

ROOF TOP UNITS																																	
EXISTING	MARK	MANUFACTURER	MODEL	NOM. CAP. (Tons)	TOTAL AIR (cfm)	MIN. O.A. (cfm)	BLOWER REQUIREMENTS				AMBIENT AIR		EVAPORATOR PERFORMANCE				HEATING PERFORMANCE				VOLTAGE	UNIT MCA	MAX. FUSE	WEIGHT (lb)	MERV FILTER	ALTITUDE (ft)	REMARKS						
							TYPE	ESP	BHP	RPM	TEMP (°F)	EAT-db (°F)	EAT-wb (°F)	LAT-db (°F)	LAT-wb (°F)	Mbh-t	Mbh-s	SEER/EEER	INPUT (Mbh)	OUTPUT (Mbh)								EAT (°F)	LAT (°F)				
-	RTU-1	CARRIER	48HC	7.5	2830	425	BELT	1.0*	1.66	948	95	74	62	53	52	82	82	12	109	81	12	EEER	180	148	55	105	208V-3Ø	45	80	1500	8	790	-
-	RTU-2	CARRIER	48HC	10.0	3830	575	BELT	1.0*	2.84	1068	95	74	62	54	52	109	81	12	EEER	224	184	55	101	208V-3Ø	57	70	1650	8	790	-			
-	RTU-3	CARRIER	48HC	6.0	2100	350	BELT	1.0*	1.78	835	95	74	62	53	51	67	49	12	EEER	125	103	55	100	208V-3Ø	34	50	1215	8	790	-			
-	RTU-4	CARRIER	48HC	6.0	2400	380	BELT	1.0*	1.98	862	95	74	62	53	52	68	52	12	EEER	125	103	55	96	208V-3Ø	34	50	1215	8	790	-			
-	RTU-5	CARRIER	48HC	6.0	2900	445	BELT	1.0*	2.10	876	95	75	62	54	52	68	52	12	EEER	125	103	55	94	208V-3Ø	34	50	1215	8	790	-			
-	RTU-6	CARRIER	48CC	5.0	2100	315	DIRECT	1.0*	1.44	2394	95	74	62	56	51	60	37	16.0	SEER	110	88	55	97	208V-3Ø	29	40	980	8	790	-			

NOTE:  
1) GENERAL ROOF TOP UNIT CONTROL: THE ROOF TOP UNITS FAN SHALL RUN CONTINUOUSLY IN THE OCCUPIED MODE AND STAGE THE HEATING AND COOLING, WITHOUT OVERLAP, TO MAINTAIN THE SPACE TEMPERATURE SETPOINTS. WHEN SPACE TEMPERATURE IS SATISFIED BUT RELATIVE HUMIDITY IS ABOVE SETPOINT (50% ADJ.) UNIT SHALL OPERATE IN DEHUMIDIFICATION (HOT GAS REHEAT) MODE UNTIL RELATIVE HUMIDITY SETPOINT HAS BEEN SATISFIED. DURING UNOCCUPIED PERIODS, THE ROOF TOP UNIT SHALL CYCLE ON/OFF TO MAINTAIN THE NIGHT HEATING/COOLING TEMPERATURE SETPOINTS. DURING UNOCCUPIED PERIODS, THE OUTSIDE AIR DAMPER SHALL BE IN THE FULLY CLOSED POSITION.  
2) THERMOSTAT SPECIFICS: A 7-DAY WIRELESS PROGRAMMABLE THERMOSTAT (HONEYWELL VISION PRO8000 #TH832R W/ YTHM5421R1010 EQUIPMENT INTERFACE MODULE KIT) SHALL OPERATE THE ROOF TOP UNITS AND SHALL CONSIST OF THE FOLLOWING: 24-HOUR TIMELOCK, FAN HAND-OFF/AUTO SWITCH, AUTOMATIC CHANGEOVER, NIGHT SETBACK, LED DISPLAY, SETPOINT ADJUSTMENT, 2-STAGE HEATING & COOLING, SPARE CONTACT TERMINALS TO ENABLE DEHUMIDIFICATION (HOT GAS REHEAT) SEQUENCE, RETURN AIR AND DISCHARGE AIR SENSORS (SEE DETAIL M2 ON SHEET M310). PROVIDE THERMOSTATS WITH LITHIUM BATTERIES. ECONOMIZER SHALL ANNOUNCE ECONOMIZER FAULTS.  
3) EACH RTU SHALL BE PROVIDED WITH FUSED DISCONNECT PROVIDED BY ELECTRICAL CONTRACTOR. M.C. TO COORDINATE SIZE REQUIREMENTS WITH E.C. BASED ON APPROVED EQUIPMENT.  
4) PROVIDE ALL RTUS WITH DUCT SMOKE DETECTOR AT ACCESSIBLE LOCATION IN RETURN AND SUPPLY AIR PLenums. SMOKE DETECTORS SUPPLIED AND WIRED FOR UNIT SHUTDOWN BY FIRE ALARM CONTRACTOR. M.C. SHALL COORDINATE WITH FIRE ALARM CONTRACTOR.  
5) PROVIDE ALL RTUS WITH THE FOLLOWING ACCESSORIES: DIFFERENTIAL ENTHALPY ECONOMIZER, BAROMETRIC RELIEF, HUMIDIFIER, POWER THRU CURB, AND 2" CURB.  
6) PROVIDE ALL RTUS 6.0 TONS AND LARGER WITH 2-SPEED FAN CONTROL.  
7) ORIGINAL WARRANTY ROOFER TO CUT, INSTALL, FLASH, AND COUNTERFLASH NEW ROOF CURB INTO ORIGINAL ROOFING MATERIALS.  
8) REMOTE SENSOR SPECIFICS: REMOTE SENSOR SHALL BE A WIRELESS HONEYWELL C7189R1004. FOR UNITS WITH SENSOR(S) SHOWN, THERMOSTAT SHALL BE SET TO AVERAGE ITS READING WITH THE SENSORS' READING.  
9) PROVIDE UNITS IN A MECHANICAL WELL ON ROOF WITH FLUE DISCHARGE DEFLECTOR: CFLUEDS001A00.  
10) PROVIDE UNITS WITH A WATER-LEVEL MONITORING DEVICE IN THE PRIMARY DRAIN PAN TO SHUT OFF THE EQUIPMENT IN THE EVENT THE DRAIN GETS RESTRICTED.

ELECTRIC WALL HEATERS							
EXISTING	MARK	ROOM(S) SERVED	MANUFACTURER	MODEL	KW	VOLTAGE	REMARKS
-	EH-1	VESTIBULE	QMARK	AWH-3150W	1.5	120V-1Ø	WHITE ENAMEL FINISH-TAMPER RESISTANT
-	EH-2	FIRE RISER ROOM	QMARK	AWH-440W	3.0	208V-1Ø	WHITE ENAMEL FINISH-TAMPER RESISTANT
-	EH-3	STAFF CORRIDOR 123	QMARK	AWH-3150W	1.5	120V-1Ø	WHITE ENAMEL FINISH-TAMPER RESISTANT
-	EH-4	MECH/STORAGE 122	QMARK	AWH-3150W	1.5	120V-1Ø	WHITE ENAMEL FINISH-TAMPER RESISTANT
-	EH-5	RPZ CLOSET 161	QMARK	AWH-440W	3.0	208V-1Ø	WHITE ENAMEL FINISH-TAMPER RESISTANT

NOTE:  
1) WALL HEATERS TO BE SUPPLIED WITH FACTORY INSTALLED INTEGRAL THERMOSTATS.  
2) BOTTOM OF WALL HEATERS SHALL BE 12" A.F.F.

EXHAUST FANS												
EXISTING	MARK	ROOM(S) SERVED	MANUFACTURER	MODEL	CFM	ESP	MOTOR	DRIVE	BHP	VOLTAGE	REMARKS	
-	EF-1	TOILETS	GREENHECK	CUE-080-VG	280	0.35	7.5	1/10 HP	DIRECT	0.05	120V-1Ø	-
-	EF-2	MED WASTE/JANITOR	GREENHECK	CUE-080-VG	225	0.35	6.8	1/10 HP	DIRECT	0.04	120V-1Ø	-
-	EF-3	TOILETS, SHOWER, LOUNGE	GREENHECK	CUE-080-VG	485	0.50	8.7	1/10 HP	DIRECT	0.11	120V-1Ø	-

NOTE:  
1) SCHEDULED EXTERNAL STATIC PRESSURE FOR ROOF MOUNT EXHAUST FANS DOES NOT INCLUDE PRESSURE LOSS THRU BACKDRAFT DAMPER.  
2) EF-1 & 3 TO BE CONTROLLED BY TIME-CLOCK (7-DAY, 24-HR.) LOCATE NEAR ELECTRICAL PANELS.  
3) EF-2 TO BE WIRED FOR CONTINUOUS OPERATION.  
4) ALL SCHEDULED EXHAUSTERS TO BE SUPPLIED WITH FACTORY SUPPLIED AND WIRED DISCONNECT SWITCHES WITH THERMAL OVERLOAD (FOR NON ECM MOTORS ONLY) AND FAN SPEED CONTROLLERS.  
5) ALL SCHEDULED ROOF MOUNTED EXHAUST FANS TO BE SUPPLIED WITH BACKDRAFT DAMPER, POWER THRU CURB, AND FACTORY BUILT ROOF CURB.

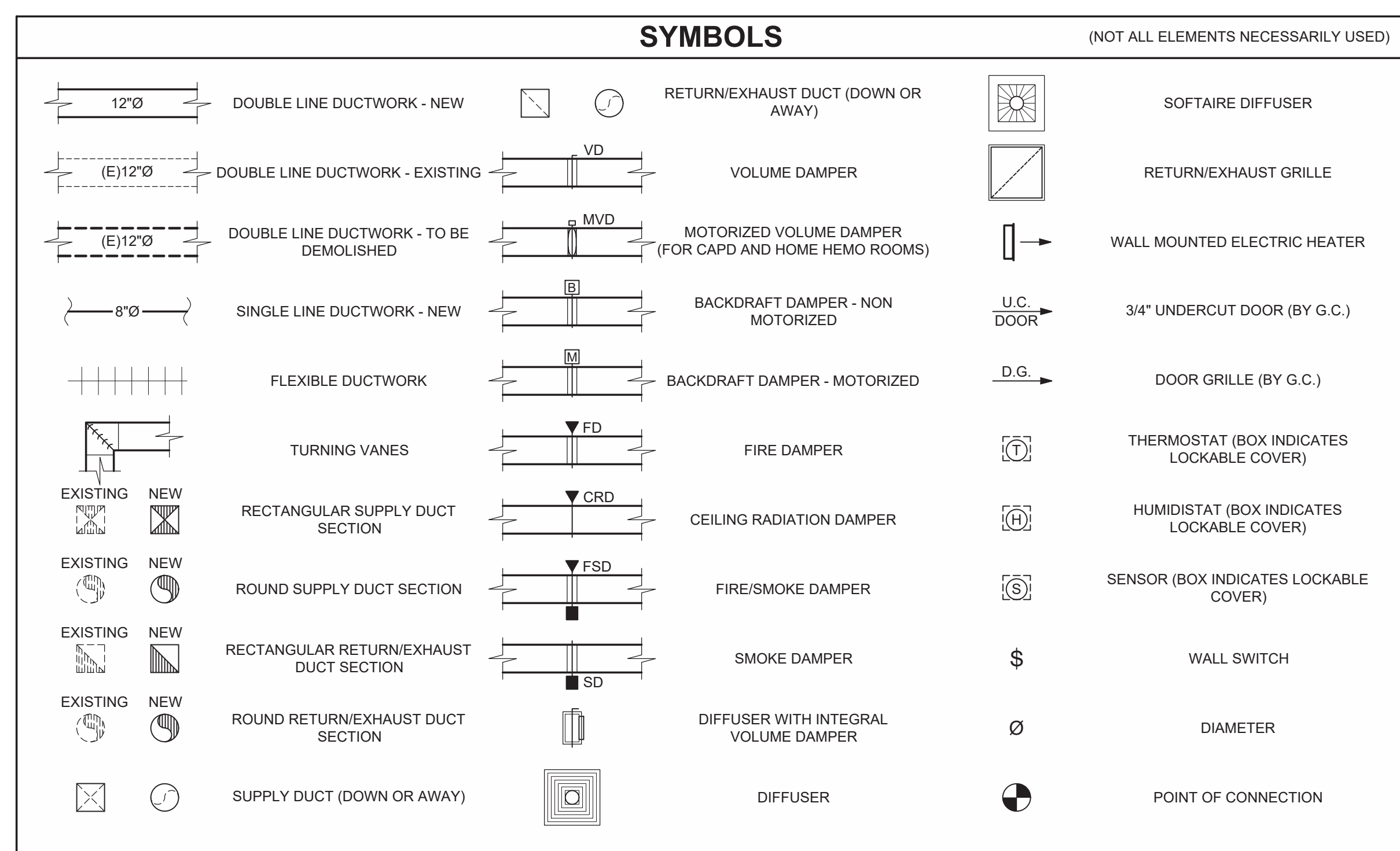
DIFFUSERS AND GRILLES						
MARK	MANUFACTURER	MODEL	NECK SIZE	MODULE/FACE SIZE	FINISH	REMARKS
S-1	PRICE	AMD	18"x18"	24"x24"	WHITE	LOUVERED FACE DIFFUSER, 4-WAY THROW AND SR ADAPTOR (SIZE SHOWN ON PLAN)
S-10	PRICE	620D	8"x6"	10"x8"	WHITE	DOUBLE DEFLECTION, SURFACE MOUNT AND OBD
S-11	PRICE	620D	12"x6"	14"x8"	WHITE	DOUBLE DEFLECTION, SURFACE MOUNT AND OBD
S-12	PRICE	620D	12"x12"	14"x14"	WHITE	DOUBLE DEFLECTION, SURFACE MOUNT AND OBD
S-20	PRICE	RCDA	6"Ø	13-1/2"Ø	WHITE	CIRCULAR DIFFUSER WITH ADJ. DISCHARGE PATTERN AND VCR-7 OBD
S-21	PRICE	RCDA	8"Ø	18"Ø	WHITE	CIRCULAR DIFFUSER WITH ADJ. DISCHARGE PATTERN AND VCR-7 OBD
S-22	PRICE	RCDA	10"Ø	22"Ø	WHITE	CIRCULAR DIFFUSER WITH ADJ. DISCHARGE PATTERN AND VCR-7 OBD
S-30	SOFTFAIRE	CCT-SQ	6"Ø	24"x24"	WHITE	LAY-IN, SQUARE FACE
S-31	SOFTFAIRE	CCT-SQ	8"Ø	24"x24"	WHITE	LAY-IN, SQUARE FACE
S-32	SOFTFAIRE	CCT-SQ	10"Ø	24"x24"	WHITE	LAY-IN, SQUARE FACE
S-33	SOFTFAIRE	CCT-SQ	12"Ø	24"x24"	WHITE	LAY-IN, SQUARE FACE
S-50	PRICE	HCD1	6"x6"	12"x8-1/2"	WHITE	SURFACE MOUNT DRUM LOUVER AND VCS3D DAMPER
S-51	PRICE	HCD1	15"x6"	18"x8-1/2"	WHITE	SURFACE MOUNT DRUM LOUVER AND VCS3D DAMPER
S-52	PRICE	HCD1	24"x10"	27"x12"	WHITE	SURFACE MOUNT DRUM LOUVER AND VCS3D DAMPER
R-1	PRICE	80	10"x10"	12"x12"	WHITE	EGG CRATE, LAY-IN
R-2	PRICE	80	10"x10"	12"x12"	WHITE	EGG CRATE, SURFACE MOUNT
R-3	PRICE	80	10"x22"	12"x24"	WHITE	EGG CRATE, LAY-IN
R-4	PRICE	80	10"x22"	12"x24"	WHITE	EGG CRATE, SURFACE MOUNT
R-5	PRICE	80	22"x22"	24"x24"	WHITE	EGG CRATE, LAY-IN
R-6	PRICE	80	22"x22"	24"x24"	WHITE	EGG CRATE, SURFACE MOUNT
R-7	PRICE	80	16"x28"	18"x30"	WHITE	EGG CRATE, DUCT MOUNT
R-8	PRICE	630	22"x10"	24"x12"	WHITE	LOUVERED FACE, SURFACE MOUNT
T-1	PRICE	80	10"x10"	12"x12"	WHITE	EGG CRATE, LAY-IN
T-2	PRICE	80	10"x10"	12"x12"	WHITE	EGG CRATE, SURFACE MOUNT
T-3	PRICE	80	10"x22"	12"x24"	WHITE	EGG CRATE, LAY-IN
T-4	PRICE	80	10"x22"	12"x24"	WHITE	EGG CRATE, SURFACE MOUNT
T-5	PRICE	630	22"x10"	24"x12"	WHITE	LOUVERED FACE, SURFACE MOUNTED GRILLE, HORIZONTAL BLADES
T-6	PRICE	630	34"x10"	36"x12"	WHITE	LOUVERED FACE, SURFACE MOUNTED GRILLE, HORIZONTAL BLADES
T-7	PRICE	630	30"x16"	32"x18"	WHITE	LOUVERED FACE, SURFACE MOUNTED GRILLE, HORIZONTAL BLADES
E-1	PRICE	80D	10"x10"	12"x12"	WHITE	EGG CRATE, LAY-IN, OBD OPERABLE FROM FACE
E-2	PRICE	80D	10"x10"	12"x12"	WHITE	EGG CRATE, SURFACE MOUNT, OBD OPERABLE FROM FACE
E-3	PRICE	80	10"x22"	12"x24"	WHITE	EGG CRATE, LAY-IN
E-4	PRICE	80	10"x22"	12"x24"	WHITE	EGG CRATE, SURFACE MOUNT
E-5	PRICE	80	22"x22"	24"x24"	WHITE	EGG CRATE, LAY-IN
E-6	PRICE	80	22"x22"	24"x24"	WHITE	EGG CRATE, SURFACE MOUNT
E-7	PRICE	630	10"x6"	12"x10"	WHITE	LOUVERED FACE, SURFACE MOUNTED GRILLE, HORIZONTAL BLADES
E-8	PRICE	630	22"x12"	24"x14"	WHITE	LOUVERED FACE, SURFACE MOUNTED GRILLE, HORIZONTAL BLADES

NOTE:  
1) NOT ALL DIFFUSERS/GRILLES ARE NECESSARILY USED. SEE PLAN FOR QUANTITY.  
2) COORDINATE MOUNTING TYPE OF ALL DIFFUSERS/GRILLES WITH CEILING TYPE.  
3) T-5, 6, & 7 SHALL BE INSTALLED SUCH THAT THE HORIZONTAL BLADES ARE POINTED UP TO OBSTRUCT VIEW THRU GRILLE.

DUCTLESS SPLIT SYSTEMS																			
MARK	ROOM(S) SERVED	INDOOR UNIT					OUTDOOR UNIT			ELECTRICAL		RATED MIN. TEMP.		REMARKS					
		MODEL	TYPE	CFM	CLG. CAP.	SEER/EEER	WTG. CAP.	HSPF	MARK	MANUFACTURER	MODEL	VOLTAGE	MCA		MOCP	COOLING	HEATING		
FC-1	SDS/WATER TREATMENT 123	MITSUBISHI	PKA-A12HA7	HIGH WALL	370	12.0 MBH	20.8 SEER	-	-	-	CU-1	MITSUBISHI	PUY-A12NHAT	208V-1Ø	12.0	15.0	-20°F	-	-

NOTE:  
1) PROVIDE LOW AMBIENT TEMPERATURE CONTROLS AND ACCESSORIES.  
2) FAN COIL IS POWERED THRU CONDENSING UNIT. WIRING BY E.C.  
3) PROVIDE CONDENSATE PUMP AND ROUTE CONDENSATE TO NEARBY FLOOR SINK.  
4) PROVIDE UNIT WITH DRAIN PAN LEVEL SENSOR ACCESSORY TO SHUT THE UNIT DOWN WHEN SENSING A HIGH LEVEL OF CONDENSATE IN THE DRAIN PAN.  
5) PROVIDE ROOF SUPPORTS FOR CONDENSING UNIT. SEE DETAIL M2 ON SHEET M3.0.

HVAC ABBREVIATIONS				(NOT ALL ABBREVIATIONS NECESSARILY USED)			
AD	ACCESS DOOR	EWT	ENTERING WATER TEMPERATURE	NO.	NUMBER		
AFF	ABOVE FINISHED FLOOR	EXH	EXHAUST	NTS	NOT TO SCALE		
AHU	AIR HANDLING UNIT	F	DEGREES FAHRENHEIT	OA	OUTSIDE AIR		
BHP	BRAKE HORSEPOWER	FA	FREE AREA (SQ. FT.)	OAI	OUTSIDE AIR INTAKE		
BTU	BRITISH THERMAL UNIT	FC	FLEXIBLE CONNECTION	OED	OPEN END DUCT		
BTUH	BTU PER HOUR	FD	FIRE DAMPER	RA	RETURN AIR		
CD	CEILING DIFFUSER	FLA	FULL LOAD AMPERES	(RE)	RELOCATED EXISTING		
CFM	CUBIC FEET PER MINUTE	FBM	FEET PER MINUTE	RF	RETURN FAN		
CG	CEILING GRILLE	FSD	FIRE/SMOKE DAMPER	RH	RELATIVE HUMIDITY		
CLG	CEILING	GAL	GALLON	RHC	REHEAT COIL		
CR	CEILING REGISTER	GPH	GALLONS PER HOUR	RPM	REVOLUTIONS PER MINUTE		
CV	CONSTANT VOLUME	GPM	GALLONS PER MINUTE	RTU	ROOFTOP UNIT		
DB	DRY BULB	HT	HEIGHT	SA	SUPPLY AIR		
DG	DOOR GRILLE	HZ	FREQUENCY	SD	SMOKE DAMPER		
DMPR	DAMPER	IN	INCH OR INCHES	SP	STATIC PRESSURE		
DX	DIRECT EXPANSION	LAT	LEAVING AIR TEMPERATURE	TEMP	TEMPERATURE		
(E)	EXISTING TO REMAIN	LD	LINEAR DIFFUSER	TYP.	TYPICAL		
(ER)	EXISTING TO BE REMOVED	LWB	LEAVING WET BULB TEMPERATURE	UC	UNDERCUT DOOR		
(ERR)	EXISTING TO BE REMOVED & RELOCATED	LWT	LEAVING WATER TEMPERATURE	UH	UNIT HEATER		
EAT	ENTERING AIR TEMPERATURE	MBH	THOUSAND BTU PER HOUR	VAV	VARIABLE AIR VOLUME UNIT		
EDB	ENTERING DRY BULB TEMPERATURE	MIN	MINIMUM	VD	VOLUME DAMPER		
EF	EXHAUST FAN	MVD	MOTORIZED VOLUME DAMPER	VVT	VARIABLE VOLUME AND TEMPERATURE		
EL	ELEVATION	N	NEW	W	WITH		
EWB	ENTERING WET BULB	NIC	NOT IN CONTRACT	WMS	WIRE MESH SCREEN		



MOTORIZED VOLUME DAMPERS						
MARK	TYPE	PLAN KEY	MODEL	MANUFACTURER	ACTUATOR	REMARKS
MVD	MOTORIZED VD	[Symbol]	4011-PC	YOUNG REGULATOR	110 VAC	TO BE CONTROLLED BY WALL MOUNTED ON-OFF SWITCH W/ INTEGRAL SPRING WOUND TIMER BY E.C.

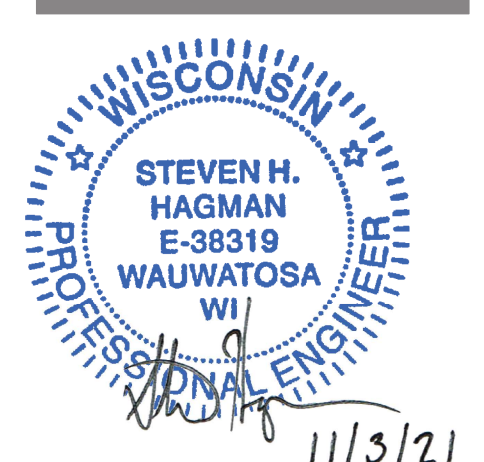
NOTE:  
1) THE PURPOSE OF THESE CONTROLS IS TO ALLOW CLINIC MEDICAL STAFF TO PROVIDE A TEMPORARY PAUSE IN AIRFLOW TO THE ROOM WHILE THE INITIAL DIALYSIS CONNECTION IS PERFORMED. WHEN THE TIMER IS OPERATING, THE MOTORIZED DAMPERS SHALL CLOSE THE SUPPLY AND RETURN AIR TO THE ROOM. WHEN THE TIMER IS OFF, AIR FLOW AS INDICATED ON THE PLAN SHALL BE DELIVERED TO THE ROOM. THE PROPER OPERATION OF THESE DAMPERS SHALL BE CONFIRMED AND RECORDED BY THE TEST & BALANCE CONTRACTOR IN THE T & B REPORT. MECHANICAL CONTRACTOR TO COORDINATE WITH THE T & B CONTRACTOR.

FIRE AND SMOKE DAMPERS										
MARK	DAMPER TYPE	INSTALL TYPE	PLAN KEY	MODEL	MANUFACTURER	SP RATING	ACTUATOR	POSITION	SLEEVE	REMARKS
FD	FIRE	RECTANGULAR ROUND OUT OF WALL	[Symbol]	DFD-150 DFDR-150 OFSD-150	GREENHECK	DYNAMIC	-	BOTH BOTH	BOTH INTEGRAL	UL555 CLASS 1 - 1 1/2 Hr.
SD	SMOKE	RECTANGULAR ROUND	[Symbol]	SMD-201 SMDR-501	GREENHECK	-	24 V	BOTH BOTH	AS REQUIRED BOTH	UL555S CLASS 1 - 1 1/2 Hr.
FSD	FIRE-SMOKE	RECTANGULAR ROUND OUT OF WALL	[Symbol]	FSD-211 FSDR-511 OFSD-211	GREENHECK	DYNAMIC	24 V	BOTH BOTH	AS REQUIRED INTEGRAL	UL555S CLASS 1 - 1 1/2 Hr.
CRD	CEILING RADIATION	RECTANGULAR ROUND	[Symbol]	CRD-60 CRD-2	GREENHECK	-	-	HORIZONTAL HORIZONTAL	AS REQUIRED AS REQUIRED	UL555C CLASS 3 Hr.

NOTE:  
1) MECHANICAL CONTRACTOR TO FURNISH AND INSTALL APPROPRIATE ACCESS/INSPECTION DOOR FOR EACH LISTED DAMPER.  
2) SEE ELECTRICAL DRAWINGS FOR DIVISION OF WORK DIAGRAM.  
3) FIRE ALARM DESIGN/BUILD CONTRACTOR RESPONSIBLE FOR WIRING OF SMOKE/FIRE DAMPERS AND INTERFACE WITH CENTRAL FIRE PROTECTION PANEL. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL DETAILS.

HVAC SET POINTS	
CONTRACTOR SHALL USE SET POINTS AS DEFAULTS TO CONFIGURE CONTROLS. ALL SET POINTS SHALL BE ADJUSTABLE BY FINAL USER.	
COOLING:	75 °F
HEATING:	72 °F
DEHUMIDIFICATION:	50% RH
HUMIDIFICATION:	N/A

EQUIPMENT RESPONSIBILITY SCHEDULE					
EQUIPMENT	SHELL MC		TI MC		REMARKS
	FURNISHED	INSTALLED	FURNISHED	INSTALLED	
ROOF TOP UNITS					
UNITS	X	X			-
ROOF CURBS	X	X			-
GAS PIPING	X	X			-
DUCT SMOKE DETECTORS			X		NOTE 2
TEMPERATURE SENSORS	X	X			-
THERMOSTATS	X		X		FINAL PLACEMENT BY TI MC



CKA REGISTRATION # T026052

Proposed Dialysis Clinic for:
FKC - Appleton
FKC Project #006055-2-RL-W-GU-2020
325 North Bluemound Drive
Grand Chute, Wisconsin 54914



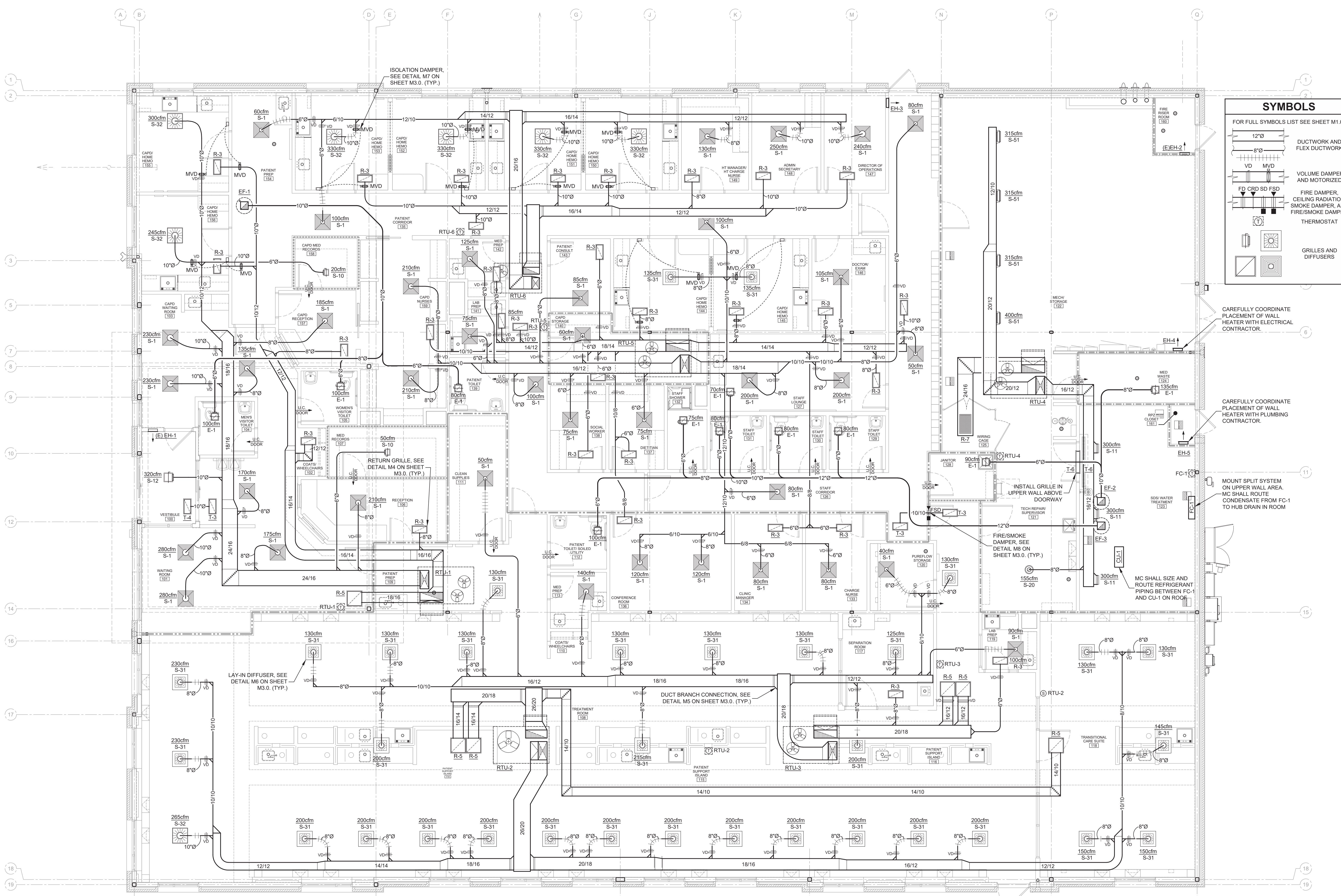
These drawings, as instruments of service, remain the property of the Architect or Engineer. Any changes, publication, or use of any kind is prohibited unless expressly authorized by said party. Copyright 2021.

Drafted By: SHH
Checked By: MAH
Date Drafted: 11/03/2021
Project #: 19208-01

Table with 2 columns: #, DATE, REVISION DESCRIPTION

MECHANICAL PLAN

M2.0



SYMBOLS
FOR FULL SYMBOLS LIST SEE SHEET M1.0
12" DUCTWORK AND FLEX DUCTWORK
VOLUME DAMPER AND MOTORIZED
FIRE DAMPER, CEILING RADIATION SMOKE DAMPER, AND FIRE/SMOKE DAMPER
THERMOSTAT
GRILLES AND DIFFUSERS

CAREFULLY COORDINATE PLACEMENT OF WALL HEATER WITH ELECTRICAL CONTRACTOR.
CAREFULLY COORDINATE PLACEMENT OF WALL HEATER WITH PLUMBING CONTRACTOR.
MOUNT SPLIT SYSTEM ON UPPER WALL AREA. MC SHALL ROUTE CONDENSATE FROM FC-1 TO HUB DRAIN IN ROOM.

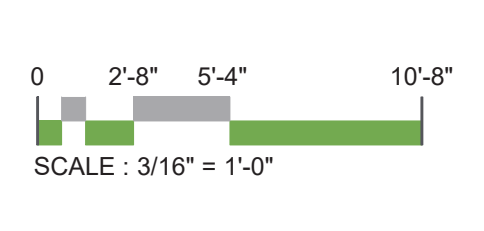
- GENERAL NOTES
A) ALL MECHANICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE SPS 364 (2015 INTERNATIONAL MECHANICAL CODE W/AMENDMENTS) AND ALL OTHER APPLICABLE LOCAL, STATE, AND NATIONAL CODES.
B) MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO CONSTRUCT A COMPLETE, OPERATIONAL HEATING, VENTILATION, AND AIR-CONDITIONING SYSTEM FOR THE ENTIRE PROJECT AS SHOWN ON THESE DRAWINGS. OBTAIN ALL PERMITS, FEES, AND ANY OTHER APPURTENANCES REQUIRED BY LOCAL JURISDICTIONS TO THE EXECUTION OF THE CONTRACT.
C) HVAC WORK IS INDICATED DIAGRAMMATICALLY. EXACT LOCATIONS OF HVAC EQUIPMENT AND ALL COMPONENTS ARE TO BE DETERMINED IN THE FIELD AND BY ACTUAL BUILDING CONDITIONS. EQUIPMENT, DUCTS, OR PIPES INTERFERING WITH OTHER INSTALLATIONS SHALL BE RELOCATED AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.
D) ALL EXHAUST CAP LOCATIONS ARE APPROXIMATE. THE AIR DISCHARGE FROM ALL EXHAUST FANS SHALL BE A MINIMUM OF 25' (10' FROM O.A. INTAKE FOR RTU-4) FROM ANY AND ALL OUTSIDE AIR INTAKES (OR WINDOW OPENINGS) UNLESS OTHERWISE NOTED.
E) POSITION AND INSTALL SMOKE DETECTOR IN CENTRAL SUPPLY AND RETURN AIR PLENUM OF ROOF TOP UNITS AS REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION. INCLUDE ACCESS DOOR FOR INSPECTION AND MAINTENANCE OF SMOKE DETECTOR. SMOKE DETECTOR SUPPLIED AND WIRED FOR UNIT SHUTDOWN BY FIRE ALARM CONTRACTOR. M.C. SHALL COORDINATE WITH FIRE ALARM CONTRACTOR.
F) PROVIDE FIRE DAMPERS AND FIRE/SMOKE DAMPERS WHERE INDICATED ON PLANS AND WHERE REQUIRED BY ALL APPLICABLE CODES FOR DUCTS AND OPENINGS IN FIRE WALLS AND FIRE PARTITIONS. PROVIDE ACCESS DOORS LOCATED SO THAT DAMPER COMPONENTS MAY BE INSPECTED AND SERVICED. SEE ARCHITECTURAL SHEETS FOR ALL WALL, PARTITION, AND BARRIER TYPES AND RATINGS.
G) ALL DUCTWORK TO HAVE NO DUCT LINER. ALL FLEX TO HAVE INSIDE POLY BARRIER (NO EXPOSED INTERIOR FIBERGLASS INSULATION OR ACOUSTICAL LINER IN TOTAL SYSTEM).
H) ROUTE BRANCH DUCTS OVER THE TOP OF MAINS BETWEEN THE STRUCTURE WHERE NEEDED TO MAINTAIN CEILING HEIGHTS SPECIFIED.
I) WHERE DUCTWORK CROSSINGS ARE SHOWN PROVIDE ALL REQUIRED TRANSITIONS/OFFSETS TO ALLOW FOR COMPLETE INSTALLATION OF SYSTEM.
J) ALL PENETRATIONS THRU SMOKE PARTITIONS SHALL BE SEALED SMOKE TIGHT.
K) ALL HOME HEMO AND CAPD ROOMS SHALL BE PROVIDED WITH YOUNG REGULATOR 401 I-HD-PC MOTORIZED DAMPERS IN DUCTS AS SHOWN. DAMPERS SHALL BE CONTROLLED BY WALL MOUNTED ON-OFF SWITCH W/ INTEGRAL SPRING WOUND TIMER.
L) ALL EXPOSED DUCTWORK LOCATED IN THE WATER TREATMENT AND/OR THE MECHANICAL STORAGE ROOM SHALL BE INSULATED WITH RIGID INSULATION. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAIL.

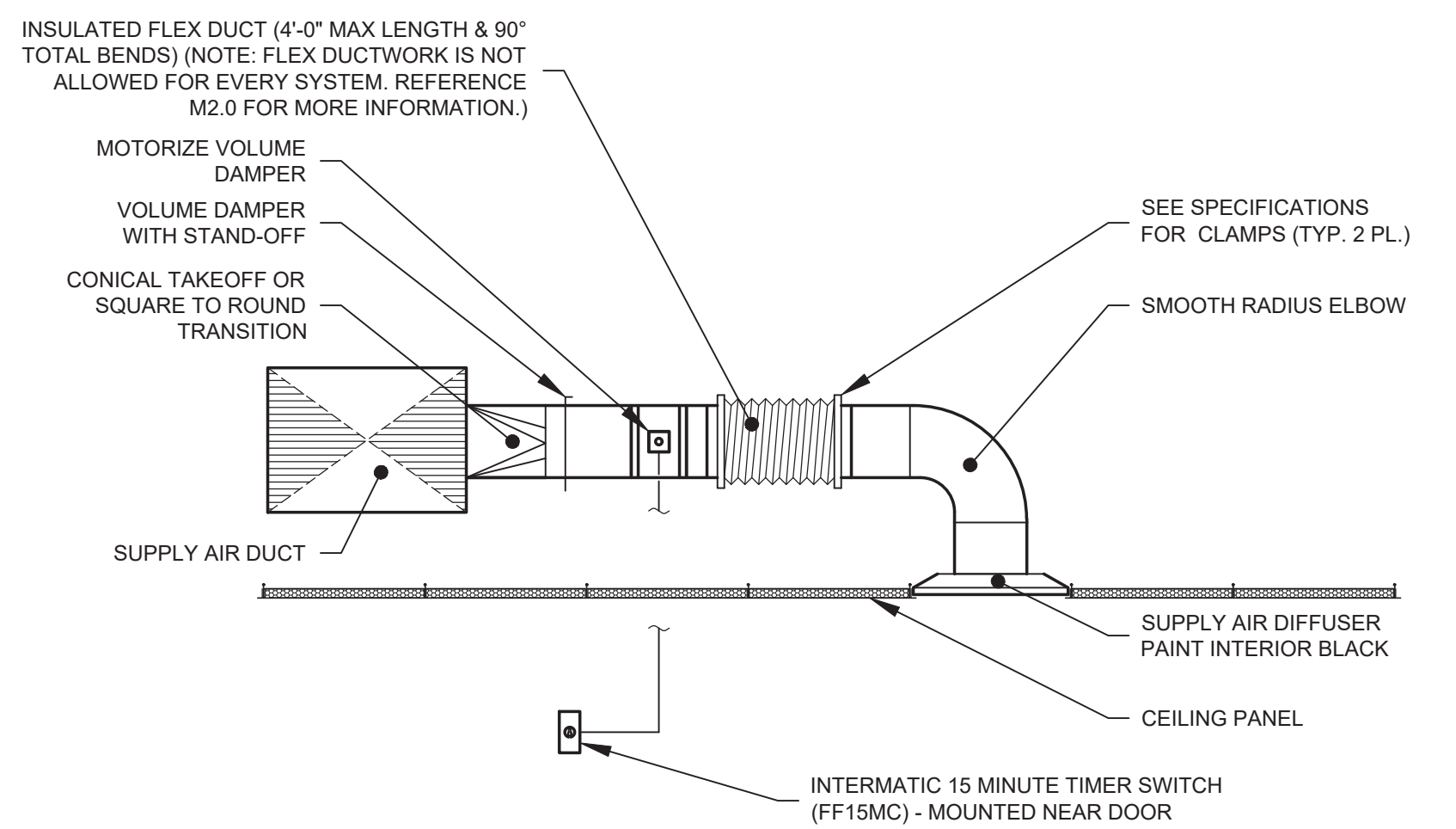
MVD CONTROL FOR CAPD ROOMS
THE INTENTION OF THESE CONTROLS IS TO ALLOW THE OCCUPANTS OF THE ROOM TO TEMPORARILY CUT OFF SUPPLY AND RETURN AIR TO THE ROOM WHILE TRAINING PATIENTS. WHEN THE TIMER IS OPERATING THE MOTORIZED DAMPER SHALL CLOSE SUPPLY AND RETURN AIR TO THE ROOM. WHEN THE TIMER IS NOT OPERATING AIR FLOW AS INDICATED ON THE DRAWINGS SHALL BE DELIVERED TO THE ROOM.

DUCTWORK HATCHING LEGEND
THESE HATCHES ARE ONLY FOR THE PURPOSE OF HELPING THE CLIENT DIFFERENTIATE BETWEEN SUPPLY AND RETURN DUCTWORK. THEY HAVE NO OTHER EXPLICIT OR IMPLIED MEANING.
SUPPLY DUCTWORK HATCH
RETURN DUCTWORK HATCH

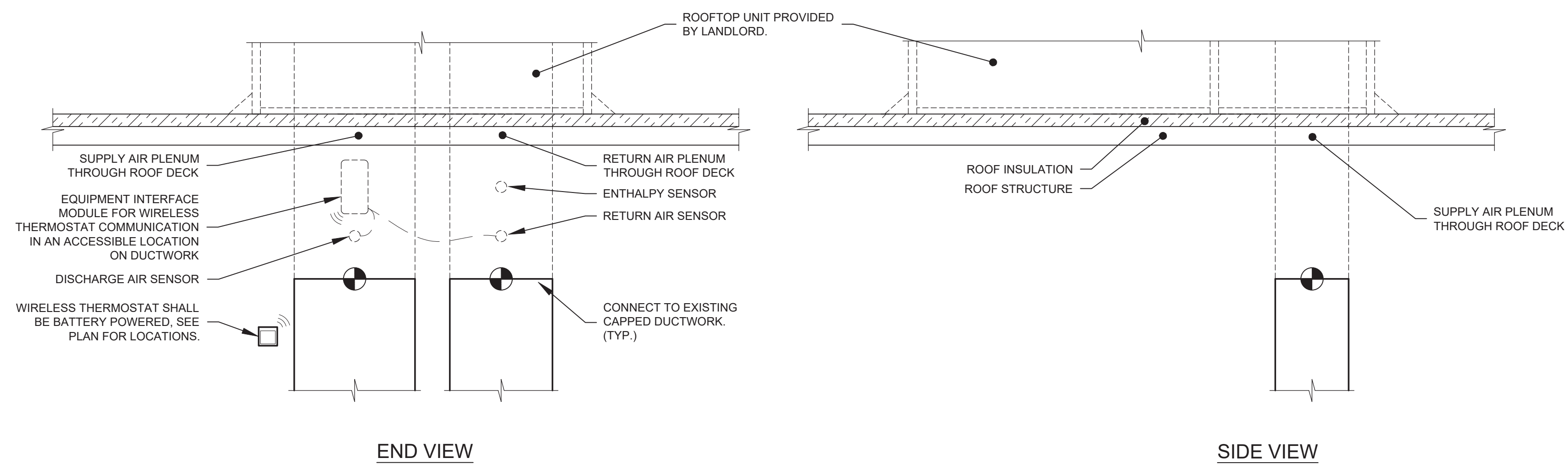
LIFE SAFETY DAMPER NOTE
IN ORDER TO MEET THE EXCEPTIONS LISTED IN THE IBC CODE TO OMIT LIFE SAFETY DAMPERS, SYSTEMS WHERE THE DUCTWORK PENETRATES A RATED WALL SHALL NOT CONTAIN ANY FLEX DUCT CONNECTORS OR FLEXIBLE DUCTWORK.

EXISTING CONDITIONS
EXISTING PROJECT CONDITIONS, AS THEY APPEAR ON THESE DRAWINGS, SUCH AS ARCHITECTURAL AND STRUCTURAL BUILDING COMPONENTS, MECHANICAL AND ELECTRICAL EQUIPMENT, PIPING, DUCTWORK, ROUGH-INS AND OTHER MISCELLANEOUS CONSTRUCTION, HAVE BEEN GATHERED AND TRANSFERRED FROM PREVIOUS CONSTRUCTION DRAWINGS. WHILE SUCH INFORMATION HAS BEEN COLLECTED AND INTERPRETED WITH REASONABLE CARE, THE ARCHITECT AND ENGINEER DO NOT ASSUME ANY EXPRESSED OR IMPLIED GUARANTEE THAT CONDITIONS SO INDICATED ARE ENTIRELY COMPLETE, CORRECT AND REPRESENTATIVE OF THOSE ACTUALLY EXISTING. ALL CONTRACTORS SHALL PROVE TO THEMSELVES AS TO ALL EXISTING CONDITIONS PRIOR TO BIDDING, AND VERIFY ALL DIMENSIONS AT THE SITE.

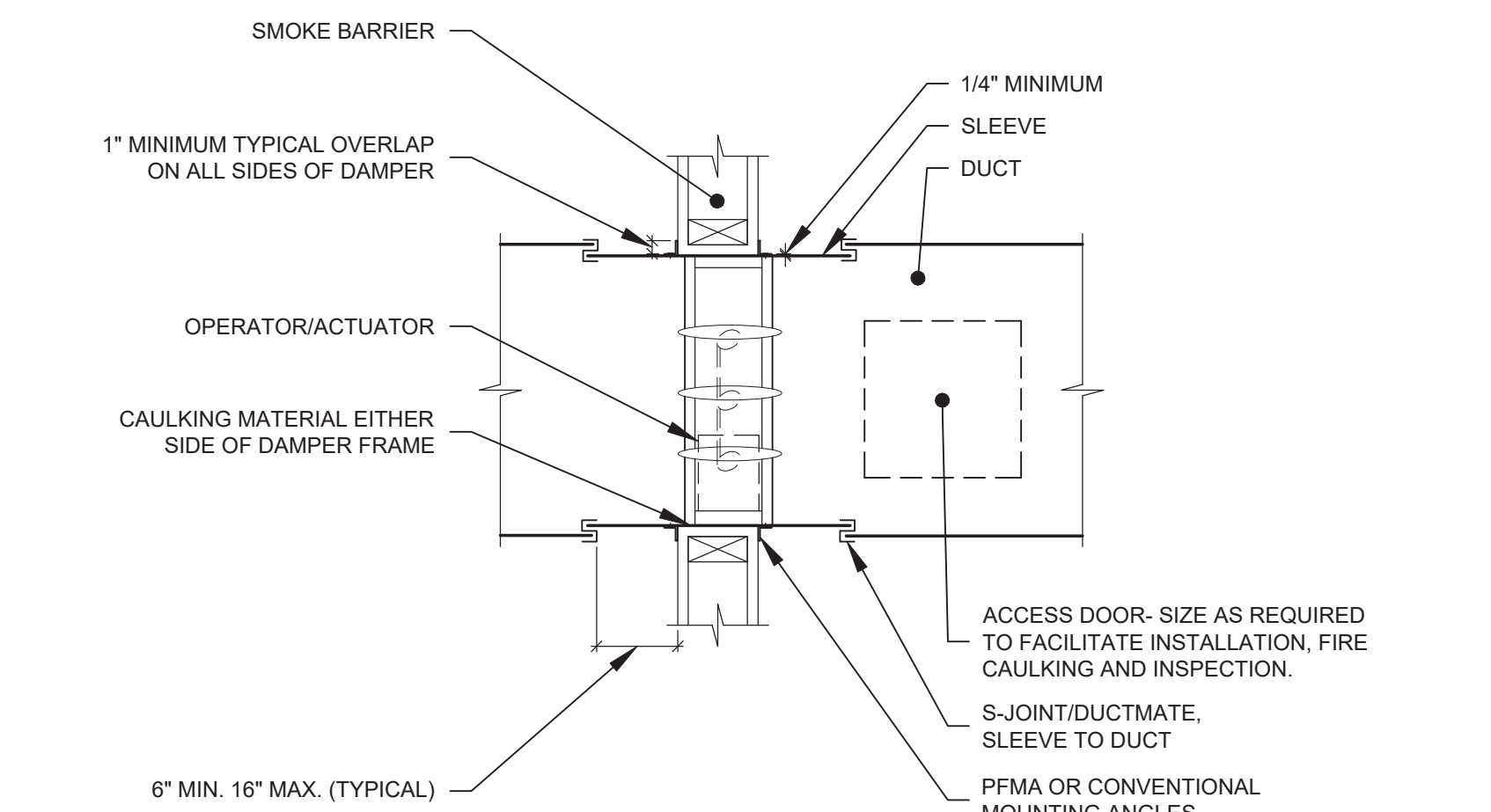




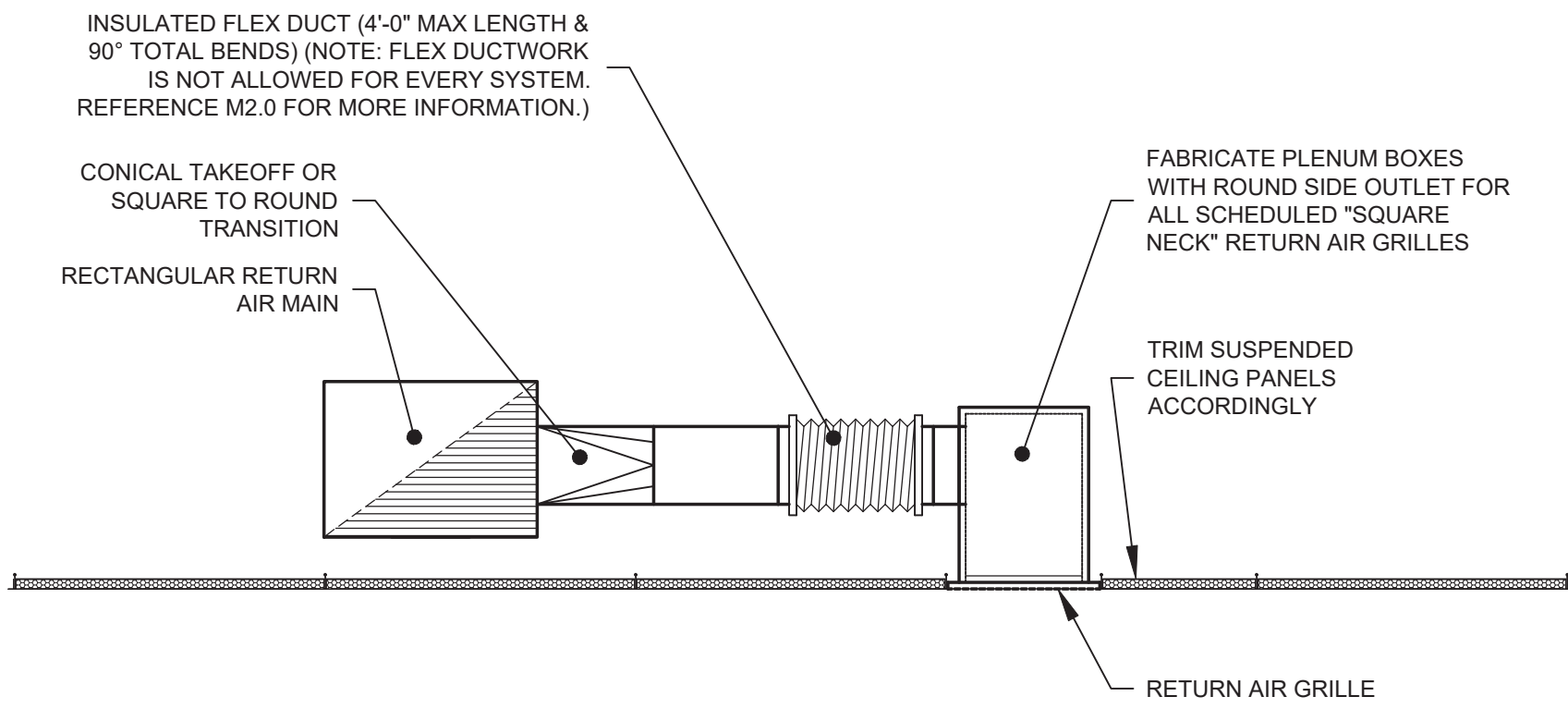
M7 TYPICAL DIFFUSER W/ CONTROL DAMPER DETAIL  
N.T.S. RETURN AIR SIMILAR



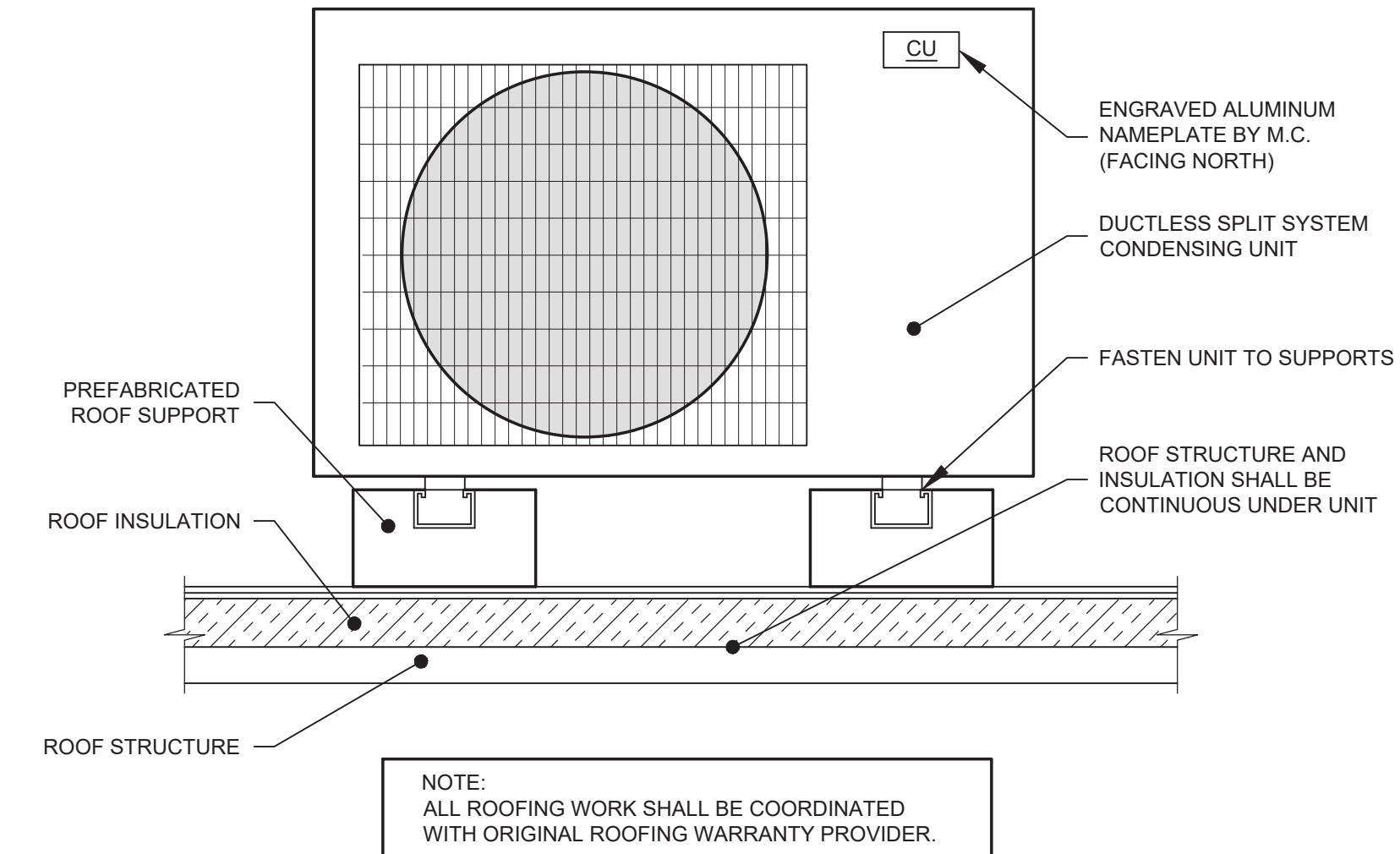
M1 TYPICAL ROOFTOP UNIT DETAIL  
N.T.S.



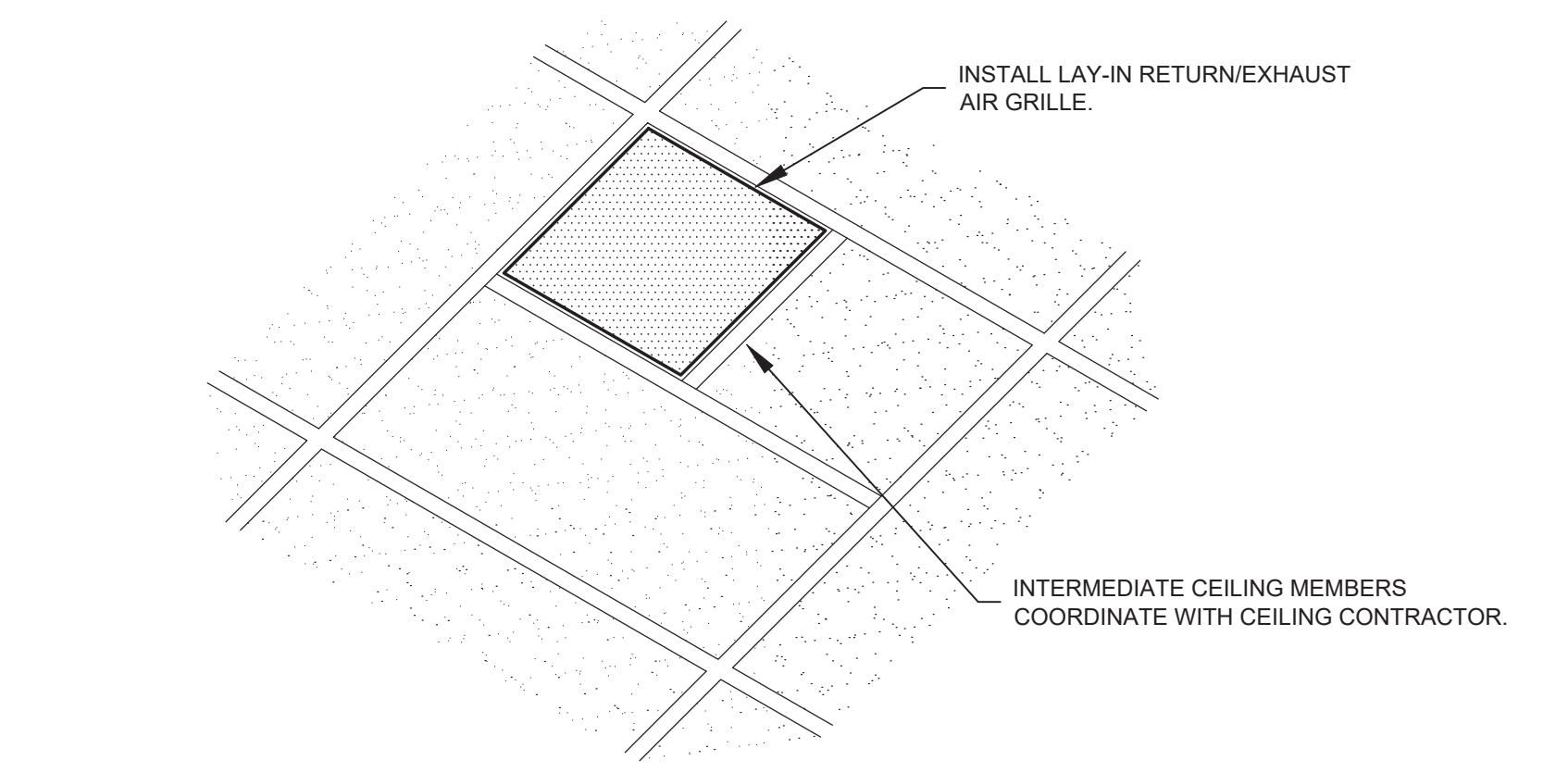
M8 TYPICAL FIRE/SMOKE DAMPER DETAIL  
N.T.S.



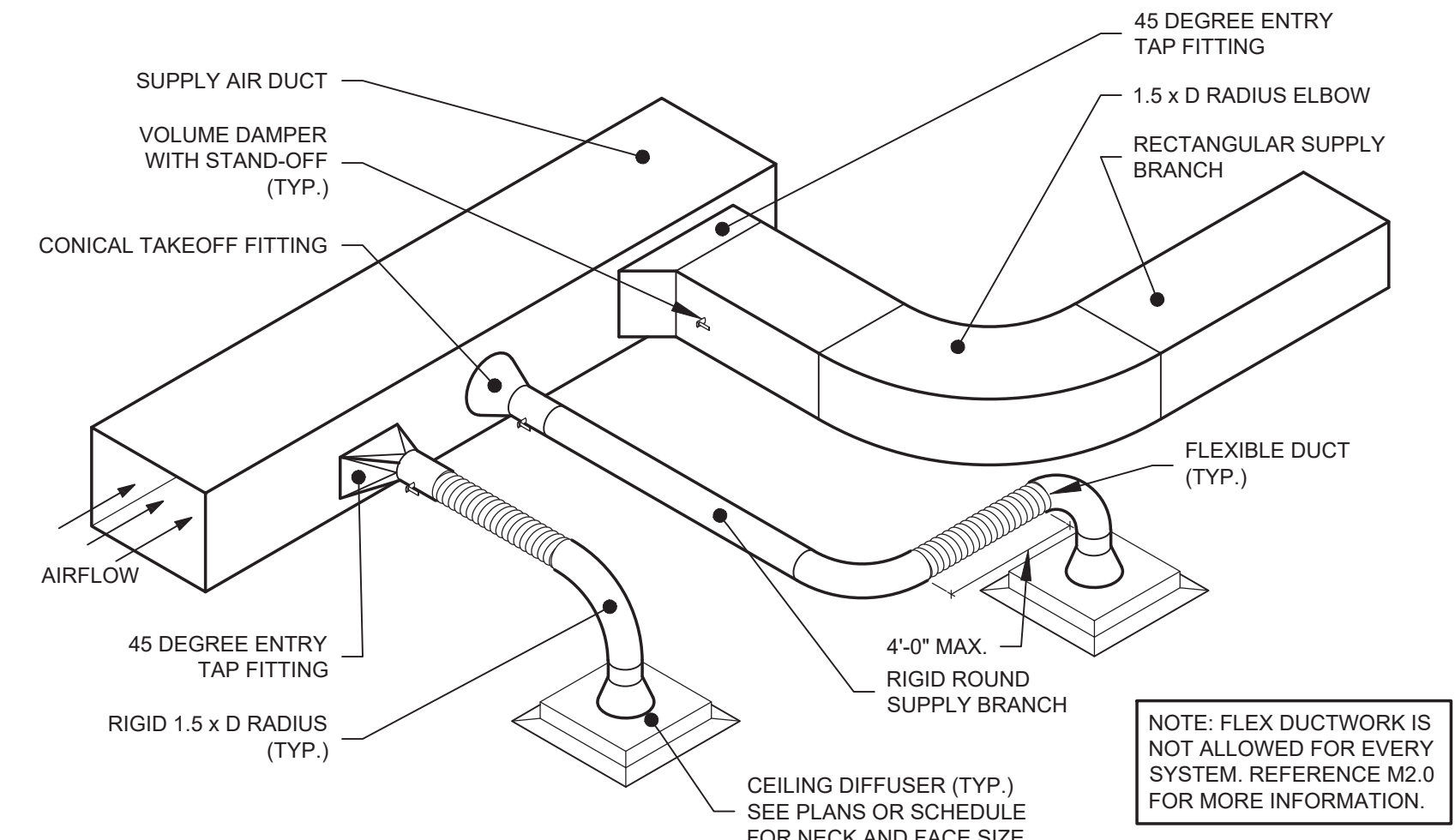
M4 TYPICAL RETURN GRILLE DETAIL  
N.T.S. EXHAUST GRILLE SIMILAR



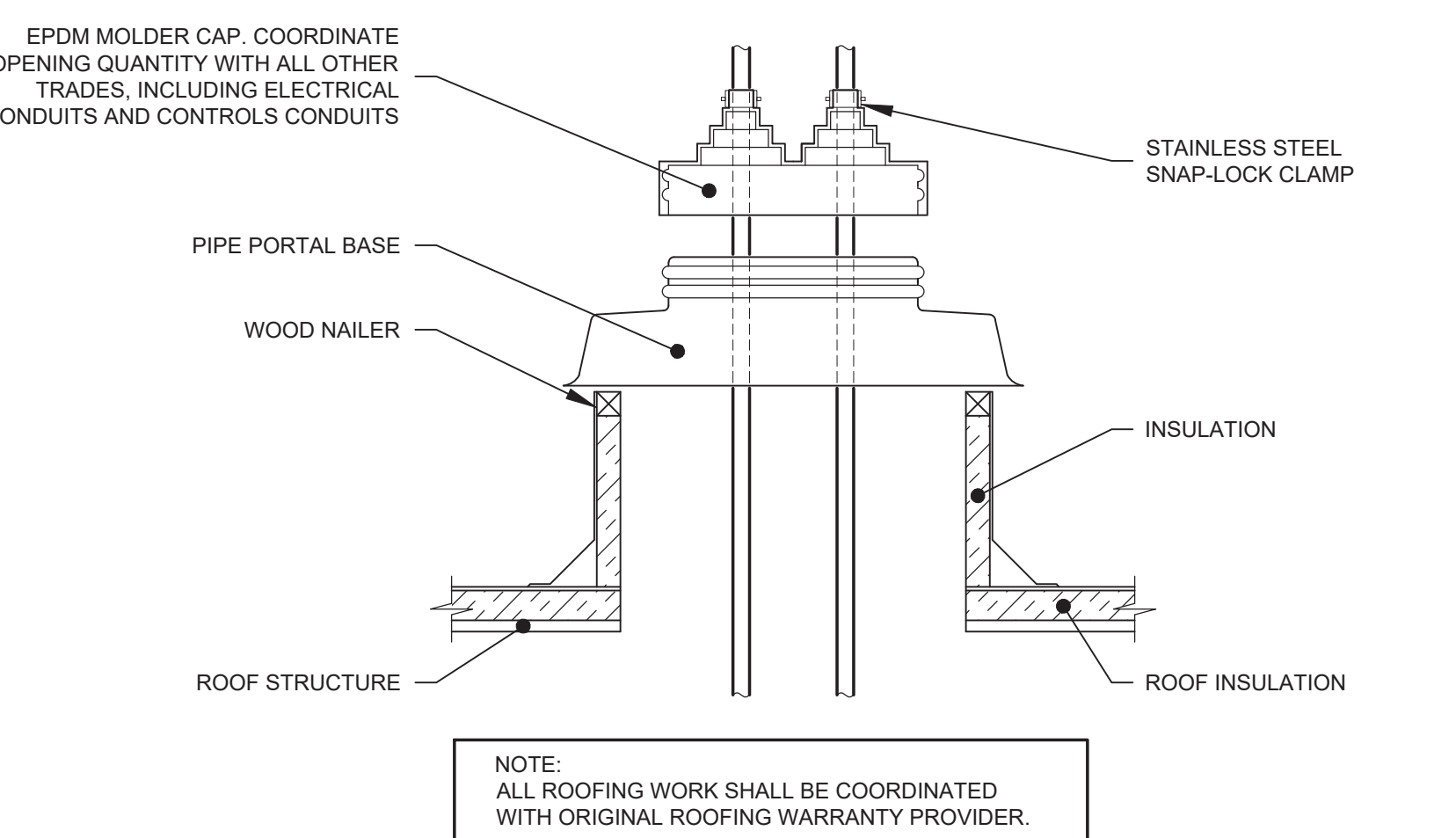
M2 TYPICAL CONDENSING UNIT ROOF SUPPORT DETAIL  
N.T.S.



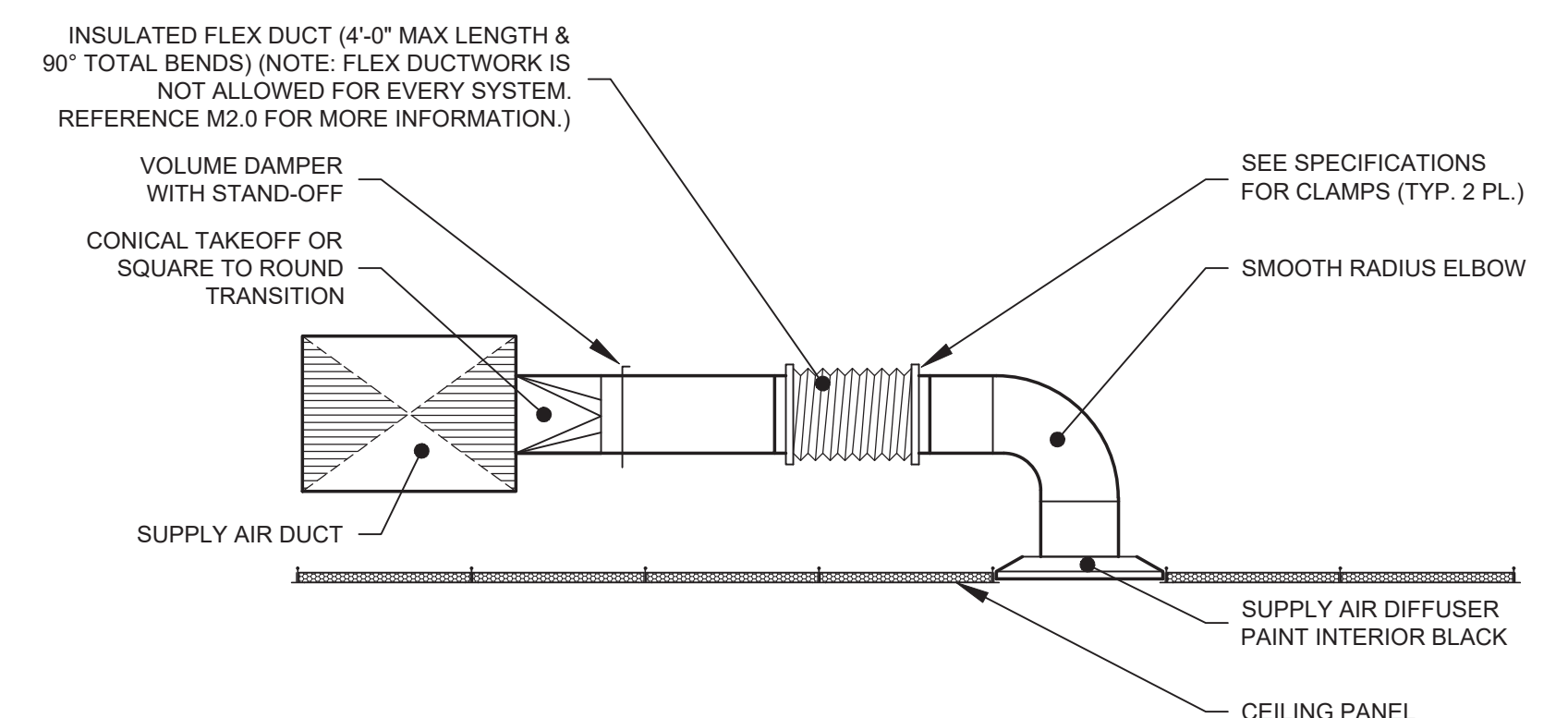
M9 RETURN/EXHAUST AIR GRILLE DETAIL  
N.T.S.



M5 BRANCH DUCT AND DIFFUSER CONNECTIONS  
N.T.S.



M3 TYPICAL PIPING THRU ROOF DETAIL  
N.T.S.



M6 TYPICAL DIFFUSER DETAIL  
N.T.S.

Steven H. Hagman, PE  
Wisconsin License #38319-006  
Expires: July 31, 2022

DESIGNER



CKA REGISTRATION # T026052

Proposed Dialysis Clinic for:  
**FKC - Appleton**  
FKC Project #006055-2-RL-W-GU-2020  
325 North Bluemound Drive  
Grand Chute, Wisconsin 54914



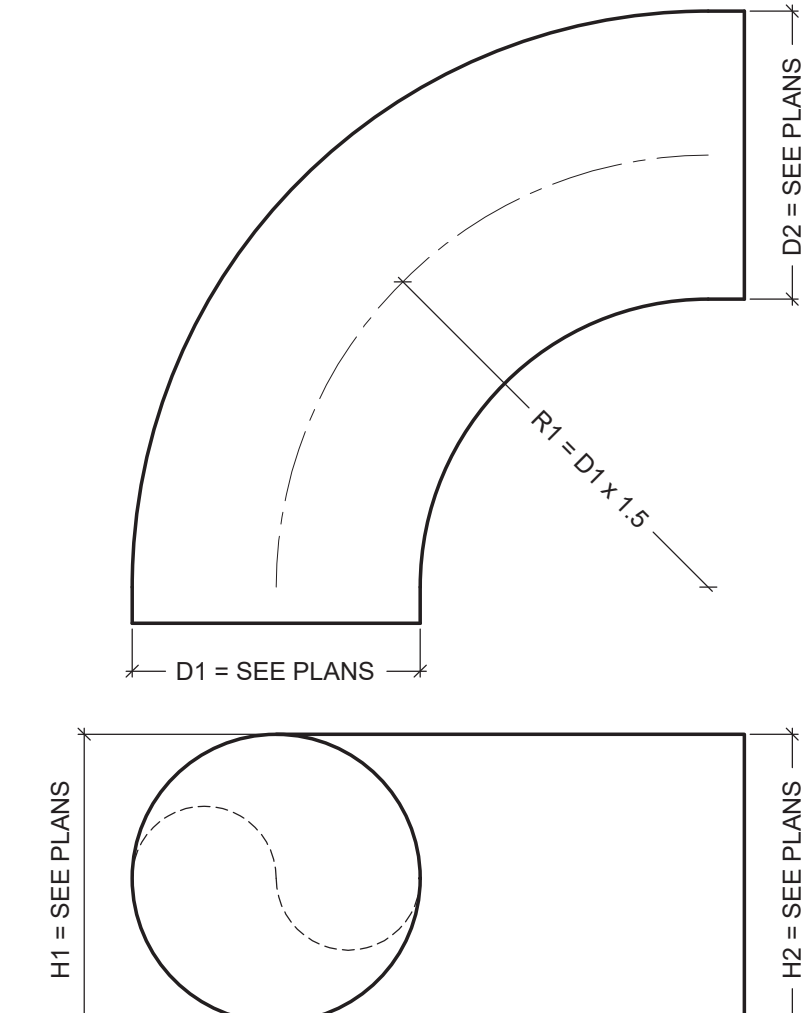
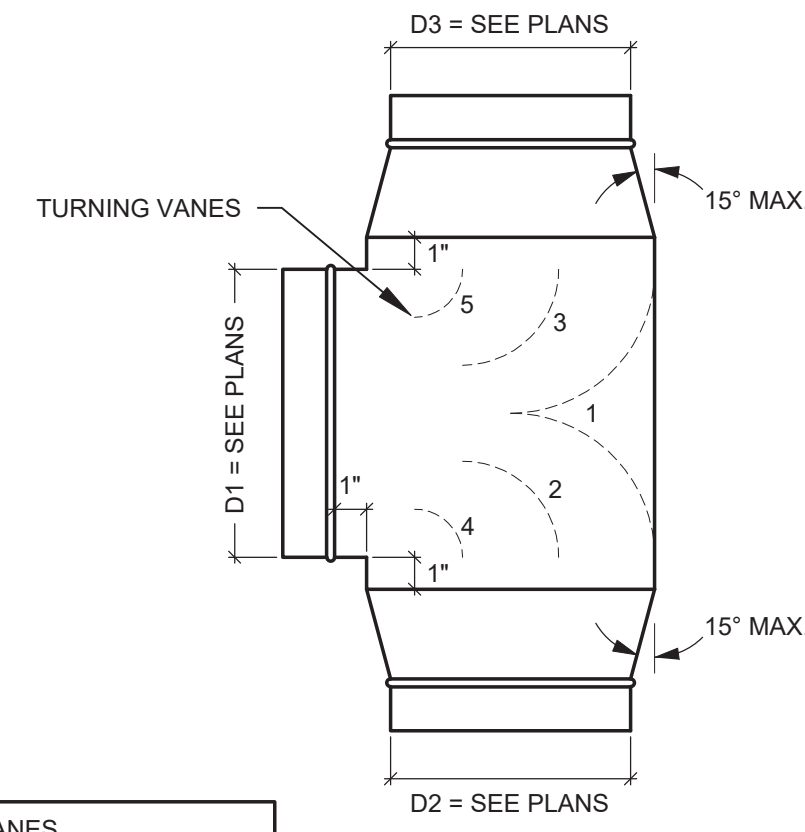
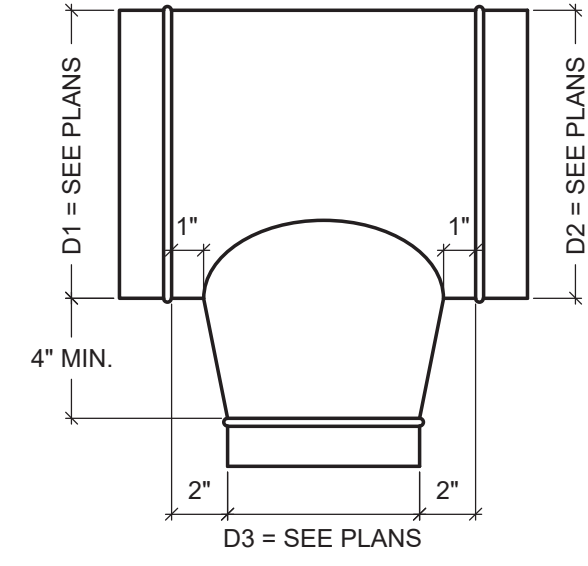
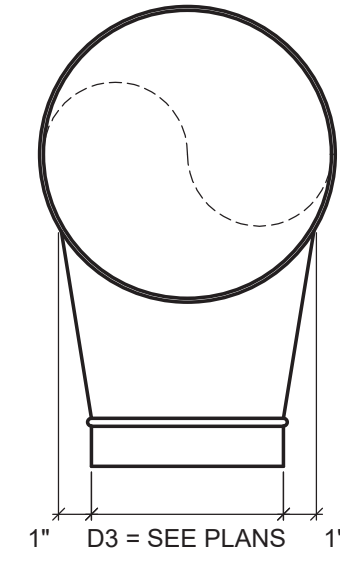
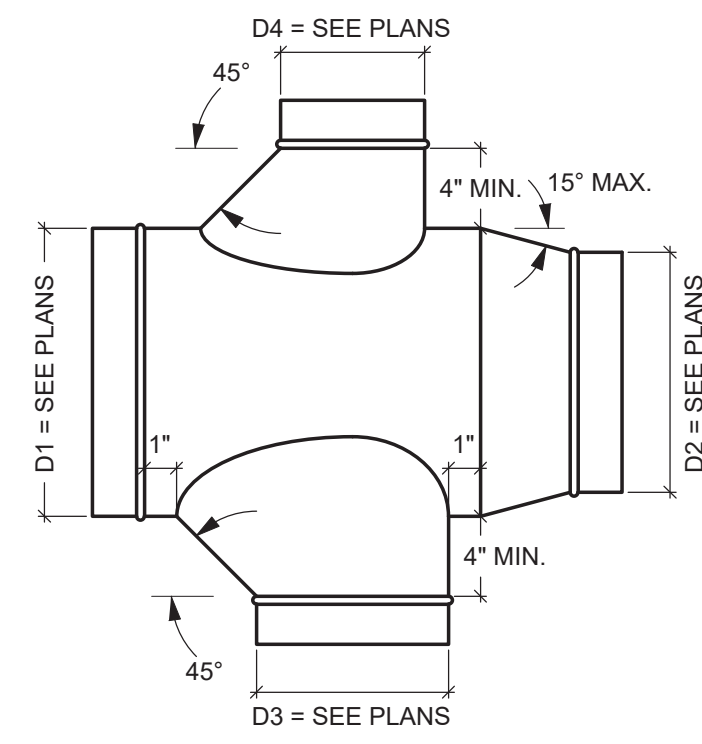
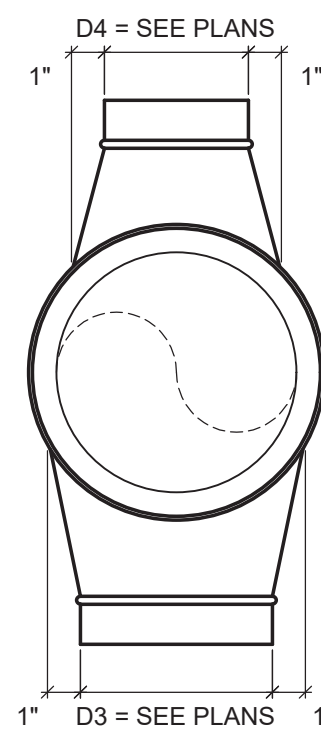
These drawings, as instruments of service, remain the property of the Architect or Engineer. Any changes, publication, or use of any kind is prohibited unless expressly authorized by said party. Copyright 2021.

Drafted By: SHH  
Checked By: MAH  
Date Drafted: 11/03/2021  
Project #: 19208-01

#	DATE	REVISION DESCRIPTION

MECHANICAL DETAILS

M3.0



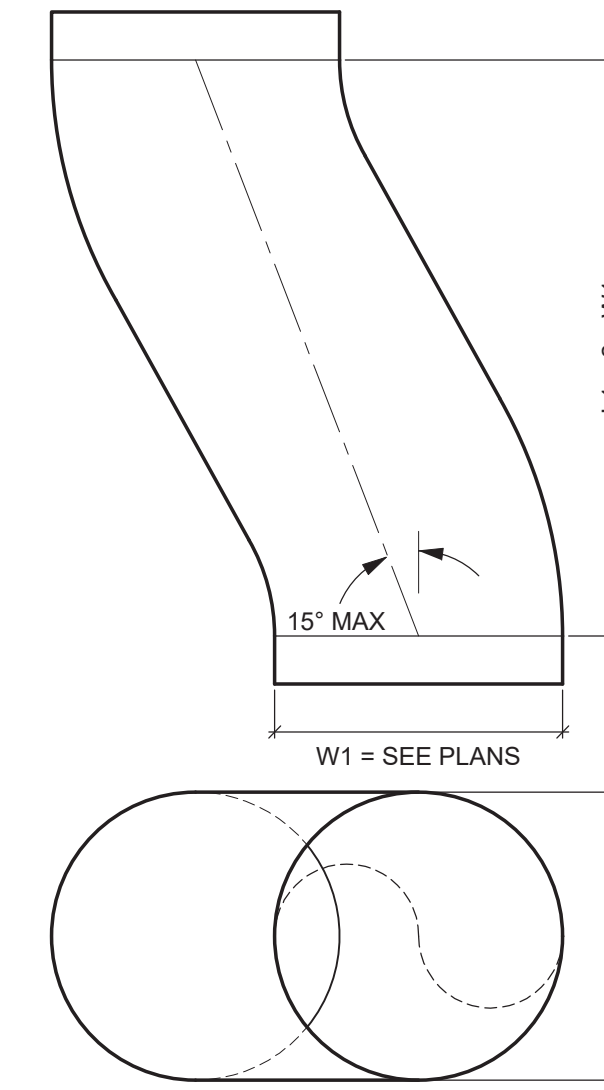
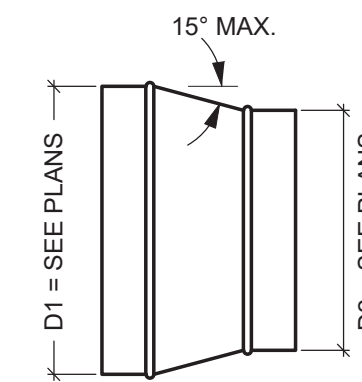
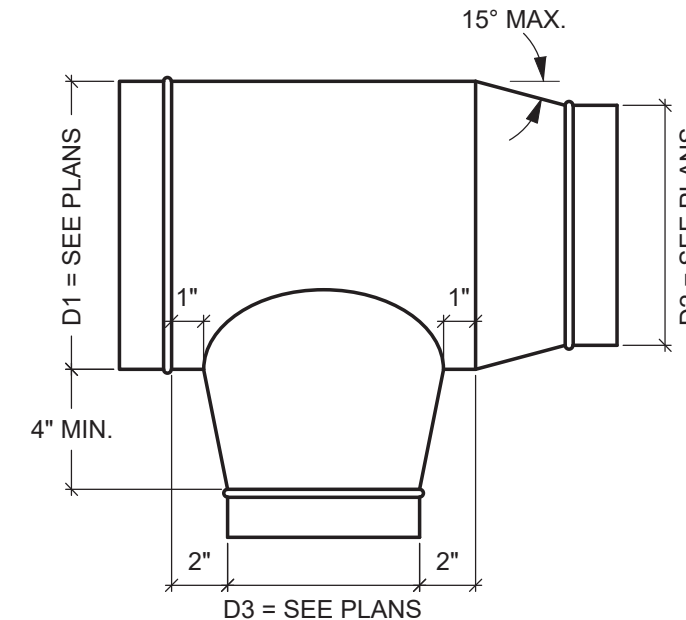
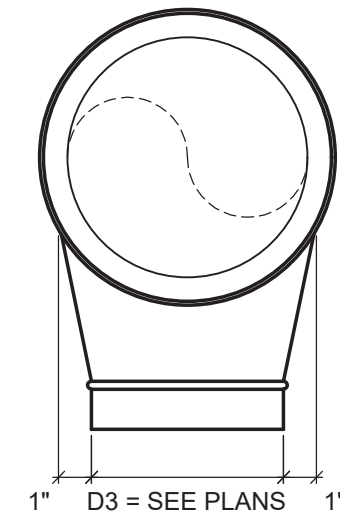
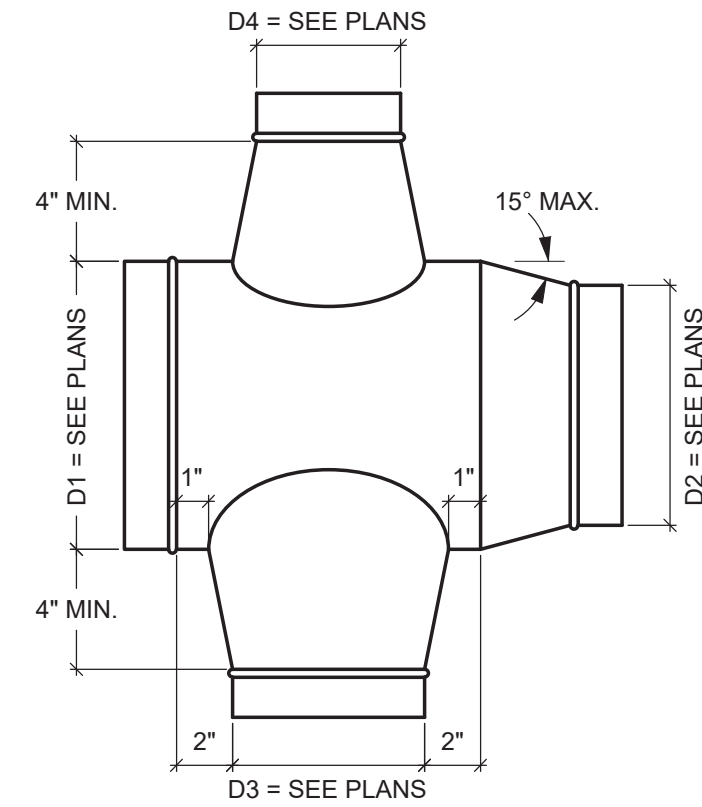
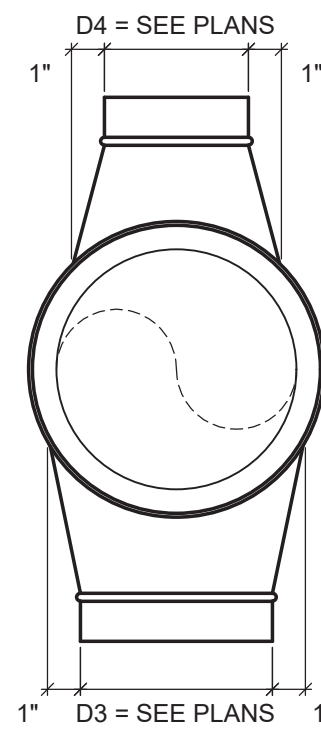
DIAMETER	NUMBER OF VANES
< 7"	1
7" - 9"	3
10" - 60"	5
> 60"	12" MAX. SPACING

M14 TYPICAL LO-LOSS™ 90° CROSS DETAIL  
N.T.S.

M10 TYPICAL CONICAL TEE DETAIL  
N.T.S.

M4 TYPICAL REDUCING BULLHEAD TEE DETAIL  
N.T.S.

M1 TYPICAL ROUND ELBOW DETAIL  
N.T.S.

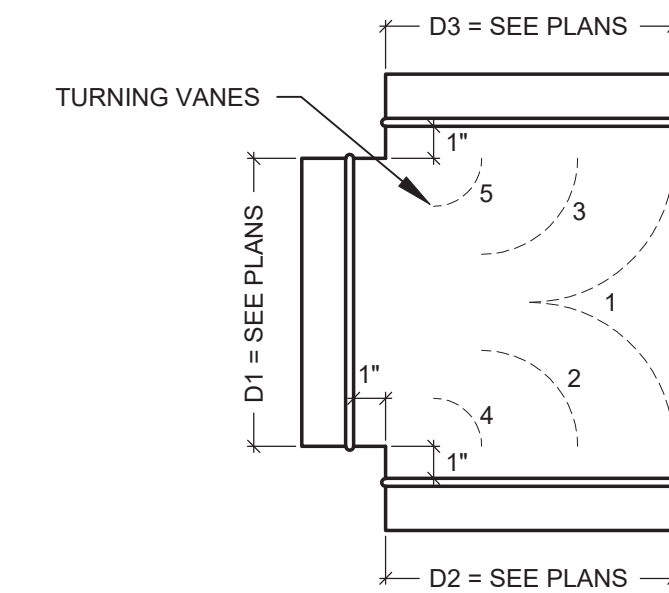
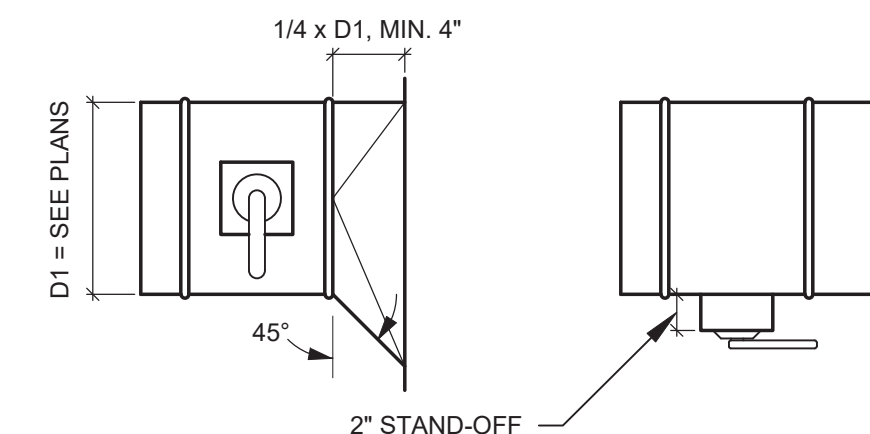
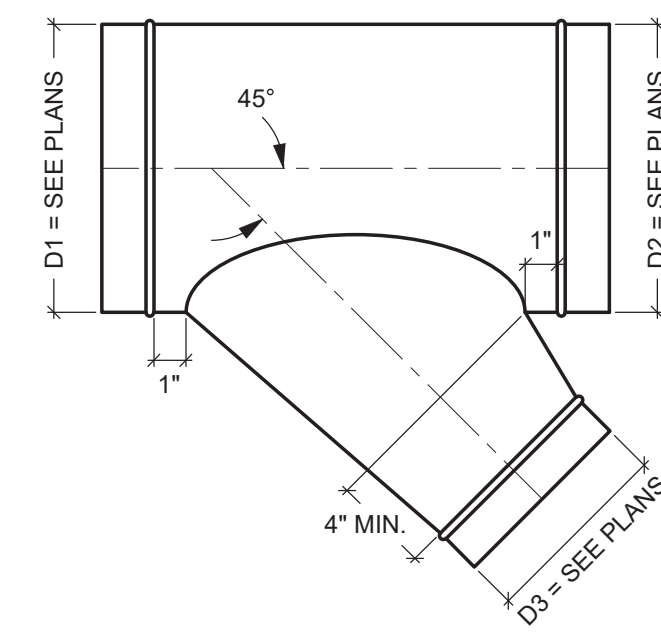
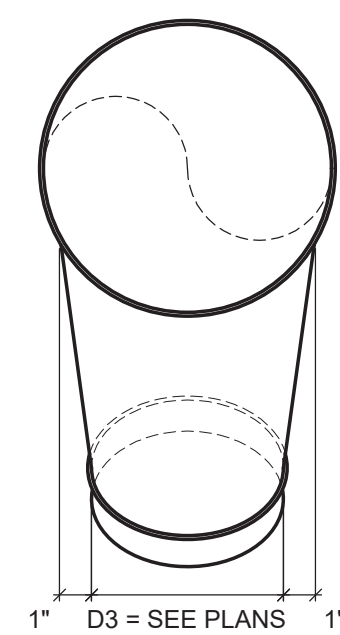


M15 TYPICAL REDUCING CONICAL 90° CROSS DETAIL  
N.T.S.

M11 TYPICAL REDUCING CONICAL TEE DETAIL  
N.T.S.

M6 TYPICAL ECCENTRIC REDUCER DETAIL  
N.T.S.

M2 TYPICAL RADIUS OFFSET DETAIL  
N.T.S.

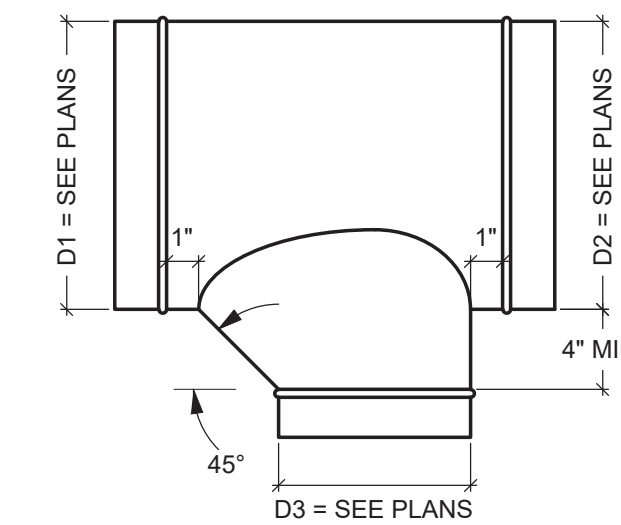
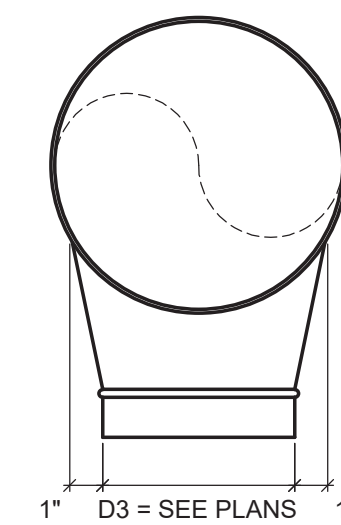
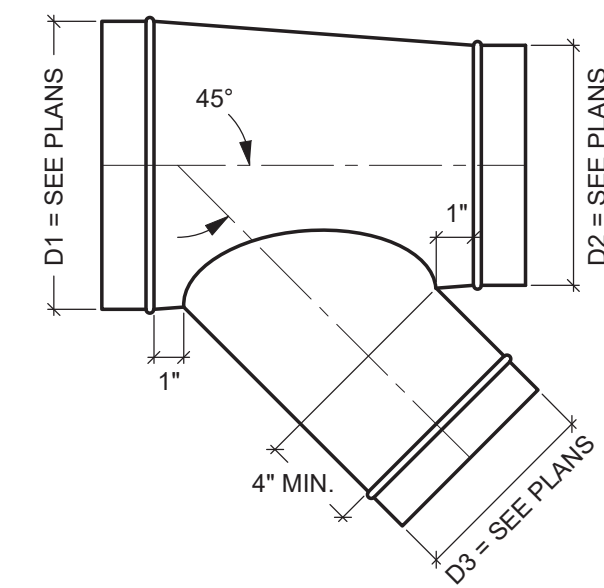
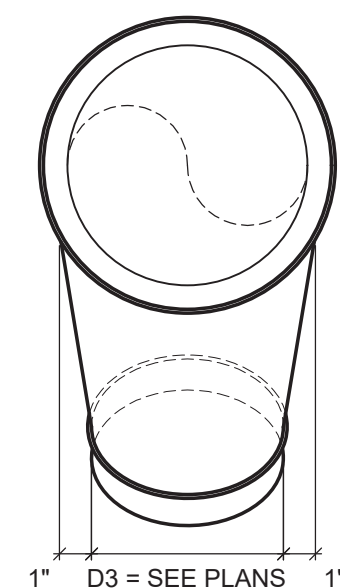


DIAMETER	NUMBER OF VANES
< 7"	1
7" - 9"	3
10" - 60"	5
> 60"	12" MAX. SPACING

M12 TYPICAL CONICAL LATERAL DETAIL  
N.T.S.

M8 TYPICAL CONICAL TAP DETAIL  
N.T.S.

M3 TYPICAL BULLHEAD TEE DETAIL  
N.T.S.

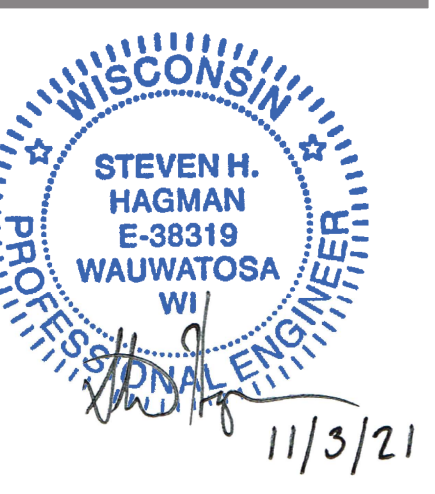


M13 TYPICAL TAPERED BODY LATERAL DETAIL  
N.T.S.

M9 TYPICAL LO-LOSS™ TEE DETAIL  
N.T.S.

Steven H. Hagman, PE  
Wisconsin License #38319-006  
Expires: July 31, 2022

DESIGNER



CKA REGISTRATION # T026052

Proposed Dialysis Clinic for:  
**FKC - Appleton**  
FKC Project #006055-2-RL-W-GU-2020  
325 North Bluemound Drive  
Grand Chute, Wisconsin 54914



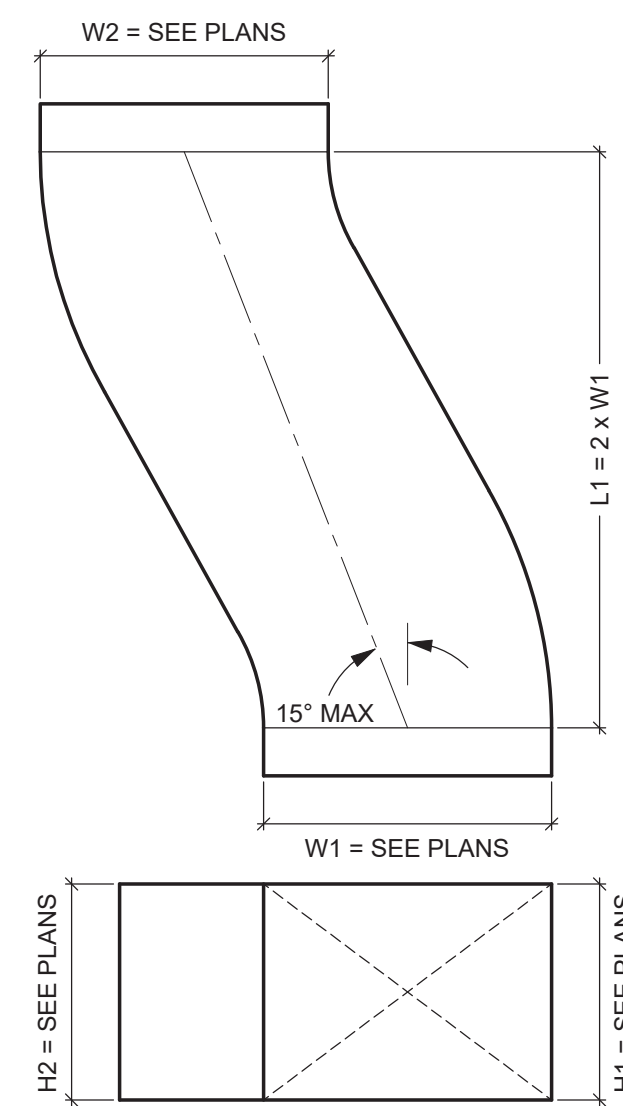
These drawings, as instruments of service, remain the property of the Architect or Engineer. Any changes, publication, or use of any kind is prohibited unless expressly authorized by said party. Copyright 2021.

Drafted By: SHH  
Checked By: MAH  
Date Drafted: 11/03/2021  
Project #: 19208-01

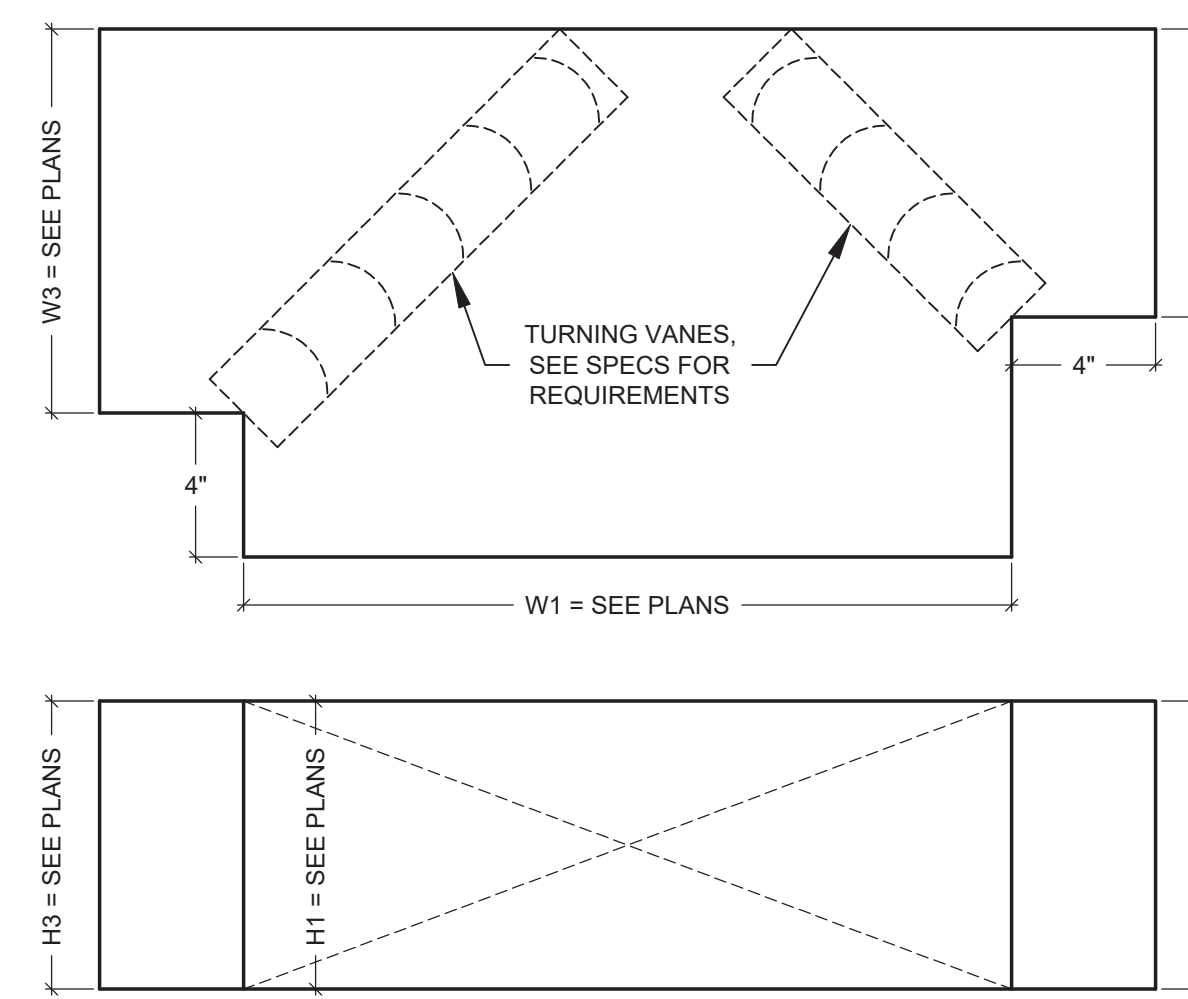
#	DATE	REVISION DESCRIPTION

MECHANICAL DETAILS

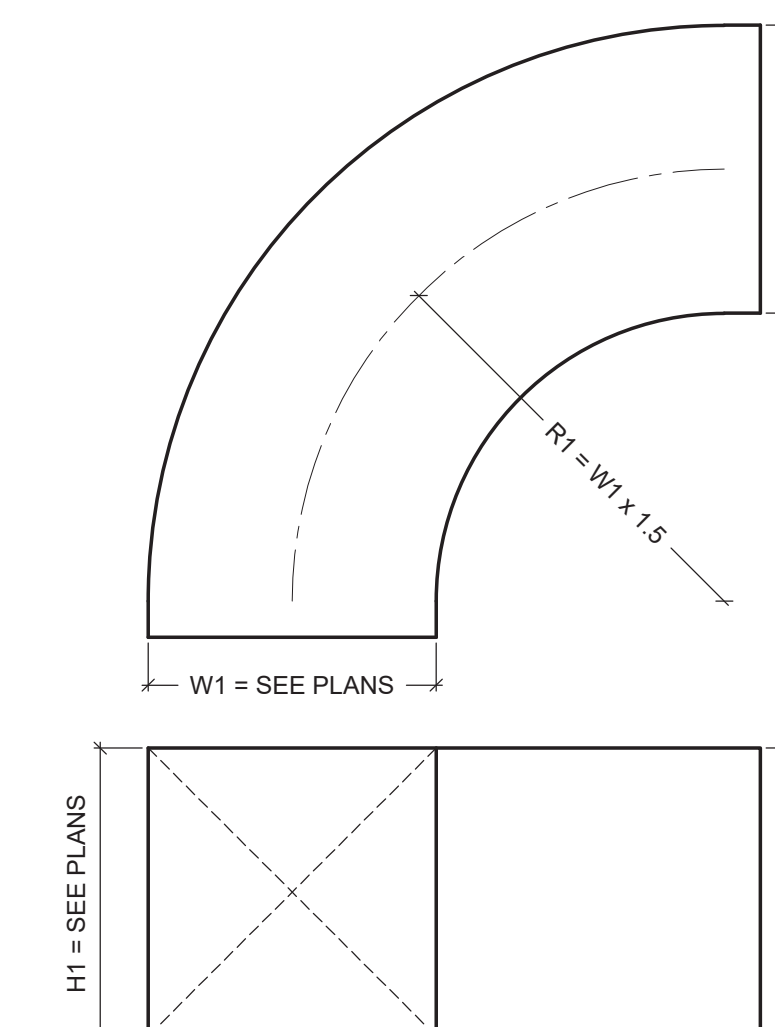
M3.1



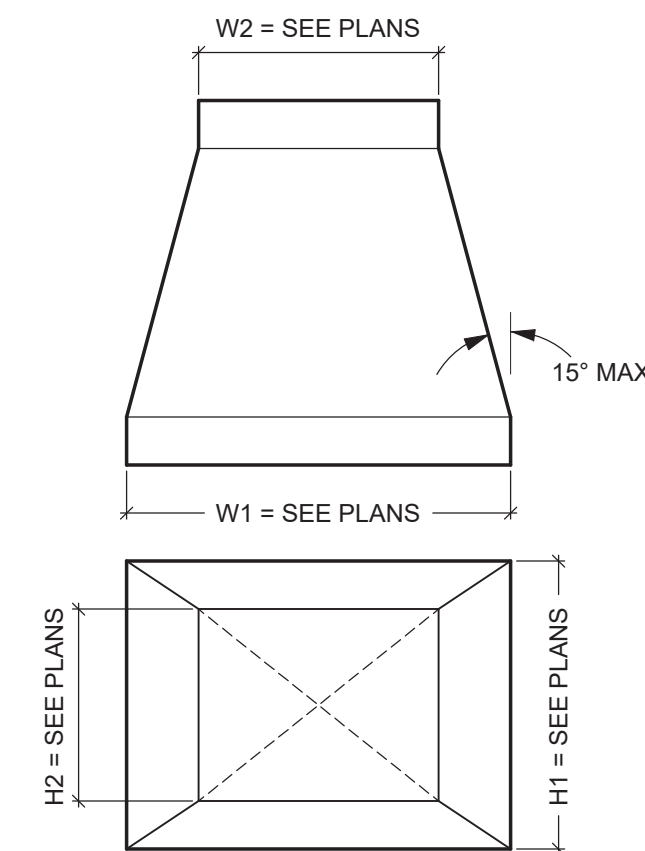
**M8** TYPICAL RADIUS OFFSET DETAIL  
N.T.S.



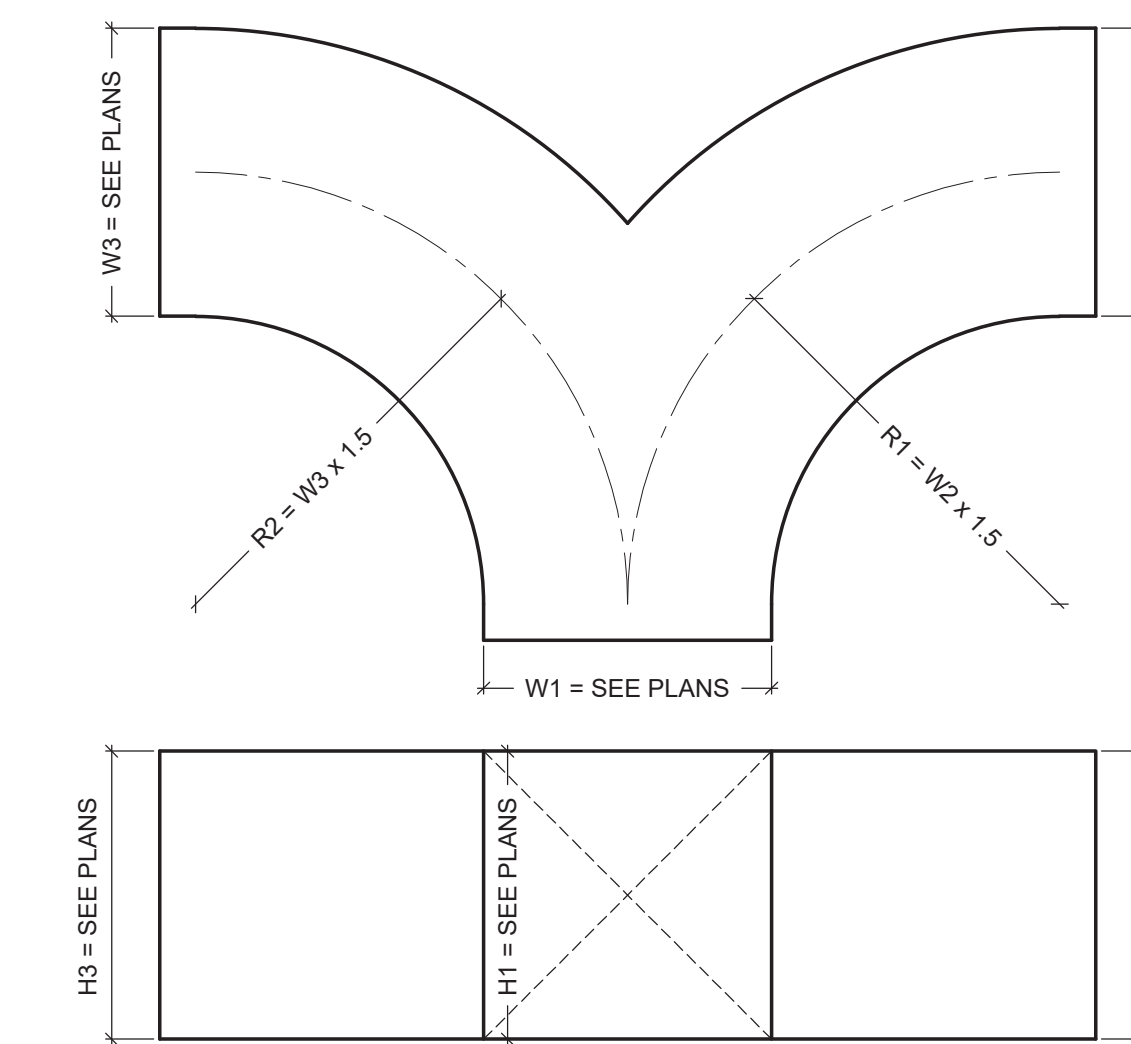
**M4** TYPICAL REDUCING BULLHEAD TEE DETAIL  
N.T.S.



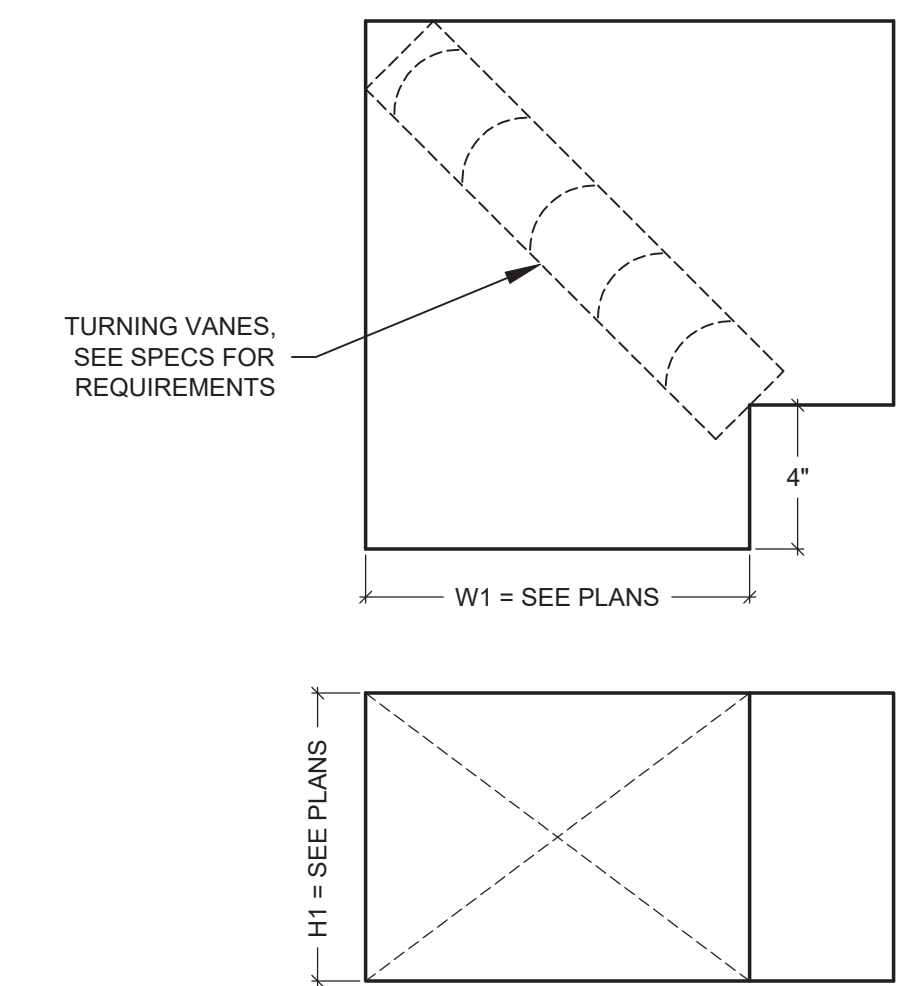
**M1** TYPICAL ELBOW DETAIL  
N.T.S.



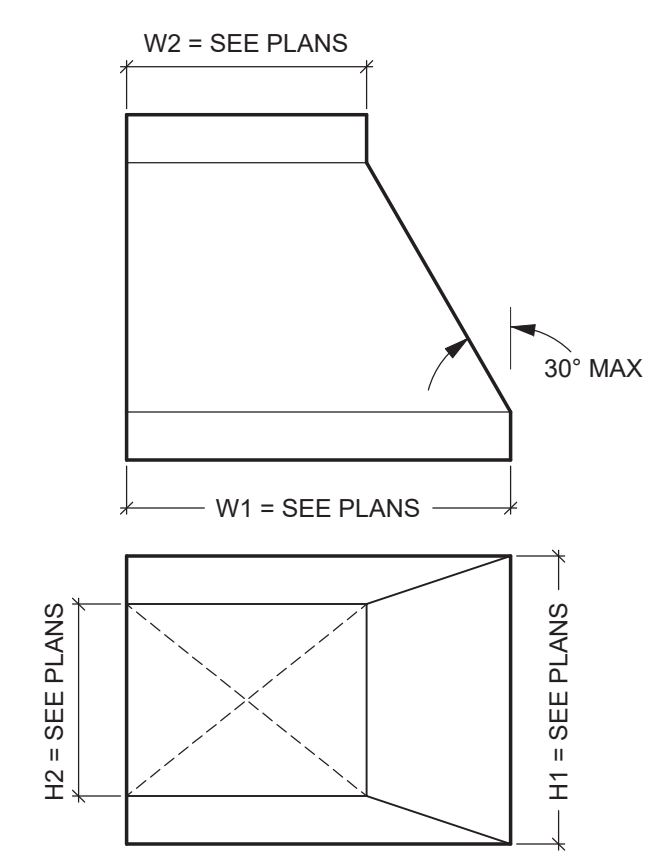
**M9** TYPICAL CONCENTRIC TRANSITION DETAIL  
N.T.S.



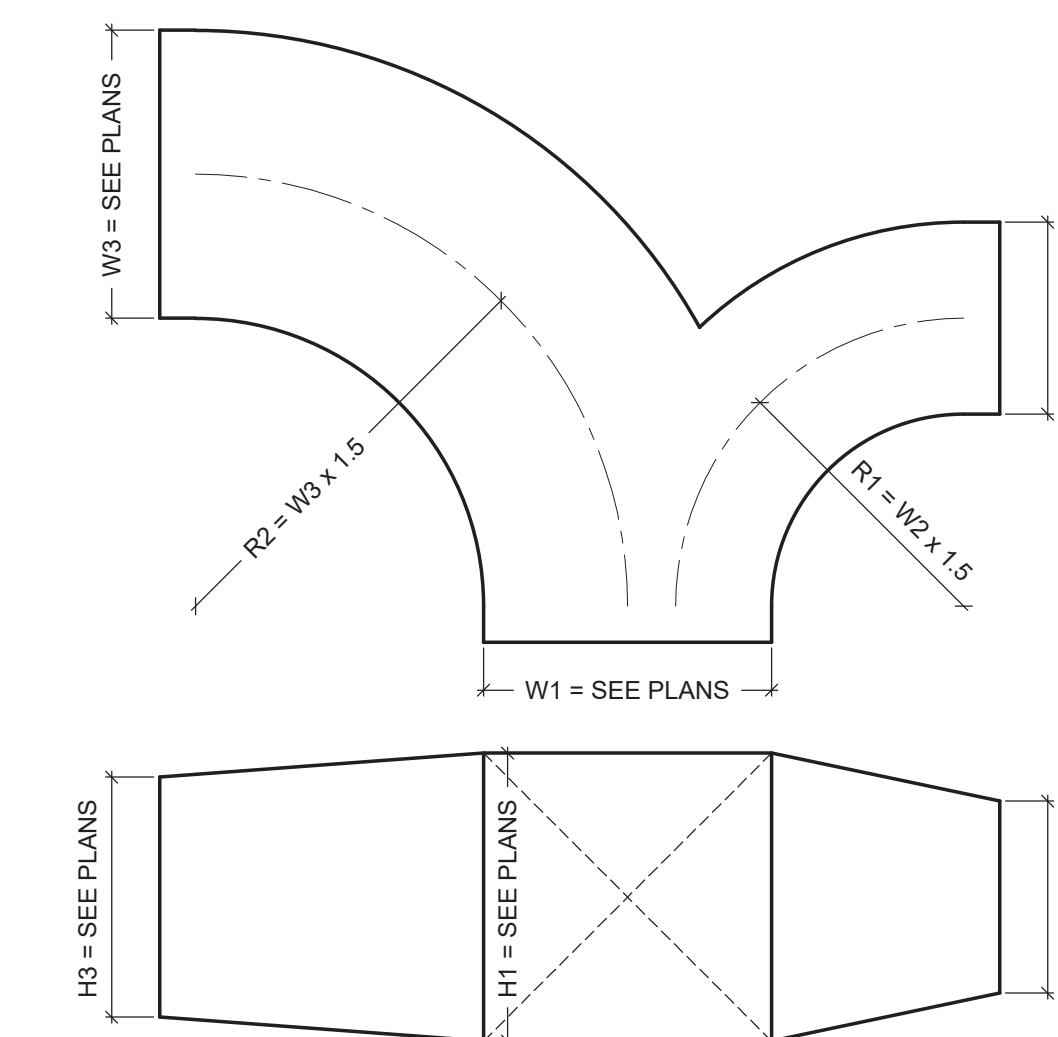
**M5** TYPICAL Y-BRANCH DETAIL  
N.T.S.



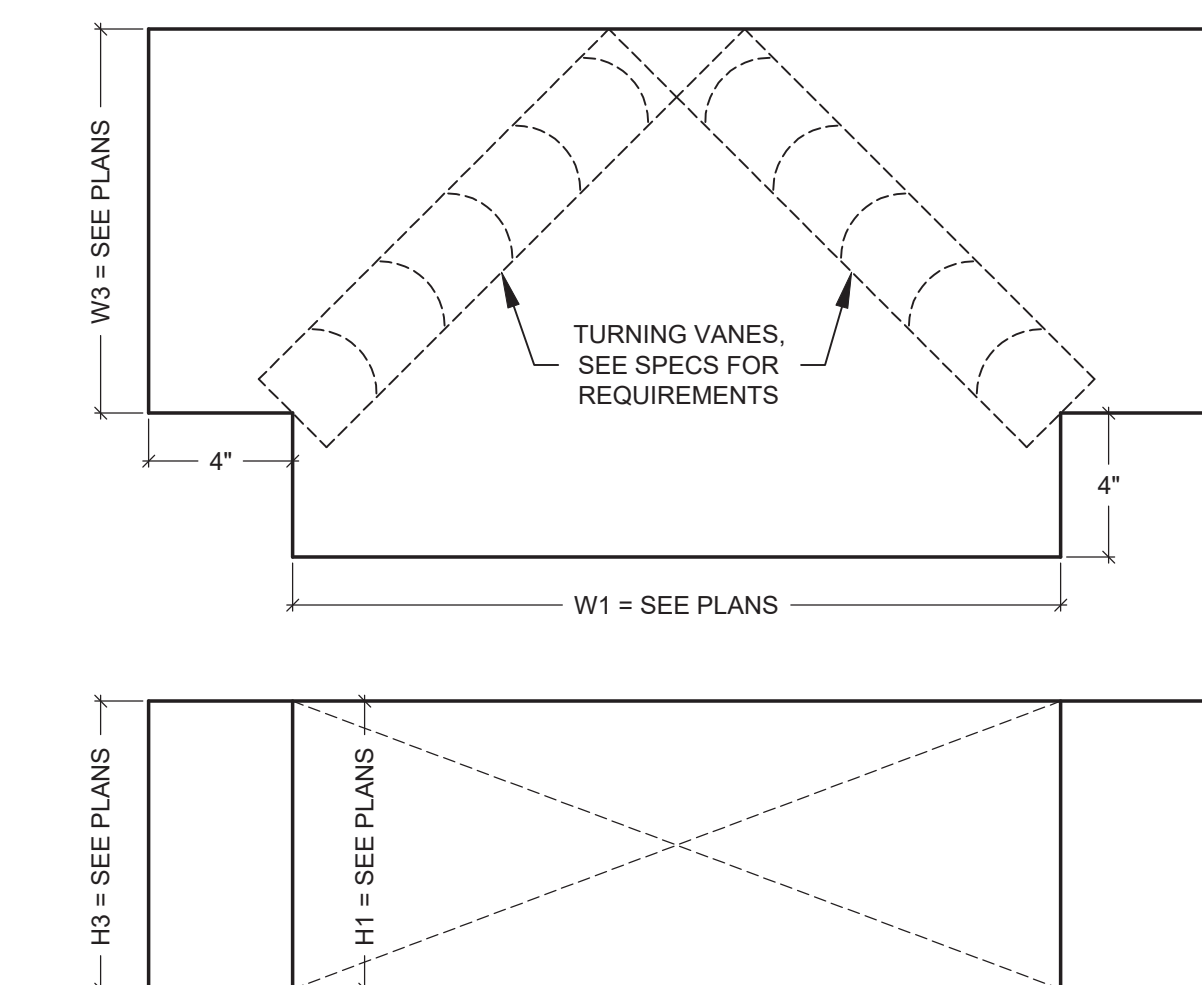
**M2** TYPICAL SQUARE THROAT ELBOW DETAIL  
N.T.S.



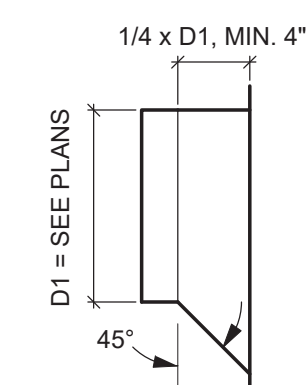
**M10** TYPICAL ECCENTRIC TRANSITION DETAIL  
N.T.S.



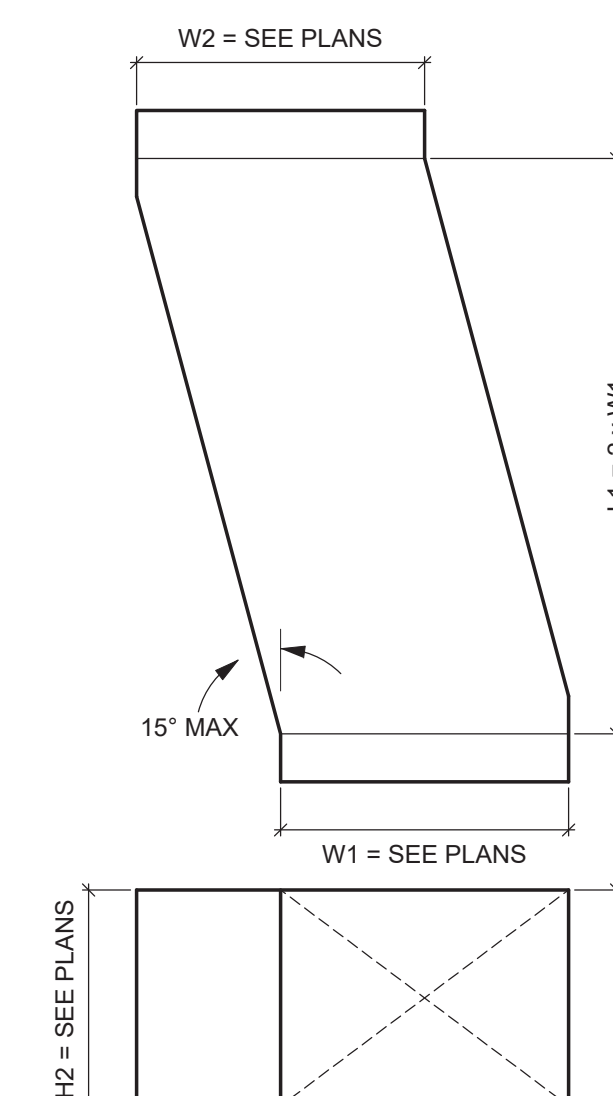
**M6** TYPICAL REDUCING Y-BRANCH DETAIL  
N.T.S.



**M3** TYPICAL BULLHEAD TEE DETAIL  
N.T.S.

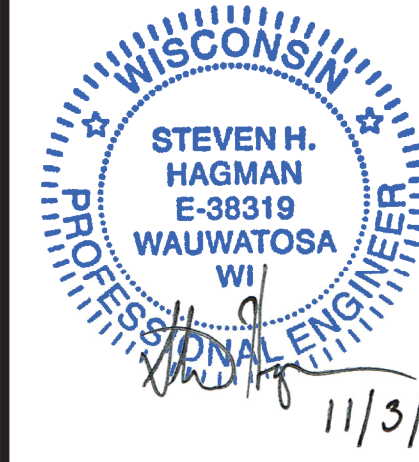


**M11** TYPICAL RECTANGULAR TAKE-OFF DETAIL  
N.T.S.



**M7** TYPICAL OFFSET DETAIL  
N.T.S.

DESIGNER  
Steven H. Hagman, PE  
Wisconsin License #38319-006  
Expires: July 31, 2022



CKA REGISTRATION # T026052

Proposed Dialysis Clinic for:  
**FKC - Appleton**  
FKC Project #006055-2-RL-W-GU-2020  
325 North Bluemound Drive  
Grand Chute, Wisconsin 54914



These drawings, as instruments of service, remain the property of the Architect or Engineer. Any changes, publication, or use of any kind is prohibited unless expressly authorized by said party. Copyright 2021.

Drafted By: SHH  
Checked By: MAH  
Date Drafted: 11/03/2021  
Project #: 19208-01

#	DATE	REVISION DESCRIPTION

MECHANICAL  
DETAILS

M3.2

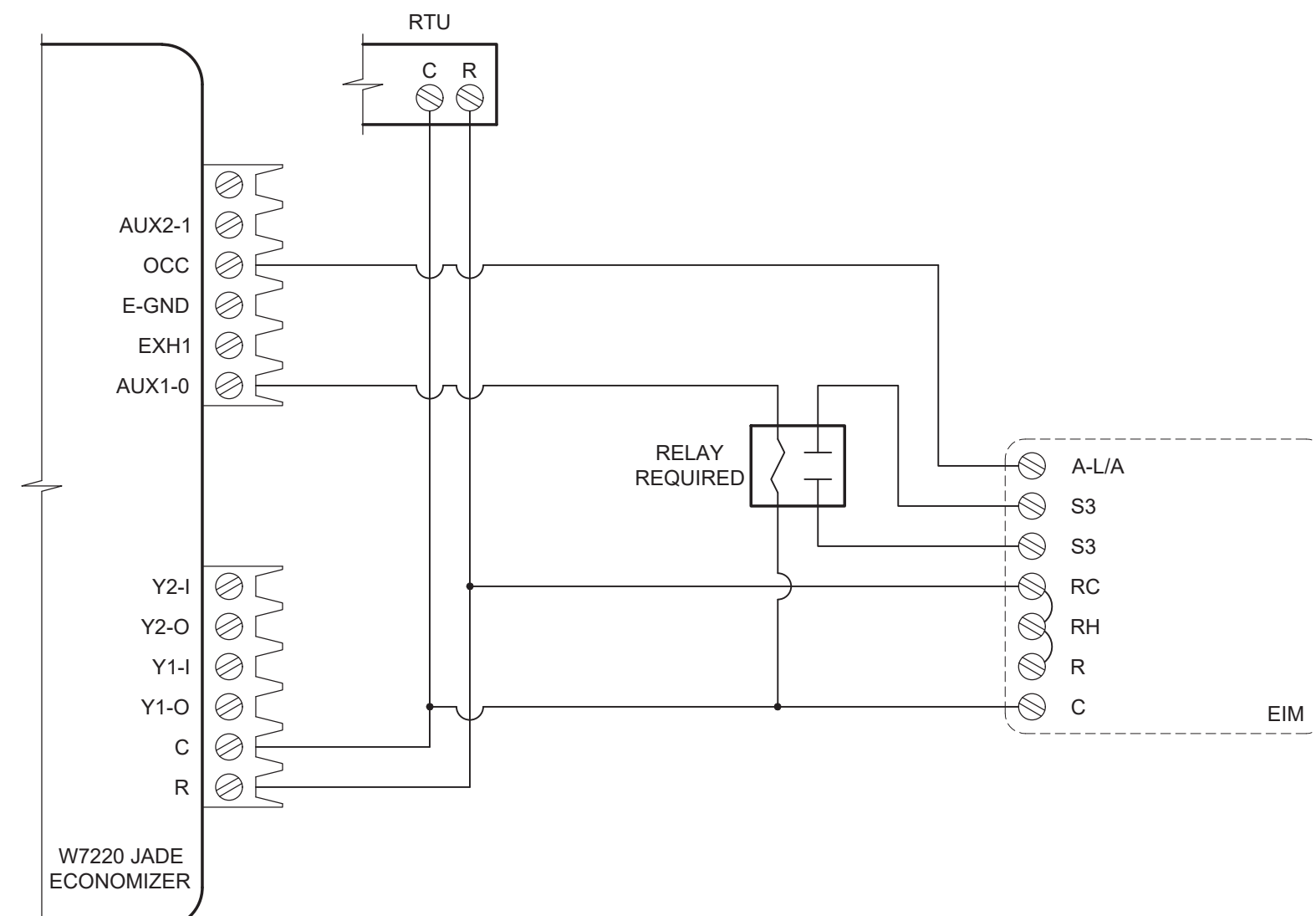
HONEYWELL VISION PRO8000 TH8321R SETUP INSTRUCTIONS					
Step	ISU Number	Installer Setup Name	Setting	Default	* NOTES
1	101	Application	*Commercial ***Select	Residential	
2	103	Thermostat Name	Thermostat Name	Thermostat	
3	110	This system is zoned	**No	No	
4	120	Tstat Controls an Equip Module	*Yes	No	This applies to the EIM module.
5		Press Connect at Equipment Module	Press Connect at Equipment Module		
6		Thermostat Connected	Thermostat Connected		
7		Connect Redlink Accessories	***No	No	Pick yes if using C7189R1004 wireless indoor sensors. (The RA and SA sensors of the EIM module are not REDLINK accessories.)
8		Press Connect on New Accessories	Press Connect on New Accessories		15 minute window
9		Press Next to begin the Installer Setup	Press Next to begin the Installer Setup		
10	104	Thermostat Type	**Programmable	Programmable	
11	105	Temperature Scale	**Fahrenheit	Fahrenheit	
12	106	Outdoor Air Sensor	**No	No	No outdoor air sensor.
13	200	Heating System	**Conv. Forced Air	Conv. Forced Air	
14	207	Cool Stages	***1-4	select 1-4	This is specific to the RTU and must be set depending on how many stages of cooling the unit has.
15	207	Heat Stages	***1-4	select 1-4	This is specific to the RTU and must be set depending on how many stages of heating the unit has.
16	211	Fan Control in Heat	**Equip Controls Fan	Equip Controls Fan	When using an EIM module economizer FDD must be wired as per page 136, figure 340. Fault detection is thru a dry contact S3. Fault displays "Service Needed" at stat, however I believe a custom message could be set to indicate economizer fault (see setting 620). (If there were no EIM module setting 222 also has a setting for FDD.)
17	222	A-L/A	*Economizer	None	
18	300	System Changeover	**Automatic	Automatic	
19	300	Auto Changeover Deadband	**3	3	
20	301	Control Options	**Basic Options	Basic Options	
21	314	Cool Cycles Per Hour Stage 1	**3CPH	3	
22	315	Heat Cycles Per Hour Stage 1	**6CPH	6	
23	324	Compressor Off Time	**5 Minutes	5 Minutes	
24	326	Extended Fan Run Time in Cool	**off	off	
25	326	Extended Fan Run Time in Heat	**off	off	
26	400	Scheduled Periods	*2	4	(2) periods - Occupied or Unoccupied
27	401	Pre-Occupancy Purge	**off	off	Can be set to turn on fan 1, 2, or 3 hours ahead of occupancy to get the air moving.
28	402	Type of Override	**Standard	Standard	
29	403	Override Duration	**3 hours	3 hours	
30	405	Min. Heat Recovery Ramp Rate	**5F/h	5 F/hr	
31	407	Min. Cool Recovery Ramp Rate	**3F/h	3 F/hr	
32	410	Min Cool Setpoint	*65F	50F	Sets the lowest setting a user can adjust stat to.
33	410	Min Heat Setpoint	*78F	90F	Sets the highest setting a user can adjust stat to.
34	411	Unlocked Partially Locked Fully Locked	***Unlocked	Unlocked	
35	500	Wired Sensor on S Terminals	*Yes	No	Wired inputs include SA (S2), RA (S1), and economizer fault detections (S3).
36	500	Wired Remote Indoor Sensor	**No	No	We spec a REDLINK wireless sensor NOT a wired sensor. See setting after ISU 120.
37	500	Wired Return Sensor	*Yes	No	This will be the RA sensor that comes with the EIM.
38	507	Return Sensor	*EIM terminal S1	None	Wire to EIM board S1 terminals
39	508	Return Sensor Type	**10K	10K	
40	500	Wired Discharge Sensor	*Yes	No	This will be the SA sensor that comes with the EIM.
41	509	Discharge Sensor	*EIM terminal S2	None	Wire to EIM board S2 terminals
42	510	Return Sensor Type	**10K	10K	
43	511	A-Coil Low Temp. Cutoff	**Off	Off	
44	600	Dry Contact Device on S Terminals	*Yes	No	
45	600	Remote Setback Dry Contact	**No	No	
46	600	Full Drain Pan Dry Contact Alert	**No	No	
47	600	Dirty Filter Dry Contact Alert	**No	No	
48	600	Water Leak Dry Contact Alert	**No	No	
49	600	Sys. Shutdown Dry Contact Alert	**No	No	
50	600	Service Needed Dry Contact Alert	*Yes	No	This is for economizer FDD fault detection. See Install manual and Detail M1, this sheet, for required wiring of contact, thermostat, and economizer control module. When there is a fault it will indicate "Service Needed" at the stat. It is not specific that the Economizer has faulted, but this can be determined thru the wiring from economizer controller to S3 contact on EIM module.

\*Change to Selection  
\*\*Leave at Default  
\*\*\*Selectable

S1	Return Sensor
S2	Discharge Sensor
S3	Fault Detection

HONEYWELL VISION PRO8000 TH8321R SETUP INSTRUCTIONS CONTINUED					
Step	ISU Number	Installer Setup Name	Setting	Default	* NOTES
51	613	Service Alert	*EIM terminal S3	None	
52	614	Service Alert is	**Normally Open	Normally Open	
53	600	Fan Failure Dry Contact Alert	**No	No	
54	600	Custom Dry Contact Alert	**No	No	
55	700	Filter Type	**Media	Media	
56	702	Number of Air Filters	**1	1	Setting of 1 will give option for 1 filter reminder, 2 will give option for 2 filter reminders.
57	711	Air Filter 1 Reminder	**Reminder-off	Reminder-off	
58	800	Humidifier Type	**None	None	No humidifier.
59	810	Hum Tank/Filter Reminder	**Reminder-off	Reminder-off	No humidifier.
60	900	Dehumidification Equipment	*Dehumidifier	None	The Humidizer/hot gas REHEAT is treated as a dehumidifier NOT A/C with high/low fan, and NOT Hot gas bypass.
61	904	Dehum Wiring	**EIM terminal U1	EIM terminal U1	Wire EIM U1 terminals to humidifier/hot gas reheat terminals.
62	912	User Dehumidifier in Heat Mode	*Yes	No	When system is set to Auto allows system to enter dehumidification if last call was for heating.
63	912	User Dehumidifier in Cool Mode	*Yes	Yes	When system is set to Auto allows system to enter dehumidification if last call was for cooling.
64	912	User Dehumidifier in OFF Mode	*Yes	No	When system is set to Auto allows system to enter dehumidification if system is off.
65	913	Dehum Fan Control	*Equip Controls Fan	Tstat Controls Fan	The RTU controls the fan operation.
66	914	Run dehumidifier when Cool is On	**Yes	Yes	This should be set to 'Yes' otherwise it will not energize dehumidification when a 1st stage call for cooling is running.
67	918	Dehum Away Mode	**Not allowed	Not allowed	
68	921	Dehumidifier Filter Reminder	**Reminder-off	Reminder-off	No dehumidifier filter.
69	1000	Ventilation Type	**None	None	
70	1017	Ventilator Filter Reminder	**Off	Off	
71	1100	Number of UV Devices	**0	0	No UV devices.
72	1200	Custom Reminders	**View/Edit Custom Reminders	None	
73	28	Backlighting	**On Demand	On Demand	
74	1400	Clock Format	**12	12	
75	1401	Daylight Saving Time	**On	On	
76	1402	Indoor Temperature Offset	**0	0 F	Changes displayed temp vs. sensed temp.
77	1402	Indoor Humidity Offset	**0	0%	Changes displayed humidity vs. sensed humidity.
78	1404	Alert Light Indicator	**On	On	
79	1500	Dealer Name	***Dealer Name	None	
80	1500	Dealer Phone	***Dealer Phone	None	
81	1501	Dealer Email Address	***Dealer Email Address	None	
82	1501	Dealer Website	***Dealer Website	None	
83	1502	Dealer Message	***Dealer Message	None	

SET COOLING TEMPERATURE SETTINGS TO 72 DEG F, 55% RELATIVE HUMIDITY.  
LOW RELATIVE HUMIDISTAT SETTINGS (LESS THAN 50% RH) ARE LIKELY TO RESULT IN TEMPERATURE CONTROL PROBLEMS AS THE UNIT WILL BE FORCED INTO SUB-COOLING MODE WHICH EFFECTIVELY CUTS THE AVAILABLE COOLING CAPACITY IN HALF.  
LOW THERMOSTAT SETTINGS (LESS THAN 72 DEG F) MAY RESULT IN HUMIDITY PROBLEMS AS THE UNIT WILL NOT BE ABLE TO ENTER FULL REHEAT MODE WHICH IS THE MOST EFFECTIVE MODE OF DEHUMIDIFICATION.

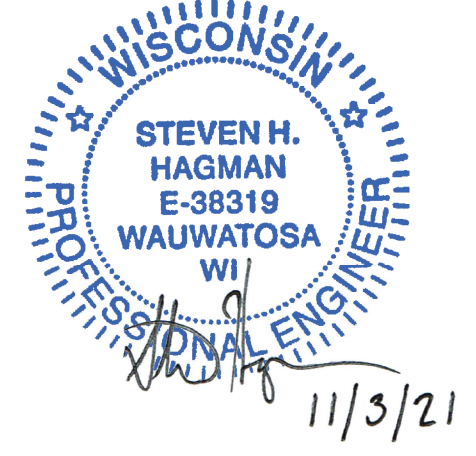


NOTE:  
1) WIRE A RELAY TO S3. CONFIGURE THE THERMOSTAT TO CONTROL ECONOMIZER (SEE SETTINGS FOR ISU 222) AND USE A CUSTOM ALERT (SEE ISU SETTING 800, 617-620). FOR THE EIM TO ECONOMIZER WIRING OTHER THAN THE A-L/A AND S CONTACTS, SEE THE OTHER ECONOMIZER DIAGRAMS IN MANUAL.  
2) REFERENCE SETUP INSTRUCTIONS STEPS 17, 50, & 51.

M1 ECONOMIZER ALARM CONTROL WIRING WHEN USING AN EIM  
N.T.S.

Steven H. Hagman, PE  
Wisconsin License #98319-006  
Expires: July 31, 2022

DESIGNER



CKA REGISTRATION # T026052

Proposed Dialysis Clinic for:  
**FKC - Appleton**  
FKC Project #006055-2-RL-W-GU-2020  
325 North Bluemound Drive  
Grand Chute, Wisconsin 54914



These drawings, as instruments of service, remain the property of the Architect or Engineer. Any changes, publication, or use of any kind is prohibited unless expressly authorized by said party. Copyright 2021.

Drafted By: SHH  
Checked By: MAH  
Date Drafted: 11/03/2021  
Project #: 19208-01

#	DATE	REVISION DESCRIPTION

THERMOSTAT SETUP INSTRUCTIONS

M4.0