

<u>\* NOTE \*</u>

ALL OF GENERAL NOTES ON THIS SHEET ARE TO BE APPLIED TO ALL OTHER DRAWINGS IN

#### EQUIPMENT ABBREVIATIONS AC AIR CONDITIONING UNIT EWH ELECTRIC WATER HEATER ACC AIR COOLED CONDENSER FCU FAN COIL UNIT ACCU AIR COOLING CONDENSING UNIT FP FIRE PUMP GREASE INTERCEPTOR AHU AIR HANDLING UNIT GI AIR SEPARATOR GRAVITY ROOF VENTILATOR AS GRV BOILER HWP HEATING WATER PUMP В HX HEAT EXCHANGER CHILLER СН СТ COOLING TOWER HRU HEAT RECOVERY UNIT POWER ROOF VENTILATOR CUH CABINET UNIT HEATER PRV CWP CONDENSER WATER PUMP RETURN/EXHAUST FAN RE CHWP CHILLED WATER PUMP RTU ROOFTOP UNIT DBP DOMESTIC WATER BOOSTER PUMP SEP SEWAGE EJECTOR PUMP SUPPLY FAN DC DUCT MOUNTED COIL SF DCP DOMESTIC WATER CIRCULATING PUMP SP SUMP PUMP UNIT HEATER EF EXHAUST FAN UH EDC ELECTRIC DUCT COIL WATER HEATER WH EXPANSION TANK ET

	ABBREVIA	TIONS	
Ø	ROUND	LVR	LOUVER
ABV	ABOVE	LWT	LEAVING WATER TEMPERATURE
AC	AIR CONDITIONING	M/A	MIXED AIR
AD	AREA DRAIN	MAX	MAXIMUM
ADD	ADDENDUM	MBH	ONE THOUSAND BTU PER HOUR
AFF	ABOVE FINISHED FLOOR	MCF	ONE THOUSAND CUBIC FEET
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY	MD	
ALT AP	ALTERNATE ACCESS PANEL	MECH MFR	MECHANICAL MANUFACTURER
AP	ACCESS FANEL ARCHITECT/ARCHITECTURAL	MIN	MINIMUM
BFF	BELOW FINISHED FLOOR	MISC	MISCELLANEOUS
BLW	BELOW	MTR	MOTOR
BTU	BRITISH THERMAL UNITS	MU/A	MAKE-UP/AIR
BTUH	BRITISH THERMAL UNITS PER HOUR	NC	NOISE CRITERIA
CAP	CAPACITY	NC	NORMALLY CLOSED
CB	CATCH BASIN	NIC	NOT IN CONTRACT
CFM	CUBIC FEET PER MINUTE	NO	NUMBER
CLG	CEILING	NO	NORMALLY OPEN
CO		NTS	NOT TO SCALE
CW	COLD WATER	0	
D DB	DEGREE DRY BULB	0/A ORD	OUTSIDE AIR OVERFLOW ROOF DRAIN
DB DIA	DIAMETER	PD	PRESSURE DROP
DIA	DOWN	PIV	POST INDICATOR VALVE
DW	DISTILLED WATER	PLBG	PLUMBING
EA	EACH	PRESS	
EAT	ENTERING AIR TEMPERATURE	PRV	PRESSURE REDUCING VALVE
ELEC	ELECTRICAL	PSI	POUNDS PER SQUARE INCH
EQUIP	EQUIPMENT	PSIG	POUNDS PER SQUARE INCH GAUGE
EWC	ELECTRIC WATER COOLER	PWR	POWER
EWT	ENTERING WATER TEMPERATURE	R	DUCT RISER
E/A	EXHAUST AIR	R/A	RETURN AIR
EXIST	EXISTING	RCP	RADIANT CEILING PANEL
F	DEGREES FAHRENHEIT	RD REC	ROOF DRAIN
FCO FD	FLOOR CLEAN OUT FLOOR DRAIN	RED	RECESSED REDUCER
FD	FIRE DAMPER	RH	RELATIVE HUMIDITY
FDV	FIRE DEPARTMENT VALVE	RL/A	RELIEF AIR
FL	FLOOR	RM	ROOM
FO	FUEL OIL	RPM	REVOLUTIONS PER MINUTE
FOV	FUEL OIL VENT	RW	RAIN WATER
FOR	FUEL OIL RETURN	SF	SQUARE FOOT
FOS	FUEL OIL SUPPLY	S/A	SUPPLY AIR
FPM	FEET PER MINUTE	SAN	SANITARY
FS	FLOOR SINK	SF	SQUARE FOOT
FT	FOOT/FEET	SD	SMOKE DAMPER
FTR	FIN TUBE RADIATION GALLON	SM SP	SURFACE MOUNT STANDPIPE
GAL GC	GALLON GENERAL CONTRACTOR	SP SP	STANDPIPE STATIC PRESSURE
GC GPM	GENERAL CONTRACTOR GALLONS PER MINUTE	SP STM	STATIC PRESSURE
GW	GREASE WASTE	T	THERMOSTAT
HB	HOSE BIB	TD	TEMPERATURE DROP
HP	HORSE POWER	TDR	TRENCH DRAIN
HTG	HEATING	TEMP	TEMPERATURE
HTR	HEATER	TYP	TYPICAL
HW	HOT WATER	UG	UNDERGROUND
HYD	HYDRANT	VAC	VACUUM
ID	INDIRECT	V	
IN		VAV	
INV			
LB LB/HR	POUND POUNDS PER HOUR	VTR W	VENT THROUGH ROOF WASTE
LB/HR LAT	LEAVING AIR TEMPERATURE	WB	WASTE
LP	LOW PRESSURE	WCO	WALL CLEAN OUT
LPG	LIQUEFIED PETROLEUM GAS	WH	WALL HYDRANT

## HVAC GENERAL NOTES

HVAC GENERAL NOTES:

- 1. ALL MECHANICAL EQUIPMENT AND INSTALLATIONS SHALL CONFORM WITH THE REQUIREMENTS OF THE VIRGINIA BUILDING CODE, VIRGINIA MECHANICAL CODE, VIRGINIA PLUMBING CODE, THE STATE ENERGY CODE, NFPA 90A, 101, AND ALL APPLICABLE CODES AND ORDINANCES.
- 2. CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH ELECTRICAL DRAWINGS PRIOR TO ORDERING EQUIPMENT OR SUBMITTING SHOP DRAWINGS, AND SHALL FURNISH EQUIPMENT WIRED FOR THE VOLTAGES SHOWN THEREIN.
- 3. ALL MECHANICAL EQUIPMENT REQUIRING ELECTRICAL POWER SHALL BE INSTALLED WITH DISCONNECT SWITCHES AT EACH PIECE OF EQUIPMENT. COORDINATE SWITCH TYPE (FUSED OR NON-FUSED) WITH EQUIPMENT CHARACTERISTICS, MANUFACTURER'S RECOMMENDATIONS AND ELECTRICAL DRAWINGS. MECHANICAL CONTRACTOR SHALL PURCHASE ALL DISCONNECTS.
- 4. ALL REQUIRED CONTROL WIRING NOT SHOWN ON THE ELECTRICAL DRAWINGS SHALL BE INCLUDED AS PART OF THE MECHANICAL WORK.
- 5. UNLESS NOTED OTHERWISE, STARTERS, SMOKE DETECTORS, TRANSFORMERS, CONTROLS AND CONTROL WIRING REQUIRED FOR ALL MECHANICAL SYSTEMS SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
- 6. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- 7. DUCT SHALL BE SIZED AT 0.1"/100 FT STATIC PRESSURE DROP WHERE A SIZE IS NOT NOTED ON DRAWINGS. FLEXIBLE DUCTWORK SHALL BE INSTALLED AS STRAIGHT AS POSSIBLE, AND SHALL BE ROUTED AND SUPPORTED WITHOUT FORMING CRIMPS OR OTHER AIR FLOW RESTRICTIONS. PROVIDE SQUARE TO ROUND ADAPTERS OR BOOTS TO CONNECT TO AIR DEVICE NECK WHEN REQUIRED.
- 8. ROUND AND FLEXIBLE DUCTWORK SHALL BE CONNECTED TO MAIN DUCTS WITH SPIN-IN FITTINGS WITH BALANCING DAMPERS.
- 9. ALL WORK SHALL BE COORDINATED AND PERFORMED WITH PRIOR APPROVAL FROM THE OWNER TO SUIT HIS OPERATING CONDITIONS.
- 10. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL MECHANICAL EQUIPMENT, DUCTWORK, ETC. TO FIT WITHIN THE SPACE ALLOWED BY THE ARCHITECTURAL AND STRUCTURAL CONDITIONS. CUTTING OR OTHERWISE ALTERING ANY STRUCTURAL MEMBERS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT. IN GENERAL, DUCTWORK SHALL BE ROUTED AS HIGH AS POSSIBLE. PROVIDE ALL OFFSETS REQUIRED TO MAINTAIN ARCHITECTURAL CEILING HEIGHTS AND OPEN SPACE CLEARANCES. THIS INCLUDES ANY OFFSETS NOT SPECIFICALLY SHOWN ON THE DRAWINGS. OFFSETS SHOWN ARE DIAGRAMMATIC AND ARE NOT MEANT TO INDICATE THE ONLY OFFSETS REQUIRED.
- 11. MOUNT THERMOSTATS 4' 4" AFF UNLESS NOTED OTHERWISE. PROVIDE SPACE TEMPERATURE SENSORS FOR THERMOSTATS LOCATED IN CORRIDORS.
- 12. LOCATIONS OF GRILLES, REGISTERS, & DIFFUSERS SHOWN ON THE DRAWINGS ARE APPROXIMATE. COORDINATE EXACT LOCATIONS WITH LIGHTS, CEILING GRID, ETC.
- 13. PROVIDE ACCESS PANELS IN NON-ACCESSIBLE CEILINGS AND IN WALL STRUCTURE TO ALLOW ADEQUATE ROOM FOR MAINTENANCE OF EQUIPMENT AND BALANCING OF SYSTEM.
- 14. ACCESS DOORS IN CEILINGS/WALLS SHALL BE A MINIMUM OF 12X12, HINGED, AND FIRE RATED TO MATCH CEILING/WALL RATING. DUCT ACCESS DOORS SHALL BE DOUBLE WALL IF INSTALLED ON SUPPLY DUCT, AND PROVIDED WITH THUMB LATCHES FOR AN AIR TIGHT FIT.
- 15. PROVIDE MVDs AT TAKE-OFFS, WHERE ACCESSIBLE CEILING (LAY-IN) IS PROVIDED, OF RUNOUTS TO DIFFUSERS AND WHERE SHOWN ON PLANS. WHERE BALANCING DAMPERS ARE ALSO PROVIDED AT THE SUPPLY GRILLE/DIFFUSER (SEE SCHEDULE), BALANCE THE SYSTEM WITH THE DAMPER AT THE TAKE-OFF (NOT AT GRILLE). GRILLE DAMPER SHOULD BE 100% OPEN AFTER TEST AND BALANCE.
- 16. DUCT ROUTING, OFFSETS AND LOCATIONS ARE DIAGRAMMATIC. EXACT LOCATIONS, ELEVATIONS, AND OFFSETS SHALL BE DETERMINED FROM COORDINATION DRAWINGS PRODUCED FROM A COMPOSITE OF ARCHITECTURAL, STRUCTURAL AND OTHER TRADE'S DRAWINGS. ROUTE DUCT HIGH AS POSSIBLE. SEE SPECIFICATIONS FOR COMPLETE MULTI TRADE COORDINATION DRAWING REQUIREMENTS.
- 17. PROVIDE FIRE DAMPERS AND FIRE/SMOKE DAMPERS IN RATED WALLS AS REQUIRED BY THE VIRGINIA CONSTRUCTION CODE AND VIRGINIA MECHANICAL CODE.



PHONE: 440.835.3957 mail@dscarchitects.com

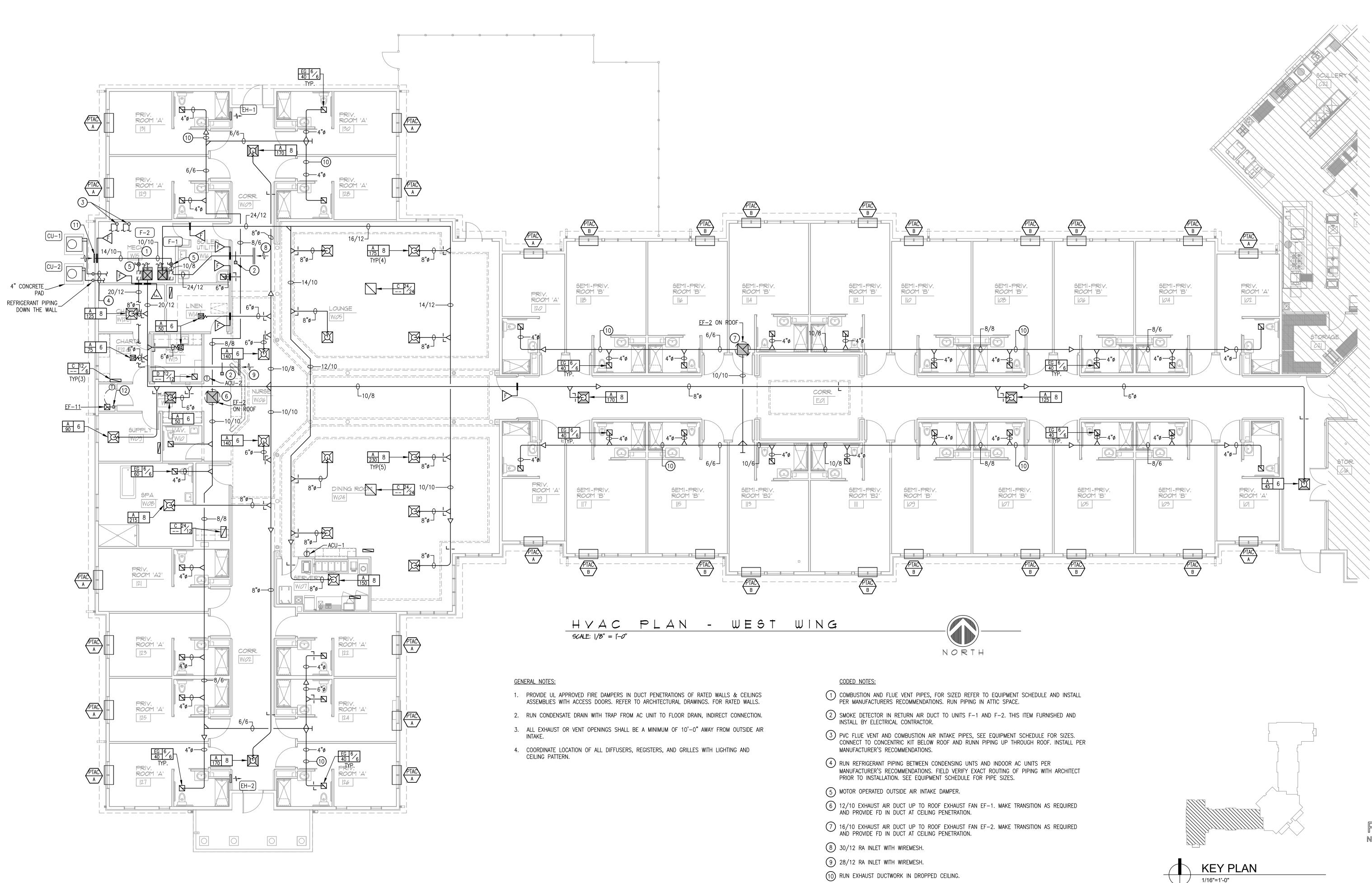
PRICING SET: Ø3/11/24

+  $\triangleleft$ T ┉ **\_\_** - $\triangleleft$ Ϋ́ ЦL.  $\triangleright \forall$  $\overline{A}$  $\Box \overline{}$ Ш 

PRELIMINARY NOT FOR CONSTRUCTION

> DSCA PROJECT NO. 23.Ø46





- (11) 24/16 OA INTAKE LOUVER, 800 CFM.
- (12) RUN 6" & EXHAUST DUCT UP TO ATTIC SPACE AND OPEN-ENDED WITH WIREMESH.





 $\mathbb{Z}$  $\triangleleft$ T ┉ **\_\_** - $\triangleleft$ УШ ă ₩ <u>ت</u>  $\overline{A}$ N  $\overset{\square}{\frown}\overset{\checkmark}{\checkmark}$ ð  $\cap$ Ш ⊗ **≓** 

PRELIMINARY NOT FOR CONSTRUCTION

> DSCA PROJECT NO. 23.046





# HVAC PLAN - CENTER SCALE: 1/8" = 1'-0"



GENERAL NOTES:

CODED NOTES:

(13) 6/6 EG, 75 CFM.

INTAKE. 4. COORDINATE LOCATION OF ALL DIFFUSERS, REGISTGERS, AND GRILLES WITH LIGHTING AND CEILING PATTERN.

 $\bigcirc$  24/12 SA AND RA DUCTS UP TO RTU-1 ON ROOF. MAKE TRANSITION AS REQUIRED AND PROVIDE FLEXIBLE CONNECTION AT UNIT INLET.

 $\bigcirc$  22/12 SA AND RA DUCTS UP TO RTU-2 ON ROOF. MAKE TRANSITION AS REQUIRED AND PROVIDE FLEXIBLE CONNECTION AT UNIT INLET.

 $\bigcirc$  30/12 SA AND RA DUCTS UP TO RTU-3 ON ROOF. MAKE TRANSITION AS REQUIRED AND PROVIDE FLEXIBLE CONNECTION AT UNIT INLET.

4 34/12 SA AND RA DUCTS UP TO RTU-4 ON ROOF. MAKE TRANSITION AS REQUIRED AND PROVIDE FLEXIBLE CONNECTION AT UNIT INLET.

6 8/6 EXHAUST AIR DUCT UP TO ROOF EXHAUST FAN EF-3. MAKE TRANSITION AS REQUIRED AND PROVIDE FD IN DUCT AT CEILING PENETRATION.

(7) 10/8 EXHAUST AIR DUCT UP TO ROOF EXHAUST FAN EF-4. MAKE TRANSITION AS REQUIRED AND PROVIDE FD IN DUCT AT CEILING PENETRATION.

(8) 18/12 EXHAUST AIR DUCT UP TO ROOF EXHAUST FAN EF-7. MAKE TRANSITION AS REQUIRED.

(9) 8/6 EXHAUST AIR DUCT UP TO ROOF EXHAUST FAN EF-8. MAKE TRANSITION AS REQUIRED.

(14) 8" DRYER EXHAUST UP THRU ROOF INSTALL IN-LINE DUCT MOUNTED LINT STOPPER ENERGENICS GRIP MODEL AF-1-5 (SELF-CLEANING), 8"Ø INLET AND 10"Ø OUTLET AND RUN 10"Ø EXHAUST DUCT UP THRU ROOF AND TERMINATE WITH GOOSENECK ABOVE ROOF.

(16) OUTSIDE AIR INTAKE LOREN COOK MODEL GI THROAT AREA 16/18 (2 SQ. FT.) 29/36 HOOD WITH

SUPPLY AIR DUCT. OPEN ENDED WITH BIRD SCREEN. INTERLOCK DRYERS WITH MOTORIZED

BIRDSCREEN. COMPLETE WITH ROOF CURB, BIRDSCREEN AND MOTORIZED DAMPERS. RUN 18/16

(10) 24/10 SA DUCT DOWN, 513 CFM EA. (TYP. OF 4). CONNECT TO KITCHEN HOOD INLET.

(11) 16" Ø EXHAUST DUCT DOWN, 2625 CFM, CONNECT TO KITCHEN HOOD OUTLET.

(12) 10" Ø EXHAUST DUCT DOWN, 600 CFM, CONNECT TO DISHWASHER HOOD OUTLET.

(15) 4"ø dryer exhaust thru roof and terminate above roof with vent cap.

DAMPER. DAMPER SHALL OPEN WHENEVER ONE DRYER IS OPERATING.

(19) 12/8 RAG IN WALL ABOVE CEILING. PROVIDE ONE ON EACH SIDE OF WALL.

(17) 18/10 TRANSFER AIR OPENING WITH FD ABOVE CEILING.

(18) 40/14 RA INLET WITH WIRE MESH SCREEN.

20) 28/12 RA INLET INTAKE W/WIRE MESH SCREEN.

(5) SMOKE DETECTOR IN RA DUCT FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.

- 3. ALL EXHAUST OR VENT OPENINGS SHAL BE A MINIMUM OF 10'-0" AWAY FROM OUTSIDE AIR

- ASSEMBLIES WITH ACCESS DOORS. REFER TO ARCHITECTUAL DWGS. FOR RATED WALLS. 2. RUN CONDENSATE DRAIN WITH TRAP FROM AC UNIT TO FLOOR DRAIN, INDIRECT CONNECTION.

1. PROVIDE UL APPROVED FIRE DAMPERS IN DUCT PENETRATIONS OF RATED WALLS & CEILINGS



DSC ARCHITECTS 401 FRONT STREET BEREA, OHIO 44017 PHONE: 440.835.3957 mail@dscarchitects.com

DATE: PRICING SET: Ø3/11/24

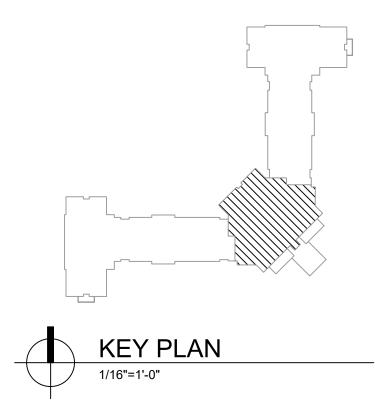
₽ Z  $\square$ ⋓ 17

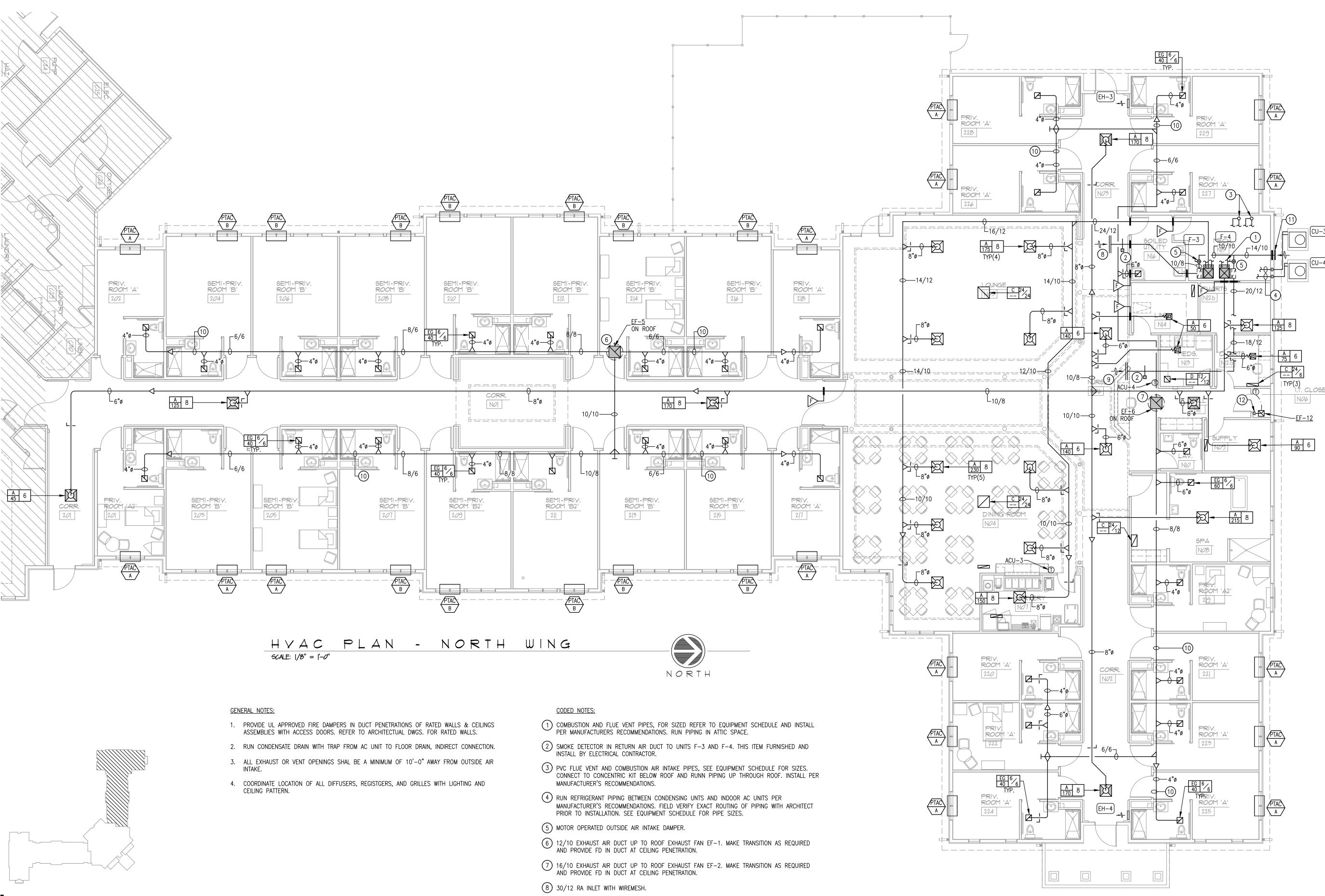
 $\mathbb{Q}$ 

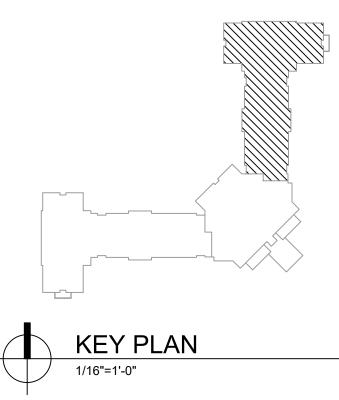


DSCA PROJECT NO. 23.046









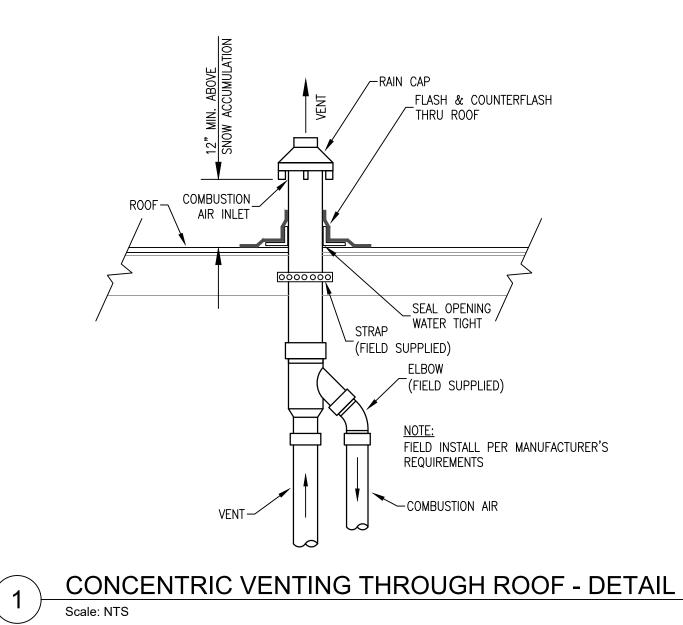
- (9) 28/12 RA INLET WITH WIREMESH.
- (10) RUN EXHAUST DUCTWORK IN DROPPED CEILING.
- (11) 24/16 OA INTAKE LOUVER, 800 CFM.
- (12) RUN 6"Ø EXHAUST DUCT UP TO ATTIC SPACE AND OPEN-ENDED WITH WIREMESH.

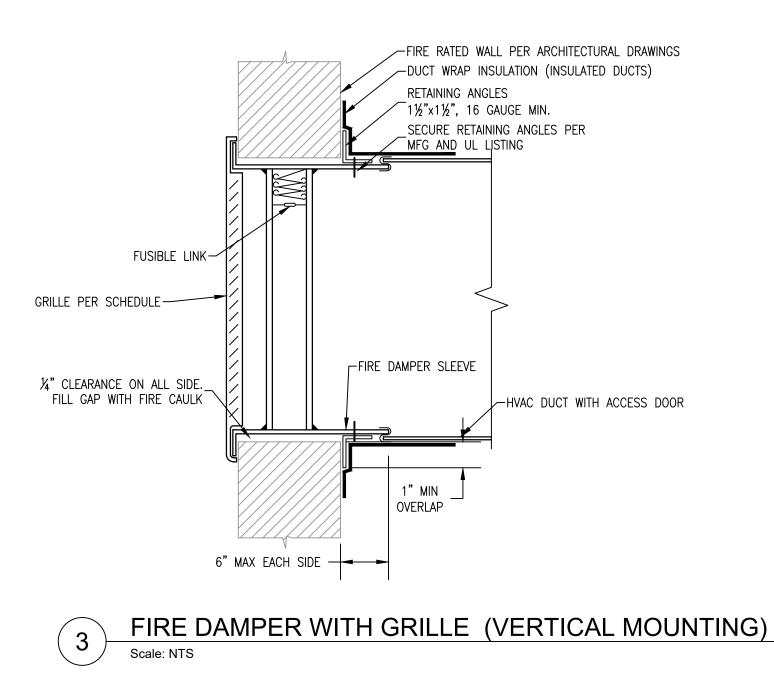


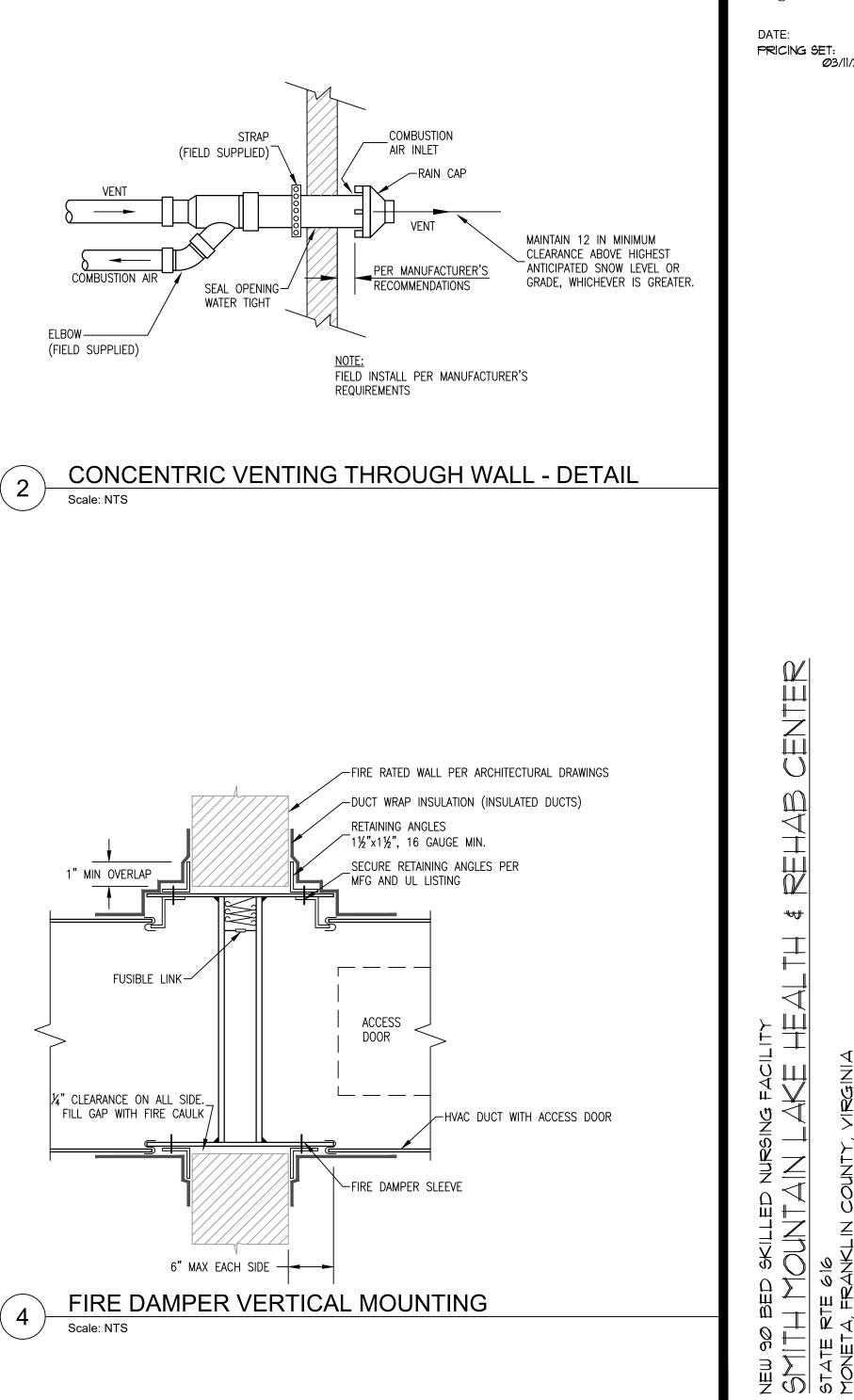
 $\triangleleft$ T ┉ - $\triangleleft$ Ϋ́  $\mathbf{V}$  $\triangleright \forall \triangleleft$  $\overline{A}$ ð  $\cap$ Ш 

PRELIMINARY NOT FOR CONSTRUCTION

> DSCA PROJECT NO. 23.046  $\searrow$







**4** Scale: NTS



DATE: PRICING SET: Ø3/11/24

 $\square$ 

-₩₩ |

 $\overline{\triangleleft}$ 

Ť لوً

SKILLED NUR

 $\Box \overline{}$ 

m —⊫

\_\_\_\_

PRELIMINARY NOT FOR CONSTRUCTION

> DSCA PROJECT NO. 23.046

# M5.,

	ROOFTOP UNIT SCHEDULE																													
	UNIT SUPPLY FAN COOLING												HEATING ELECTRICAL																	
		NOMINAL	ECONO-	HOT GAS		OUTSIDE	AIR FLOW	ESP	TSP	MOTOR	AIR FLOW	EAT DB	EAT WB	LAT DB	LAT WB	TOTAL	SENSIBLE	HEAT	CONTROL		MAX INPUT	MAX OUTPUT	MIN OUTPUT	EAT DB	LAT DB				MANUFACTURER	
MARK	SERVICE	TONS	MIZER	REHEAT	CONFIGURATION	AIR	(CFM)	(IN WC)	(IN WC)	(HP)	(CFM)	(F)	(F)	(F)	(F)	(MBH)	(MBH)	EXCHANGER	TYPE	STAGES	(MBH)	(MBH)	(MBH)	(F)	(F)	VOLTAGE	MCA	MOCP	MODEL	REMARKS
RTU-1	PHYSICAL THERAPY	5	YES	NO	DOWN DISCHARGE	375	2030	0.75	1.04	1.5	2030	80	67	59.88	58.51	60.1	49.7	STD INDIRECT	STAGED	2	150.5	121.5	85.1	70.0	125.6	208/3Ø	30	45	TRANE YSC060G3	1,2,5
RTU-2	LOBBY	4	YES	NO	DOWN DISCHARGE	310	1700	0.70	0.92	1.5	1700	80	67	59.57	58.27	49.2	40.2	STD INDIRECT	STAGED	2	80	64.8	45.4	70.0	105.6	208/3Ø	27	40	TRANE YSC048G3	1,2,5
RTU-3	OFFICES/ ACTIVITY	6	YES	NO	DOWN DISCHARGE	450	2420	0.70	0.87	3	2420	80	67	58.86	57.26	76.7	58.8	STD INDIRECT	STAGED	1	120	97.2		70.0	106.8	208/3Ø	38	50	TRANE YSJ072A3	1,2,3,4,5
RTU-4	KITCHEN, LAUNDRY	7.5	YES	NO	DOWN DISCHARGE	525	2905	0.75	1.09	3	2905	80	67	58.62	57.1	94.0	71.8	STD INDIRECT	STAGED	1	150	121.5		70.0	108.3	208/3Ø	42	50	TRANE YSJ090A3	1,2,3,4,5

REMARKS: AMBIENT AIR TEMP. 95°F.

ACCESSORIES TO INCLUDE ROOF CURB, ECONOMIZER CONTROLS,

BAROMETRIC RELIEF, DISCONNECT SWITCH, PROGRAMMABLE THERMOSTAT. 3. VARIABLE SPEED, DIRECT DRIVE FAN.

#### 4. DUAL COMPRESSOR. 5. LP CONVERSION KIT TO BE PROVIDED.

			INDOOR															0	UTDOOR		
			FAN				COOLING	HEATING				E	ECTRIC	CAL	MANUFACTURER		ELECTRICAL		L	MANUFACTURER	
MARK	SERVICE	CFM	OA	ESP	HP	TOTAL MBH	SENSIBLE	SEER2	INPUT	OUTPUT	EFFICIENCY	VOLTAGE	MCA	MOCP	MODEL	MARK	VOLTAGE	MCA	MOCP	MODEL	REMARKS
F-1	DINING, LOUNGE (NORTH WING)	2000	450	0.75	1	60		14.0	100/65	96.7/62.8	96%	115V/1Ø	13.9	15	TRANE S9V2C100	CU-1	208/3Ø	21	35	TRANE 4TTA4060A3	1,2,3,4,5,6
F-2	SPA, CORRIDORS, NURSE, CHARTS (NORTH WING)	1600	350	0.75	1	48		14.5	80/52	77.6/50.44	96%	115V/1Ø	13.9	15	TRANE S9V2C080	CU-2	208/3Ø	18	30	TRANE 4TTA4048A3	1,2,3,4,5,6
F-3	DINING, LOUNGE (EAST WING)	2000	450	0.75	1	60		14.0	100/65	96.7/62.8	96%	115V/1Ø	13.9	15	TRANE S9V2C100	CU-3	208/3Ø	21	35	TRANE 4TTA4060A3	1,2,3,4,5,6
F-4	SPA, CORRIDORS, NURSE, CHARTS (EAST WING)	1600	350	0.75	1	48		14.5	80/52	77.6/50.44	96%	115V/1Ø	13.9	15	TRANE S9V2C080	CU-4	208/3Ø	18	30	TRANE 4TTA4048A3	1,2,3,4,5,6

REMARKS: 1. AMBIENT AIR TEMP. 95° F. FURNACES SHALL BE COMPLETE WITH FILTER RACK, FILTERS & MATCHING DX-COOLING COIL.

COMBUSTION AIR INTAKE AND FLUE VENT TO BE PVC PRICING, INSTALL PER MANUFACTURERS SPECIFICATIONS. VARIABLE SPEED, DIRECT DRIVE BLOWER. 4

5. FURNACE 13.9MCA, 15A MOCP.

6. LP CONVERSION KIT TO BE PROVIDED.

					OUTD	DOR M/	AKE-UP	AIR UN	IT SCH	EDULE					
				FA	N			HEATING		UNIT		ELECTRICAL			
				MINIMUM			INPUT	OUTPUT		WEIGHT				MANUFACTURER	l
MARK	LOCATION	SERVICE	CFM	OA CFM	ESP	HP	MBH	MBH	STAGES	LBS	VOLTAGE	MCA	MOCP	MODEL	REMARKS
MAU-1	ROOFTOP	KITCHEN HOOD HOOD #1	2050	2050	0.5"	2	156.4	143.9	MC		208/3Ø			CAPTIVE AIRE	1,2,3,4,5,6
REMARKS:				4. D	ISCONNECT S	WITCH.	1						NOTE: CAPTIV	/E AIR MAKE & MODEL	NUMBER NOTED IN

. ROOF CURB.

SINGLE ZONE UNIT.

3. FILTERS SHALL BE MINIMUM 25% ASHRAE DUSTSTOP EFFICIENCY IN ACCORDANCE WITH ASHRAE TEST STANDARD 52.1 & 52.2.

5. DOWNFLOW ARRANGEMENT.

6. MODULATION CONTROL FURNISHED BY KITCHEN HOOD SUPPLIER.

	PACKAGED TERMINAL AIR CONDITIONING UNIT SCHEDULE																
			FAN				COOLING			HEATING			ELECTRICAL				
			0.A.			TOTAL	SENSIBLE	EER	STANDARD	COP	ELECTRIC				MANUFACTURER		
MARK	SERVICE	CFM	CFM	ESP	HP	COOLING	COOLING	(MIN)	HEATING	HEATING	HEATING	VOLTAGE	MCA	MOCP	& MODEL NO.	WEIGHT	REMARKS
PTAC-1	PRIVATE ROOM	360/212	45			9,400		12.2	8,000	3.7	6,600 BTUH 1.96 KW	208/1Ø	15	15	GE AZ65H09DAB	114	1,2,3,4,5,6,7
PTAC-2	SEMI-PRIVATE ROOM	370/284	45			11,600		11.8	10,300	3.6	9,400 BTUH 2.78 KW	208/1Ø	20	20	GE AZ65H12DAB	115	1,2,3,4,5,6,7

3. CONDENSATE DRAIN KIT.

REMARKS:
INCLUDE CORROSION RESISTANT WALL SLEEVE & ARCHITECTURAL GRILLE KIT. COLOR TO MATCH BRICK & TO BE APPROVED BY THE ARCHITECT.
REMOTE WALL MOUNTED SENSOR.

4. 5-YEAR SEALED COMPRESSOR WARRANTY. 5. FUSE HOLDER KIT.

6. REFRIGERANT R-410A HEAT PUMP.

7. POWER CORD CONNECTION KIT. NEMA 6-20R

# ELECTRIC DUCT HEATER SCHEDULE

						JLL				L.			JOUL		
MARK	AREA SERVED	CFM	DUCT SIZE	KW	VOLTAGE	MANUFACTURER MODEL	REMARKS			AREA			VOLTAGE	MANUFACTURER	
EDH-1	CONFERENCE & LOBBY	400	10"x10"	2	208	INDEECO	1,2,3,4,5,6		MARK	SERVED	TYPE	KW	PHASE	MODEL	REMARKS
	(CENTRAL WING)	400		۲ 	1Ø	QUA	1,2,0,4,0,0	E	:H-1	CORRIDOR N03 (NORTH WING)	WALL (FAN FORCED)	3	208V 1Ø	MARKEL 3326	1,2,3
EDH-2	ACTIVITY & OFFICES (CENTRAL WING)	780	10"x10"	3.5	208 1Ø	INDEECO QUA	1,2,3,4,5,6		H-2	CORRIDOR N02	(FANTORCED) WALL	2	208V	MARKEL	4.0.0
REMARKS:						NOTE: EQUIVALENT B	Y BRASCH,		:n-z	(NORTH WING)	(FAN FORCED)	3	1Ø	3326	1,2,3
1. OPEN C 2. THERMA	OIL, SLIP-IN. AL CUT-OUTS.					CHROMOLOX, OR AS	APPROVED.	E	H-3	CORRIDOR N03 (NORTH WING)	WALL (FAN FORCED)	3	208V 1Ø	MARKEL 3326	1,2,3
4. CONTAC 5. BUILT IN	N SWITCH. CTORS, FUSES, CONTROL C I SNAP ACTING DOOR.	·						E	H-4	CORRIDOR N02 (NORTH WING)	WALL (FAN FORCED)	3	208V 1Ø	MARKEL 3326	1,2,3
6. INTERLO	OCKED DISCONNECT SWITC	H & CONTROL	PANEL.					E	H-5	CORRIDOR C01 (CENTRAL WING)	CEILING	4	208V 3Ø	MARKEL 3470 SERIES MODEL J3474	1,2,4
								<u>REI</u> 1.	<u>Marks:</u> Furnish		IOSTAT.			NOTE: EQUIVALENT OR AS APPROVED.	BY QMARK, BERKO,

# SPLIT SYSTEM AIR-CONDITIONING UNIT SCHEDULE

NOTE: TRANE MAKE & MODEL NUMBER NOTED IN SCHEDULE. CARRIER, JOHNSON CONTROLS AS EQUIVALENT.

NOTE: CAPTIVE AIR MAKE & MODEL NUMBER NOTED IN	
SCHEDULE, EQUIVALENT BY GREENHECK, REZNOR, OF	R
AS APPROVED BY THE KITCHEN HOOD SUPPLIER.	

NOTE: GE MAKE & MODEL NUMBER IN SCHEDULE, EQUIVALENT BY AMANA, FRIEDRICH, OR AS APPROVED.

# ELECTRIC HEATER SCHEDULE

 DISCONNECT SWITCH.
FAN-FORCED WALL HEATER, RECESSED. 4. SURFACE MOUNTED

					FAN			ELECTRICAL		
		EXHAUST	SP	RPM	SIZE	DRIVE	TYPE	VOLTAGE	MANUFACTURER	
MARK	SERVICE	CFM			HP			PHASE	MODEL	REMARKS
EF-1	PRIVATE ROOM, UTIL., LAV, SPA (NORTH WING)	650	3/8"	1548	1/6	BELT	ROOF	120V 1Ø	LOREN COOK ACE-B 100C2B	1,3,4,8
EF-2	PRIVATE,SEMI-PRIVATE ROOMS (NORTH WING)	860	1/2"	1884	1/4	BELT	ROOF	120V 1Ø	LOREN COOK ACE-B 100C3B	1,3,4,8
EF-3	JAN & LAV (CENTRAL WING)	150	3/8"	1310	1/6	BELT	ROOF	120V 1Ø	LOREN COOK ACE-B 70C2B	2,3,4,7
EF-4	MENS, WOMENS, LAV, BATH (CENTRAL WING)	300	3/8"	1752	1/4	BELT	ROOF	120V 1Ø	LOREN COOK ACE-B 70C3B	2,3,4,8
EF-5	PRIVATE,SEMI-PRIVATE ROOMS (EAST WING)	860	1/2"	1884	1/4	BELT	ROOF	120V 1Ø	LOREN COOK ACE-B 100C3B	1,3,4,8
EF-6	PRIVATE ROOM, UTIL, LAV, SPA (EAST WING)	650	3/8"	1548	1/6	BELT	ROOF	120V 1Ø	LOREN COOK ACE-B 100C2B	1,3,4,8
EF-7 * <sup>1 *2</sup>	KITCHEN HOOD (CENTRAL WING)	2625	0.8	963	1.0	BELT	ROOF	120V 1Ø	CAPTIVE AIRE NCA16FA	2,3,4
EF-8 * <sup>1 *2</sup>	DISHWASHER HOOD (CENTRAL WING)	600	0.35	1367	0.18	BELT	ROOF	120V 1Ø	CAPTIVE AIRE DU12HFA	2,3,4,6
EF-9	C25 HAZ (CENTRAL WING)	75	1/4"	1050	41 W	DIRECT	CEILING	120V 1Ø	LOREN COOK GC220	3,4,10,11
EF-10	C26 OXYGEN (CENTRAL WING)	75	1/4"	1050	41 W	DIRECT	CEILING	120V 1Ø	LOREN COOK GC220	3,4,10,11
EF-11	IT CLOSET (NORTH WING)	75	1/4"	1050	41 W	DIRECT	CEILING	120V 1Ø	LOREN COOK GC220	3,4,9,10
EF-12	IT CLOSET (EAST WING)	75	1/4"	1050	41 W	DIRECT	CEILING	120V 1Ø	LOREN COOK GC220	3,4,9,10

REMARKS: 1. PREFAB. ROOF CURB FOR PITCHED ROOF. 2. PREFAB. ROOF CURB FOR FLAT ROOF.

3. GRAVITY DAMPER.

4. DISCONNECT SWITCH.

5. LIGHT SWITCH CONTROL 6. MANUAL OPERATION.

 \*<sup>1</sup> FURNISHED BY KITCHEN HOOD SUPPLIER & INSTALLED BY MECHANICAL CONTRACTOR.
\*<sup>2</sup> ELECTRICAL REQUIREMENTS & FAN PERFORMANCE TO BE VERIFIED WITH ACTUAL EXHAUST FAN FURNISHED BY KITCHEN EQUIPMENT SUPPLIER.

	G	RILLE, REGIST	ER AND	) DIFFU	SER SC	CHEDULE		
MARK	MANUFACTURER MODEL	DESCRIPTION	DAMPER NUMBER	FRAME/ BORDER	MODULE SIZE	PATTERN	FINISH	REMARKS
A	PRICE SPD	SQUARE FLAT PLAQUE DIFFUSER	VCR7 OBD	LAY-IN	24 X 24	4 - WAY	WHITE	1.
В	PRICE 520	LOUVERED SUPPLY GRILLE	VCS3 OBD	GYP BRD	AS NOTED	DOUBLE DEFLECTION	WHITE	
С	PRICE 530	FIXED, LOUVERED RETURN GRILLE	VCS3 OBD	LAY-IN	AS NOTED	SINGLE DEFLECTION	WHITE	2
EG	PRICE 530	FIXED, LOUVERED EXHAUST GRILLE	VCS3 OBD	GYP BRD	AS NOTED	3/4", FIXED 45 DEFLECTION	WHITE	3,4.

SAMPLE REMARKS: 1. MODEL SPF, STEEL PLASTER FRAME, WHITE FINISH, IF LOCATED IN GYPSUM BOARD. 2. MODEL LS, LIGHT SHIELD, BLACK FINISH AT RETURN AIR PLENUMS. MODEL SR, SQUARE TO ROUND ADAPTER, BLACK INTERIOR.
PROVIDE GREENHECK ABD, SET TO SCHEDULED CFM. SEE DETAIL.

NOTE: TRANE MAKE & MODEL NUMBER NOTED IN SCHEDULE. AAON, CARRIER, JOHNSON CONTROLS, MCQUAY OR AS APPROVED.

7. LIGHT SWITCH CONTROL

8. PROGRAMMABLE TIME CLOCK OPERATION. 9. OPERATE FROM WALL THERMOSTAT.

10. CEILING GRILLE. 11. CONTINUOUS OPERATION.



401 FRONT STREET BEREA, OHIO 44017 PHONE: 440.835.3957 mail@dscarchitects.com

DATE: PRICING SET: Ø3/11/24

 $\square$ -₩₩ |  $\overline{\triangleleft}$ ≻Щ SKILLED NURG m —⊫ NEW 90 E STATE R1 MONETA

PRELIMINARY NOT FOR CONSTRUCTION

> DSCA PROJECT NO. 23.046



# MAINTENANCE INFORMATION AND SYSTEM COMMISSIONING

<u>GENERAL</u> THIS SECTION COVERS THE PROVISION OF MAINTENANCE INFORMATION AND THE COMMISSIONING OF, AND THE FUNCTIONAL TESTING REQUIREMENTS FOR, BUILDING SYSTEMS. MECHANICAL CONTRACTOR SHALL PROVIDE COMMISSIONING SERVICES IN ACCORDANCE WITH IECC SECTION C408.

## BUILDING OPERATIONS AND MAINTENANCE INFORMATION

THE BUILDING OPERATIONS AND MAINTENANCE DOCUMENTS SHALL BE PROVIDED TO THE OWNER AND SHALL CONSIST OF MANUFACTURERS' INFORMATION, SPECIFICATIONS AND RECOMMENDATIONS; PROGRAMMING PROCEDURES AND DATA POINTS; NARRATIVES; AND OTHER MEANS OF ILLUSTRATING TO THE OWNER HOW THE BUILDING, EQUIPMENT AND SYSTEMS ARE INTENDED TO BE INSTALLED, MAINTAINED AND OPERATED. REQUIRED REGULAR MAINTENANCE ACTIONS FOR EQUIPMENT AND SYSTEMS SHALL BE CLEARLY STATED ON A READILY VISIBLE LABEL. THE LABEL SHALL INCLUDE THE TITLE OR PUBLICATION NUMBER FOR THE OPERATION AND MAINTENANCE MANUAL FOR THAT PARTICULAR MODEL AND TYPE OF PRODUCT.

Mechanical systems and service water-heating systems commissioning and completion requirements Prior to the final mechanical and plumbing inspections, the approved agency shall provide evidence of mechanical systems commissioning and completion in accordance with the provisions of this section. Copies of all documentation shall be given to the owner or owner's authorized agent and made available to the code

official upon request.

Exceptions: The following systems are exempt:

1. Systems that serve individual dwelling units and sleeping units.

#### Commissioning plan

- A commissioning plan shall be developed by the approved agency and shall include the following items:
- 1. A narrative description of the activities that will be accomplished during each phase
- of commissioning, including the personnel intended to accomplish each of the activities 2. A listing of the specific equipment, appliances or systems to be tested and a description of the tests to be performed.
- 3. Functions to be tested including, but not limited to, calibrations and economizer controls.
- 4. Conditions under which the test will be performed. Testing shall affirm winter and summer design conditions and full outside air conditions.
- 5. Measurable criteria for performance.

## Systems adjusting and balancing

HVAC systems shall be balanced in accordance with generally accepted engineering standards. Air and water flow rates shall be measured and adjusted to deliver final flow rates within the tolerances provided in the product specifications. Test and balance activities shall include air system and hydronic system balancing.

#### Air systems balancing

Each supply air outlet and zone terminal device shall be equipped with means for air balancing in accordance with the requirements of Chapter 6 of the International Mechanical Code. Discharge dampers used for air-system balancing are prohibited on constant-volume fans and variable volume fans with motors 10 hp and larger. Air systems shall be balanced in a manner to first minimize throttling losses then, for fans with system power of greater than 1 hp, fan speed shall be adjusted to meet design flow conditions.

Exception: Fans with fan motors of 1 hp or less are not required to be provided with a means for air balancing.

#### Hydronic systems balancing

Individual hydronic heating and cooling coils shall be equipped with means for balancing and measuring flow. Hydronic systems shall be proportionately balanced in a manner to first minimize throttling losses, then the pump impeller shall be trimmed, or pump speed shall be adjusted to meet design flow conditions. Each hydronic system shall have either the capability to measure pressure across the pump, or test ports at each side of each pump. Exception: The following equipment is not required to be equipped with a means for balancing or measuring flow:

- 1 Pumps with pump motors of 5 hp (3.7 kW) or less.
- 2. Where throttling results in not greater than 5 percent of the nameplate horsepower draw above that required if the impeller were trimmed.

#### Functional performance testing

Functional performance testing shall be provided as indicated below.

#### <u>Equipment</u>

Equipment functional performance testing shall demonstrate the installation and operation of components, systems and system-to-system interfacing relationships in accordance with approved plans and specifications such that operation, function and maintenance serviceability for each of the commissioned systems are confirmed. Testing shall include all modes and sequence of operation, including under full-load, part-load and the following emergency conditions:

- 1. All modes as described in the sequence of operation.
- 2. Redundant or automatic back-up mode.
- 3. Performance of alarms.
- 4. Mode of operation upon a loss of power and restoration of power.
- 5. Exception: Unitary or packaged HVAC equipment that does not require supply air economizers.

## <u>Controls</u>

HVAC and service water-heating control systems shall be tested to document that control devices, components, equipment and systems are calibrated and adjusted and operate in accordance with approved plans and specifications. Sequences of operation shall be functionally tested to document they operate in accordance with approved plans and specifications.

#### <u>Economizers</u>

Air economizers shall undergo a functional test to determine that they operate in accordance with the manufacturer's specifications.

#### Preliminary commissioning report

A preliminary report of commissioning test procedures and results shall be completed and certified by the approved agency and provided to the building owner or owner's authorized agent. The report shall be organized with mechanical and service hot water findings in separate sections to allow independent review. The report shall be identified as "Preliminary Commissioning Report," shall include the completed Commissioning Compliance Checklist, and shall identify:

- 1. Itemization of deficiencies found during testing required by this section that have not been corrected at the time of report preparation.
- 2. Deferred tests that cannot be performed at the time of report preparation because of climatic conditions. 3. Climatic conditions required for performance of the deferred tests.
- 4. Results of functional performance tests.
- 5. Functional performance test procedures used during the commissioning process, including measurable criteria for test acceptance.

#### Acceptance of report

Buildings, or portions thereof, shall not be considered as acceptable for a final inspection pursuant to IECC Section C105.2.6 until the code official has received the Preliminary Commissioning Report from the building owner or owner's authorized agent.

## Copy of report

The code official shall be permitted to require that a copy of the Preliminary Commissioning Report be made available for review by the code official.

## COMMISSIONING COMPLIANCE CHECKLIST

- Project Information: \_\_\_\_\_\_ Project Name: \_\_\_\_\_ Project Address:
- Commissioning Authority:
- Commissioning Plan (Section C408.2.1)

Commissioning Plan was used during construction and includes all items required by Section C408.2.1

- Systems Adjusting and Balancing has been completed.
- HVAC Equipment Functional Testing has been executed. If applicable, deferred and follow-up testing is scheduled to be provided on:
- HVAC Controls Functional Testing has been executed. If applicable, deferred and follow-up testing is scheduled to be provided on:\_\_\_\_\_
- Economizer Functional Testing has been executed. If applicable, deferred and follow-up testing is scheduled to be provided on:
- Lighting Controls Functional Testing has been executed. If applicable, deferred and follow-up testing is scheduled to be provided on:
- is scheduled to be provided on:
- Manual, record documents and training have been completed or scheduled
- and lighting systems commissioning in accordance with the 2021 IECC.
- Signature of Building Owner or Owner's Representative \_\_\_\_\_ Date\_\_\_\_\_

#### Documentation requirements

The documents described in this section be provided to the building owner or owner's authorized agent within 90 days of the date of receipt of the certificate of occupancy.

## System balancing report

A written report describing the activities and measurements completed in accordance with system adjusting and balancing noted above.

#### Final commissioning report

A report of test procedures and results identified as "Final Commissioning Report" shall be delivered to the building owner or owner's authorized agent. The report shall be organized with mechanical system and service hot water system findings in separate sections to allow independent review. The report shall include the following:

- 1. Results of functional performance tests.
- for test acceptance, provided herein for repeatability. Exception: Deferred tests that cannot be performed at the time of report preparation due to climatic conditions.
- Functional testing of lighting controls

## Functional testing

Prior to passing final inspection, the approved agency shall provide evidence that the lighting control systems have been tested to ensure that control hardware and software are calibrated, adjusted, programmed and in proper working condition in accordance with the construction documents and manufacturer's instructions. Functional testing shall be in accordance with the applicable control type.

#### Occupant sensor controls

Where occupant sensor controls are provided, the following procedures shall be performed: 1. Certify that the occupant sensor has been located and aimed in accordance with manufacturer recommendations.

- 2. For projects with seven or fewer occupant sensors, each sensor shall be tested. 3. For projects with more than seven occupant sensors, testing shall be done for each unique combination of
- controls to be tested, verify the following: a. Where occupant sensor controls include status indicators, verify correct operation. b. The controlled lights turn off or down to the permitted level within the required time.
- enters the space.
- d. For manual-on occupant sensor controls, the lights turn on only when manually activated.

Time-switch controls Where time-switch controls are provided, the following procedures shall be performed: 1. Confirm that the time-switch control is programmed with accurate weekday, weekend and holiday schedules. 2. Provide documentation to the owner of time-switch controls programming including weekday, weekend,

- holiday schedules, and set-up and preference program settings.
- 3. Verify the correct time and date in the time switch. Verify that any battery back-up is installed and energized.
- 5. Verify that the override time limit is set to not more than 2 hours.
- 6. Simulate occupied condition. Verify and document the following: a. All lights can be turned on and off by their respective area control switch.
- b. The switch only operates lighting in the enclosed space in which the switch is located.
- 7. Simulate unoccupied condition. Verify and document the following: a. Nonexempt lighting turns off.
- located to turn on or remain on until the next scheduled shutoff occurs. 8. Additional testing as specified by the registered design professional.

## Daylight responsive controls

- Where daylight responsive controls are provided, the following shall be verified:
- 2. Daylight controlled lighting loads adjust to light level setpoints in response to available daylight.
- 3. The calibration adjustment equipment is located for ready access only by authorized personnel.

#### Documentation requirements

The documents described in this section be provided to the building owner or owner's authorized agent within 90 days of the date of receipt of the certificate of occupancy.

#### <u>Drawings</u>

Service Water Heating System Functional Testing has been executed. If applicable, deferred and follow-up testing

Preliminary Commissioning Report submitted to owner and includes all items required by Section C408.2.4

I hereby certify that the commissioning provider has provided me with evidence of mechanical, service water heating

2. Disposition of deficiencies found during testing, including details of corrective measures used or proposed. 3. Functional performance test procedures used during the commissioning process, including measurable criteria

Automatic lighting controls required by this code shall comply with this section.

sensor type and space geometry. Where multiples of each unique combination of sensor type and space geometry are provided, not less than 10 percent and in no case fewer than one of each combination shall be tested unless the code official or design professional requires a higher percentage to be tested. Where 30 percent or more of the tested controls fail, all remaining combinations shall be tested. For occupant sensor

c. For auto-on occupant sensor controls, the lights turn on to the permitted level when an occupant

e. The lights are not incorrectly turned on by movement in adjacent areas or by HVAC operation.

b. Manual override switch allows only the lights in the enclosed space where the override switch is

1. Control devices have been properly located, field calibrated and set for accurate setpoints and threshold light

Construction documents shall include the location and catalogue number of each piece of equipment.

#### <u>Manuals</u>

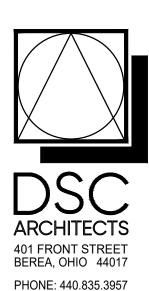
An operating and maintenance manual shall be provided and include the following:

1. Name and address of not less than one service agency for installed equipment. 2. A narrative of how each system is intended to operate, including recommended setpoints

- 3. Submittal data indicating all selected options for each piece of lighting equipment and lighting controls.
- 4. Operation and maintenance manuals for each piece of lighting equipment. Required routine maintenance actions, cleaning and recommended relamping shall be clearly identified.
- 5. A schedule for inspecting and recalibrating all lighting controls.

A report of test results shall be provided and include the following:

 Results of functional performance tests. 2. Disposition of deficiencies found during testing, including details of corrective measures used or proposed.



DATE: PRICING SET: @3/11/24

mail@dscarchitects.com

 $\triangleleft$ ╶┶ᠸᢔ - $\triangleleft$ Ϋ́  $\downarrow$  $\triangleright$   $\forall$  $\overline{A}$ N 

PRELIMINARY NOT FOR CONSTRUCTION

> DSCA PROJECT NO 23.046