UCONN HEALTH

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VOLUME 3

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SHEET NUMBER	DRAWING TITLE
00 - GENERAL 3	
G3-1.0.0	COVER SHEET
G3-1.0.1	DRAWING LIST
G3-1.0.2	SECTOR KEY PLAN
00 - GENERAL 3: 3	
10 - MECHANICAL	
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HG-0.0.1	OVERALL PHASING
H-0.0.1	HVAC SCHEDULES
H-0.0.2	HVAC SCHEDULES
H-0.0.3	HVAC SCHEDULES
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HD-1.1.3B	HVAC FIRST FLOOR DUCT DEMO PLAN SECTOR B
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HD-2.1.2D	HVAC MAIN FLOOR PIPING DEMO PLAN SECTOR D
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HD-2.1.3B	HVAC FIRST FLOOR PIPING DEMO PLAN SECTOR B
HD-2.1.3C	HVAC FIRST FLOOR PIPING DEMO PLAN SECTOR C
HD-2.1.3D	HVAC FIRST FLOOR PIPING DEMO PLAN SECTOR D
HD-2.1.4A	HVAC SECOND FLOOR PIPING DEMO PLAN SECTOR A
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HD-2.1.4C	HVAC SECOND FLOOR PIPING DEMO PLAN SECTOR C
HD-2.1.4D	HVAC SECOND FLOOR PIPING DEMO PLAN SECTOR D
HD-2.1.5A	HVAC ROOF & PH PIPING DEMO PLAN SECTOR A
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HD-2.1.5C	HVAC ROOF & PH PIPING DEMO PLAN SECTOR C
HD-2.1.5D	HVAC ROOF & PH PIPING DEMO PLAN SECTOR D
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H-1.0.1	HVAC GROUND FLOOR DUCT PLAN OVERALL
H-1.0.2	HVAC MAIN FLOOR DUCT PLAN OVERALL
H-1.0.3	HVAC FIRST FLOOR DUCT PLAN OVERALL
H-1.0.4	HVAC SECOND FLOOR DUCT PLAN OVERALL
H-1.0.5	HVAC ROOF & PH DUCT PLAN OVERALL
H-1.1.0A	HVAC BASEMENT DUCT PLAN SECTOR A
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H-1.1.0C	HVAC BASEMENT DUCT PLAN SECTOR C
H-1.1.0D	HVAC BASEMENT DUCT PLAN SECTOR D
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H-1.1.1B	HVAC GROUND FLOOR DUCT PLAN SECTOR B
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H-1.1.2A	HVAC MAIN FLOOR DUCT PLAN SECTOR A
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H-1.1.2D	HVAC MAIN FLOOR DUCT PLAN SECTOR D
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H-1.1.3C	HVAC FIRST FLOOR DUCT PLAN SECTOR C
H-1.1.3D	HVAC FIRST FLOOR DUCT PLAN SECTOR D
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H-1.1.4B	HVAC SECOND FLOOR DUCT PLAN SECTOR B
H-1.1.4C	HVAC SECOND FLOOR DUCT PLAN SECTOR C
H-1.1.4D	HVAC SECOND FLOOR DUCT PLAN SECTOR D
H-1.1.5A	HVAC ROOF & PH DUCT PLAN SECTOR A
H-1.1.5B	HVAC ROOF & PH DUCT PLAN SECTOR B
H-1.1.5C	HVAC ROOF & PH DUCT PLAN SECTOR C
H-1.1.5D	HVAC ROOF & PH DUCT PLAN SECTOR D
H-2.0.0	HVAC BASEMENT PIPING PLAN OVERALL
H-2.0.1	HVAC GROUND FLOOR PIPING PLAN OVERALL
H-2.0.2	HVAC MAIN FLOOR PIPING OVERALL PLAN
H-2.0.3	HVAC FIRST FLOOR PIPING PLAN OVERALL
H-2.0.4	HVAC SECOND FLOOR PIPING PLAN OVERALL
H-2.0.5	HVAC ROOF & PH PIPING PLAN OVERALL
H-2.1.0A	HVAC BASEMENT PIPING PLAN SECTOR A
H-2.1.0B	HVAC BASEMENT PIPING PLAN SECTOR B

SHEET NUMBER	DRAWING TITLE
H-2.1.0C	HVAC BASEMENT PIPING PLAN SECTOR C
H-2.1.0D	HVAC BASEMENT PIPING PLAN SECTOR D
H-2.1.1A	HVAC GROUND FLOOR PIPING PLAN SECTOR A
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H-2.1.1C	HVAC GROUND FLOOR PIPING PLAN SECTOR C
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H-2.1.2A	HVAC MAIN FLOOR PIPING PLAN SECTOR A
H-2.1.2B	HVAC MAIN FLOOR PIPING PLAN SECTOR B
H-2.1.2C	HVAC MAIN FLOOR PIPING PLAN SECTOR C
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H-2.1.3A	HVAC FIRST FLOOR PIPING PLAN SECTOR A
H-2.1.3B	HVAC FIRST FLOOR PIPING PLAN SECTOR B
H-2.1.3C	HVAC FIRST FLOOR PIPING PLAN SECTOR C
H-2.1.3D	HVAC FIRST FLOOR PIPING PLAN SECTOR D
H-2.1.4A	HVAC SECOND FLOOR PIPING PLAN SECTOR A
H-2.1.4B	HVAC SECOND FLOOR PIPING PLAN SECTOR B
H-2.1.4C	HVAC SECOND FLOOR PIPING PLAN SECTOR C
H-2.1.4D	HVAC SECOND FLOOR PIPING PLAN SECTOR D
H-2.1.5A	HVAC ROOF & PH PIPING PLAN SECTOR A
H-2.1.5B	HVAC ROOF & PH PIPING PLAN SECTOR B
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H-3.0.0	HVAC BLDG. C BLOWER ZONING CONCEPT
HD-3.0.1A	HVAC DEMO AIRFLOW DISTRIBUTION DIAGRAM (NORTH)
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H-3.0.2	HVAC CHILLED WATER RISER DIAGRAM
H-3.0.3	HVAC STEAM & HOT WATER FLOW DIAGRAM
HD-3.0.4	HVAC DEMO HOT WATER RISER DIAGRAM
H-3.0.4	HVAC NEW HOT WATER RISER DIAGRAM
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H-4.0.1B	HVAC AHU DETAILS
H-4.0.1C	HVAC AHU DETAILS
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H-7.0.3B	HVAC CONTROL DIAGRAMS
H-7.0.3C	HVAC CONTROL DIAGRAMS
H-7.0.4A	HVAC CONTROL DIAGRAMS
H-7.0.4B	HVAC CONTROL DIAGRAMS
H-7.0.4C	HVAC CONTROL DIAGRAMS
H-7.0.5	HVAC CONTROL DIAGRAMS
H-7.0.6	HVAC CONTROL DIAGRAMS
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H-7.0.8	HVAC CONTROL DIAGRAMS
H-7.0.9	HVAC CONTROL DIAGRAMS
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H-7.0.11	HVAC CONTROL DIAGRAMS
10 - MECHANICAL: 167	

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UCONN HEALTH

(UCONN PROJECT # 901737)

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DRAWING
LIST

G3-1.0.1

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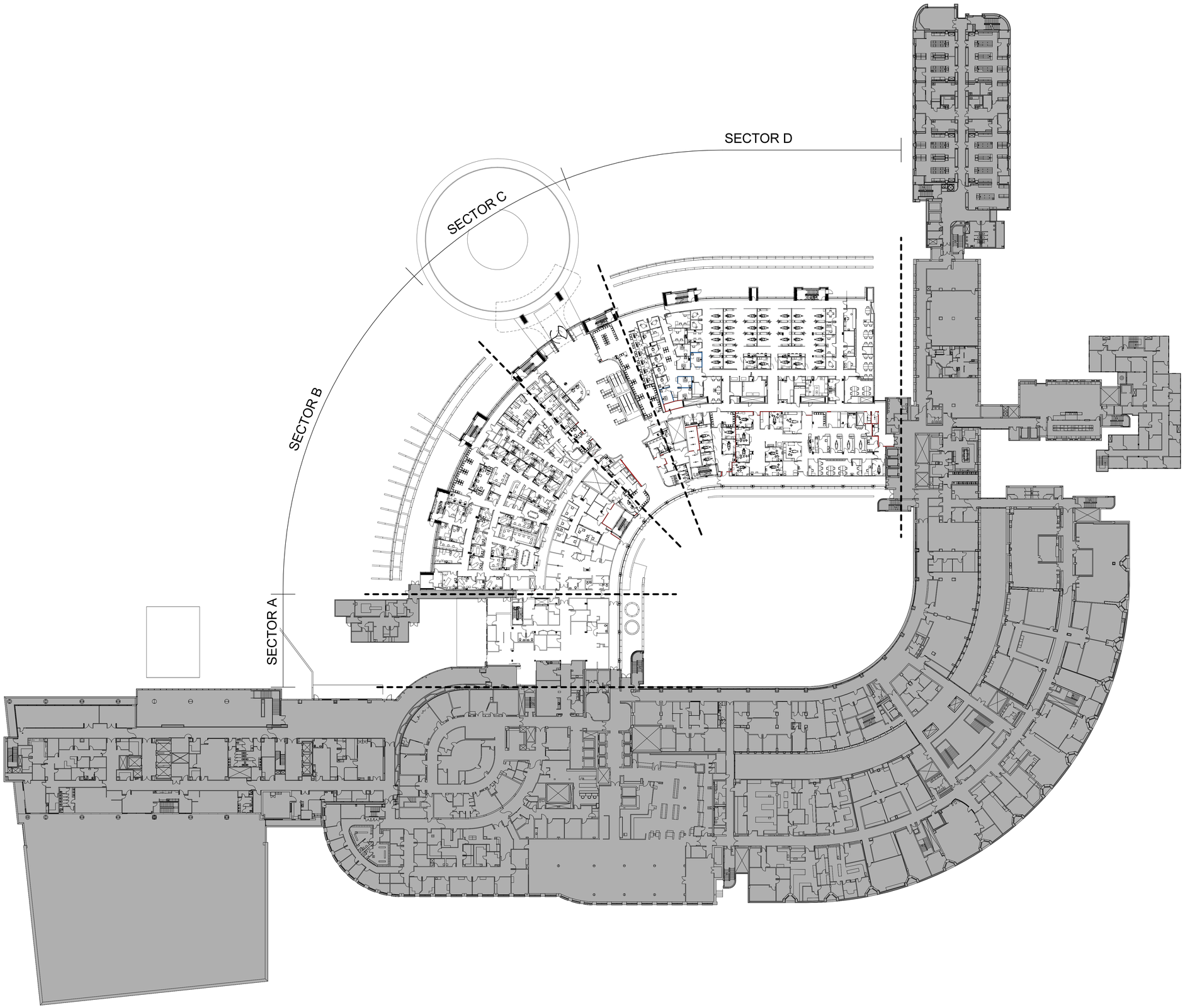

1 MAIN FLOOR - OVERALL FLOOR PLAN - SECTORS 3
1/32" = 1'-0"

NO.	REVISION	DATE

N

0 8' 16' 32' 64'

SCALE: 1/32" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C
RENOVATION

263 FARMINGTON AVE.
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SECTOR KEY PLAN

G3-1.0.2

BID DOCUMENTS

SCALE:	1/32" = 1'-0"
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FILE NAME:	SECTOR KEY PLAN

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1 HVAC LEGEND (SYMBOLS)

PLAN SYMBOLS

HWS	HOT WATER SUPPLY (NEW PRE/REHEAT LOOP)
HWR	HOT WATER RETURN (NEW PRE/REHEAT LOOP)
RHWS	REHEAT HOT WATER SUPPLY (EXISTING REHEAT LOOP)
RHWRR	REHEAT HOT WATER REVERSE RETURN (EXISTING REHEAT LOOP)
SCHWS	SECONDARY CHILLED HOT WATER SUPPLY (EXISTING INDUCTION LOOP)
SCHWR	SECONDARY CHILLED HOT WATER RETURN (EXISTING INDUCTION LOOP)
CHS	CHILLED WATER SUPPLY
CHR	CHILLED WATER RETURN
LPS	LOW PRESSURE STEAM
LPR	LOW PRESSURE RETURN
MPS	MEDIUM PRESSURE STEAM
MPR	MEDIUM PRESSURE RETURN
PC	PUMPED CONDENSATE
D	DRAIN
V	VENT
CF	CHEMICAL FEED
ECHS	PIPING PRECEDED WITH AN "E" SHALL BE EXISTING (EXAMPLE: EXISTING CHILLED WATER SUPPLY)

PRESSURE TEMPERATURE TAP WITH CAP
THERMOMETER WELL
TRAP
TRAP ASSEMBLY
PIPE TURNED UP
PIPE TURNED DOWN
ORIFICE
VENTURI METER ASSEMBLY
METER
TURBINE METER ASSEMBLY
VORTEX SHEDDING METER ASSEMBLY
FLOW INDICATING ASSEMBLY
THERMOMETER
PRESSURE SENSOR
TEMPERATURE SENSOR
FINNED TUBE RADIATION
A = TYPE
B = LENGTH IN FEET

GATE VALVE
GLOBE VALVE
ANGLE GLOBE
BALL VALVE
NEEDLE VALVE
LOCK SHIELD VALVE
BUTTERFLY VALVE
LUBRICATED PLUG VALVE
FLOW CONTROL BALANCING VALVE
CONSTANT FLOW VALVE
QUICK ACTING VALVE
HOSE END VALVE
PNEUMATIC AUTOMATIC VALVE (TWO WAY)
PNEUMATIC AUTOMATIC VALVE (THREE WAY)
ELECTRIC MOTORIZED AUTOMATIC VALVE
ELECTRIC SLOW ACTING SOLENOID VALVE
ELECTRIC SOLENOID VALVE
RELIEF VALVE OR SAFETY VALVE
FUSIBLE LINK VALVE
PRESSURE REDUCING VALVE
CHECK VALVE
PIPE GUIDE
PIPE ANCHOR
CONCENTRIC REDUCER
ECCENTRIC REDUCER
MANUAL AIR VENT
AUTOMATIC AIR VENT
VACUUM BREAKER
EXPANSION JOINT
BALL JOINT
FLEXIBLE CONNECTION
UNION
FLANGE
STRAINER ASSEMBLY
PRESSURE GAUGE ASSEMBLY

DUCT UNDER POSITIVE PRESSURE
DUCT UNDER NEGATIVE PRESSURE
(Q) AxB–C–XX
AIR OUTLET LABEL
Q = QUANTITY
AxB = NECK SIZE
C = TYPE
XX = CFM
AP ACCESS PANEL
R RISE
D DROP
SYMBOL WITH NO MARK IS A MANUAL OBD
FD FIRE DAMPER
VD OPPOSED BLADE VOLUME DAMPER
AD AUTOMATIC DAMPER OPPOSED BLADE
AD(UL) UL LISTED PNUEMATIC OPERATED CONTROL DAMPER
SD SMOKE DAMPER
SCD SMOKE CONTROL DAMPER
FSD FIRE SMOKE DAMPER
BDD BACK DRAFT DAMPER
SQUARE ELBOW WITH TURNING VANES
FLEXIBLE DUCTWORK
FLEXIBLE CONNECTION
TRANSFER OPENING ABOVE HUNG CEILING ("A" SQUARE FEET FREE AREA)
DOOR LOUVER ("A" CFM)
DOOR UNDER CUT ("A" CFM)
THERMOSTAT
HUMIDISTAT
PRESSURE INDICATOR
CARBON DIOXIDE SENSOR
WATER LEAK SENSOR
CONNECT TO EXISTING
EXTENT OF DEMOLITION
DEMOLISH (DUCT/PIPE)
DIFFERENTIAL PRESSURE CONTROLLER

VAV BOX
VAV BOX WITH COIL
VAV BOX DESIGNATION NUMBER A
AIR SIDE
A = BOX TYPE AND SIZE
B = MAX CFM
C = MIN CFM
D SPACE FOR CONTRACTOR TO ADD ATC ADDRESS ON AS BUILTS
WATER SIDE
A = BOX TYPE AND SIZE
B = HEATING CFM
C = GPM
D SPACE FOR CONTRACTOR TO ADD ATC ADDRESS ON AS BUILTS
COMBINED DRAWING
A = BOX TYPE AND SIZE
B = MAX CFM
C = MIN CFM
D SPACE FOR CONTRACTOR TO ADD ATC ADDRESS ON AS BUILTS
E = HEATING CFM
F = GPM

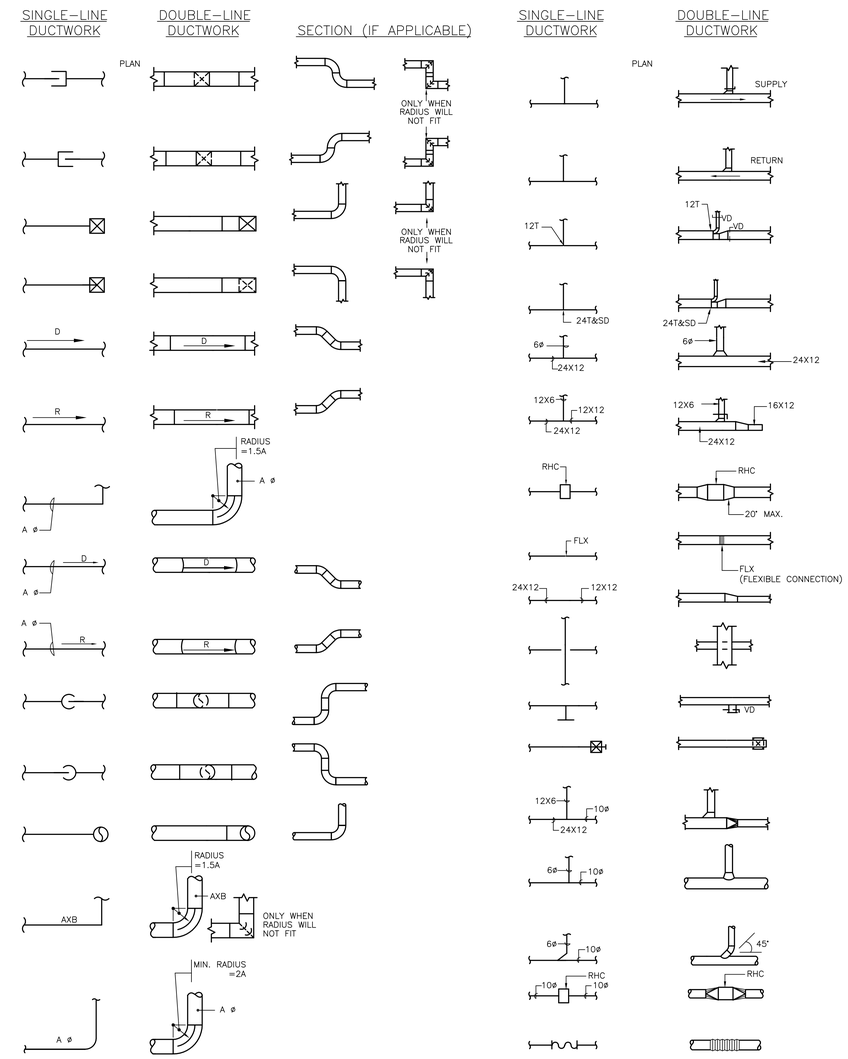
FINNED–TUBE OR RADIANT CEILING PANEL SCHEDULE BOX
A = FINNED–TUBE OR RADIANT CEILING PANEL TYPE
B = LENGTH
C = GPM

DETAIL REFERENCE (DETAIL "X" ON DRAWING "Z")
SECTION MARK (SECTION "X" ON DRAWING "Z")
REFERENCE LINE
SMD SMOKE DETECTOR
FS FLOW SWITCH
DDC DDC CONTROL PANEL
LCP LOCAL CONTROL PANEL

DIAGRAM SYMBOLS

PUMP
FAN (AXIAL)
CENTRIFUGAL FAN
PROPELLER FAN
TERMINAL BOX TAG
XX–XX–X
(SHAFT # OF DUCT MAIN TAKE–OFF)
(BOX/AVCMS NUMBER*)
(FLOOR)(SECTOR)
*ODD # BOXES (SUPPLY) CORRESPOND TO EVEN # AVCMS (RETURN)

3 HVAC LEGEND (SINGLE AND DOUBLE–LINE DUCTWORK)



2 HVAC LEGEND (ABBREVIATIONS)

A/C	AIR CONDITIONING
ABS	ABSOLUTE
AFF	ABOVE FINISHED FLOOR
ALUM.	ALUMINUM
AMPS	AMPERES
AP	ACCESS PANEL
ATM.	ATMOSPHERE
AUTO.	AUTOMATIC
BFC	BELOW FINISHED CEILING
BHP	BRAKE HORSE POWER
BT	BOTTOM THROAT
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CO	CLEAN OUT
DB	DRY BULB OR DECIBELS
DDC	DIRECT DIGITAL CONTROL
DIA	DIAMETER
DN	DOWN
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB TEMPERATURE
EP	ELECTRIC PNEUMATIC
EWB	ENTERING WET BULB TEMPERATURE
EWT	ENTERING WATER TEMPERATURE
FA	FREE AREA IN SQUARE FEET
FC	FAIL CLOSED; FLEXIBLE CONNECTION
FLA	FULL LOAD AMPS
FLX	FLEXIBLE CONNECTION
FO	FAIL OPEN
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
GAL.	GALLON
GALV	GALVANIZED
GEN.	GENERATOR
GPH	GALLON PER HOUR
GPM	GALLON PER MINUTE
HB	HOSE BIB
HP	HORSE POWER
HVAC	HEATING VENTILATING AND AIR–CONDITIONING
HZ	HERTZ
IN	INCHES
IN H_2O	INCHES OF WATER
IN W.G.	INCHES OF WATER GAUGE
K.W.	KILOWATTS
LAT	LEAVING AIR TEMPERATURE
LDB	LEAVING DRY BULB TEMPERATURE
LRA	LOCK ROTOR AMPS
LWB	LEAVING WET BULB TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MER	MECHANICAL EQUIPMENT ROOM
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
OZ	OUNCE
PE	PNEUMATIC ELECTRIC
PH	PHASE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
RA	RETURN AIR
RPM	REVOLUTIONS PER MINUTE
S/S	STAINLESS STEEL
SA	SUPPLY AIR
SD	SPLITTER DAMPER
SEC	SECOND
SP	STATIC PRESSURE
SQ. FT.	SQUARE FOOT
STD	STANDARD
T	THROAT
TEMP.	TEMPERATURE
TSP	TOTAL STATIC PRESSURE
TT	TOP THROAT
TYP.	TYPICAL
V	VOLTAGE
W	WIDTH, WEST, WATER
W/	WITH
W/O	WITHOUT
WB	WET BULB
WMS	WIRE MESH SCREEN

4 HVAC LEGEND (EQUIPMENT DESIGNATION)

ACP	AIR COMPRESSOR
AEL	AIR ELIMINATOR
AHU	AIR HANDLING UNIT
ACCH	AIR COOLED CHILLER
ACC	AIR COOLED CONDENSER
CC	COOLING COIL
CFP	CHEMICAL FEED PUMP
CH	CHILLER
CHP	CHILLED WATER PUMP
CP	CONDENSATE PUMP
CT	COOLING TOWER
CUH	CABINET UNIT HEATER
CO2	CARBON DIOXIDE SENSOR
CWP	CONDENSER WATER PUMP
CV	CONSTANT VOLUME BOX
CAC	COMPUTER ROOM A/C UNIT
DCR	DRY COOLER
EAHU	EXHAUST AIR HANDLING UNIT
EX	EXHAUST
F	FILTER
FCU	FAN COIL UNIT
FF	FINAL FILTER
FTK	FLASH TANK
FMS	FLOW MEASURING STATION
GX	GENERAL EXHAUST
GLYP	GLYCOL PUMP
HC	HEATING COIL
HVU	HEATING AND VENTILATING UNIT
HWP	HOT WATER PUMP
HX	HOOD EXHAUST
HE	HEAT EXCHANGER
H	HUMIDIFIER
MCP	MAIN CONDENSATE PUMP
PF	PRE–FILTER; PLATE & FRAME HEAT EXCHANGER
PHC	PREHEAT COIL
PRV	PRESSURE REDUCING VALVE
RF	RETURN FAN
RHC	REHEAT COIL
RTU	ROOF TOP PACKAGE A/C UNIT
RGH	ROOF MOUNTED GRAVITY HOOD
RCP	RADIANT CEILING PANEL
SA	SOUND ATTENUATOR
SCHP	SECONDARY CHILLED WATER PUMP
SEP	SEPARATOR
SF	SUPPLY FAN
SHWP	SECONDARY HOT WATER PUMP
SMX	SMOKE EXHAUST
TK	TANK
TRP	TRANSFER PUMP
TX	TOILET EXHAUST
UH	UNIT HEATER
VV	VARIABLE VOLUME
VCV	VARIABLE/CONSTANT VOLUME BOX
VVE	VARIABLE VOLUME EXHAUST BOX

5 GENERAL NOTE

THE LOCATION AND SIZES OF EXISTING BUILDING SYSTEMS, PIPING, FIXTURES, DEVICES, OUTLETS AND EQUIPMENT NOTED AND DRAWN ON THESE DOCUMENTS HAVE BEEN PROVIDED BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING FROM THE CONSTRUCTION MANAGER A SET OF THE EXISTING PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS AND COORDINATING WITH ALL NEW SYSTEMS PRIOR TO COMMENCING WORK.

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC LEGEND

H-0.0.0

BID DOCUMENTS

SCALE:	N.T.S.
JOB NO:	1.302
DATE:	12/10/2015
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FILE NAME:	

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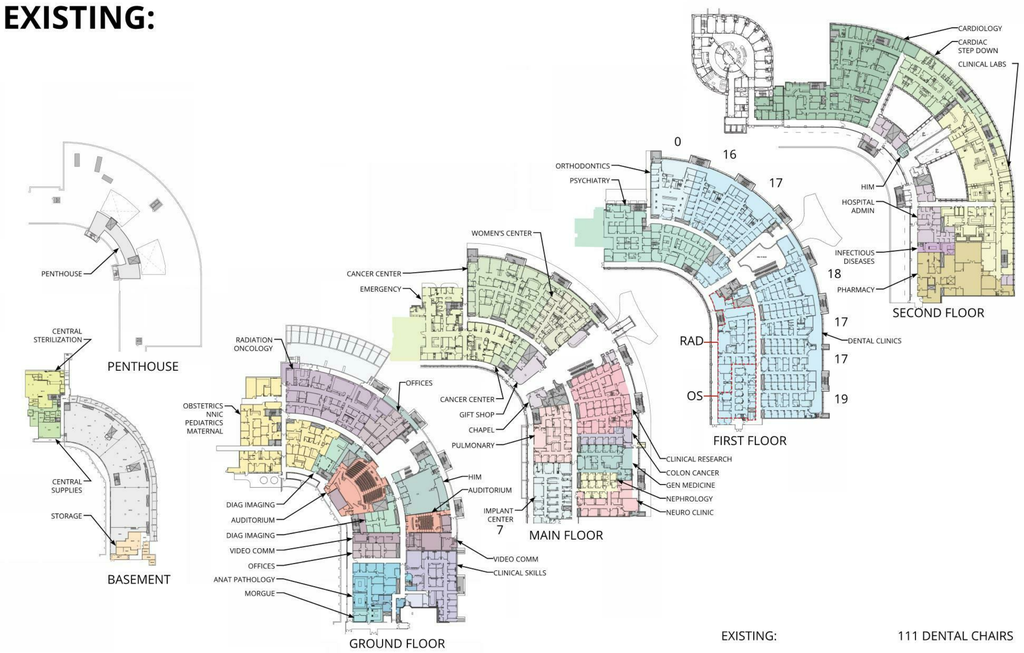
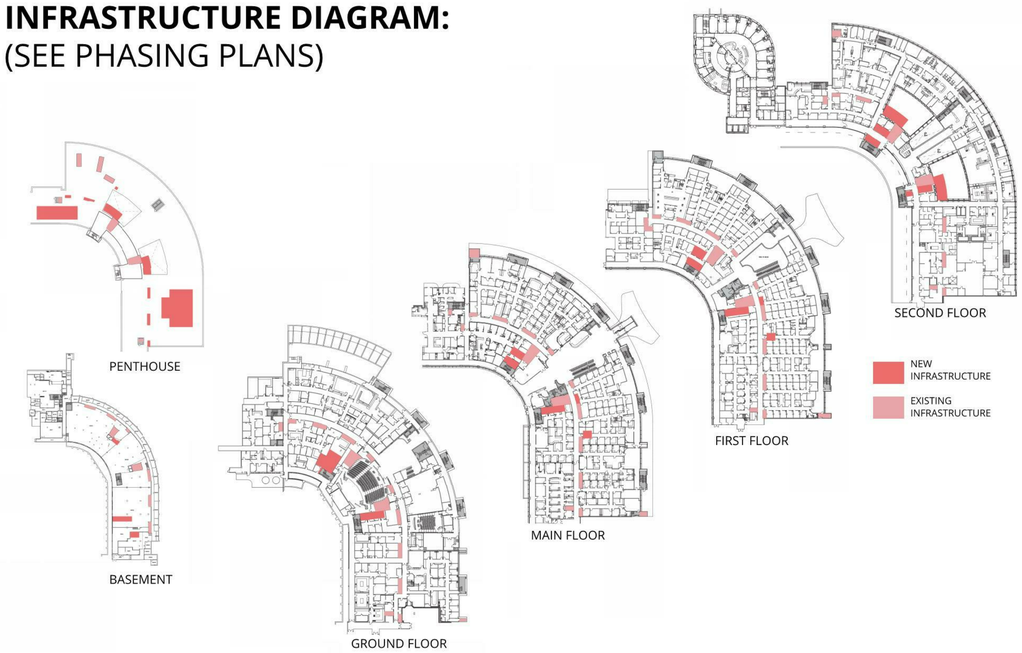
EXISTING:



EXISTING: 111 DENTAL CHAIRS

INFRASTRUCTURE DIAGRAM:
(SEE PHASING PLANS)



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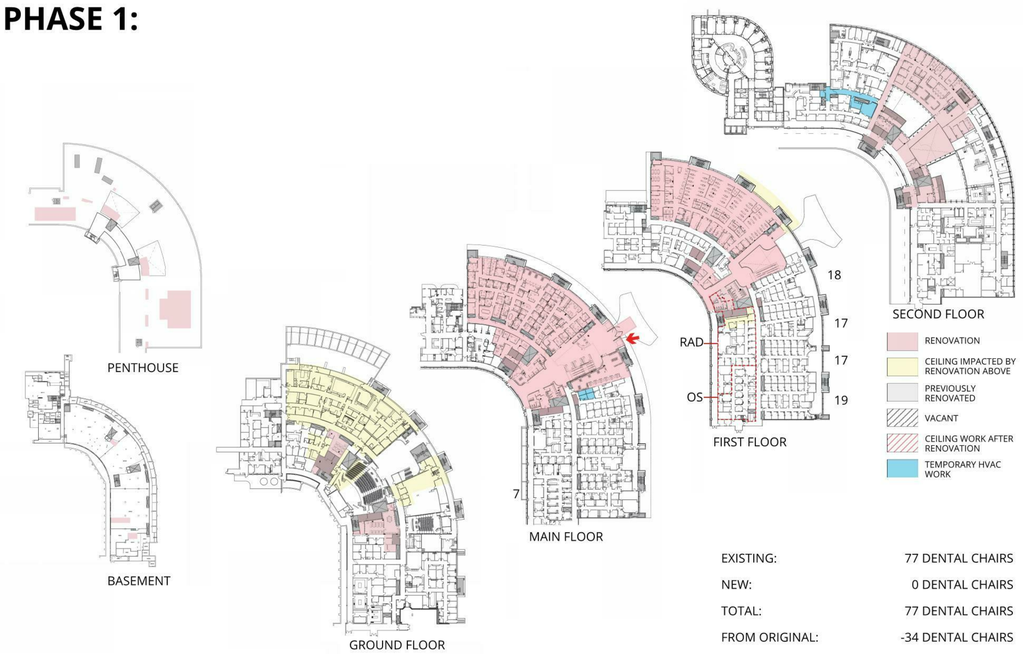
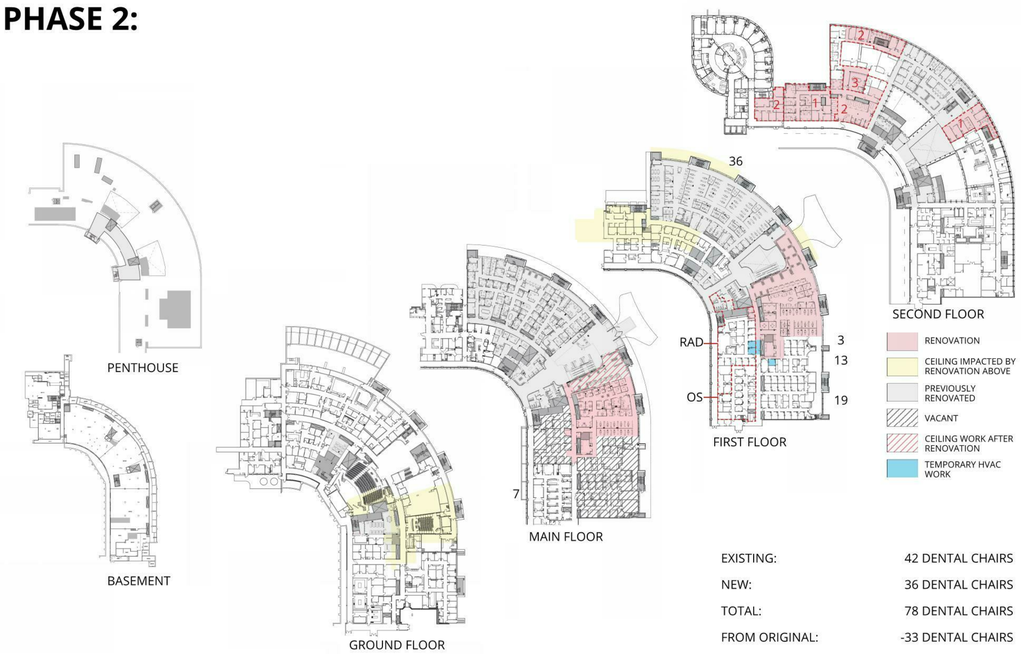


EXISTING:	77 DENTAL CHAIRS
NEW:	0 DENTAL CHAIRS
TOTAL:	77 DENTAL CHAIRS
FROM ORIGINAL:	-34 DENTAL CHAIRS

PHASE 2:



EXISTING:	42 DENTAL CHAIRS
NEW:	36 DENTAL CHAIRS
TOTAL:	78 DENTAL CHAIRS
FROM ORIGINAL:	-33 DENTAL CHAIRS

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(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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OVERALL PHASING

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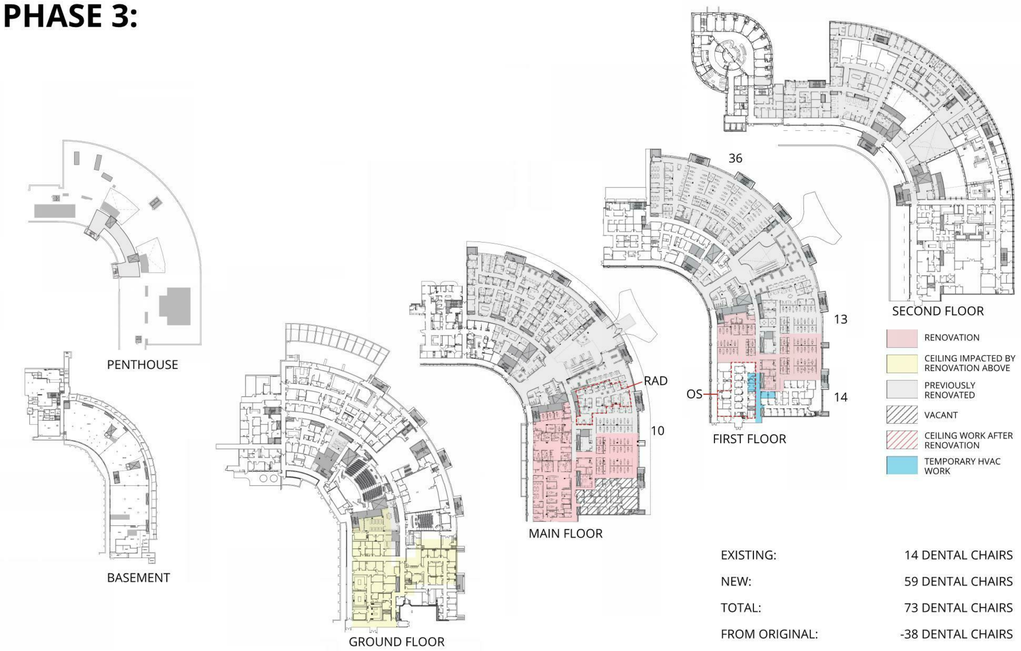
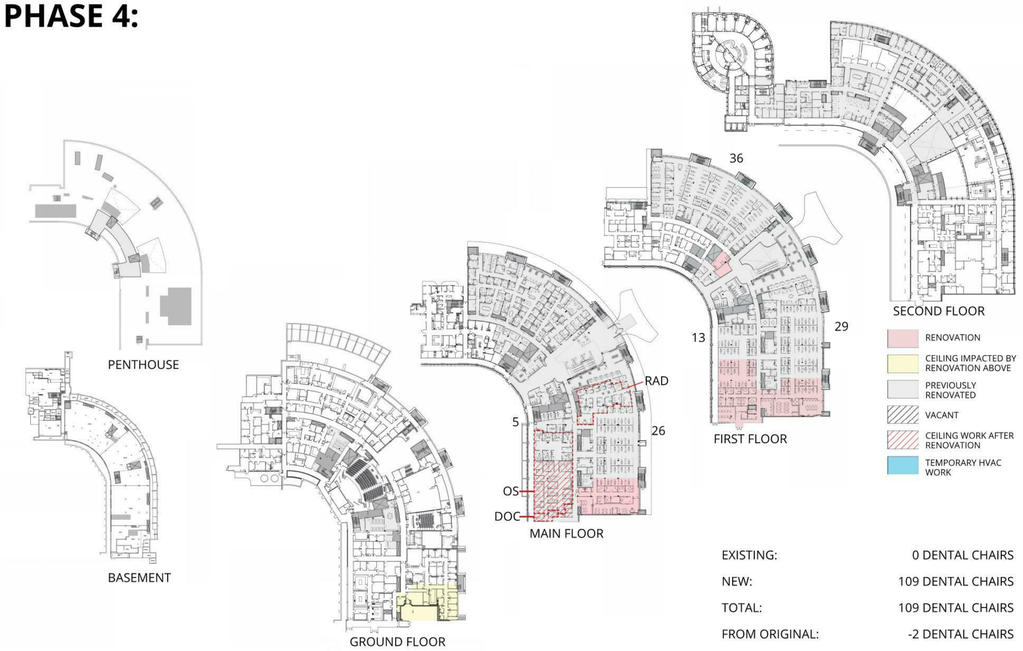
PHASE 3:



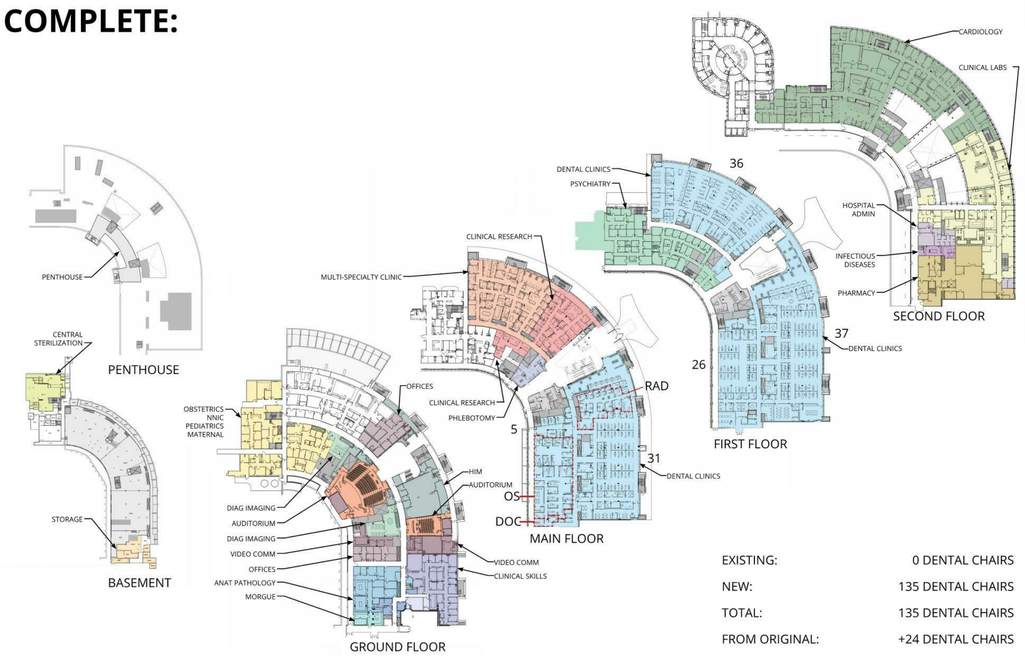
EXISTING:	14 DENTAL CHAIRS
NEW:	59 DENTAL CHAIRS
TOTAL:	73 DENTAL CHAIRS
FROM ORIGINAL:	-38 DENTAL CHAIRS

PHASE 4:



EXISTING:	0 DENTAL CHAIRS
NEW:	109 DENTAL CHAIRS
TOTAL:	109 DENTAL CHAIRS
FROM ORIGINAL:	-2 DENTAL CHAIRS

COMPLETE:



EXISTING:	0 DENTAL CHAIRS
NEW:	135 DENTAL CHAIRS
TOTAL:	135 DENTAL CHAIRS
FROM ORIGINAL:	+24 DENTAL CHAIRS

Phasing Note:

1. It shall be the responsibility of the Contractor and Sub-Contractor to provide temporary provisions related to maintaining MEP/FP/FA/LV services to support program areas that are to remain occupied and in use by the Owner during the phased construction. (Scope to be inclusive of temporary balancing of systems during interim conditions and ensuring building life safety code requirement are always maintained.)

Existing Conditions Note:

1. The Location and sizes of existing building system, piping, fixtures, devices, outlets and equipment noted and drawing on these documents have been provided by the Owner. The Contractor shall be responsible for obtaining from the Construction Manager a set of the existing plans. The Contractor shall be responsible for verifying all existing conditions and coordinating with all new systems prior to commencing work.

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EXISTING BLOWER SCHEDULE (SUPPLY AND RETURN)

03/11/09 S031340

Supply Blower Number	Associated Return/Exhaust Fan Number	LOCATION	SUPPLY FAN: Supply Design CFM	4/2015 T.A.B. Report Total CFM	Minimum Outside Air (cfm)	Final Rebalanced Supply Design CFM	Final Rebalanced Minimum Outside Air CFM	Quantity	FAN Type	Total SP	4/2015 T.A.B. Report Total SP	Minimum External SP (Supply)	Max. BHP EA.	Min. MHP EA.	RPM	Motor Type	Inlet vanes	Inlet bell	Inlet cone	Outlet cone
BL-50	EXH-79,96 EXH-98,99,100	BASEMENT	37,000	28,579	37,000	DEMO	DEMO	1	CENT.	4.5	6.10	–	–	40	–	–	–	–	–	–
BL-51	EXH-80	BASEMENT	90,000	75,140	22,500	DEMO	DEMO	1	CENT.	3.75	3.45	–	–	75	544	–	–	–	–	–
BL-52	EXH-82	BASEMENT	28,000	–	28,000	NO CHANGE	NO CHANGE	1	CENT.	1.75	–	–	–	15	664	–	–	–	–	–
BL-53	EXH-81	BASEMENT	11,000	11,200	2,200	NO CHANGE	NO CHANGE	1	CENT.	4.25	2.82	–	–	10	1,330	–	–	–	–	–
BL-54	EXH-78	BASEMENT	12,000	–	3,000	NO CHANGE	NO CHANGE	1	CENT.	4	–	–	–	15	1,350	–	–	–	–	–
BL-55	EXH-84	BASEMENT	46,000	45,053	11,500	XXXXX	XXXXX	1	CENT.	3.25	2.72	–	–	30	689	–	–	–	–	–
BL-56	EXH-85	BASEMENT	63,000	60,962	15,750	XXXXX	XXXXX	1	CENT.	4.5	2.19	–	–	75	855	–	–	–	–	–
BL-57	EXH-87	BASEMENT	16,500	–	16,500	NO CHANGE	NO CHANGE	1	PLEN.	4	–	–	–	15	–	–	–	–	–	–
BL-58	BLDG H EXH	BASEMENT	4,000	–	4,000	NO CHANGE	NO CHANGE	1	PLEN.	5.3	–	–	–	5	–	–	–	–	–	–
BL-59	BLDG H EXH	BASEMENT	7,500	–	2,500	NO CHANGE	NO CHANGE	2	PLEN.	7	–	–	–	10	–	–	–	–	–	–
BL-60	–	BASEMENT	3,300	3,747	3,300	DEMO	DEMO	1	–	4.75	2.92	–	–	5	1,416	–	–	–	–	–
BL-61	–	BASEMENT	2,200	–	2,200	DEMO	DEMO	1	–	4	–	–	–	3	1,583	–	–	–	–	–
BL-62	–	BASEMENT	6,500	–	6,500	DEMO	DEMO	1	–	4.5	–	–	–	10	1,050	–	–	–	–	–
BL-63	EXH-79	BASEMENT	36,000	31,151	18,000	NO CHANGE	NO CHANGE	1	CENT.	11	8.93	–	–	100	1,389	–	–	–	–	–
BL-64	EXH-86	BASEMENT	28,000	–	28,000	NO CHANGE	NO CHANGE	1	CENT.	2	–	–	–	15	688	–	–	–	–	–
BL-65	EXH-83	BASEMENT	17,000	–	17,000	NO CHANGE	NO CHANGE	1	–	2	–	–	–	10	634	–	–	–	–	–
BL-91																				
BL-NEO																				
BL-CATH LAB1	–	ROOFTOP																		
BL-CATH LAB2	–	ROOFTOP																		
BL-CATH LAB3	–	ROOFTOP																		
BL-PHARMA	–	ROOFTOP																		

Supply Blower Number	RETURN/RELIEF FAN: Return Design CFM	4/2015 T.A.B. Report Return CFM	Final Rebalanced Return Design CFM	Quantity	FAN Type	Tot. SP	4/2015 T.A.B. Report SP	Minimum External SP (RETURN)	Max. BHP EA.	Min. MHP EA.	RPM	Motor Type	Inlet vanes	Inlet bell	Inlet cone	Outlet cone
BL-50	–	–	DEMO	–	–	–	–	–	–	–	–	–	–	–	–	–
BL-51	72,830	66,888	DEMO	1	–	2.5	2.9	–	–	40	–	–	–	–	–	–
BL-52	27,000	–	NO CHANGE	1	–	2	–	–	–	15	–	–	–	–	–	–
BL-53	11,030	10,760	NO CHANGE	1	–	2	1.37	–	–	5	–	–	–	–	–	–
BL-54	10,040	–	NO CHANGE	1	–	2.25	–	–	–	7.5	–	–	–	–	–	–
BL-55	38,765	31,996	XXXXX	1	–	2.5	1.39	–	–	25	–	–	–	–	–	–
BL-56	50,080	30,550	XXXXX	1	–	2.5	5.19	–	–	30	–	–	–	–	–	–
BL-57	15,545	–	NO CHANGE	1	–	3	–	–	–	10	–	–	–	–	–	–
BL-58	–	–	NO CHANGE	–	–	–	–	–	–	–	–	–	–	–	–	–
BL-59	–	–	NO CHANGE	–	–	–	–	–	–	–	–	–	–	–	–	–
BL-60	–	–	DEMO	–	–	–	–	–	–	–	–	–	–	–	–	–
BL-61	–	–	DEMO	–	–	–	–	–	–	–	–	–	–	–	–	–
BL-62	–	–	DEMO	–	–	–	–	–	–	–	–	–	–	–	–	–
BL-63	18,645	3,576	NO CHANGE	1	–	2.5	2.25	–	–	15	–	–	–	–	–	–
BL-64	28,000	–	NO CHANGE	1	–	2	–	–	–	15	–	–	–	–	–	–
BL-65	15,300	–	NO CHANGE	1	–	2.5	–	–	–	10	–	–	–	–	–	–

Supply Blower Number	COIL – HEATING PERFORMANCE: AIR SIDE Max. Face Velocity (FPM)	EDB °F	LDB °F	Minimum Rows	Max. Fin Spacing FPI	Max. △P Inch H_2O	WATER SIDE Fluid	Flow GPM	EWT °F	LWT °F	Max. △P Feet H_2O	COIL – COOLING PERFORMANCE: AIR SIDE Max. Face Velocity (FPM)	EDB °F	EWB °F	LDB °F	LWB °F	Minimum Rows	Max. Fin Spac. FPI	Max. △P Inch H_2O	WATER SIDE Fluid	Flow GPM	EWT °F	LWT °F	Max. △P Feet H2O
BL-50	465	–3	60	–	–	–	–	–	–	–	–	490	95	75	58	56	6	–	0.65	WATER	410	–	–	13
BL-51	436	–3	60	–	–	–	–	–	–	40	–	490	84	67.8	58	56.5	6	–	0.70	WATER	375	–	–	14
BL-52	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
BL-53	260	–3	60	–	–	–	–	–	–	5	–	545	85	67.5	58	55	6	–	0.71	WATER	40	–	–	4
BL-54	375	–3	60	–	–	–	–	–	–	7.5	–	500	84	68	58	55	6	–	0.65	WATER	50	–	–	4
BL-55	460	–3	60	–	–	–	–	–	–	25	–	475	84	68	58	56	6	–	0.60	WATER	220	–	–	15
BL-56	460	–3	60	–	–	–	–	–	–	30	–	500	84	68	58	56.5	6	–	0.64	WATER	255	–	–	20
BL-57	–	35	60	–	–	–	WATER	15	180	140	–	–	85	70	51	50	–	–	–	WATER	110	44	54	–
BL-58	–	0	60	–	–	–	WATER	15	180	140	–	–	91	76	51	50	–	–	–	WATER	75	44	54	–
BL-59	–	0	60	–	–	–	WATER	25	180	140	–	–	91	76	51	50	–	–	–	WATER	140	44	54	–
BL-60	350	–3	90	–	–	–	–	–	–	–	–	480	95	75	58	57.5	6	–	0.84	WATER	40	–	–	4.6
BL-61	275	–3	90	–	–	–	–	–	–	–	–	385	95	75	54	53.2	8	–	0.76	WATER	28	–	–	5
BL-62	450	–3	90	–	–	–	–	–	–	–	–	410	95	75	58	55.5	6	–	0.67	WATER	75	–	–	8
BL-63	500	–3	45	–	–	–	–	–	–	–	–	510	87	70	49	48.5	10	–	1.09	WATER	400	–	–	20
BL-64	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
BL-65	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Supply Blower Number	FILTER: PRE-FILTER Max. Face Velocity (FPM)	Specified Type	Minimum Efficiency	Max. Pressure Drop Clean	Pressure Drop Dirty	FINAL FILTER Max. Face Velocity (FPM)	Specified Type	Minimum Efficiency	Max. Pressure Drop Clean	Pressure Drop Dirty	CASING: Double Wall	Internal Wall	Insulation	Min. SMACNA Leakage Class	Min. SMACNA Pressure Class "H_2O	Leaving Air Temperature	POWER	Fire Alarm Integration	Emergency Power	KEY NOTES
BL-50	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	480V – 3 ø–60 Hz	–	N	2,9,11
BL-51	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	480V – 3 ø–60 Hz	–	N	2,6,9,11
BL-52	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	480V – 3 ø–60 Hz	–	N	1,5,8,9
BL-53	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	480V – 3 ø–60 Hz	–	N	1,9,11
BL-54	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	480V – 3 ø–60 Hz	–	N	1,9
BL-55	442	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	480V – 3 ø–60 Hz	–	N	1,5,9,11
BL-56	437.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	480V – 3 ø–60 Hz	–	N	1,5,9,11
BL-57	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	480V – 3 ø–60 Hz	–	N	1,9
BL-58	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	480V – 3 ø–60 Hz	–	N	1,9
BL-59	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	480V – 3 ø–60 Hz	–	N	1,9
BL-60	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	480V – 3 ø–60 Hz	–	N	2,9,11
BL-61	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	480V – 3 ø–60 Hz	–	N	2,9
BL-62	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	480V – 3 ø–60 Hz	–	N	2,9
BL-63	428.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	480V – 3 ø–60 Hz	–	N	1,5,9,11
BL-64	467	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	480V – 3 ø–60 Hz	–	N	1,9
BL-65	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	480V – 3 ø–60 Hz	–	N	1,9
BL-91																	480V – 3 ø–60 Hz		N	1,9
BL-NEO																	480V – 3 ø–60 Hz		N	1,9
BL-CATH LAB1																	480V – 3 ø–60 Hz		Y	1,10
BL-CATH LAB2																	480V – 3 ø–60 Hz		Y	1,10
BL-CATH LAB3																	480V – 3 ø–60 Hz		Y	1,10
BL-PHARMA																	480V – 3 ø–60 Hz		Y	2,10

KEY NOTES:

1. EXISTING UNIT TO REMAIN (SHOWN FOR REFERENCE ONLY.)
2. DEMO SUPPLY BLOWER AND, WHERE APPLICABLE, "ASSOCIATED RETURN/RELIEF FAN" LISTED ABOVE (COORDINATE PHASING WITH ARCHITECTURAL / CM PROJECT PHASING)
3. ELECTRIC PREHEAT COIL UTILIZED FOR ORIGINAL BUILDING'S DESIGN. CURRENT METHOD OF PRE-HEAT UTILIZES ELEVATING THE CHILLED WATER SUPPLY TEMPERATURE (EWT) TO 68F.
4. N/A.
5. CONSTRUCTION PHASING WILL REQUIRE THE EXISTING SUPPLY FAN AND RETURN/RELIEF FAN TO BE REPURPOSED AND/OR REBALANCED AS THE LOAD IS INCREASED OR DECREASED. PROVIDE ONE NEW VFD PER FAN (SEE VFD SCHEDULE). PROVIDE ONE NEW MOTOR PER FAN (SEE NEW MOTOR SCHEDULE).
6. UNIT TO EVENTUALLY BE DEMOLISHED, HOWEVER THERE IS AN INTERIM CONDITION WHERE CONSTRUCTION PHASING WILL REQUIRE THE EXISTING UNIT TO BE REBALANCED AS THE LOAD IS INCREMENTALLY DECREASED UNTIL UNIT IS PERMANENTLY TAKEN OFFLINE. RE-SHEAVE UNIT ACCORDINGLY AS EACH FAN MOTOR PERMITS. IN THE EVENT A FAN MOTOR REACHES ITS MINIMUM SHEAVE POINT, THE REMAINING CFM SHALL OVERFLOW INTO THE BASEMENT MECH. ROOM. AIR SHALL BE RETURNED VIA A NEW OPEN-ENDED DUCT (W/ WIRE MESH SCREEN AND VOLUME DAMPER) TAPPED OFF THE RESPECTIVE RETURN DUCTWORK. ALTERNATIVELY, PROVIDE A TEMPORARY VFD TO THROTTLE DOWN THE FAN MOTOR (BELIEVED TO BE A LESS COST EFFECTIVE METHOD).

KEY NOTES:

7. N/A.
8. PROVIDE AN IN-DUCT CHILLED WATER COOLING COIL FOR BL-52 TO TEMPORARILY SERVE MORGUE, ANATOMIC PATHOLOGY, OFFICES, DIAGNOSTIC IMAGING, HIM, AND & CLINICAL SKILLS PROGRAMS ON LEVEL G WHILE BL-133 IS UNDER CONSTRUCTION.
9. EXISTING UNIT IS ON NORMAL POWER.
10. EXISTING UNIT IS ON EMERGENCY POWER (EQUIPMENT BRANCH).
11. ACTUAL AIRFLOW & PRESSURE READINGS RECORDED AS PART OF AN HVAC EXISTING CONDITIONS SURVEY IN APRIL 2015 BY WINGS T.A.B. CO.

FACTORY BUILT-UP AIR HANDLING UNIT SCHEDULE – FAN ARRAY (With Unit Return Fans)

03/14/14 S031340

(continued below) ⟶

Supply Blower Number	Return Fan Number	LOCATION	SERVICE	Control Sequence	TOTAL SUPPLY CFM	TOTAL SUPPLY CFM (V/ 1 FAN OFF)	Minimum Supply External SP Inch WG.	Minimum Return External SP Inch WG.	Minimum Outside Air – cfm (Post-Event Smoke Purge)	Minimum Outside Air – cfm (Normal Operation)	RELIEF AIR: Min. CFM	Max. CFM	SUPPLY FAN: Quantity	FAN Type	Tan Array, Horizontal Qty.	Tan Array, Vertical Qty.	FAN CLASS	FAN CFM EA.	Min. SP IN. WG.	Wheel DIA. (IN.)	Max. BHP EA.	Min. MHP EA.	FAN RPM	Motor Type	Drive	FAN CONTROL: VFD	Tan per VFD	Design Frequency HZ
BL-130A	RF-XX	ROOF	LEV M,1,2 (SOUTH)	X	75,000	N/A	3.0	3.0	N/A	21,750	21,750	75,000	4	PLENUM	2	2	II	18,750	6.5		–	30	1750	TEFC	DIRECT	YES	1	60
BL-130B	RF-XX	ROOF	LEV M,1,2 (SOUTH)	X	75,000	N/A	3.0	3.0	N/A	21,750	21,750	75,000	4	PLENUM	2	2	II	18,750	6.5		–	30	1750	TEFC	DIRECT	YES	1	60
BL-131	RF-XX	ROOF	LEV M,1,2 (NORTH)	X	60,000	N/A	3.0	3.0	N/A	17,400	17,400	60,000	4	PLENUM	2	2	III	15,000	6.5		–	25	1750	TEFC	DIRECT	YES	1	60
BL-133	RF-XX	BASEMENT	LEV G (SOUTH)	X	32,000	N/A	2.75	–	N/A	9,280	9,280	32,000	2	PLENUM	1	2	III	16,000	6.5		–	30	1750	TEFC	DIRECT	YES	1	60

Supply Blower Number	TOTAL RETURN CFM	TOTAL RETURN CFM (V/ 1 FAN OFF)	Minimum RET/EXH External SP Inch WG.	RETURN/EXHAUST FAN: Quantity	FAN Type	Tan Array, Horizontal Qty.	Tan Array, Vertical Qty.	CLASS	FAN CFM EA.	Min. SP IN. WG	Wheel DIA. (IN.)	Max. BHP EA.	Min. MHP EA.	FAN RPM	Motor Type	Drive	FAN CONTROL: VFD	Tan per VFD	Design Frequency HZ	PREHEAT COIL: Max. Face Velocity (FPM)	AIR SIDE Post-Event Smoke Purge: Heating MBH	Heating CFM	EDB °F	LDB °F	Normal Operation: Heating MBH	Heating CFM	EDB °F	LDB °F	Minimum Rows	Max. Fin Spacing FPI	Max. △P Inch WG.	WATER SIDE: Fluid	Post-Event Smoke Purge Flow GPM	Normal Operation Flow GPM	EWT °F	LWT °F	Max. △P Feet H_2O
BL-130A	75,000	X	3.0	4	PLENUM	2	2	II	18,750	4.25		–	20	1750	TEFC	DIRECT	YES	1	60	750	N/A	N/A	N/A	N/A	915.5	56,250	40	55.0	2	8	.25	WATER	N/A	61	180	150	10
BL-130B	75,000	X	3.0	4	PLENUM	2	2	II	18,750	4.25		–	20	1750	TEFC	DIRECT	YES	1	60	750	N/A	N/A	N/A	N/A	915.5	56,250	40	55.0	2	8	.25	WATER	N/A	61	180	150	10
BL-131	60,000	X	3.0	4	PLENUM	2	2	III	15,000	4.25		–	20	1750	TEFC	DIRECT	YES	1	60	750	N/A	N/A	N/A	N/A	732.4	45,000	40	55.0	2	8	.25	WATER	N/A	49	180	150	10
BL-133	SEE FAN SCHEDULE																			750	N/A	N/A	N/A	N/A	390.6	24,000	40	55.0	2	8	.25	WATER	N/A	26	180	150	10

FACTORY BUILT-UP AIR HANDLING UNIT SCHEDULE – FAN ARRAY (With Unit Return Fans)

03/14/14 S031340

⟵ (continued above)

Supply Blower Number	COOLING COIL: AIR SIDE Max. Face Velocity (FPM)	Post-Event Smoke Purge CAPACITY SENS MBH	TOTAL MBH	CFM	EDB °F	EWB °F	LDB °F	LWB °F	△h btu/lb_a	Minimum Rows	Max. Fin. Spac. FPI	Max. △P inch WG.	Normal Operation CAPACITY SENS MBH	TOTAL MBH	CFM	EDB °F	EWB °F	LDB °F	LWB °F	△h btu/lb_a	Minimum Rows	Max. Fin. Spac. FPI	Max. △P inch WG.	WATER SIDE Fluid	Post-Event Smoke Purge Flow GPM	Normal Operation Flow GPM	EWT °F	LWT °F	Max. △P Feet WG.	FILTER: PRE-FILTER Max. Face Velocity (FPM)	Specified Type	Minimum Efficiency	Max Pressure Drop Clean (IN. WG.)	Pressure Drop Dirty (IN. WG.)	FINAL FILTER Max. Face Velocity (FPM)	Specified Type	Minimum Efficiency	Max Pressure Drop Clean (IN. WG.)	Pressure Drop Dirty (IN. WG.)	AIR MIXING BLENDER	ENTHALPY RECOVERY WHEEL	CASING: Double Wall	Internal Wall	Insulation	Min. SMACNA Leakage Class	Min. SMACNA Pressure Class " WG.	Leaving Air Temperature (°F)	Supply SA Number	Return SA Number	POWER	Fire Alarm Integration	Emergency Power	KEY NOTES SEE BELOW
BL-130A	450	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	–	2,877	75,000	79.8	65.0	52.0	51.9	8.523	10	10	1.0	WATER	N/A	480	44	56	10	400	A	30% (MERV-8)	.30	.75	400	D	90% (MERV-14)	.30	.75	YES	NO	YES	Solid	YES	2	8	55	SA-XXX	SA-XXX	480V – 3 ø–60 Hz	YES	NO	1-12
BL-130B	450	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	–	2,877	75,000	79.8	65.0	52.0	51.9	8.523	10	10	1.0	WATER	N/A	480	44	56	10	400	A	30% (MERV-8)	.30	.75	400	D	90% (MERV-14)	.30	.75	YES	NO	YES	Solid	YES	2	8	55	SA-XXX	SA-XXX	480V – 3 ø–60 Hz	YES	NO	1-12
BL-131	450	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	–	2,302	60,000	79.8	65.0	52.0	51.9	8.523	10	10	1.0	WATER	N/A	384	44	56	10	400	A	30% (MERV-8)	.30	.75	400	D	90% (MERV-14) 90%	.30	.75	YES	NO	YES	Solid	YES	2	8	55	SA-XXX	SA-XXX	480V – 3 ø–60 Hz	YES	NO	1-12
BL-133	450	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	–	1,228	32,000	79.8	65.0	52.0	51.9	8.523	10	10	1.0	WATER	N/A	205	44	56	10	400	A	30% (MERV-8)	.30	.75	400	D	90% (MERV-14)	.30	.75	YES	NO	YES	Solid	YES	2	8	55	SA-XXX	SA-XXX	480V – 3 ø–60 Hz	YES	NO	1-12

KEY NOTES:

1. ALL MOTORS 460V, 3ø, INVERTER DUTY PREMIUM EFFICIENCY.
2. COIL CASINGS AND FILTER RACKS TO BE STAINLESS STEEL. CASING LINERS & FLOOR OF COOLING COIL SECTIONS SHALL BE STAINLESS STEEL OR ALUMINUM. (WITH 2" TURNED UP LIP.)
3. PROVIDE 30% EFFICIENCY PRE-FILTERS AND 90% EFFICIENCY FINAL FILTERS. ALL FILTERS TO HAVE INTEGRAL GASKETED SEAL.
4. FAN BEARING TO BE L-10 200,000 HR.
5. HEATING CFM BASED ON 75% OF SUMMER COOLING CFM.
6. SUPPLY & RETURN TUNNELS SHALL UTILIZE FAN ARRAY W/ INDIVIDUAL VDF'S.
7. COOLING COIL DATA. NOTED FOR COOLING COIL DISCHARGE TEMP (52°F + 3°F FAN HEAT = 55°F AHU DISCHARGE TEMP.)

KEY NOTES:

8. IF (1) SUPPLY/RETURN FAN WERE TO FAIL, THE REMAINING SUPPLY/RETURN FANS SHALL INCREASE SPEED TO ACHIEVE THE SCHEDULED CFM "W/ (1) FAN OFF". SUBMITTALS SHALL INDICATE FAN PERFORMANCE W/ ALL FANS OPERATING AND WITH ONE FAN WITHIN ARRAY OFF.
9. AHU MANUFACTURER TO PROVIDE VFDs FOR AHU (TO ALLOW FOR UNIT OPERATION AT FACTORY TESTING). COORDINATE VFD INSTALLATION IN FIELD.
10. UNITS LOCATED ON ROOFTOP SHALL BE PROVIDED WITH 3'-0" HIGH DUNNAGE SUPPORT STRUCTURE AND A FLASHED AND SEALED WEATHER CURTAIN AROUND THE PERIMETER OF THE UNIT. SEE AHU DETAILS.

KEY NOTES:

11. NEW UNIT SHALL BE ON NORMAL POWER.
12. AIR HANDLING UNIT BASIS OF DESIGN RELFECTS HAAKON INDUSTRIES. REFER TO SPECIFICATION SECTION 237323.

NEW MOTOR SCHEDULE (FOR EXISTING BLOWERS)

Supply, Return/Relief, Exhaust	Blower Number	Quantity	FAN Type	FAN CLASS	FAN CFM	Min. SP IN. WG.	Wheel DIA. (IN.)	Max. BHP EA.	Min. MHP EA.	FAN RPM	Motor Type	Drive	FAN CONTROL: VFD	Fan per VFD	Design Frequency HZ	Key Notes
SUPPLY	BL-51	1	PLENUM	–	–	3.75	–	–	75	1750	TEFC	DIRECT	YES	1	60	1,3,4
SUPPLY	BL-52	1	PLENUM	–	–	1.75	–	–	15	1750	TEFC	DIRECT	YES	1	60	2,3,4
SUPPLY	BL-55	1	PLENUM	–	–	3.25	–	–	30	1750	TEFC	DIRECT	YES	1	60	2,3,4
SUPPLY	BL-56	1	PLENUM	–	–	4.5	–	–	75	1750	TEFC	DIRECT	YES	1	60	2,3,4
SUPPLY	BL-63	1	PLENUM	–	–	11.0	–	–	100	1750	TEFC	DIRECT	YES	1	60	2,3,4
RETURN/RELIEF	EXH-79	1	PLENUM	–	–	2.5	–	–	15	1750	TEFC	DIRECT	YES	1	60	2,3,4
RETURN/RELIEF	EXH-80	1	PLENUM	–	–	3.0	–	–	40	1750	TEFC	DIRECT	YES	1	60	1,3,4,5
RETURN/RELIEF	EXH-84	1	PLENUM	–	–	2.5	–	–	25	1750	TEFC	DIRECT	YES	1	60	2,3,4
EXHAUST	EXH-88	1	PLENUM	–	–	3.5	–	–	15	1750	TEFC	DIRECT	YES	1	60	2,3,4,6
EXHAUST	EXH-90	1	PLENUM	–	–	5.0	–	–	15	1750	TEFC	DIRECT	YES	1	60	2,3,4

KEY NOTES:

1. NEW MOTOR IS FOR TEMPORARY USE DURING CONSTRUCTION PHASING TO MAINTAIN COMPATIBILITY WITH THE NEW VFD. THE NEW MOTOR AND VFD ARE INTENDED TO HELP EXPEDITE THE REOCCURRING TESTING, ADJUSTING AND BALANCING EFFORTS.
2. NEW MOTOR IS PERMANENT AND SHALL BE USED DURING CONSTRUCTION PHASING TO MAINTAIN COMPATIBILITY WITH THE NEW VFD. THE NEW MOTOR AND VFD ARE INTENDED TO HELP EXPEDITE THE REOCCURRING TESTING, ADJUSTING AND BALANCING EFFORTS.
3. ALL MOTORS 460V, 3ø, INVERTER DUTY PREMIUM EFFICIENCY.
4. REFER TO CONTROL DIAGRAMS.
5. THE DESIGN STATIC PRESSURE OF THE EXISTING MOTOR (EXH-80) WAS 2.5 IN. WG. THE DESIGN STATIC PRESSURE OF THE NEW MOTOR TO INCREASE TO ACCOMMODATE THE OPERATING STATIC PRESSURE INDICATED IN THE T.A.B. REPORT DATED APRIL 17, 2015.
6. THE 1968 DESIGN DRAWINGS INDICATE EXHAUST FAN EXH-88 TO HAVE A 10 HP MOTOR @ 2.0 IN. WG. THE T.A.B. REPORT DATED APRIL 17, 2015 INDICATES THE EXISTING MOTOR TO HAVE A 15 HP MOTOR @ 3.4 IN. WG. (OPERATING S.P.).

GENERAL DESIGN ITEMS & ASSUMPTIONS:

1. THE EXISTING MRI SUITE LOCATED IN THE RADIATION ONCOLOGY DEPARTMENT (GROUND LEVEL) IS NOT INCLUDED IN THE SCOPE OF WORK AND SHALL BE EXISTING TO REMAIN.
2. THE DESIGN TEAM REQUESTS ASSISTANCE FROM OWNER AND CONSTRUCTION MANAGER TO DETERMINE RIGGING PATHS TO BASEMENT MECHANICAL ROOM. POSSIBLE PATH REQUIRING INVESTIGATION STARTS AT HATCH AT SOUTH GROUND FLOOR ENTRY THROUGH STORAGE AREA CB004A&B (NOTE: STORAGE ROOM CONTAINS RED BAG HAZARDOUS WASTE MATERIALS). REFER TO NEW BASEMENT FLOOR PLAN.
3. PROVIDE A NEW SET OF DOUBLE DOORS TO ACCESS THE SOUTH END OF BUILDING C ROOF. REFER TO ARCHITECTURAL ROOF PLAN.
4. G.C. TO COORDINATE BASEMENT SCOPE OF WORK WITH THE CONTRACTORS INVOLVED IN THE BUILDING H RENOVATION WORK. EXISTING BLOWERS BL-57, BL-58 & BL-59 ARE LOCATED IN THE BASEMENT OF BUILDING C AND CURRENTLY SUPPORT THE CENTRAL STERILE AND CENTRAL SUPPLIES PROGRAMS IN THE BASEMENT OF BUILDING C AND BUILDING H. THESE BLOWERS ARE TO BE REPLACED AS PART OF THE BUILDING H PROJECT.

NO.	REVISION	DATE

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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FARMINGTON, CT 06030

HVAC SCHEDULES

H-0.0.1

BID DOCUMENTS

SCALE:	N.T.S.
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	MSL
FILE NAME:	

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VARIABLE SPEED DRIVE SCHEDULE

NUMBER	DRIVEN EQUIPMENT	LOCATION	MHP	DRIVE TYPE	NUMBER OF PULSES INPUT	5% LINE REACTOR	BYPASS	LUGS OVERSIZED	ADDITIONAL DEVICES TO REDUCE HARMONICS (CURRENT AND VOLTAGE)	BASIS OF DESIGN MANUFACTURER & MODEL	REMARKS	KEY NOTES SEE BELOW	EMERG. POWER
VFD-BL-130A-SF1	BL-130A-SF1	AHU SERVICE AISLE	30	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-130A-SF2	BL-130A-SF2	AHU SERVICE AISLE	30	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-130A-SF3	BL-130A-SF3	AHU SERVICE AISLE	30	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-130A-SF4	BL-130A-SF4	AHU SERVICE AISLE	30	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-130B	BL-130B-SF1	AHU SERVICE AISLE	30	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-130B	BL-130B-SF2	AHU SERVICE AISLE	30	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-130B	BL-130B-SF3	AHU SERVICE AISLE	30	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-130B	BL-130B-SF4	AHU SERVICE AISLE	30	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-130A	BL-130A-RF1	AHU SERVICE AISLE	20	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-130A	BL-130A-RF2	AHU SERVICE AISLE	20	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-130A	BL-130A-RF3	AHU SERVICE AISLE	20	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-130A	BL-130A-RF4	AHU SERVICE AISLE	20	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-130B	BL-130B-RF1	AHU SERVICE AISLE	20	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-130B	BL-130B-RF2	AHU SERVICE AISLE	20	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-130B	BL-130B-RF3	AHU SERVICE AISLE	20	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-130B	BL-130B-RF4	AHU SERVICE AISLE	20	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-131-S1	BL-131-SF1	AHU SERVICE AISLE	25	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-131-S2	BL-131-SF2	AHU SERVICE AISLE	25	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-131-S3	BL-131-SF3	AHU SERVICE AISLE	25	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-131-S4	BL-131-SF4	AHU SERVICE AISLE	25	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-131-R1	BL-131-RF1	AHU SERVICE AISLE	20	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-131-R2	BL-131-RF2	AHU SERVICE AISLE	20	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-131-R3	BL-131-RF3	AHU SERVICE AISLE	20	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-131-R4	BL-131-RF4	AHU SERVICE AISLE	20	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-133-SF1	BL-133-SF1	BSMT MECH RM	30	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-133-SF2	BL-133-SF2	BSMT MECH RM	30	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-133-RF1	BL-133-RF1	BSMT MECH RM	15	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-133-RF2	BL-133-RF2	BSMT MECH RM	15	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-EXH-151	EXH-151	PH MECH RM	10	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-EXH-152	EXH-152	PH MECH RM	10	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-EXH-154	EXH-154	BLDG. C PENTHOUSE	1/4	PWM	SEE KEY NOTES	NO	YES	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,3,4	Y
VFD-P-C-4	P-C-4	BSMT MECH RM	25	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,3,5	Y
VFD-BL-51	BL-51	BSMT MECH RM	75	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,4,5	N
VFD-BL-52	BL-52	BSMT MECH RM	15	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-55	BL-55	BSMT MECH RM	30	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-56	BL-56	BSMT MECH RM	75	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-BL-63	BL-63	BSMT MECH RM	100	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-EXH-79	EXH-79	BSMT MECH RM	15	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-EXH-84	EXH-84	BSMT MECH RM	40	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-EXH-88	EXH-88	BSMT MECH RM	15	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N
VFD-EXH-90	EXH-90	BSMT MECH RM	15	PWM	SEE KEY NOTES	NO	NO	YES	AS REQUIRED TO MEET THE SPECIFIED	ABB		1,2,5	N

KEY NOTES:
1. REFER TO SPECIFICATIONS FOR ADDITIONAL DEVICES TO REDUCE HARMONIC MITIGATION REQUIREMENTS.
2. REFER TO DRIVEN EQUIPMENT FOR EMERGENCY POWER SOURCE.
3. VFD SHALL BE ON EMERGENCY POWER (EQUIPMENT BRANCH).
4. NEW VFD IS FOR TEMPORARY USE DURING CONSTRUCTION PHASING FOR REOCCURRING BALANCING.
5. VFDs 30 HORSEPOWER AND LARGER SHALL BE 18-PULSE. VFDs 25 HORSEPOWER AND SMALLER SHALL BE 6-PULSE VFD'S W/ HARMONIC FILTERS.

SOUND ATTENUATORS

9/21/99 5303.DWG

NUMBER	MAX AIRFLOW	SIZE (INCHES)	MAX FACE VELOCITY	LENGHTH FEET	MAX PRESSURE DROP	MINIMUM DYNAMIC INSERTION LOSS 1 63	2 125	3 250	4 500	5 1000	6 2000	7 4000	8 8000	STANDARD LINING	HOSPITAL GRADE LINING	PAOALESS	GALVANIZED	ALUMINUM	STAINLESS STEEL	SIMILAR TO	MAXIMUM SELF NOISE 1 63	2 125	3 250	4 500	5 1000	6 2000	7 4000	8 8000	NOTES SEE BELOW
SA-AHU-OA	500	12x12	500	3	.05	–	–	–	–	–	–	–	–	NO	YES	NO	NO	YES	NO	VIBRO ACOUSTICS-RFL-LV	–	–	–	–	–	–	–	–	1,3
SA-AHU-RA	750	12x12	750	5	.05									YES	NO	NO	NO	YES	NO	VIBRO ACOUSTICS-RD-LV									3
SA-AHU-EA	750	12x12	750	5	.05									YES	NO	NO	NO	YES	NO	VIBRO ACOUSTICS-RD-LV									3
SA-AHU-SA	500	12x12	500	3	.05									NO	YES	NO	NO	YES	NO	VIBRO ACOUSTICS-RFL-LV									1,3
SA-VVR/E-A	1000	12x12	1000	3	.15									YES	NO	NO	YES	NO	NO	VIBRO ACOUSTICS-RD-LV									1,2
SA-EXH-154-1	300	10"ø	3000	12	.05	2	2	7	9	8	7	4	2	YES	NO	NO	YES	NO	NO	VIBRO ACOUSTICS-CMB-UHV-F1	46	27	20	15	10	10	23	24	1,2
SA-EXH-154-2	300	6"ø	3000	12	.05	0	1	4	7	10	9	5	4	NO	YES	NO	YES	NO	NO	VIBRO ACOUSTICS-CMB-UHV-F1	45	26	19	15	10	10	20	22	1,2

NOTES:
1. "HOSPITAL GRADE" ATTENUATOR WITH MYLAR LINING & STAND-OFF SEPARATOR.
2. HVAC CONTRACTOR TO PROVIDE DUCTWORK TRANSITIONS AS REQUIRED FOR SOUND ATTENUATORS.
3. "SA-AHU" SHALL BE PROVIDED AS PART OF THE AIR HANDLNING UNIT (BY THE UNIT MANUFACTURER.) NOMINAL PERFORMANCE DATA SHOWN.
   OA – OUTSIDE AIR INTAKE LOCATION
   RA – RETURN AIR LOCATION
   EA – EXHAUST / RELIEF / SPILL (DURING ECONOMIZER CYCLE.)
   SA – SUPPLY AIR (UNIT DISCHARGE)

EXISTING EXHAUST FAN SCHEDULE

9/15/99 5306.DWG

UNIT NUMBER	LOCATION	SERVICE	DESIGN CFM	T.A.B. REPORT CFM	DESIGN S.P. (IN. H_2O)	DESIGN S.P. (IN. H_2O)	FAN RPM	WHEEL DIAMETER (IN.)	CLASS	MOTOR DATA @ 60 HZ MBHP	MHP	RPM	VOLTS	PHASE	INLET VANES	FAN TYPE	SIMILAR TO	NOTES SEE BELOW	EMER POWER
EXH-67	BLDG. E MECH RM E-P002	OPERATING ROOM SYSTEM #2	3,230	–	1.5	–	–	–	–	–	1 1/2	–	–	–	–	–	–	1	–
EXH-79	BLDG. C MECH ROOM C-P001,2,3	24-HR RETURN BLDG. C	18,645	–	2.5	–	–	–	–	–	15	–	–	–	–	–	–	1	–
EXH-88	BLDG. C MECH ROOM C-P001,2,3	TOILET BLDG. C	20,795	18,368	2	3.40	–	–	–	–	10	–	–	–	–	–	–	1,3	–
EXH-89	BLDG. C MECH ROOM C-P001,2,3	AUTOPSY RM BLDG. C	1,585	–	1.5	–	–	–	–	–	3/4	–	–	–	–	–	–	1	–
EXH-90	BLDG. C MECH ROOM C-P001,2,3	GEN. EXH (8-HR) BLDG. C	15,185	13,493	1.5	4.77	–	–	–	–	7 1/2	–	–	–	–	–	–	1,3	–
EXH-91	BLDG. C MECH ROOM C-P001,2,3	KITCHEN BLDG. C	900	–	1.5	–	–	–	–	–	3/4	–	–	–	–	–	–	1	–
EXH-92	BLDG. C MECH ROOM C-P001,2,3	GAS LAB BLDG. C	135	0	1	0	–	–	–	–	1/20	–	–	–	–	–	–	1,2,3,4	–
EXH-93	BLDG. C MECH ROOM C-P001,2,3	NURSERY BLDG. C	5,750	4,212	1.5	1.34	–	–	–	–	3	–	–	–	–	–	–	1,2,3	–
EXH-94	BLDG. C MECH ROOM C-P001,2,3	DEL. RM SYSTEM #2	3,160	2,380	1.5	1.90	–	–	–	–	1 1/2	–	–	–	–	–	–	1,2,3	–
EXH-95	BLDG. C MECH ROOM C-P001,2,3	DEL. RM SYSTEM #1	2,090	–	1.5	–	–	–	–	–	1	–	–	–	–	–	–	1,2	–
EXH-96	BLDG. C MECH ROOM C-P001,2,3	GEN. EXH. (24-HR) BLDG. C	18,300	13,710	2.25	3.95	–	–	–	–	10	–	–	–	–	–	–	1,3	–
EXH-97	BLDG. C MECH ROOM C-P001,2,3	RADIO ISOTOPE BLDG. C	2,095	–	3	–	–	–	–	–	2	–	–	–	–	–	–	1	–
EXH-98	BLDG. C MECH ROOM C-P001,2,3	BACTEROLOGICAL BLDG. C	3,140	–	1.75	–	–	–	–	–	1 1/2	–	–	–	–	–	–	1	–
EXH-99	BLDG. C MECH ROOM C-P001,2,3	LAB FUME HOODS BLDG. C	7,230	–	1.75	–	–	–	–	–	3	–	–	–	–	–	–	1	–
EXH-100	BLDG. C MECH ROOM C-P001,2,3	MECH. RM BLDG. C	8,000	–	1	–	–	–	–	–	3	–	–	–	–	–	–	1	–
EXH-101	BLDG. C MECH ROOM C-P001,2,3	TRASH RM BLDG. C	2,200	–	1.25	–	–	–	–	–	3/4	–	–	–	–	–	–	1	–
EXH-102	BLDG. C MECH ROOM C-P001,2,3	PROJECT RM BLDG. C	900	–	1.25	–	–	–	–	–	1/2	–	–	–	–	–	–	1	–
EXH-153	BLDG. C ROOF	BLDG. C CLINICAL LABS BL-2+	800	–	1.25	–	2375	–	II	0.4	1/2	3160	208	3	–	CENT.	GREENHECK CSW	1	YES

NOTES:
1. EXISTING UNIT SHOWN FOR REFERENCE ONLY
2. DEMOLISH EXISTING EXHAUST BLOWER
3. ACTUAL AIRFLOW & PRESSURE READINGS RECORDED AS PART OF AN HVAC EXISTING CONDITIONS SURVEY IN APRIL 2015 BY WINGS T.A.B. CO.
4. EXISTING BLOWER NO LONGER IN USE (CAPPED IN CEILING).

NEW FAN SCHEDULE

03/14/14 5031.DWG

UNIT NUMBER	LOCATION	SERVICE	ASSOCIATED AHU	CFM	FAN S.P. (IN. WG.)	WHEEL DIAMETER (IN.)	FAN RPM	AMCA CLASS	FAN TYPE	DISCHARGE ORIENTATION	FAN CONTROL DRIVE DIRECT/BELT	VFD	DESIGN FREQUENCY HZ	MOTOR DATA @ 60 HZ BHP	MIN. MHP	RPM	VOLTS	PHASE	BASIS OF DESIGN MANUFACTURER & MODEL	INLET SOUND ATTEN. TAG	DISCHARGE SOUND ATTEN. TAG	EQUIPMENT INTERLOCK	KEY NOTES SEE BELOW	FIRE ALARM INTEGRATION	EMER POWER
BL-133-RF1	BLDG. C BSMT MECH RM	BLDG. C BL-133	BL-133	16,000	4.5	26	2011	II	IN-LINE MF	HORIZONTAL	DIRECT	YES	60	13.94	15	1725	480	3	GREENHECK QEI	SA-XX	SA-XX	–	1	YES	NO
BL-133-RF2	BLDG. C BSMT MECH RM	BLDG. C BL-133	BL-133	16,000	4.5	26	2011	II	IN-LINE MF	HORIZONTAL	DIRECT	YES	60	13.94	15	1725	480	3	GREENHECK QEI	SA-XX	SA-XX	–	1	YES	NO
EXH-151	BLDG. C PENTHOUSE	BLDG. C GENERAL EXH.	–	10,000	3.0	30	1386	II	IN-LINE MF	HORIZONTAL	DIRECT	YES	60	6.78	7 1/2	1725	480	3	GREENHECK QEI	SA-XX	SA-XX	–	1	YES	NO
EXH-152	BLDG. C PENTHOUSE	BLDG. C GENERAL EXH.	–	10,000	3.0	30	1386	II	IN-LINE MF	HORIZONTAL	DIRECT	YES	60	6.78	7 1/2	1725	480	3	GREENHECK QEI	SA-XX	SA-XX	–	1	YES	NO
EXH-154	BLDG. C ROOF	BLDG. C PHARM. HAZ. DRUG EXH.	BL-130A&B	300	1.0	–	2130	II	CENT.	BAU	DIRECT	YES	60	0.15	1/4	3160	208	3	GREENHECK CSW	SA-BL-154-1	SA-BL-154-2	–	1,2,3	NO	YES

GENERAL NOTES:
1. PREMIUM EFFICIENCY MOTORS TEFC.
2. REFER TO S.A. SCHEDULES FOR ATTENUATOR ACOUSTICAL DATA

KEY NOTES:
1. PROVIDE VIBRATION ISOLATION HANGERS FOR INSTALLATION.
2. PROVIDE A VFD FOR BALANCING.
3. EMERGENCY POWER (EQUIPMENT BRANCH).

AIR DISTRIBUTION DEVICE SCHEDULE

03/14/14 5011.DWG

UNIT NUMBER	SERVICE	MOUNTING	AIR PATTERN	NOMINAL FACE MODULE DIMENS, (IN.)	NECK SIZE	MATERIAL	ACCESSORIES	BASIS OF DESIGN MANUFACTURER & MODEL	REMARKS	KEY NOTES SEE BELOW
A	SUPPLY AIR	CEILING	1-WAY	24 x 24	PER PLANS	STEEL	XX	TUTTLE & BAILEY RC		3
B	SUPPLY AIR	CEILING	2-WAY (90°)	24 x 24	PER PLANS	STEEL	XX	TUTTLE & BAILEY RC		3
C	SUPPLY AIR	CEILING	2-WAY (180°)	24 x 24	PER PLANS	STEEL	XX	TUTTLE & BAILEY RC		3
D	SUPPLY AIR	CEILING	3-WAY	24 x 24	PER PLANS	STEEL	XX	TUTTLE & BAILEY RC		3
E	SUPPLY AIR	CEILING	4-WAY	24 x 24	PER PLANS	STEEL	XX	TUTTLE & BAILEY RC		3
F	RETURN/EXHAUST AIR	SIDEWALL	45° DEFLECTION	24 x 24	PER PLANS	STEEL	XX	TUTTLE & BAILEY T77D		1,7
G	SUPPLY AIR	SIDEWALL	45° DEFLECTION	X x X	PER PLANS	STEEL	XX	TUTTLE & BAILEY T547	HEAVY GAUGE	
H	RETURN/EXHAUST AIR	LOW WALL	–	X x X	PER PLANS	STEEL	XX	TUTTLE & BAILEY 117DG	HEAVY GAUGE	
I	RETURN AIR	VERT. HEAT PUMP	–	X x X	PER PLANS	ALUMINUM	1" FILTER	CLIMATE MASTER G-816		5
J	LINEAR SUPP./RET. AIR	CEILING	–	X x X	PER PLANS	STEEL	CONTROL GRID	TUTTLE & BAILEY EH	EXTRUDED GRILLE T&B EH STRIPLINE	3
K	EXHAUST AIR	WALL	–	X x X	PER PLANS	ALUMINUM	1" FILTER	TUTTLE & BAILEY A70DFB		3,4,5
L	LINEAR SUPPLY AIR	CEILING	–	X x X	PER PLANS	ALUMINUM	XX	TUTTLE & BAILEY SLAD		4

GENERAL NOTES:
1. MAXIMUM NC FOR ALL _____

KEY NOTES:
1. ALL TYPE "F" RETURN/EXHAUST GRILLES IN DAMP AREAS TO BE ALUMINUM (REFER TO SPECIFICATION), MANUFACTURER/MODEL NUMBERS SHOWN ONLY TO INDICATE GEOMETRIC CONFIGURATIONS. DUCT TO DIFFUSER CONNECTION PER DETAILS.
3. PREFERRED DUCT CONNECTION PER DETAILS FOR SQUARE NECK SIZES. ALTERNATE DIFFUSER CONNECTION WHERE HEIGHT CLEARANCE PREVENTS USE OF THE "DIFFUSER BOOT CONNECTION" TO BE PER DETAIL. ALL DIFFUSER BOOT CONNECTIONS AND SQUARE TO ROUND DIFFUSER PLENUM ADAPTER CONNECTIONS TO BE INSULATED.
4. PROVIDE FINISH PER DIRECTION OF ARCHITECT.
5. PROVIDE ALL ALUMINUM CONSTRUCTION FOR DIFFUSERS.
6. DIFFUSERS LOCATED IN MRI/CT/OR'S SHALL HAVE FEATURE WHICH ALLOWS VOLUME DAMPERS TO BE ADJUSTABLE FROM OPENING AT FACE OF DIFFUSERS
7. ANY DIFFUSER NOTED WITH A "W" IN THE DIFFUSER TAG SHALL BE WELDED 316 S/S.

NO.	REVISION	DATE

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC SCHEDULES

H-0.0.2

BID DOCUMENTS

SCALE:	N.T.S.
JOB NO:	1.502
DATE:	12/10/2015
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FILE NAME:	

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EXISTING HEAT EXCHANGER (STEAM-WATER) SCHEDULE (SHOWN FOR REFERENCE)

6/16 5119.DWG

UNIT NUMBER	SERVICE	LOCATION	TUBE LENGTH (FT)	SHELL DIAMETER (IN)	NO. OF PASSES	WATER SIDE (TUBE) EWT °F	LWT °F	GPM	ΔPRESS. FT. H_2O	MIN. MBH	FOULING FACTOR	PRES. RATING	STEAM SIDE (SHELL) OPER. PRES.	#'S PER HR.	PRES. RATING	SIMILAR TO	NOTES SEE BELOW
C-5	FINNED TUBE RADIATION	MECH. RM. C-B003	6	16	2	180	200	535	2	2,945	–	–	5	2,850	–	B&G	1,3
HEX-C-2	PERIMETER INDUCTION	MECH. RM. C-B003	–	–	–	180	200	550	–	5,500	–	–	–	–	–	–	1,2
HEX-C-8	H.W. RE-HEAT	MECH. RM. C-B003	–	–	–	180	200	910	–	9,100	–	–	–	–	–	–	1

NOTES:
1. EXISTING CONVERTER / HEAT EXCHANGER SHOWN FOR REFERENCE.
2. HEX-2 SERVES THE INDUCTION LOOP LOAD PREVIOUSLY SERVED BY BOILER B-5 (ABANDONED IN PLACE).
3. VERIFY CAPACITY OF EMERGENCY CONVERTER C-5 (MIN MBH NOT CONSISTENT W/ NORMALLY OPERATING ELECTRIC BOILER B-5).

NEW HEAT EXCHANGER (STEAM-WATER) SCHEDULE

6/16 5119.DWG

UNIT NUMBER	SERVICE	LOCATION	TUBE LENGTH (FT)	SHELL DIAMETER (IN)	NO. OF PASSES	WATER SIDE (TUBE) FLUID	EWT °F	LWT °F	GPM	ΔPRESS FT. H_2O	MIN. MBH	FOULING FACTOR	PRES. RATING	STEAM SIDE (SHELL) OPER. PRES.	#'S PER HR.	PRES. RATING	BASIS OF DESIGN MANUFACTURER & MODEL	KEY NOTES SEE BELOW
HEX-C-11	H.W. PRE/REHEAT	MECH. RM. C-B003	5	18	2	WATER	150	180	848	5	9,100	.001	125	5	9,475	150	B&G MODEL SU	1

KEY NOTES:
1. UNIT TO OPERATE TO SUPPORT NEW HOT WATER PRE/REHEAT SYSTEM.

HOT WATER REHEAT COIL SCHEDULE

03/14/14 5098.DWG

UNIT NUMBER	ASSOC. SUPPLY BLOWER	NO. OF ROWS	MAX FPI	CAPACITY (MBH)	AIR SIDE CFM	EAT °F	LAT °F	MAX FACE VEL.	MAX ΔPRESS. IN. WG.	WATER SIDE FLUID	EWT °F	LWT °F	GPM	MAX ΔPRESS FT. H_2O	PIPE RUN-OUT SIZE (IN.)	COIL SIZE	KEY NOTES SEE BELOW
RHC-3	BL-130A&B	2	12	6.5	200	55	85	700	0.2	WATER	180	150	0.5	8	3/4	12"x6"	
RHC-4	BL-130A&B	2	12	13.0	350	55	85	700	0.2	WATER	180	150	0.9	8	3/4	14"x8"	
RHC-5	BL-130A&B	2	12	4.9	150	55	85	700	0.2	WATER	180	150	0.4	8	3/4	12"x6"	
RHC-6	BL-130A&B	2	12	42.3	1,300	55	85	700	0.2	WATER	180	150	2.9	8	3/4	28"x12"	
RHC-7	BL-130A&B	2	12	9.0	275	55	85	700	0.2	WATER	180	150	0.6	8	3/4	12"x6"	
RHC-8	BL-130A&B	2	12	12.2	375	55	85	700	0.2	WATER	180	150	0.9	8	3/4	14"x10"	
RHC-9	BL-130A&B	2	12	99.0	3,040	55	85	700	0.2	WATER	180	150	6.6	8	3/4	48"x14"	1
RHC-10	BL-130A&B	2	12	15.6	480	55	85	700	0.2	WATER	180	150	1.1	8	3/4	16"x8"	1
RHC-11	BL-130A&B	2	12	3.3	125	55	85	700	0.2	WATER	180	150	0.3	8	3/4	12"x6"	
RHC-12	BL-130A&B	2	12	22.8	700	55	85	700	0.2	WATER	180	150	1.6	8	3/4	24"x8"	
RHC-13	BL-130A&B	2	12	13.8	425	55	85	700	0.2	WATER	180	150	1.0	8	3/4	14"x6"	1

GENERAL NOTES:
1. RHC'S TO BE FURNISHED BY MECH. CONTRACTOR.
2. SCHEDULED HEATING CAPACITY/AIRFLOW CONSISTENT WITH COOLING CAPACITY/AIRFLOW DUE TO CONSTANT VOLUME AHU SYSTEM.
3. REFER TO SPECIFICATION 238216.

KEY NOTES:
1. NEW COMMON REHEAT COIL TO SUPPORT EXISTING ROOMS OUT OF THE PROJECT SCOPE. THE SUPPLY CFM ALLOCATED TO THE ROOMS OUT OF SCOPE ARE ASSUMED FROM THE ORIGINAL BUILDING DESIGN DRAWINGS. CONFIRM SCHEDULED AIRFLOW TO THE T.A.B. REPORT PRIOR TO SUBMITTAL APPROVAL.

CABINET & UNIT HEATER SCHEDULE

03/14/14 5213.DWG

UNIT NUMBER	LOCATION	FAN SPEED SETTING	FAN CFM	FAN RPM	FAN EXT. SP IN. WG.	MOTOR DATA @ 60 HZ HP	RPM	VOLTS	PHASE	HOT WATER COIL CAPAC. MBH	EWT °F	LWT °F	GPM	ΔPRESS FT. WG.	STEAM COIL INLET PSIG	#/HR	ELECTRIC COIL VOLTS	KW	BASIS OF DESIGN MANUFACTURER & MODEL	KEY NOTES SEE BELOW	EMER POWER
CUH-1	MAIN LOBBY	–	1,400	1050	0.2	3/4	1750	120	1	45.6	180	150	3.1	5.0	N/A	N/A	N/A	N/A	PRICE BCH SERIES	1,2	NO

GENERAL NOTES:
1. ALL UNITS SIMILAR TO AIRTHERM MFGR.
2. PROVIDE A SEPARATE LINE FOR EACH TYPE OF UNIT, ie. HORIZONTAL, HORIZONTAL CONCEALED, VERTICAL, ETC.
3. HIGH STATIC MOTOR REQUIRED.
4. PERFORMANCE DATA BASED ON CONDITIONS STATED ABOVE.

KEY NOTES:
1. N/A
2. CUH SHALL BE RECESSED TYPE. REFER TO FLOOR PLANS FOR ARRANGEMENT.

EXPANSION TANK SCHEDULE

03/14/14 5098.DWG

UNIT NUMBER	LOCATION	SYSTEM SERVED	FLUID	SYST. APPROX. VOL. (GALLONS)	TEMP. RANGE MIN. °F	MAX. °F	TANK PRESSURE MIN. PRESS. (PSIG)	MAX. OPERAT. (PSIG)	TANK CAPACITY (GALLONS)	STYLE	TANK LENGTH (IN.) X DIA. (IN.)	TANK FITTING SIZE (IN.)	RELIEF VALVE SETTING PSIG	FILL VALVE SETTING PSIG	BASIS OF DESIGN	KEY NOTES SEE BELOW
TK-1	BUILDING C – PH MECH RM	PRE/REHEAT HOT WATER	WATER	5,000	60	200	12	34	383	VERTICAL	74 x 48	2	85	70	WESSELS NLA SERIES	

GENERAL NOTES:
1. NOT USED

KEY NOTES:
1. NOT USED

EXISTING CONDENSATE PUMP SCHEDULE

8/7/07 5275.DWG

UNIT NUMBER	LOCATION	SQ. FT. EDR	MIN. RECEIV. CAPACITY (GAL)	MIN. VENT CONNECT SIZE (IN.)	GPM	NPSH MAX. FT. H_2O	SUCTION TEMP.	DISCH. PRES. PSIG	NO. OF PUMPS	MOTOR DATA @ 60 HZ MHP EA	RPM	VOLTS	PHASE	SIMILAR TO	KEY NOTES SEE BELOW	EMER POWER
CP-C-1	MECH. RM. C-B003	–	–	–	13	–	–	70	2	2	3500	460	3	SCHAUB ENG. CO. SERIES G	1	–
CP-C-2	MECH. RM. C-B003	–	–	–	–	–	–	–	2	5	–	460	3	SCHAUB ENG. CO. SERIES G	1	–
CP-C-3	MECH. RM. C-B003	–	15	–	12	–	–	100	2	5	–	460	3	SHIPCO TYPE PC, CATALOG #129 PC3	1,2	–

KEY NOTES:
1. EXISTING PUMP SHOWN FOR REFERENCE.
2. EXISTING PUMP INSTALLED AS PART OF "WATER HEATER NO. 9 REPLACEMENT" PROJECT. ISSUE DATE 09-11-2013.

NEW CONDENSATE PUMP SCHEDULE

8/7/07 5275.DWG

UNIT NUMBER	LOCATION	SQ. FT. EDR	MIN. RECEIV. CAPACITY (GAL)	MIN. VENT CONNECT SIZE (IN.)	GPM	NPSH MAX. FT. H_2O	SUCTION TEMP.	DISCH. PRES. PSIG	NO. OF PUMPS	MOTOR DATA @ 60 HZ MHP EA	RPM	VOLTS	PHASE	SIMILAR TO	KEY NOTES SEE BELOW	EMER POWER
CP-C-11	BSMT MECH RM	40,000	65	2	60	2	210	75	2	7 1/2	3500	460	3	SKIDMORE (DUPLEX)	1-4	YES

KEY NOTES:
1. PROVIDE CAST IRON RECEIVER W/ GAUGE GLASS, STRAINER, AND STAINLESS STEEL CHECK VALVES
2. PROVIDE 2 FLOAT SWITCHES.
3. EACH PUMP TO BE SIZED FOR FULL SCHEDULED CAPACITY AND SHALL BE CAPABLE OF PROVIDING EMERGENCY BACK DURING A POSSIBLE PUMP FAILURE.
4. PUMP SHALL BE ON EMERGENCY POWER (EQUIPMENT BRANCH).

EXISTING WATER PUMP SCHEDULE

8/7/07 5274.DWG

UNIT NUMBER	LOCATION	SERVICE	TYPE	GPM	TOTAL HEAD (FT. H_2O)	MAX NPSH	MOTOR DATA @ 60 HZ BHP	MHP	RPM	VOLTS	PHASE	SIMILAR TO	KEY NOTES SEE BELOW	EMER POWER
P-25	MECH. RM. C-B003	SECOND. WTR. BLDG. C	–	534	175	–	–	50	1750	460	3	WEINMAN PUMP CO.	2	–
P-26	MECH. RM. C-B003	SECOND. WTR. BLDG. C	–	534	175	–	–	50	1750	460	3	WEINMAN PUMP CO.	1,2	–
P-27	MECH. RM. C-B003	REHEAT H.W. BLDG. C	–	750	106	–	–	25	1750	460	3	WEINMAN PUMP CO.	1,2	–
P-28	MECH. RM. C-B003	REHEAT H.W. BLDG. C	–	750	106	–	–	25	1750	460	3	WEINMAN PUMP CO.	2	–

KEY NOTES:
1. STAND-BY SERVICE
2. EXISTING PUMP SHOWN FOR REFERENCE.

NEW WATER PUMP SCHEDULE

8/7/07 5274.DWG

UNIT NUMBER	LOCATION	SERVICE	TYPE	GPM	TOTAL HEAD (FT. WG)	MAX NPSH	MOTOR DATA @ 60 HZ BHP	MHP	RPM	VOLTS	PHASE	VFD	BASIS OF DESIGN MANUFACTURER & MODEL	KEY NOTES SEE BELOW	EMER POWER
P-C-1A	ROOF	BL-130A H.W. RECIRC.	IN LINE	82	30	–	–	0.5	1750	460	3	NO	B&G SERIES 90	5,6	YES
P-C-1B	ROOF	BL-130B H.W. RECIRC.	IN LINE	82	30	–	–	0.5	1750	460	3	NO	B&G SERIES 90	1,5,6	YES
P-C-2	ROOF	BL-131 H.W. RECIRC.	IN LINE	102	30	–	–	0.5	1750	460	3	NO	B&G SERIES 90	5,6	YES
P-C-3	BSMT MECH RM	BL-133 H.W. RECIRC.	IN LINE	66	30	–	–	0.5	1750	460	3	NO	B&G SERIES 90	5,6	YES
P-C-4	BSMT MECH RM	PRE/RE-HEAT H.W. BLDG. C	END SUCTION	800	60	–	–	25	1750	460	3	YES	B&G SERIES 1500	5	YES
P-C-6	BSMT MECH RM	BL-133 C.C. CONDENSATE	IN LINE	–	25	–	–	0.5	1750	460	3	NO	B&G SERIES 90	5,6	YES
P-C-8	ROOF	BL-130A&B SERVICE AISLE PLENUM H.W. RECIRC.	IN LINE	5	15	–	–	0.5	1750	460	3	NO	B&G SERIES 90	5,6	YES
P-C-9	ROOF	BL-131 SERVICE AISLE PLENUM H.W. RECIRC.	IN LINE	5	15	–	–	0.5	1750	460	3	NO	B&G SERIES 90	5,6	YES

KEY NOTES:
1. STAND-BY SERVICE.
2. NOT USED
3. ORIGINAL PUMP INFORMATION TAKEN FROM ORIGINAL SHOP DRAWING DATED OCTOBER 29, 2009 INFORMATION SHOWN FOR REFERENCE ONLY
4. PROVIDE NEW PUMP CASING AND "B" STYLE PUMP IMPELLER (SIZE 4x6x10.5B-9.125" IMPELLER) TO ACCOMMODATE NEW CHILLED WATER GPM AS SCHEDULED. MECHANICAL CONTRACTOR TO PROVIDE ALL WORK ASSOCIATED WITH PUMP IMPELLER CHANGE OUT AND FIELD ALIGNMENT. THIS INCLUDES SHAFT ALIGNMENT, BALANCING, SETTING OF SHIMS, ETC.

KEY NOTES:
5. PUMP SHALL BE ON EMERGENCY POWER (EQUIPMENT BRANCH)
6. MOTOR STARTER PROVIDED BY DIV. 26

EXISTING ELECTRIC HOT WATER BOILER SCHEDULE

Number	LOCATION	SYSTEM	CAPACITY (MBH)	STEPS	REMARKS	KEY NOTES SEE BELOW
B-5	MECH. RM. C-B003	SECOND. WTR HTG BLDG C	5,500	14 @ 90 KW / 6 @ 60 KW	BASED ON CDATES ELEC. MFG. CO.	1
B-6	MECH. RM. C-B003	REHEAT H.W. BLDG C	9,100	30 @ 90 KW	BASED ON CDATES ELEC. MFG. CO.	1

KEY NOTES:
1. EXISTING UNITS SHOWN FOR REFERENCE ONLY. PROJECT TO DECOMMISSION AND REMOVE BOILERS AND REPLACE WITH NEW STEAM/HOT WATER HEAT EXCHANGERS. UNITS CURRENTLY UTILIZED AS "BACK-UP" AND TO SUPPLEMENT SYSTEM CAPACITY IF REQUIRED. DEMO OF UNITS TO BE COORDINATED WITH OWNER TO KEEP SYSTEM OPERATIONAL.

FINNED TUBE RADIATION

03/14/14 5131.DWG

TYPE	LOCATION	SYSTEM	FLUID	MIN BTUH PER FT.	AVERG. T °F	ΔT °F	EAT °F	ELEMENT QTY	PIPE SIZE INCHES	TYPE	FIN SIZE IN.	MAX. FPF	ENCLOSURE HEIGHT IN.	DEPTH IN.	TYPE	MINIMUM MOUNTING HEIGHT IN.	BASIS OF DESIGN (MANUFACTURER & MODEL)	KEY NOTES SEE BELOW
A	SEE PLANS	PERIMETER HEATING	WATER	1,395	165	30	65	2	1"	CU/AL	4 1/4" x 3 5/8"	50	6 3/4"	6 3/4"	LOUVER	4" A.F.F.	STERLING CLASSIC VB-AR-2PM	1,2,3,4,6
B	SEE PLANS	PERIMETER HEATING	WATER	905	165	30	65	1	1"	CU/AL	4 1/4" x 3 5/8"	50	6 3/4"	6 3/4"	NONE	4" A.F.F.	STERLING CLASSIC VB-AR-PM	5,7
C	SEE PLANS	PERIMETER HEATING	WATER	1,485	165	30	65	2	1"	CU/AL	4 1/4" x 3 5/8"	50	24 7/16"	5 5/16"	LOUVER	4" A.F.F.	STERLING CLASSIC VB-AR18 & 24LI	1,3,4,8

KEY NOTES:
1. PROVIDE CUSTOM COLOR TO BE DETERMINED BY ARCHITECT.
2. PEDESTAL MOUNTED 4" A.F.F
3. PROVIDE ALL TRIM AS REQUIRED TO ALLOW FOR CONTINUOUS APPEARANCE.
4. PROVIDE EXTENDED ALUMINUM GRILLES ON TOP OF CASING.
5. PROVIDE BARE-FINNED TUBE RADIATION W/ SUPPORTS.

KEY NOTES:
6. FTR TYPE TYPICAL FOR MAIN FLOOR AND FIRST FLOOR.
7. FTR TYPE TYPICAL FOR FIRST FLOOR SOFFIT (BELOW SECOND FLOOR OVERHANG) AND BELOW ROOF TOP AHU SERVICE AISLES.
8. FTR TYPE TYPICAL FOR SECOND FLOOR CARDIOLOGY.

NO.	REVISION	DATE

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC SCHEDULES

H-0.0.3

BID DOCUMENTS

SCALE:	N.T.S.
JOB NO:	1.302
DATE:	12/10/2015
DRAWN BY:	MCL
FILE NAME:	

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EXISTING AIR COOLED CONDENSING UNIT SCHEDULE

UNIT NO.	SERVICE	LOCATION	NOMINAL COOLING CAPACITY (BTUH)	COOLING MODE-DRY BULB TEMP	ELECTRICAL DATA: UNIT VOLTAGE	PHASE	FLA	MOCP	MCA	REFRIGERANT	EMERG. POWER	SELECTION BASED ON	NOTES SEE BELOW
ACCU-C-1	PHARMACY	COURTYARD	16,000	–	115	3	–	–	–	R22 – 17 OZ	–	KOLDWAVE	1,2
ACCU-C-2	–	COURTYARD	–	–	–	–	–	–	–	–	–	–	1
ACCU-C-3	–	COURTYARD	–	–	–	–	–	–	–	–	–	–	1
ACCU-C-14	LEV 2 PHARMACY DRUG VAULT	BLDG. C ROOF	12,000	95° F	208	3	0.35	15	13	R410A	YES	MITSUBISHI PUY-A12NHA6 (-BS)	1

NOTES:
1. EXISTING EQUIPMENT SHOWN FOR REFERENCE ONLY.
2. EXISTING AIR COOLED CONDENSING UNIT TO BE RELOCATED. SEE DEMO AND NEW WORK PLANS.

AIR COOLED CONDENSING UNIT SCHEDULE

UNIT NO.	SERVICE	LOCATION	NOMINAL COOLING CAPACITY (BTUH)	COOLING MODE-DRY BULB TEMP	ELECTRICAL DATA: UNIT VOLTAGE	PHASE	MOCP	MCA	REFRIGERANT	EMERG. POWER	SELECTION BASED ON	NOTES SEE BELOW
ACCU-C-4	LEV G-2 IDF ROOMS	ROOF	36,000	95° F	208	3	40	25	R410A	YES	MITSUBISHI-PUY-A36NHA4	1-8
ACCU-C-5	LEV G-2 IDF ROOMS	ROOF	36,000	95° F	208	3	40	25	R410A	YES	MITSUBISHI-PUY-A36NHA4	1-8
ACCU-C-6	LEV G-2 IDF ROOMS	ROOF	36,000	95° F	208	3	40	25	R410A	YES	MITSUBISHI-PUY-A36NHA4	1-8
ACCU-C-7	LEV G-2 IDF ROOMS	ROOF	36,000	95° F	208	3	40	25	R410A	YES	MITSUBISHI-PUY-A36NHA4	1-8
ACCU-C-8	LEV G-2 IDF ROOMS	ROOF	36,000	95° F	208	3	40	25	R410A	YES	MITSUBISHI-PUY-A36NHA4	1-8
ACCU-C-9	LEV G-2 IDF ROOMS	ROOF	36,000	95° F	208	3	40	25	R410A	YES	MITSUBISHI-PUY-A36NHA4	1-8
ACCU-C-10	LEV G-2 IDF ROOMS	ROOF	36,000	95° F	208	3	40	25	R410A	YES	MITSUBISHI-PUY-A36NHA4	1-8
ACCU-C-11												9
ACCU-C-12	CLINICAL RESEARCH SERVER ROOM	ROOF	36,000	95° F	208	3	40	25	R410A	YES	MITSUBISHI-PUY-A36NHA4	1-8
ACCU-C-13	LEV 2 CLINICAL LABS STORAGE & FREEZERS	BLDG. C ROOF	36,000	95° F	208	3	40	25	R410A	YES	MITSUBISHI PUHY-P168YSKMU-A	1-7

NOTES:

1. N/A
2. REFRIGERATION PIPE AND ALL ASSOCIATED SPECIALTIES BY CONTRACTOR. CONTRACTOR TO CONFIRM PIPE SIZES WITH VENDOR.
4. EQUIPMENT TO MEET 100% DESIGN CAPACITY WITH 5:1 TURNDOWN
5. EACH INDIVIDUAL MODULE REQUIRES A SEPARATE ELECTRICAL CONNECTION. REFER TO SCHEDULE ABOVE FOR INFORMATION.
6. PROVIDE INTEGRAL CONTROLS WITH BACNET CONNECTION.
7. PROVIDE LOW AMBIENT KIT.

NOTES:

8. CONDENSING UNIT SHALL BE ON EMERGENCY POWER (EQUIPMENT BRANCH).
9. "ACCU-C-11" EQUIPMENT IDENTITY TAG FOR FUTURE LEVEL 2 SOUTH IDF ROOM.

8/7/07 S221.DWG

EXISTING SPLIT AIR CONDITIONING UNIT SCHEDULE

TAG	SERVICE	ESP	CFM	CAPACITY (BTU/h) COOLING (SENSIBLE)	COOLING MODE AIR TEMPERATURE DRY BULB (F)	WET BULB (F)	ELECTRICAL DATA: VOLTS	PHASE	HERTZ	FLA	MCA	MOCP	SELECTION BASED ON	NOTES	Emergency Power
AC-C-1	PHARMACY	0	–	16,000	80	67	115	1	60	–	13	–	KOLDWAVE (MODEL # 2K16DB11)	1	–
AC-C-2	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
AC-C-3	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
AC-C-14	LEV 2 PHARMACY DRUG VAULT	0.2	390-530	12,000	80	67	208	1	60	0.5	1	–	MITSUBISHI PLA-A12BA6	1	YES

NOTES:

1. EXISTING EQUIPMENT SHOWN FOR REFERENCE ONLY.

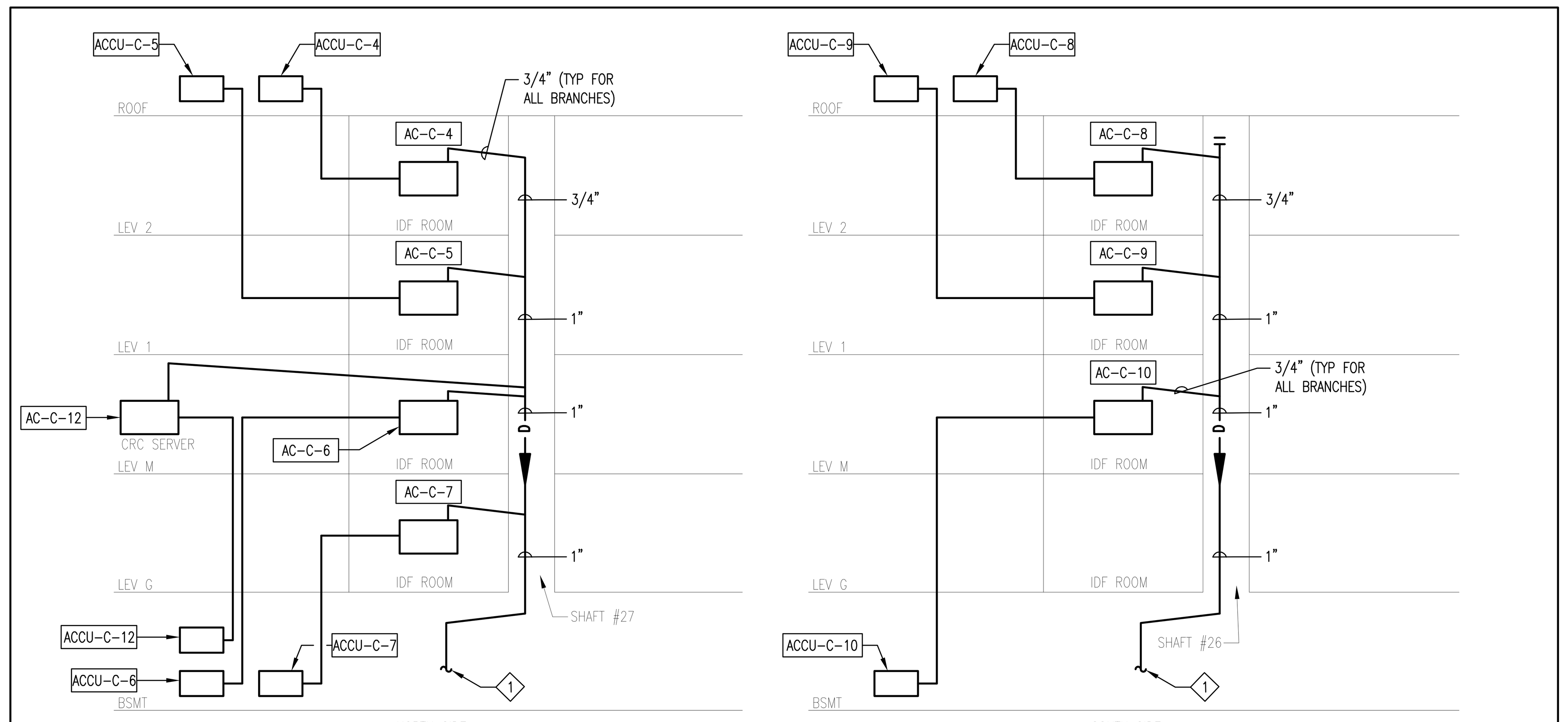
8/7/07 S221.DWG

SPLIT AIR CONDITIONING UNIT SCHEDULE

TAG	SERVICE	ESP	CFM	CAPACITY (BTU/h) COOLING (SENSIBLE)	COOLING MODE AIR TEMPERATURE DRY BULB (F)	WET BULB (F)	ELECTRICAL DATA: VOLTS	PHASE	HERTZ	MCA	MOCP	SELECTION BASED ON	NOTES	Emergency Power
AC-C-4	IDF ROOM - SEE PLANS FOR LOCATION	0.2	742-1,095	36,000	80	67	208	1	60	2	15	MITSUBISHI PCA-A36KA4	1,2,3,6	YES
AC-C-5	IDF ROOM - SEE PLANS FOR LOCATION	0.2	742-1,095	36,000	80	67	208	1	60	2	15	MITSUBISHI PCA-A36KA4	1,2,3,6	YES
AC-C-6	IDF ROOM - SEE PLANS FOR LOCATION	0.2	742-1,095	36,000	80	67	208	1	60	2	15	MITSUBISHI PCA-A36KA4	1,2,3,6	YES
AC-C-7	IDF ROOM - SEE PLANS FOR LOCATION	0.2	742-1,095	36,000	80	67	208	1	60	2	15	MITSUBISHI PCA-A36KA4	1,2,3,6	YES
AC-C-8	IDF ROOM - SEE PLANS FOR LOCATION	0.2	742-1,095	36,000	80	67	208	1	60	2	15	MITSUBISHI PCA-A36KA4	1,2,3,6	YES
AC-C-9	IDF ROOM - SEE PLANS FOR LOCATION	0.2	742-1,095	36,000	80	67	208	1	60	2	15	MITSUBISHI PCA-A36KA4	1,2,3,6	YES
AC-C-10	IDF ROOM - SEE PLANS FOR LOCATION	0.2	742-1,095	36,000	80	67	208	1	60	2	15	MITSUBISHI PCA-A36KA4	1,2,3,6	YES
AC-C-11													5	
AC-C-12	CLINICAL RESEARCH SERVER ROOM	0.2	742-1,095	36,000	80	67	208	1	60	2	15	MITSUBISHI PCA-A36KA4	1,2,3	YES
AC-C-13	LEV 2 CLINICAL LABS STORAGE & FREEZERS	0.2	742-1,095	36,000	80	67	208	1	60	2	15	MITSUBISHI PCA-A36KA4	1,2,3	YES

NOTES:
1. PROVIDE INTEGRAL CONDENSATE PUMP
2. REFRIGERANT TO BE R410A.
3. EVAPORATOR UNIT SHALL BE ON EMERGENCY POWER (EQUIPMENT BRANCH).
4. NOT USED
5. "AC-C-11" EQUIPMENT IDENTITY TAG FOR FUTURE LEVEL 2 SOUTH IDF ROOM.

NOTES:
6. EVAPORATOR UNIT TO BE CEILING-SUSPENDED INSIDE IDF ROOM.



KEY NOTES:

1. 1" PITCHED COOLING COIL CONDENSATE PIPING DROP TO NEAREST EXISTING 4" FLOOR DRAIN NEAR EXISTING AHU. COORDINATE LOCATION IN FIELD.

(A) SPLIT AC SYSTEMS CONCEPT DIAGRAM

03/14/14 S021.DWG

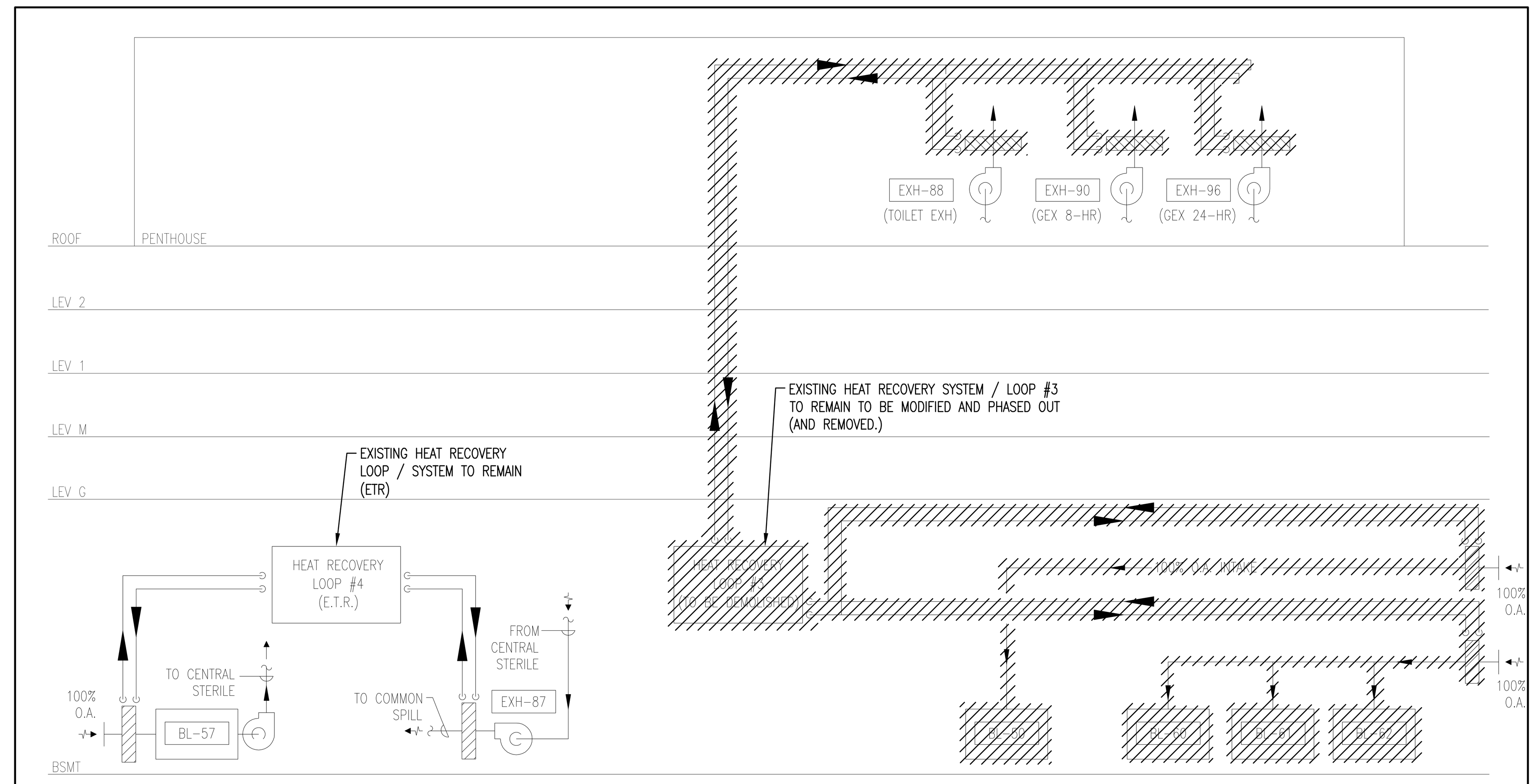
AIR TERMINAL BOX ASSEMBLY SCHEDULE

UNIT NUMBER	TYPE	ASSEMBLY: DESIGN RANGE CFM MIN.-MAX.	MAX. AIR PD IN. WG	TURNDOWN MIN. CFM	AIR VALVE MAX. APD IN. WG.	HOT WATER COIL: CAPAC. MBH	AIR SIDE: MAX. HEATING CFM (*)	EAT °F	LAT °F (MIN) (**)	MAX FV FPM	MAX AIR PD IN. WG	MIN NO.OF ROWS	MAX FPI	MIN FIN THICK. IN.	WATER: GPM	MIN. TUBE O.D. IN.	EWT °F	LWT °F	MAX ΔP FT. WG.	SOUND CONTROL SECTION: INLET STATIC PRESS (IN.)	NOISE CRITERIA (AT LISTED INLET SP) MAX. RAW POWER LEVEL db (LEAVING ASSEMBLY) DISCHARGE SPL @ 1.5" WG: 125hz	250hz	500hz	1Khz	2Khz	4Khz	MAX. APD IN. WG	LINING HOSPITAL GRADE	MAX. ASSEMBLY DEPTH (IN)	SYSTEM SIDE: CONNECT SIZE (IN)	DUCT SIZE (IN)	ROOM SIDE: CONNECT SIZE (IN)	DUCT SIZE (IN)	ACCESORIES: ACCESS DOOR BEFORE COIL	ACCESS DOOR AFTER COIL	KEY NOTES SEE BELOW	REMARKS (ACCEPTABLE MANUFACTURERS SUBJECT TO CONFORMANCE WITH SPECIFICATIONS)
VCV-5	VAV REHEAT SUPPLY	120-250	0.30	60	0.03	---	125	55	85	360	0.10	1	8	0.0095	0.3	1/2	180	150	10	1.5	67	63	58	56	54	53	0.17	YES	12	5ø	6ø	12x10	12x6	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
VCV-6	VAV REHEAT SUPPLY	150-400	0.30	70	0.03	---	200	55	85	560	0.10	1	8	0.0095	0.6	1/2	180	150	10	1.5	67	63	58	56	54	53	0.17	YES	12	6ø	8ø	12x10	12x8	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
VCV-8	VAV REHEAT SUPPLY	300-650	0.30	140	0.03	---	325	55	85	560	0.10	1	8	0.0095	0.8	1/2	180	150	10	1.5	67	63	58	56	54	53	0.17	YES	15	8ø	10ø	14x15	14x12	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
VCV-10	VAV REHEAT SUPPLY	500-925	0.30	225	0.03	---	463	55	85	560	0.10	1	8	0.0095	1.4	1/2	180	150	10	1.5	67	63	58	56	54	53	0.17	YES	15	10ø	12ø	16x15	16x12	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
VCV-12	VAV REHEAT SUPPLY	800-1400	0.30	310	0.03	---	700	55	85	560	0.10	1	8	0.0095	1.9	1/2	180	150	10	1.5	67	63	58	56	54	53	0.17	YES	18	12ø	14ø	20x18	20x12	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
VCV-14	VAV REHEAT SUPPLY	1000-1650	0.30	440	0.03	---	825	55	85	560	0.10	1	8	0.0095	2.1	1/2	180	150	10	1.5	67	63	58	56	54	53	0.17	YES	18	14ø	16ø	24x18	24x12	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
VCV-16	VAV REHEAT SUPPLY	1200-2300	0.30	575	0.03	---	1150	55	85	560	0.10	1	8	0.0095	2.6	5/8	180	150	10	1.5	67	63	58	56	54	53	0.17	YES	18	24x16	24x16	34x18	30x12	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
CV-5	CAV REHEAT SUPPLY	65-250	0.30	60	0.03	---	250	55	85	360	0.10	1	8	0.0095	0.7	5/8	180	150	10	1.5	67	63	58	56	54	53	0.17	YES	12	5ø	6ø	12x10	12x6	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
CV-6	CAV REHEAT SUPPLY	75-400	0.30	70	0.03	---	400	55	85	560	0.10	1	10	0.0095	1.2	5/8	180	150	10	1.5	67	63	58	56	54	53	0.17	YES	12	6ø	8ø	12x10	12x8	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
CV-8	CAV REHEAT SUPPLY	150-650	0.30	140	0.03	---	650	55	85	560	0.10	1	10	0.0095	1.5	5/8	180	150	10	1.5	67	63	58	56	54	53	0.17	YES	15	8ø	10ø	14x15	14x12	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
CV-10	CAV REHEAT SUPPLY	250-925	0.30	225	0.03	---	925	55	85	560	0.10	1	10	0.0095	2.3	5/8	180	150	10	1.5	67	63	58	56	54	53	0.17	YES	15	10ø	12ø	16x15	16x12	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
CV-12	CAV REHEAT SUPPLY	350-1400	0.30	310	0.03	---	1400	55	85	560	0.10	1	10	0.0095	3.1	5/8	180	150	10	1.5	67	63	58	56	54	53	0.17	YES	18	12ø	14ø	20x18	20x12	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
CV-14	CAV REHEAT SUPPLY	475-1650	0.30	440	0.03	---	1650	55	85	560	0.10	1	10	0.0095	3.7	5/8	180	150	10	1.5	67	63	58	56	54	53	0.17	YES	18	14ø	16ø	24x18	24x12	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
CV-16	CAV REHEAT SUPPLY	600-2300	0.30	575	0.03	---	2300	55	85	560	0.10	1	10	0.0095	5.0	5/8	180	150	10	1.5	67	63	58	56	54	53	0.17	YES	18	24x16	24x16	34x18	30x12	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
VV-5	VAV SUPPLY	120-250	0.20	60	0.03	---	---	---	---	---	---	---	--	---	--	--	--	--	--	1.5	67	63	58	56	54	53	0.17	YES	12	5ø	6ø	12x10	12x6	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
VV-6	VAV SUPPLY	150-400	0.20	70	0.03	---	---	---	---	---	---	---	--	---	--	--	--	--	--	1.5	67	63	58	56	54	53	0.17	YES	12	6ø	8ø	12x10	12x8	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
VV-8	VAV SUPPLY	300-650	0.20	140	0.03	---	---	---	---	---	---	---	--	---	--	--	--	--	--	1.5	67	63	58	56	54	53	0.17	YES	15	8ø	10ø	14x15	14x12	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
VV-10	VAV SUPPLY	500-925	0.20	225	0.03	---	---	---	---	---	---	---	--	---	--	--	--	--	--	1.5	67	63	58	56	54	53	0.17	YES	15	10ø	12ø	16x15	16x12	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
VV-12	VAV SUPPLY	800-1400	0.20	310	0.03	---	---	---	---	---	---	---	--	---	--	--	--	--	--	1.5	67	63	58	56	54	53	0.17	YES	18	12ø	14ø	20x18	20x12	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
VV-14	VAV SUPPLY	1000-1650	0.20	440	0.03	---	---	---	---	---	---	---	--	---	--	--	--	--	--	1.5	67	63	58	56	54	53	0.17	YES	18	14ø	16ø	24x18	24x12	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
VV-16	VAV SUPPLY	1200-2300	0.20	575	0.03	---	---	---	---	---	---	---	--	---	--	--	--	--	--	1.5	67	63	58	56	54	53	0.17	YES	18	24x16	24x16	34x18	30x12	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
VVE-5	VAV EXHAUST/RETURN	120-250	0.20	60	0.03	---	---	---	---	---	---	---	--	---	--	--	--	--	--	1.5	67	63	58	56	54	53	0.17	YES	12	5ø	6ø	12x10	12x6	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
VVE-6	VAV EXHAUST/RETURN	150-400	0.20	70	0.03	---	---	---	---	---	---	---	--	---	--	--	--	--	--	1.5	67	63	58	56	54	53	0.17	YES	12	6ø	8ø	12x10	12x8	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
VVE-8	VAV EXHAUST/RETURN	300-650	0.20	140	0.03	---	---	---	---	---	---	---	--	---	--	--	--	--	--	1.5	67	63	58	56	54	53	0.17	YES	15	8ø	10ø	14x15	14x12	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
VVE-10	VAV EXHAUST/RETURN	500-925	0.20	225	0.03	---	---	---	---	---	---	---	--	---	--	--	--	--	--	1.5	67	63	58	56	54	53	0.17	YES	15	10ø	12ø	16x15	16x12	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
VVE-12	VAV EXHAUST/RETURN	800-1400	0.20	310	0.03	---	---	---	---	---	---	---	--	---	--	--	--	--	--	1.5	67	63	58	56	54	53	0.17	YES	18	12ø	14ø	20x18	20x12	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
VVE-14	VAV EXHAUST/RETURN	1000-1650	0.20	440	0.03	---	---	---	---	---	---	---	--	---	--	--	--	--	--	1.5	67	63	58	56	54	53	0.17	YES	18	14ø	16ø	24x18	24x12	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR
VVE-16	VAV EXHAUST/RETURN	1200-2300	0.20	575	0.03	---	---	---	---	---	---	---	--	---	--	--	--	--	--	1.5	67	63	58	56	54	53	0.17	YES	18	24x16	24x16	34x18	30x12	YES	YES	--	ENVIRO-TEC, PRICE, NAILOR

(*) MAXIMUM PRESSURE DROP AT MAXIMUM DESIGN CFM.
(**) MINIMUM TEMPERATURE AT MAXIMUM HEATING CFM

GENERAL NOTES:
1. THE DISCHARGE SOUND LEVEL SHALL BE LESS THAN SCHEDULED IN EACH FREQUENCY WHEN THE ASSEMBLY IS TESTED AND CERTIFIED IN A CERTIFIED NOISE LABORATORY. THE TEST SHALL BE WITH 1.5" WC AT THE INLET OF THE BOX AND AT THE MAXIMUM SCHEDULED AIR FLOW. IN ADDITION THE ASSEMBLY PRESSURE DROP SHALL BE LESS THAN SCHEDULED. THE ORDER OF COMPONENTS SHALL BE VALVE, COIL, SILENCER OR VALVE, SILENCER, COIL, BUT SHALL BE TESTED AS SUPPLIED.
2. THIS TEST SHALL OCCUR IF ALL COMPONENTS ARE BY THE SAME MANUFACTURER OR IF THE COMPONENTS ARE BY DIFFERENT MANUFACTURER.
3. CERTIFIED TEST DATA SHALL BE PROVIDED FOR EACH BOX ASSEMBLY AND FOR EACH BOX TYPE INCLUDING EXHAUST RETURN ASSEMBLIES.
4. EACH HEATING COIL SHALL BE PROVIDED WITH AN ACCESS DOOR ON EACH SIDE, UP STREAM AND DOWN STREAM.
5. HEATING COIL SIZE SHALL BE SAME AS ROOM SIDE CONNECTIONS DIMENSIONS.

KEY NOTES:
1. NOT USED



(B) EXISTING BUILDING C HEAT RECOVERY FLOW DIAGRAM

NO.	REVISION	DATE

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC SCHEDULES

H-0.0.4

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SCALE: N.T.S.
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Supply Air Terminal Box Schedule - Basement

Box Tag	Box Size	Max CFM	Min CFM	Box GPM	Associated AHU

Supply Air Terminal Box Schedule - Ground Floor

Box Tag	Box Size	Max CFM	Min CFM	Box GPM	Associated AHU

Supply Air Terminal Box Schedule - Main Floor

Box Tag	Box Size	Max CFM	Min CFM	Box GPM	Associated AHU
MC-1A-21A	VCV-8	575 CFM	250 CFM	0.75 GPM	130
MC-1B-21A	VCV-10	875 CFM	350 CFM	0.75 GPM	130
MC-1C-21A	VCV-10	825 CFM	350 CFM	0.75 GPM	130
MC-1D-21A	VCV-8	500 CFM	250 CFM	0.75 GPM	130
MC-1D-21A	VCV-12	1050 CFM	500 CFM	1.00 GPM	130
MC-1E-21A	VCV-10	750 CFM	250 CFM	0.75 GPM	130
MC-3A-20	VCV-8	500 CFM	250 CFM	0.75 GPM	133
MC-3B-20	VCV-6	250 CFM	150 CFM	0.75 GPM	133
MC-3C-20	VCV-12	1050 CFM	250 CFM	0.00 GPM	133
MC-3D-20	VCV-6	250 CFM	150 CFM	0.00 GPM	133
MC-3E-20	VCV-6	275 CFM	250 CFM	0.75 GPM	133
MC-3F-20	VCV-6	250 CFM	150 CFM	0.75 GPM	133
MD-1A-21A	VCV-8	400 CFM	200 CFM	0.75 GPM	130
MD-1B-21A	VCV-8	550 CFM	225 CFM	0.75 GPM	130
MD-1C-21A	VCV-10	725 CFM	425 CFM	0.75 GPM	130
MD-3A-22	VCV-10	850 CFM	425 CFM	0.75 GPM	130
MD-3B-22	VCV-8	625 CFM	300 CFM	0.75 GPM	130
MD-3C-22	VCV-10	900 CFM	450 CFM	0.75 GPM	130
MD-3D-22	VCV-8	450 CFM	225 CFM	0.75 GPM	130
MD-3E-23	VCV-10	860 CFM	550 CFM	1.00 GPM	130
MD-3F-23	VCV-6	400 CFM	200 CFM	0.75 GPM	130
MD-3G-23	VCV-12	1175 CFM	550 CFM	1.00 GPM	130
MD-5A-22	VCV-8	525 CFM	550 CFM	0.00 GPM	130
MD-5B-22	CV-8	625 CFM	625 CFM	1.25 GPM	130
MD-5C-22	VCV-8	525 CFM	550 CFM	0.00 GPM	130
MD-5D-22	VCV-6	350 CFM	500 CFM	1.00 GPM	130
MD-5E-22	VCV-6	0 CFM	550 CFM	1.00 GPM	130
MD-7A-23	VCV-8	525 CFM	225 CFM	0.75 GPM	130
MD-7B-23	VCV-10	725 CFM	500 CFM	1.00 GPM	130
MD-7C-23	VCV-8	550 CFM	625 CFM	1.25 GPM	130
MD-7D-23	VCV-6	350 CFM	175 CFM	0.75 GPM	130
MD-7E-23	VCV-12	1050 CFM	525 CFM	1.00 GPM	130
MD-7F-23	VCV-6	400 CFM	300 CFM	0.75 GPM	130
MD-7G-23	VCV-6	300 CFM	150 CFM	0.75 GPM	130
MD-7H-23	VCV-6	350 CFM	175 CFM	0.75 GPM	130
MD-7I-23	VCV-6	225 CFM	125 CFM	0.75 GPM	130
MD-9-23	CV-8	500 CFM	500 CFM	1.00 GPM	130
MD-11-23	CV-8	550 CFM	550 CFM	1.00 GPM	130
MD-13-23	VCV-8	450 CFM	575 CFM	1.00 GPM	130
MD-15-23	VCV-8	450 CFM	575 CFM	1.00 GPM	130
MD-17-23	VCV-8	450 CFM	575 CFM	1.00 GPM	130
MD-19-23	CV-8	450 CFM	450 CFM	0.75 GPM	130
MD-21-23	VCV-8	475 CFM	575 CFM	1.00 GPM	130
MD-23-23	VCV-8	475 CFM	575 CFM	1.00 GPM	130
MD-25A-24	VCV-12	1175 CFM	225 CFM	0.75 GPM	130
MD-25B-24	VCV-8	525 CFM	225 CFM	0.75 GPM	130
MD-25C-24	VCV-10	725 CFM	525 CFM	1.00 GPM	130
MD-25D-24	VCV-6	300 CFM	150 CFM	0.75 GPM	130
MD-25E-24	VCV-6	400 CFM	200 CFM	0.75 GPM	130
MD-25F-25	VCV-8	525 CFM	550 CFM	1.00 GPM	130
MD-25G-25	CV-8	550 CFM	550 CFM	1.00 GPM	130
MD-29A-25	VCV-8	425 CFM	300 CFM	0.75 GPM	130
MD-29B-25	VCV-8	600 CFM	300 CFM	0.75 GPM	130
MD-29C-25	VCV-12	975 CFM	800 CFM	1.50 GPM	130
MD-29D-25	VCV-8	600 CFM	300 CFM	0.75 GPM	130

Supply Air Terminal Box Schedule - First Floor

Box Tag	Box Size	Max CFM	Min CFM	Box GPM	Associated AHU
1B-1A-18	VCV-10	750 CFM	250 CFM	0.75 GPM	133
1B-1B-18	VCV-10	750 CFM	250 CFM	0.75 GPM	133
1B-1C-18	VCV-10	850 CFM	250 CFM	0.75 GPM	133
1B-1D-18	VCV-6	300 CFM	250 CFM	0.75 GPM	133
1B-1E-18	VCV-6	150 CFM	250 CFM	0.75 GPM	133
1B-1F-18	VCV-6	150 CFM	250 CFM	0.75 GPM	133
1B-1G-18	VCV-10	750 CFM	250 CFM	0.75 GPM	133
1B-1H-18	VCV-10	750 CFM	250 CFM	0.75 GPM	133
1B-3A-19	VCV-8	600 CFM	250 CFM	0.75 GPM	133
1B-3B-19	VCV-6	150 CFM	250 CFM	0.75 GPM	133
1B-3C-19	VCV-10	900 CFM	250 CFM	0.75 GPM	133
1B-3D-19	VCV-8	450 CFM	300 CFM	0.75 GPM	133
1B-3E-19	VCV-10	750 CFM	250 CFM	0.75 GPM	133
1B-3F-19	VCV-6	300 CFM	250 CFM	0.75 GPM	133
1B-3G-19	VCV-6	225 CFM	250 CFM	0.75 GPM	133
1B-3H-19	VCV-6	0 CFM	250 CFM	0.75 GPM	133
1B-3I-19	VCV-6	350 CFM	250 CFM	0.75 GPM	133
1B-3J-19	VCV-8	450 CFM	250 CFM	0.75 GPM	133
1B-3K-19	VCV-8	500 CFM	250 CFM	0.75 GPM	133
1B-5A-19	VCV-6	150 CFM	250 CFM	0.75 GPM	133
1B-5B-19	VCV-10	900 CFM	250 CFM	0.75 GPM	133
1B-5C-19	VCV-10	750 CFM	250 CFM	0.75 GPM	133
1B-5D-19	VCV-6	300 CFM	250 CFM	0.75 GPM	133
1B-5E-19	VCV-6	300 CFM	250 CFM	0.75 GPM	133
1B-5F-19	VCV-8	450 CFM	250 CFM	0.75 GPM	133
1B-5G-19	VCV-6	150 CFM	250 CFM	0.75 GPM	133

Supply Air Terminal Box Schedule - First Floor

Box Tag	Box Size	Max CFM	Min CFM	Box GPM	Associated AHU
1B-5H-19	VCV-8	600 CFM	250 CFM	0.75 GPM	133
1B-5I-19	VCV-8	650 CFM	250 CFM	0.75 GPM	133
1B-5J-19	VCV-8	600 CFM	250 CFM	0.75 GPM	133
1B-5K-19	VCV-6	150 CFM	250 CFM	0.75 GPM	133
1B-5L-19	VCV-8	525 CFM	250 CFM	0.75 GPM	133
1B-7A-19	VCV-8	425 CFM	250 CFM	0.75 GPM	133
1B-7B-19	VCV-6	325 CFM	250 CFM	0.75 GPM	133
1B-7C-19	VCV-6	125 CFM	250 CFM	0.75 GPM	133
1B-7D-19	VCV-8	550 CFM	250 CFM	0.75 GPM	133
1B-7E-19	VCV-8	525 CFM	250 CFM	0.75 GPM	133
1D-1A-21A	VCV-16	1900 CFM	700 CFM	1.75 GPM	130
1D-1B-21A	VCV-16	1900 CFM	700 CFM	1.75 GPM	130
1D-1C-21A	VCV-12	1275 CFM	700 CFM	1.25 GPM	130
1D-1D-21A	VCV-12	1000 CFM	500 CFM	1.00 GPM	130
1D-3A-22	VCV-12	1125 CFM	420 CFM	0.75 GPM	130
1D-3B-22	VCV-6	250 CFM	125 CFM	0.75 GPM	130
1D-3C-22	VCV-10	900 CFM	620 CFM	1.25 GPM	130
1D-3D-22	VCV-12	1200 CFM	620 CFM	1.25 GPM	130
1D-3E-21A	VCV-8	500 CFM	420 CFM	0.75 GPM	130
1D-3F-21A	VCV-6	150 CFM	250 CFM	0.75 GPM	130
1D-3G-22	VCV-6	300 CFM	250 CFM	0.75 GPM	130
1D-3H-22	CV-6	250 CFM	250 CFM	0.75 GPM	130
1D-3I-23	VCV-8	450 CFM	125 CFM	0.75 GPM	130
1D-3J-23	VCV-6	400 CFM	175 CFM	0.75 GPM	130
1D-5A-23	VCV-12	1125 CFM	420 CFM	0.75 GPM	130
1D-5B-23	VCV-8	625 CFM	700 CFM	1.25 GPM	130
1D-5C-23	VCV-10	875 CFM	700 CFM	1.25 GPM	130
1D-5D-23	CV-10	700 CFM	700 CFM	1.25 GPM	130
1D-5E-23	VCV-6	300 CFM	125 CFM	0.75 GPM	130
1D-5F-23	VCV-6	250 CFM	125 CFM	0.75 GPM	130
1D-5G-23	VCV-6	250 CFM	125 CFM	0.75 GPM	130
1D-5H-23	VCV-8	475 CFM	175 CFM	0.75 GPM	130
1D-5I-25	VCV-8	450 CFM	700 CFM	1.25 GPM	130
1D-7A-23	VCV-8	525 CFM	150 CFM	0.75 GPM	130
1D-7B-23	VCV-10	700 CFM	150 CFM	0.75 GPM	130
1D-7C-23	VCV-12	975 CFM	500 CFM	1.00 GPM	130
1D-9A-23	VCV-6	300 CFM	150 CFM	0.75 GPM	130
1D-9B-23	VCV-12	1200 CFM	600 CFM	1.00 GPM	130
1D-9C-23	VCV-6	300 CFM	150 CFM	0.75 GPM	130
1D-11A-24	VCV-10	875 CFM	700 CFM	1.25 GPM	130
1D-11B-24	CV-10	700 CFM	700 CFM	1.25 GPM	130
1D-11C-24	VCV-6	150 CFM	125 CFM	0.75 GPM	130
1D-11D-24	VCV-6	250 CFM	275 CFM	0.75 GPM	130
1D-11E-24	VCV-6	250 CFM	125 CFM	0.75 GPM	130
1D-11F-24	VCV-6	250 CFM	275 CFM	0.75 GPM	130
1D-11G-24	VCV-8	425 CFM	225 CFM	0.75 GPM	130
1D-11H-24	VCV-6	375 CFM	175 CFM	0.75 GPM	130
1D-13A-24	VCV-12	1400 CFM	700 CFM	1.25 GPM	130
1D-13B-24	VCV-12	1200 CFM	600 CFM	1.00 GPM	130
1D-13C-24	VCV-6	300 CFM	150 CFM	0.75 GPM	130
1D-13D-24	VCV-10	750 CFM	375 CFM	0.75 GPM	130
1D-15A-25	VCV-12	1050 CFM	375 CFM	0.75 GPM	130
1D-15B-25	VCV-6	125 CFM	375 CFM	0.75 GPM	130
1D-15C-25	VCV-10	900 CFM	375 CFM	0.75 GPM	130
1D-15D-25	VCV-8	475 CFM	375 CFM	0.75 GPM	130
1D-15E-25	VCV-6	150 CFM	375 CFM	0.75 GPM	130
1D-17A-25	VCV-6	300 CFM	150 CFM	0.75 GPM	130
1D-17B-25	VCV-12	1175 CFM	600 CFM	1.00 GPM	130
1D-17C-25	VCV-8	500 CFM	250 CFM	0.75 GPM	130
1D-17D-25	VCV-8	550 CFM	225 CFM	0.75 GPM	130

Supply Air Terminal Box Schedule - Second Floor

Box Tag	Box Size	Max CFM	Min CFM	Box GPM	Associated AHU
2A-1D-17	VCV-8	550 CFM	325 CFM	0.75 GPM	133
2A-1E-17	VCV-10	675 CFM	350 CFM	0.75 GPM	133
2A-1F-17	VCV-8	475 CFM	325 CFM	0.75 GPM	133
2A-1H-17	VCV-6	300 CFM	150 CFM	0.75 GPM	133
2A-1I-17	VCV-8	500 CFM	325 CFM	0.75 GPM	133
2A-1J-17	VCV-8	600 CFM	325 CFM	0.75 GPM	133
2A-1K-17	VCV-8	525 CFM	325 CFM	0.75 GPM	133
2B-3A-18	VCV-8	425 CFM	325 CFM	0.75 GPM	133
2B-3B-18	CV-6	275 CFM	275 CFM	0.75 GPM	133
2B-3C-18	VCV-12	1050 CFM	800 CFM	1.50 GPM	133
2B-3D-18	VCV-6	250 CFM	150 CFM	0.75 GPM	133
2B-3E-18	VCV-10	900 CFM	450 CFM	0.75 GPM	133
2B-3F-18	VCV-8	500 CFM	325 CFM	0.75 GPM	133
2B-3G-18	VCV-6	200 CFM	150 CFM	0.75 GPM	133
2B-3H-18	VCV-8	500 CFM	325 CFM	0.75 GPM	133
2B-3I-18	VCV-6	275 CFM	150 CFM	0.75 GPM	133
2B-3J-18	VCV-8	650 CFM	150 CFM	0.75 GPM	
2B-3K-18	VCV-6	200 CFM	150 CFM	0.75 GPM	
2B-3L-18	VCV-6	400 CFM	150 CFM	0.75 GPM	
2B-3M-18	VCV-12	1000 CFM	150 CFM	0.75 GPM	
2B-3N-18	CV-6	150 CFM	150 CFM	0.75 GPM	
2B-3O-18	CV-6	150 CFM	150 CFM	0.75 GPM	
2B-5A-12.5	VCV-8	600 CFM	325 CFM	0.75 GPM	133
2B-5B-12.5	VCV-8	600 CFM	325 CFM	0.75 GPM	133
2B-5C-12.5	VCV-6	400 CFM	325 CFM	0.75 GPM	133
2B-5D-12.5	VCV-8	475 CFM	325 CFM	0.75 GPM	133
2B-5E-12.5	VCV-6	400 CFM	325 CFM	0.75 GPM	133
2B-5F-12.5	VCV-6	400 CFM	325 CFM	0.75 GPM	133
2B-5G-12.5	VCV-6	400 CFM	325 CFM	0.75 GPM	133
2B-5H-12.5	VCV-6	400 CFM	325 CFM	0.75 GPM	133
2B-5I-12.5	VCV-16	2300 CFM	325 CFM	0.75 GPM	133
2B-5J-12.5	VCV-6	275 CFM	325 CFM	0.75 GPM	133
2B-5K-12.5	VCV-6	175 CFM	325 CFM	0.75 GPM	133
2B-5L-12.5	VCV-8	500 CFM	325 CFM	0.75 GPM	133
2B-5M-12.5	VCV-6	350 CFM	325 CFM	0.75 GPM	133
2C-1A-12.5	VCV-8	425 CFM	325 CFM	0.75 GPM	133
2C-1B-12.5	VCV-6	200 CFM	100 CFM	0.75 GPM	133
2C-1C-12.5	VCV-8	650 CFM	325 CFM	0.75 GPM	133
2C-1D-12.5	CV-6	125 CFM	125 CFM	0.75 GPM	133
2C-1E-12.5	VCV-8	625 CFM	325 CFM	0.75 GPM	133
2C-1F-12.5	CV-6	325 CFM	325 CFM	0.75 GPM	133
2C-1G-12.5	VCV-8	500 CFM	250 CFM	0.75 GPM	133
2C-1H-12.5	VCV-6	200 CFM	325 CFM	0.75 GPM	133

Supply Air Terminal Box Schedule - Penthouse/Roof

Box Tag	Box Size	Max CFM	Min CFM	Box GPM	Associated AHU
RA-1A-S	VCV-10	700 CFM	500 CFM	1.00 GPM	

Return Air Terminal Box Schedule - All Floors

Box Tag	Box Size	Max_Flow	Min_Flow
MD-12-23	VVR-8	550 CFM	600 CFM
MD-20-23	VVR-8	450 CFM	450 CFM
MD-14-23	VVR-8	450 CFM	450 CFM
MD-22-23	VVR-8	475 CFM	450 CFM
MD-24-23	VVR-8	475 CFM	450 CFM
MD-18-23	VVR-8	500 CFM	450 CFM
MD-16-23	VVR-8	450 CFM	450 CFM
MD-10-23	VVR-8	500 CFM	600 CFM
1D-8-23	VVR-14	1500 CFM	0 CFM

Air Volume Control & Measuring Station Schedule (All Floors)

AVCMS Tag	AVCMS Size	Floor	Associated AHU	System Classification	Max Flow (CFM)	Min Flow (CFM)	CTRL Width	CTRL Height	Static Pressure	Basis of Design	Key Notes
BD-1-22	AVCMS-1	Basement	BL-133	Supply Air	9215	9215	4' - 4"	1' - 6"	0.30 in-wg	Ebtron / Price	1-6
BD-2-21	AVCMS-2	Basement	BL-133	Return Air	1640	1640	2' - 0"	2' - 0"	0.30 in-wg	Ebtron / Price	1-6
BD-4-22	AVCMS-3	Basement	BL-133	Return Air	4475	4475	2' - 0"	2' - 0"	0.30 in-wg	Ebtron / Price	1-6
BD-8-23	AVCMS-4	Basement	BL-133	Supply Air	2340	2340	2' - 6"	0' - 10"	0.30 in-wg	Ebtron / Price	1-6
BD-10-23	AVCMS-5	Basement	BL-133	Return Air	2920	2920	4' - 2"	2' - 2"	0.30 in-wg	Ebtron / Price	1-6
BD-12-24	AVCMS-6	Basement	BL-133	Return Air	6460	6460	3' - 4"	1' - 0"	0.30 in-wg	Ebtron / Price	1-6
BD-14-24	AVCMS-7	Basement	BL-133	Supply Air	9475	9475	2' - 6"	2' - 6"	0.30 in-wg	Ebtron / Price	1-6
BD-16-25	AVCMS-8	Basement	BL-133	Supply Air	4005	4005	2' - 0"	2' - 0"	0.30 in-wg	Ebtron / Price	1-6
BD-18-25	AVCMS-9	Basement	BL-133	Supply Air	2830	2830	2' - 6"	1' - 0"	0.30 in-wg	Ebtron / Price	1-6
MC-2-20	AVCMS-10	Main	BL-130A&B	Return Air	1925	1925	1' - 10"	1' - 0"	0.30 in-wg	Ebtron / Price	1-6
MD-4-21A	AVCMS-11	Main	BL-130A&B	Return Air	2150	6075	3' - 2"	1' - 6"	0.30 in-wg	Ebtron / Price	1-6
MD-6-22	AVCMS-12	Main	BL-130A&B	Return Air	4285	4285	3' - 2"	1' - 2"	0.30 in-wg	Ebtron / Price	1-6
MD-8-22	AVCMS-13	Main	BL-130A&B	Return Air	1400	1400	2' - 6"	1' - 4"	0.30 in-wg	Ebtron / Price	1-6
MD-10-23	AVCMS-14	Main	BL-130A&B	Return Air	4050	4050	2' - 8"	1' - 4"	0.30 in-wg	Ebtron / Price	1-6
MD-26-24	AVCMS-15	Main	BL-130A&B	Return Air	2675	2675	3' - 6"	1' - 4"	0.30 in-wg	Ebtron / Price	1-6
MD-27A-24	AVCMS-16	Main	BL-130A&B	Supply Air	xxx	xxx	1' - 3"	0' - 8"	0.30 in-wg	Ebtron / Price	1-7
MD-27B-24	AVCMS-17	Main	BL-130A&B	Supply Air	xxx	xxx	2' - 4"	0' - 10"	0.30 in-wg	Ebtron / Price	1-7
MD-27C-24	AVCMS-18	Main	BL-130A&B	Supply Air	xxx	xxx	1' - 8"	0' - 8"	0.30 in-wg	Ebtron / Price	1-7
MD-27D-24	AVCMS-19	Main	BL-130A&B	Supply Air	xxx	xxx	1' - 0"	0' - 8"	0.30 in-wg	Ebtron / Price	1-7
MD-27E-25	AVCMS-20	Main	BL-130A&B	Supply Air	xxx	xxx	2' - 1"	0' - 8"	0.30 in-wg	Ebtron / Price	1-7
MD-27F-25	AVCMS-21	Main	BL-130A&B	Supply Air	xxx	xxx	1' - 0"	0' - 10"	0.30 in-wg	Ebtron / Price	1-7
MD-27G-25	AVCMS-22	Main	BL-130A&B	Supply Air	xxx	xxx	1' - 10"	0' - 10"	0.30 in-wg	Ebtron / Price	1-7
MD-28A-24	AVCMS-23	Main	BL-130A&B	Return Air	xxx	xxx	2' - 1"	0' - 10"	0.30 in-wg	Ebtron / Price	1-7
MD-28B-24	AVCMS-24	Main	BL-130A&B	Return Air	xxx	xxx	2' - 11"	1' - 6"	0.30 in-wg	Ebtron / Price	1-7
MD-28C-24	AVCMS-25	Main	BL-130A&B	Return Air	xxx	xxx	1' - 8"	0' - 8"	0.30 in-wg	Ebtron / Price	1-7
MD-30-25	AVCMS-26	Main	BL-130A&B	Return Air	1850		2' - 0"	1' - 4"	0.30 in-wg	Ebtron / Price	1-6
1B-2-18	AVCMS-27	First	BL-131	Return Air		700	3' - 4"	1' - 4"	0.30 in-wg	Ebtron / Price	1-6
1B-4-19	AVCMS-28	First	BL-131	Return Air		700	4' - 0"	1' - 0"	0.30 in-wg	Ebtron / Price	1-6
1B-6-19	AVCMS-29	First	BL-131	Return Air		700	3' - 4"	1' - 2"	0.30 in-wg	Ebtron / Price	1-6
1D-2-21A	AVCMS-30	First	BL-130A&B	Return Air		700	2' - 6"	1' - 4"	0.30 in-wg	Ebtron / Price	1-6
1D-4-22	AVCMS-31	First	BL-130A&B	Return Air		1775	2' - 10"	1' - 4"	0.30 in-wg	Ebtron / Price	1-6
1D-6-23	AVCMS-32	First	BL-130A&B	Return Air		2150	2' - 10"	1' - 4"	0.30 in-wg	Ebtron / Price	1-6
1D-10-23	AVCMS-33	First	BL-130A&B	Return Air		1225	2' - 10"	1' - 0"	0.30 in-wg	Ebtron / Price	1-6
1D-12-24	AVCMS-34	First	BL-130A&B	Return Air		2200	2' - 10"	1' - 4"	0.30 in-wg	Ebtron / Price	1-6
1D-14-24	AVCMS-35	First	BL-130A&B	Return Air		1750	2' - 10"	1' - 0"	0.30 in-wg	Ebtron / Price	1-6
1D-16-25	AVCMS-36	First	BL-130A&B	Return Air		1250	2' - 0"	1' - 0"	0.30 in-wg	Ebtron / Price	1-6
1D-18-25	AVCMS-37	First	BL-130A&B	Return Air		1100	2' - 0"	1' - 0"	0.30 in-wg	Ebtron / Price	1-6
2A-2-17	AVCMS-38	Second	BL-131	Return Air			4' - 0"	1' - 0"	0.30 in-wg	Ebtron / Price	1-6
2B-4-12.5	AVCMS-39	Second	BL-131	Return Air			4' - 10"	1' - 4"	0.30 in-wg	Ebtron / Price	1-6
2B-4B-18	AVCMS-40	Second	BL-131	Return Air			2' - 8"	1' - 0"	0.30 in-wg	Ebtron / Price	1-6
RD-1-S	AVCMS-41	Penthouse/Roof	BL-130A&B	Supply Air			2' - 6"	4' - 6"	0.30 in-wg	Ebtron / Price	1-6
RD-2-R	AVCMS-42	Penthouse/Roof	BL-130A&B	Return Air			3' - 6"	3' - 6"	0.30 in-wg	Ebtron / Price	1-6
RD-3-S	AVCMS-43	Penthouse/Roof	BL-130A&B	Supply Air			2' - 0"	5' - 0"	0.30 in-wg	Ebtron / Price	1-6
RD-6-R	AVCMS-45	Penthouse/Roof	BL-130A&B	Return Air			3' - 2"	3' - 2"	0.30 in-wg	Ebtron / Price	1-6

KEY NOTES:

1. REFER TO "HVAC DEMO AIRFLOW DISTRIBUTION DIAGRAM" FOR LOCATION.
2. LARGE CAPACITY CUSTOM RETURN AIR VOLUME CONTROL AND MEASURING STATION TO PROVIDE FLOOR BY FLOOR PRESSURIZATION CONTROL (TO TRACK ALL SUPPLY AIR TERMINALS MINUS OFFSETS) VIA RETURN PLENUM.
3. BOXES SHALL CONSIST OF THE FOLLOWING COMPONENTS:
   A. THERMO-DISPERSION TYPE AIRFLOW MEASURING STATION (EQUAL TO EBTRON GOLD SERIES)
   B. AIR VOLUME CONTROL DAMPER
4. THE ABOVE COMPONENTS SHALL BE FURNISHED AS A SINGLE INTEGRATED UNIT WITH A SINGLE MANUFACTURER RESPONSIBLE FOR ASSEMBLY. SIMILAR TO TAMCO, EBTRON, AIR MONITOR CO. ETC.
5. MAXIMUM FLOW BASED ON "CONNECTED" RETURN AIR. AIRFLOW SHALL TRACK ALL ASSOCIATED S.A. TERMINALS CONNECTED TO ASSOCIATED SUPPLY RISER (SUPPLY RISER NEXT TO RETURN IN SHAFT) MINUS SPECIFIED OFFSETS.
6. REFER TO DETAIL FOR ASSEMBLY DETAIL AND CLEARANCE REQUIREMENTS.
7. CFM ASSIGNED TO AVCMS SHALL BE DETERMINED UPON COMPLETION OF THE T.A.B. SURVEY OF THE EXISTING REHEAT COILS DOWNSTREAM OF THE NEW AVCMS. NEW AVCMS'S ARE SIZED TO MATCH THE EXISTING DUCT SIZE INDICATED ON THE EXISTING BUILDING DESIGN DRAWINGS.

Automatic Damper Schedule

Damper Tag	Floor	System Type	AD-Duct Width	AD-DuctH eight
AD-BD-1-26	Basement	Exhaust Air	54	30
AD-BD-2-26	Basement	Return Air	32	32
AD-BD-3-26	Basement	Return Air	42	48
AD-BD-4-26	Basement	Return Air	52	30
AD-BD-5-23	Basement	Return Air	90	36

GENERAL TERMINAL UNIT & DAMPER NOTES:

1. AIR TERMINAL BOX NUMBERING SCHEME: [FLOOR.SECTOR - BOX # - SHAFT #]
   NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.
2. DAMPER NUMBERING SCHEME: [DAMPER TYPE - FLOOR.SECTOR - DAMPER # - SHAFT #]

Fire/Smoke Damper Schedule

Damper Tag	Floor	System Type	FSD-Duct Width	FSD-Duct Height
FSD-BD-1-23	Basement	Return Air	50	26
FSD-BD-2-24	Basement	Return Air	40	12
FSD-BD-3-22	Basement	Return Air	24	24
FSD-BD-4-22	Basement	Return Air	24	24
FSD-BD-5-25	Basement	Supply Air	30	12
FSD-BD-6-25	Basement	Supply Air	24	24
FSD-BD-7-24	Basement	Supply Air	30	30
FSD-BD-7-25	Basement	Supply Air	30	12
FSD-BD-8-23	Basement	Supply Air	30	10
FSD-BD-9-22	Basement	Supply Air	52	18
FSD-BD-6-25	Basement	Supply Air	24	24
FSD-MB-1-17	Main	Return Air	30	16
FSD-MB-2-17	Main	Return Air	30	11
FSD-MB-3-18	Main	Supply Air	38	14
FSD-MB-4-18	Main	Return Air	32	12
FSD-MB-5-18	Main	Supply Air	35	9
FSD-MB-6-18	Main	Return Air	34	15
FSD-MB-7-19	Main	Supply Air	48	12
FSD-MB-8-19	Main	Supply Air	40	12
FSD-MB-9-19	Main	Return Air	32	10
FSD-MB-10-19	Main	Return Air	32	8
FSD-MB-11-20	Main	Return Air	22	12
FSD-MB-12-27	Main	Supply Air	10	8
FSD-MB-13-27	Main	Return Air	12	10
FSD-MB-14-20	Main	Supply Air	22	12
FSD-MD-1-21A	Main	Supply Air	38	18
FSD-MD-2-21A	Main	Supply Air	16	16
FSD-MD-3-21A	Main	Return Air	38	18
FSD-MD-4-22	Main	Supply Air	26	12
FSD-MD-5-22	Main	Supply Air	18	12
FSD-MD-6-22	Main	Return Air	38	14
FSD-MD-7-22	Main	Return Air	30	16
FSD-MD-8-23	Main	Supply Air	36	16
FSD-MD-9-23	Main	Supply Air	30	16
FSD-MD-10-23	Main	Return Air	44	12
FSD-MD-11-23	Main	Return Air	30	16
FSD-MD-12-24	Main	Supply Air	42	16
FSD-MD-13-24	Main	Supply Air	40	10
FSD-MD-14-24	Main	Return Air	42	16
FSD-MD-15-24	Main	Return Air	55	20
FSD-MD-16-25	Main	Supply Air	24	16
FSD-MD-17-25	Main	Supply Air	30	14
FSD-MD-18-25	Main	Return Air	24	16
FSD-MD-19-26	Main	Return Air	12	10
FSD-MD-20-26	Main	Supply Air	10	8
FSD-1B-1-17	First	Return Air	28	26
FSD-1B-2-17	First	Supply Air	28	24
FSD-1B-3-18	First	Return Air	40	16
FSD-1B-4-18	First	Supply Air	24	14
FSD-1B-5-18	First	Return Air	24	14
FSD-1B-6-18	First	Supply Air	40	16
FSD-1B-7-19	First	Supply Air	36	10
FSD-1B-8-19	First	Supply Air	36	16
FSD-1B-9-19	First	Return Air	28	10
FSD-1B-10-19	First	Return Air	30	20
FSD-1B-11-19	First	Return Air	30	20
FSD-1B-12-19	First	Supply Air	36	20
FSD-1B-13-19	First	Return Air	18	12
FSD-1B-14-19	First	Return Air	22	12
FSD-1B-15-19	First	Supply Air	24	20
FSD-1B-17-20	First	Return Air	22	12
FSD-1C-1-20	First	Supply Air	22	12
FSD-1D-1-21A	First	Supply Air	40	16
FSD-1D-2-21A	First	Supply Air	30	12
FSD-1D-3-21A	First	Return Air	30	16
FSD-1D-4-22	First	Supply Air	34	16
FSD-1D-5-22	First	Return Air	34	16
FSD-1D-6-23	First	Supply Air	26	16
FSD-1D-7-23	First	Supply Air	36	16
FSD-1D-8-23	First	Return Air	34	12
FSD-1D-9-23	First	Return Air	34	16
FSD-1D-10-24	First	Supply Air	30	16
FSD-1D-11-24	First	Supply Air	34	16
FSD-1D-12-24	First	Return Air	34	12
FSD-1D-13-24	First	Return Air	34	16
FSD-1D-14-25	First	Supply Air	32	16
FSD-1D-15-25	First	Return Air	24	12
FSD-1D-16-25	First	Return Air	24	12
FSD-2B-1-17	Second	Return Air	26	20
FSD-2B-2-17	Second	Supply Air	24	24
FSD-2B-3A-17	Second	Return Air	32	12
FSD-2B-3B-27	Second	Exhaust Air	24	12
FSD-2B-4-17	Second	Supply Air	40	12
FSD-2C-1-12.5	Second	Supply Air	24	8
FSD-2C-2-12.5	Second	Supply Air	18	8
FSD-2D-1-23	Second	Return Air	42	42
FSD-2D-2-23	Second	Return Air	38	38
FSD-2D-3-23	Second	Supply Air	60	24
FSD-2D-4-23	Second	Supply Air	54	30

Fire Damper Schedule

Damper Tag	Floor	System Type	FD-Duct Width	FD-Duct Height
FD-GD-1-22	Ground	Supply Air	18	8
FD-GD-2-22	Ground	Return Air	18	8
FD-GD-3-22	Ground	Return Air	18	8
FD-GD-4-22	Ground	Supply Air	18	8
FD-MC-1-21A	Main	Supply Air	10	10
FD-MD-1-22	Main	Supply Air	14	15
FD-MD-2-22	Main	Return Air	12	8
FD-MD-3-22	Main	Supply Air	14	15
FD-MD-4-22	Main	Return Air	12	8
FD-1D-2-23	First	Return Air	12	8
FD-1D-1-23	Second	Supply Air	14	15

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HVAC SCHEDULES

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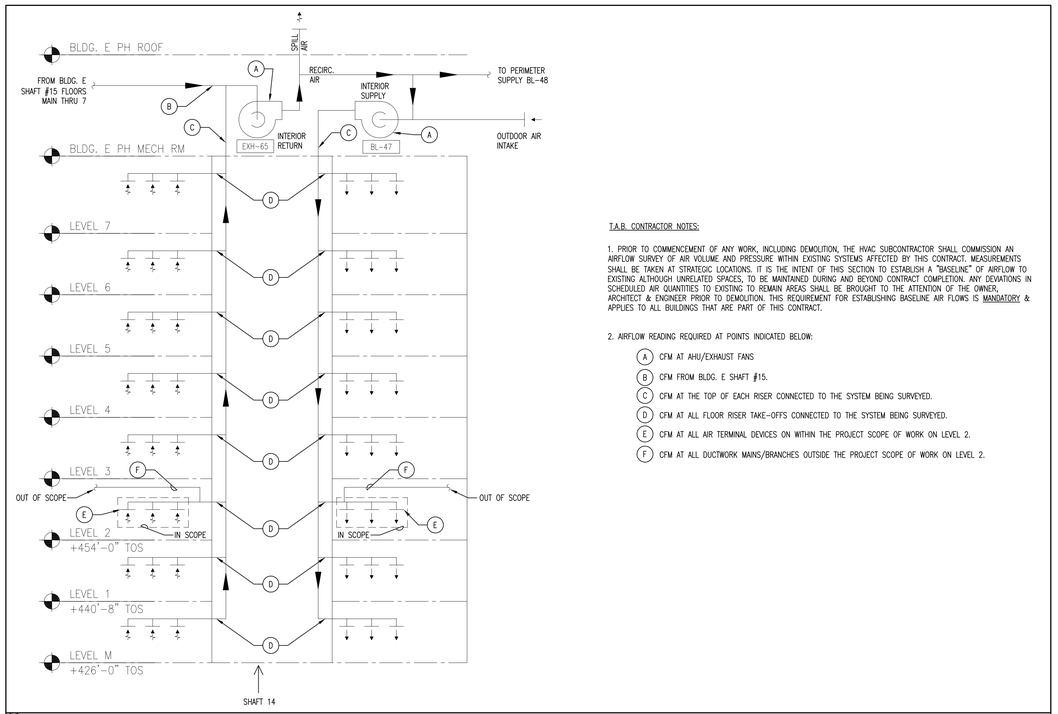
TEMPORARY AIR VOLUME CONTROL & MEASURING STATION SCHEDULE

TAVCMS SIZE	TAVCMS TAG	FLOOR	SUPPLY/ RETURN/ EXHAUST	ASSOCIATED AHU	CONSTANT VOLUME FLOW (CFM)	NOMINAL DAMPER SIZE (CUSTOM MADE: LOCATION & DIMENSIONS TO BE FIELD VERFIED)	SOUND CONTROL SECTION: SOUND ATTENUATOR?	MAX FACE VEL.	LENGHTH FEET	MAX PRESSURE DROP	INLET STATIC PRESS (IN.)	MINIMUM DYNAMIC INSERTION LOSS (db) DISCHARGE SPL @ 1.5" WG: 125hz	250hz	500hz	1Khz	2Khz	4Khz	MAX. APD IN. WG	LINING (FIBERGLASS)	SP IN H_2O	BASIS OF DESIGN	KEY NOTES
TAVCMS-1	MD-1-25	MAIN FLOOR	SUPPLY	BL-51	X	24x12	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-2	MD-2-24	MAIN FLOOR	RETURN	BL-80	X	35x10	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-3	MD-3-24	MAIN FLOOR	RETURN	BL-80	X	28x10	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-4	MD-4-24	MAIN FLOOR	SUPPLY	BL-51	X	33x12	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-5	MD-5-23	MAIN FLOOR	RETURN	BL-80	X	24x8	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-6	MD-6-23	MAIN FLOOR	SUPPLY	BL-51	X	26x10	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-7	MD-7-23	MAIN FLOOR	RETURN	BL-80	X	30x10	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-8	MD-8-23	MAIN FLOOR	SUPPLY	BL-51	X	12x8	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-9	MD-9-22	MAIN FLOOR	RETURN	BL-80	X	24x8	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-10	MD-10-23	MAIN FLOOR	SUPPLY	BL-51	X	36x10	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-11	MD-11-22	MAIN FLOOR	RETURN	BL-80	X	34x10	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-12	1D-1-22	FIRST FLOOR	SUPPLY	BL-51	X	35x12	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-13	1D-2-22	FIRST FLOOR	RETURN	BL-80	X	32x10	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-14	1D-3-23	FIRST FLOOR	SUPPLY	BL-51	X	28x10	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-15	1D-4-23	FIRST FLOOR	RETURN	BL-80	X	38x20	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-16	1D-5-23	FIRST FLOOR	SUPPLY	BL-51	X	12x8	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-17	1D-6-22	FIRST FLOOR	RETURN	BL-80	X	18x10	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-18	1D-7-24	FIRST FLOOR	SUPPLY	BL-51	X	32x10	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-19	1D-8-23	FIRST FLOOR	RETURN	BL-80	X	32x10	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-20	1D-9-23	FIRST FLOOR	RETURN	BL-80	X	30x11	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-21	1D-10-24	FIRST FLOOR	SUPPLY	BL-51	X	30x12	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-22	1D-11-24	FIRST FLOOR	SUPPLY	BL-51	X	32x18	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-23	1D-12-24	FIRST FLOOR	RETURN	BL-80	X	40x20	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-24	1D-13-24	FIRST FLOOR	RETURN	BL-80	X	38x10	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-25	1D-14-24	FIRST FLOOR	RETURN	BL-80	X	21x10	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-26	1D-15-25	FIRST FLOOR	SUPPLY	BL-51	X	28x12	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-27	1D-16-25	FIRST FLOOR	SUPPLY	BL-51	X	26x12	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-28	1D-17-25	FIRST FLOOR	SUPPLY	BL-51	X	22x18	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-29	2B-1-18	SECOND FLOOR	SUPPLY	BL-60	X	22x8	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-30	2B-2-18	SECOND FLOOR	SUPPLY	BL-60	X	42x10	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-31	2B-3-18	SECOND FLOOR	SUPPLY	BL-62	X	50x14	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-32	2B-4-18	SECOND FLOOR	SUPPLY	BL-56	X	42x11	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-33	2B-5-18	SECOND FLOOR	SUPPLY	BL-56	X	40x6	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-34	2B-6-18	SECOND FLOOR	SUPPLY	BL-61	X	36x9	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-35	2B-7-17	SECOND FLOOR	SUPPLY	BL-56	X	14x6	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6
TAVCMS-36	2B-8-17	SECOND FLOOR	SUPPLY	BL-56	X	34x12	NO	–	–	–	–	–	–	–	–	–	–	–	–	0.3"	EBTRON / PRICE	1-6

KEY NOTES:
1. REFER TO "HVAC DEMO AIRFLOW DISTRIBUTION DIAGRAM" FOR LOCATION.
2. LARGE CAPACITY CUSTOM RETURN AIR "BOXES" TO PROVIDE FLOOR BY FLOOR PRESSURIZATION CONTROL (TO TRACK ALL SUPPLY AIR TERMINALS MINUS OFFSETS) VIA RETURN PLENUM.
3. BOXES SHALL CONSIST OF THE FOLLOWING COMPONENTS:
   A. THERMO-DISPERSION TYPE AIRFLOW MEASURING STATION (EQUAL TO EBTRON GOLD SERIES)
   B. AIR VOLUME CONTROL DAMPER
   C. SOUND ATTENUATOR (ONLY IN BASEMENT AND SECOND FLOOR)
4. THE ABOVE COMPONENTS SHALL BE FURNISHED AS A SINGLE INTEGRATED UNIT WITH A SINGLE MANUFACTURER RESPONSIBLE FOR ASSEMBLY. SIMILAR TO TAMCO, EBTRON, AIR MONITOR CO. ETC.
5. MAXIMUM FLOW BASED ON "CONNECTED" RETURN AIR. AIRFLOW SHALL TRACK ALL ASSOCIATED S.A. TERMINALS CONNECTED TO ASSOCIATED SUPPLY RISER (SUPPLY RISER NEXT TO RETURN IN SHAFT) MINUS SPECIFIED OFFSETS.
6. REFER TO DETAIL FOR ASSEMBLY DETAIL AND CLEARANCE REQUIREMENTS.



A AIRFLOW READING POINTS REQUIRED FOR EXISTING SUPPLY AHU BL-47 AND EXISTING EXHAUST FAN EXH-65

T.A.B. CONTRACTOR NOTES:

1. PRIOR TO COMMENCEMENT OF ANY WORK, INCLUDING DEMOLITION, THE HVAC SUBCONTRACTOR SHALL COMMISSION AN AIRFLOW SURVEY OF AIR VOLUME AND PRESSURE WITHIN EXISTING SYSTEMS AFFECTED BY THIS CONTRACT. MEASUREMENTS SHALL BE TAKEN AT STRATEGIC LOCATIONS. IT IS THE INTENT OF THIS SECTION TO ESTABLISH A "BASELINE" OF AIRFLOW TO EXISTING ALTHOUGH UNRELATED SPACES, TO BE MAINTAINED DURING AND BEYOND CONTRACT COMPLETION. ANY DEVIATIONS IN SCHEDULED AIR QUANTITIES TO EXISTING TO REMAIN AREAS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER, ARCHITECT & ENGINEER PRIOR TO DEMOLITION. THIS REQUIREMENT FOR ESTABLISHING BASELINE AIR FLOWS IS MANDATORY & APPLIES TO ALL BUILDINGS THAT ARE PART OF THIS CONTRACT.

2. AIRFLOW READING REQUIRED AT POINTS INDICATED BELOW:

- (A) CFM AT AHU/EXHAUST FANS
- (B) CFM FROM BLDG. E SHAFT #15.
- (C) CFM AT THE TOP OF EACH RISER CONNECTED TO THE SYSTEM BEING SURVEYED.
- (D) CFM AT ALL FLOOR RISER TAKE-OFFS CONNECTED TO THE SYSTEM BEING SURVEYED.
- (E) CFM AT ALL AIR TERMINAL DEVICES ON WITHIN THE PROJECT SCOPE OF WORK ON LEVEL 2.
- (F) CFM AT ALL DUCTWORK MAINS/BRANCHES OUTSIDE THE PROJECT SCOPE OF WORK ON LEVEL 2.

TEMPORARY HOT WATER REHEAT COIL SCHEDULE

03/14/14 S0386.DWG

UNIT NUMBER	ASSOCIATED TAVCMS	ASSOCIATED AHU SYSTEM	NO. OF ROWS	MAX FPI	CAPACITY (MBH)	AIR SIDE: MAX CFM	EAT °F	LAT °F	MAX FACE VEL.	MAX ΔPRESS IN. WG.	WATER SIDE: FLUID	EWT °F	LWT °F	GPM	MAX ΔPRESS FT. H_2O	PIPE RUN-OUT SIZE (IN.)	COIL SIZE	KEY NOTES SEE BELOW
TRHC-1	TAVCMS-8	BL-51	1	12	16.3	500	55	85	750	0.2	WATER	180	150	1.1	8	3/4	12"x8"	2
TRHC-2	TAVCMS-16	BL-51	1	12	16.3	500	55	85	750	0.2	WATER	180	150	1.1	8	3/4	12"x8"	2
TRHC-3	TAVCMS-18	BL-51	1	12	23.6	725	55	85	750	0.2	WATER	180	150	1.6	8	3/4	14"x10"	1,2
TRHC-4	TAVCMS-18	BL-51	1	12	40.7	1,250	55	85	750	0.2	WATER	180	150	2.7	8	3/4	24"x10"	1,2

GENERAL NOTES:
1. REFER TO SPECIFICATION 238216.

KEY NOTES:
1. TEMP. AIR VOLUME CONTROL & MEASURING STATION "TAVCMS-18" SUPPORTS TEMP. REHEAT COILS TRHC-3 & TRHC-4.
2. ALL NEW TEMPORARY REHEAT COILS DIMENSIONS MATCH THE EXISTING DUCT SIZE. EXISTING AIRFLOW S ARE UNKNOWN. CFM IS BASED OFF A MAX VELOCITY OF 750 FPM.

ELECTRIC REHEAT COIL SCHEDULE

03/14/14 S0386.DWG

UNIT NUMBER	ASSOCIATED VAV BOX	ASSOCIATED AHU SYSTEM	CAPACITY (KW)	CAPACITY (MBH)	AIR SIDE: MAX CFM	EAT °F	LAT °F	MAX FACE VEL.	MAX ΔPRESS IN. WG.	ELECTRICAL DATA: VOLTS	PHASE	HZ	# CONTROL STEPS	COIL SIZE	BASIS OF DESIGN	KEY NOTES SEE BELOW
ERHC-1	2B-3A-18	BL-131	5.0	17.0	400	55	85	750	0.2	480	3	60	1	12"x10"	WARREN TECHNOLOGY	1
ERHC-2	2B-3D-18	BL-131	5.0	17.0	400	55	85	750	0.2	480	3	60	1	12"x10"	WARREN TECHNOLOGY	1
ERHC-3	2B-3E-18	BL-131	11.0	37.6	925	55	85	750	0.2	480	3	60	1	26"x10"	WARREN TECHNOLOGY	1
ERHC-4	2B-3G-18	BL-131	5.0	17.0	400	55	85	750	0.2	480	3	60	1	12"x6"	WARREN TECHNOLOGY	1

GENERAL NOTES:
1. REFER TO SPECIFICATION XXXXXX.

KEY NOTES:
1. ELECTRIC REHEAT COIL SHALL BE ON NORMAL POWER.

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HVAC SCHEDULES

H-0.0.6

BID DOCUMENTS

SCALE:	N.T.S.
JOB NO:	1302
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DRAWN BY:	MS
FILE NAME:	

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GENERAL DUCTWORK DEMO NOTES:

1. CUT, CAP AND SEAL DUCTWORK
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7. DISCONNECT AND REMOVE EXISTING INDUCTION UNIT. CUT AND CAP SUPPLY DUCT BACK TO MAIN WHERE THE CONSTRUCTION ZONE PERMITS, OTHERWISE CUT AND CAP AT UNIT.

DRAWING NOTES:

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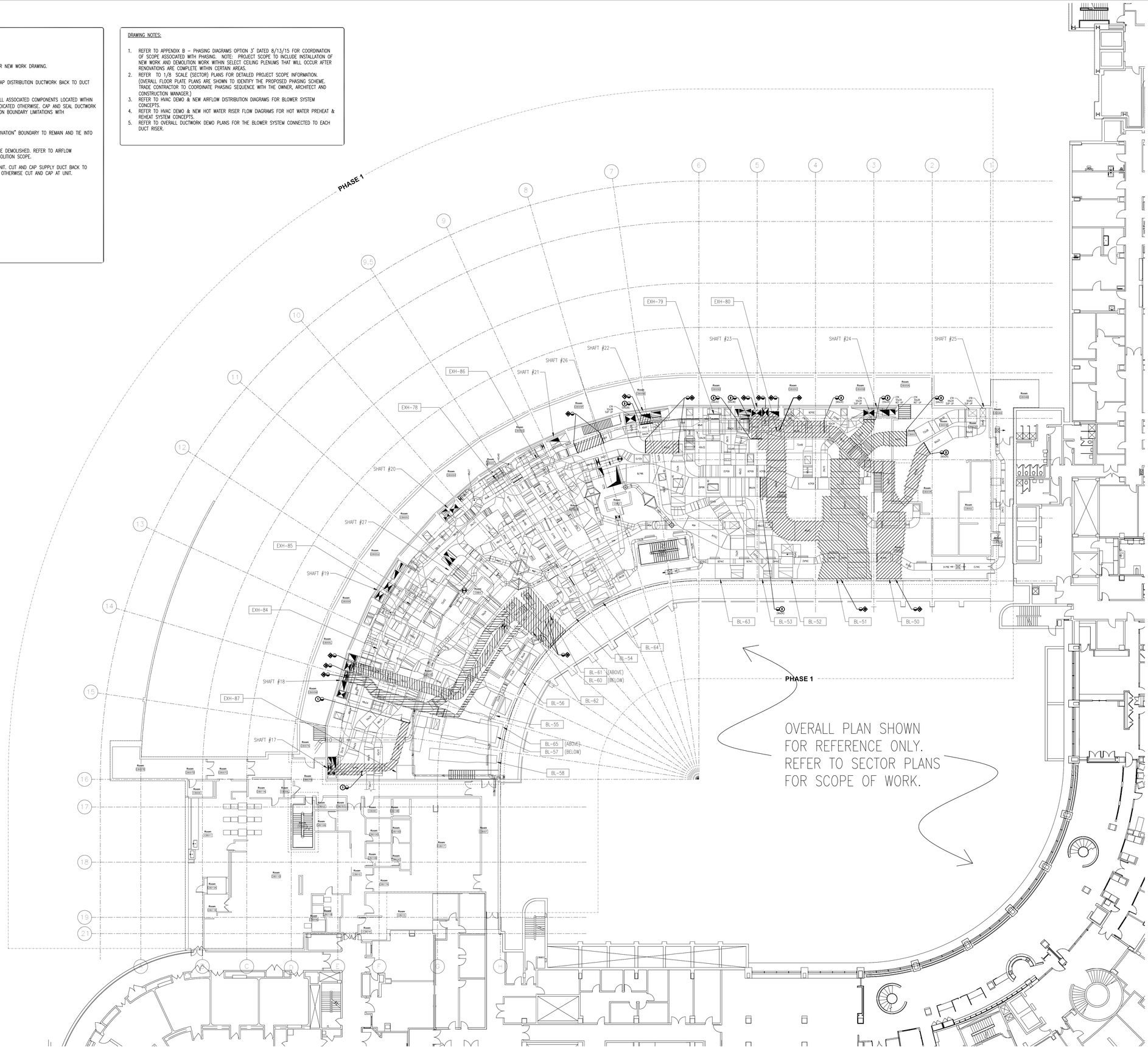

NO.	REVISION	DATE

N

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UCONN HEALTH

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HVAC BASEMENT DUCT DEMO PLAN OVERALL

HD-1.0.0

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J:\JOBS\1330000.QN\HVAC\QN-HD-1.0.0 - LEVEL B DEMO DUCT.DWG 12-09-2015 08:36:15 - mcl

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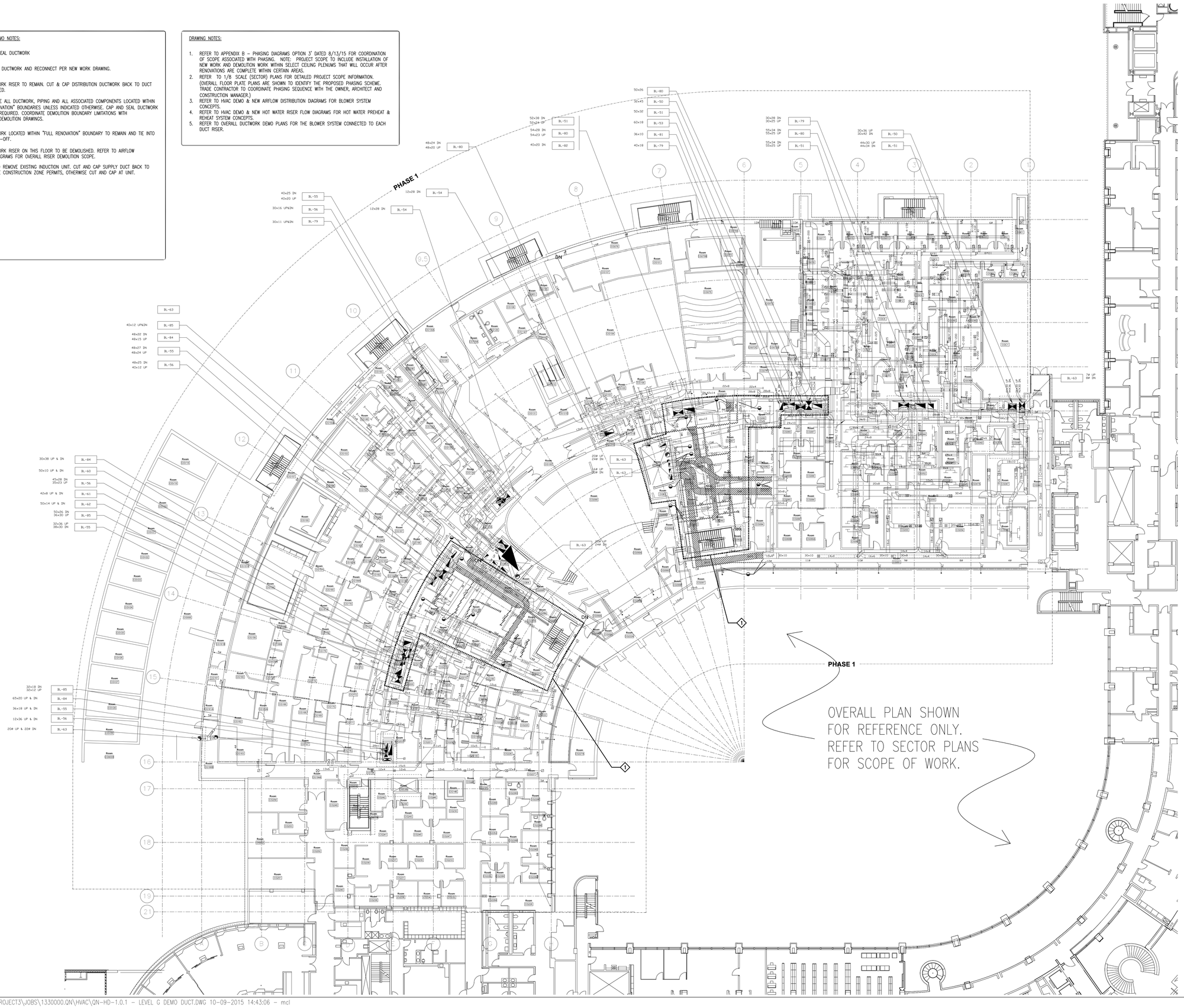

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HVAC GROUND FLOOR DUCT DEMO PLAN OVERALL

HD-1.0.1

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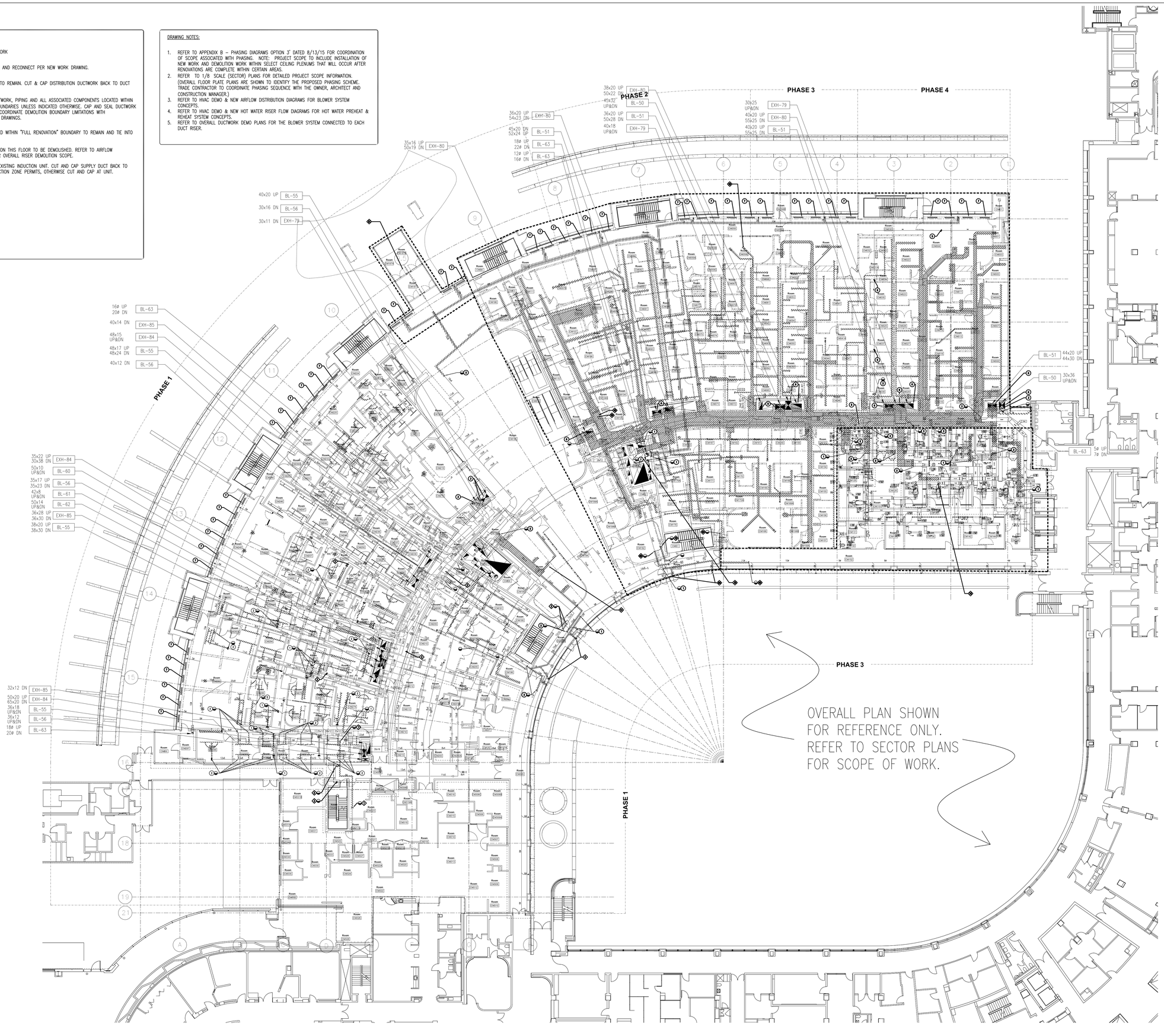

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HVAC MAIN FLOOR DUCT DEMO PLAN OVERALL

HD-1.0.2

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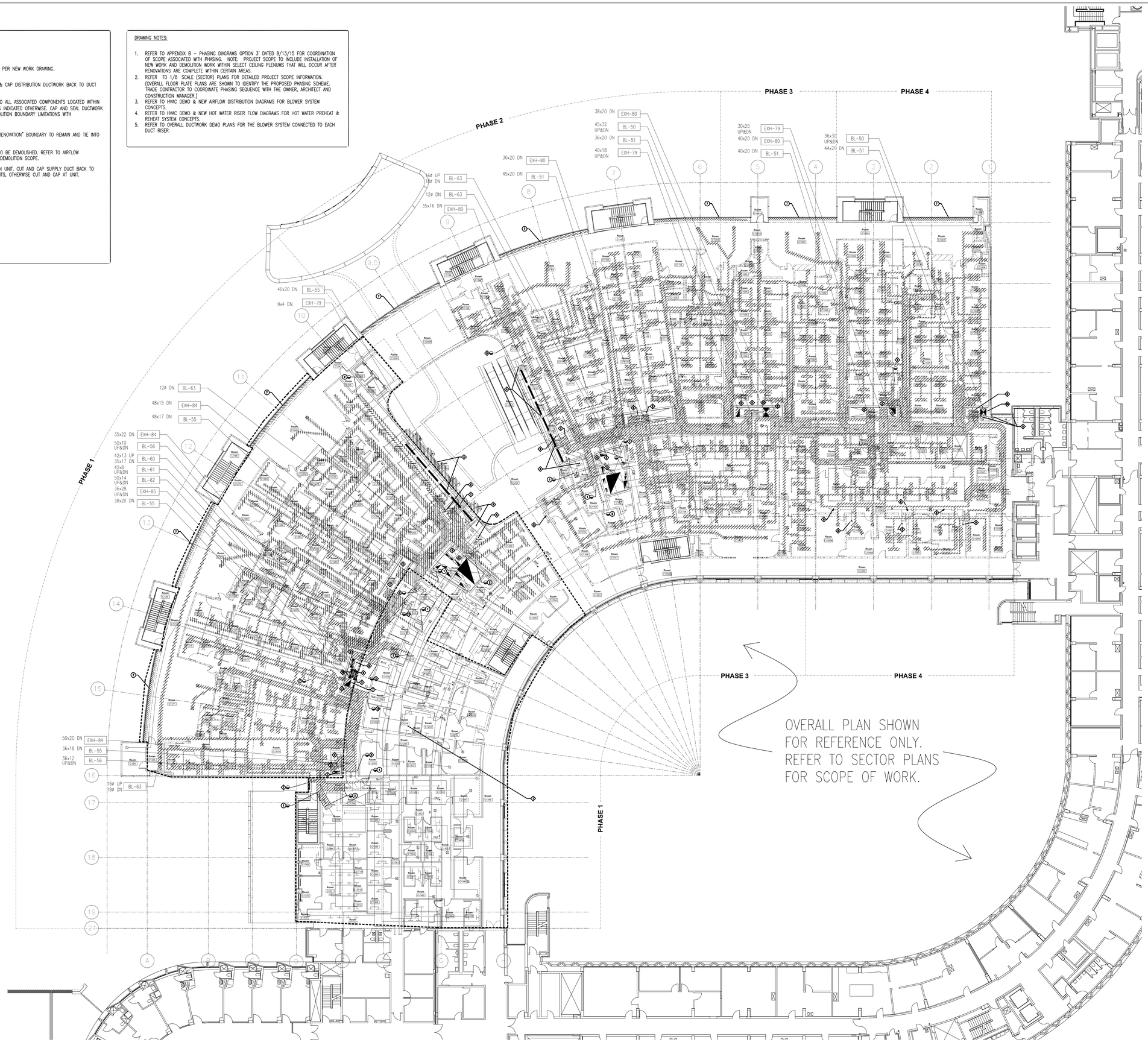

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HVAC FIRST FLOOR DUCT DEMO PLAN OVERALL

HD-1.0.3

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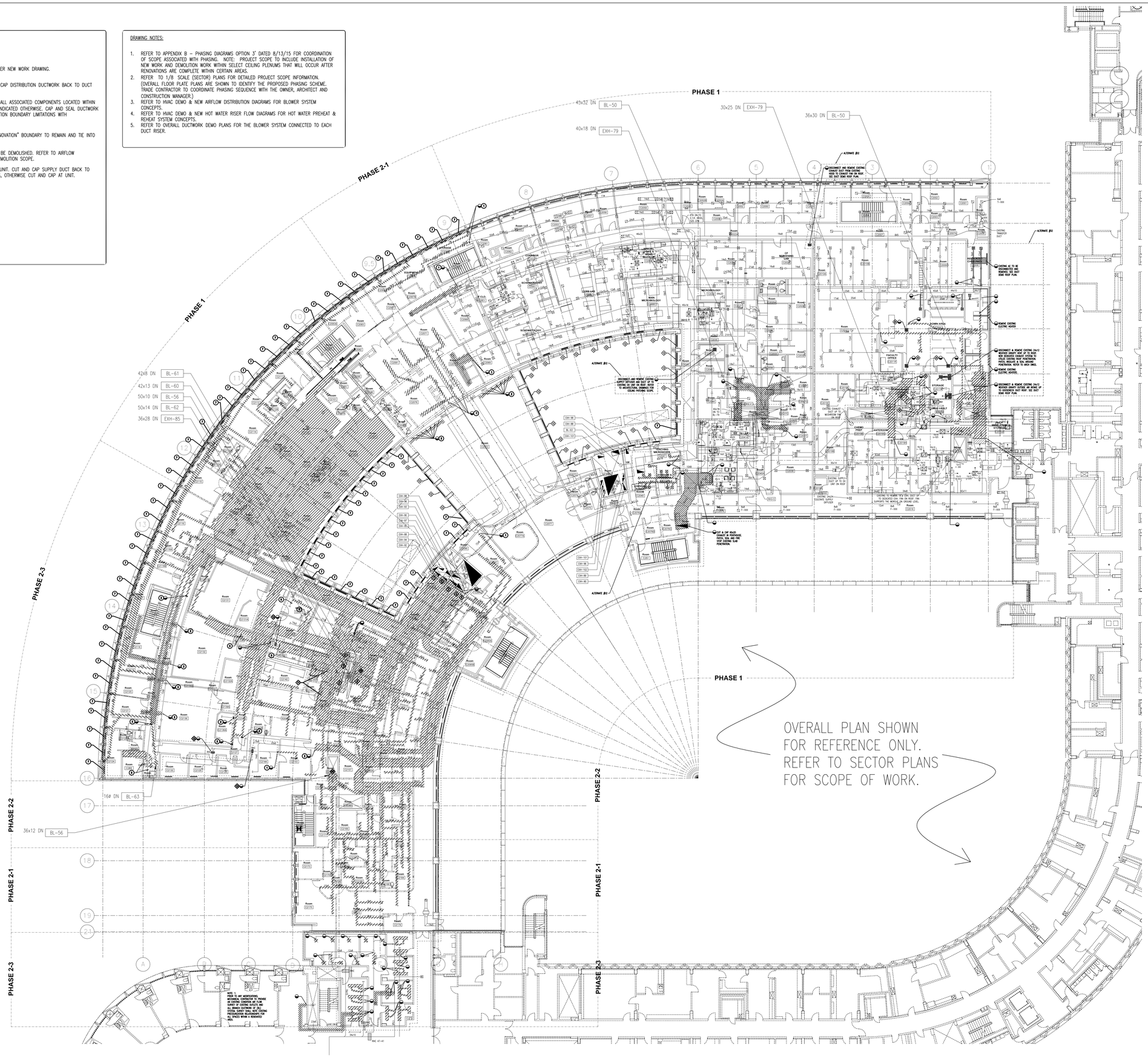

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UCONN HEALTH

(UCONN PROJECT # 901737)

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HVAC
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DUCT DEMO
PLAN OVERALL

HD-1.0.4

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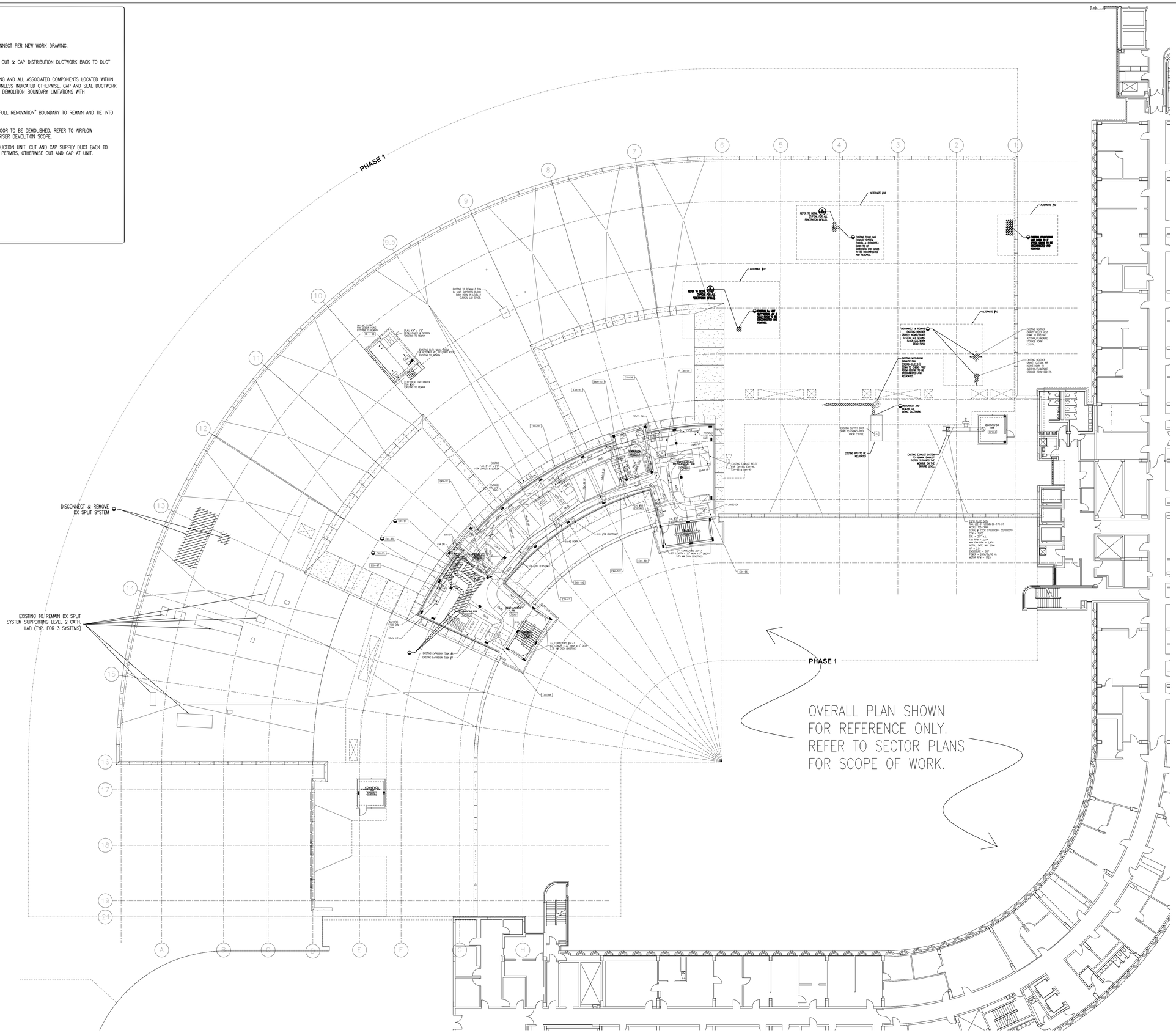

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UCONN HEALTH

(UCONN PROJECT # 901737)

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HVAC ROOF & PH DUCT DEMO PLAN OVERALL

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5. EXISTING DUCTWORK LOCATED WITHIN "FULL RENOVATION" BOUNDARY TO REMAIN AND TIE INTO NEW RISER TAKE-OFF.
6. EXISTING DUCTWORK RISER ON THIS FLOOR TO BE DEMOLISHED. REFER TO AIRFLOW DISTRIBUTION DIAGRAMS FOR OVERALL RISER DEMOLITION SCOPE.
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DRAWING NOTES:

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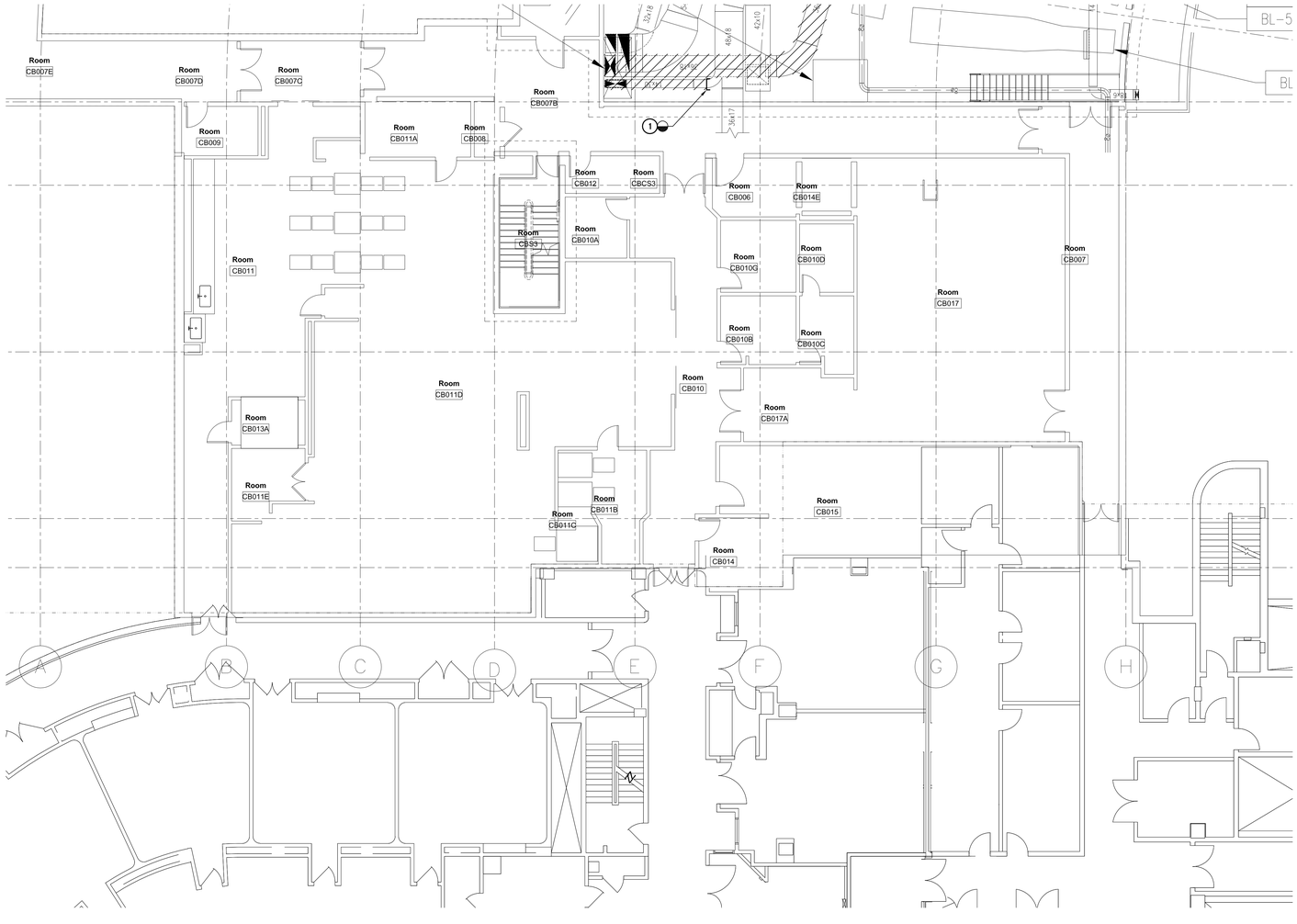
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

DUCTWORK DEMO KEYNOTES:



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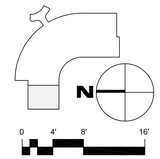

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC BASEMENT DUCT DEMO PLAN SECTOR A

HD-1.1.0A

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JOB NO:	1302
DATE:	12/10/2015
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FILE NAME:	

GENERAL DUCTWORK DEMO NOTES:

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5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

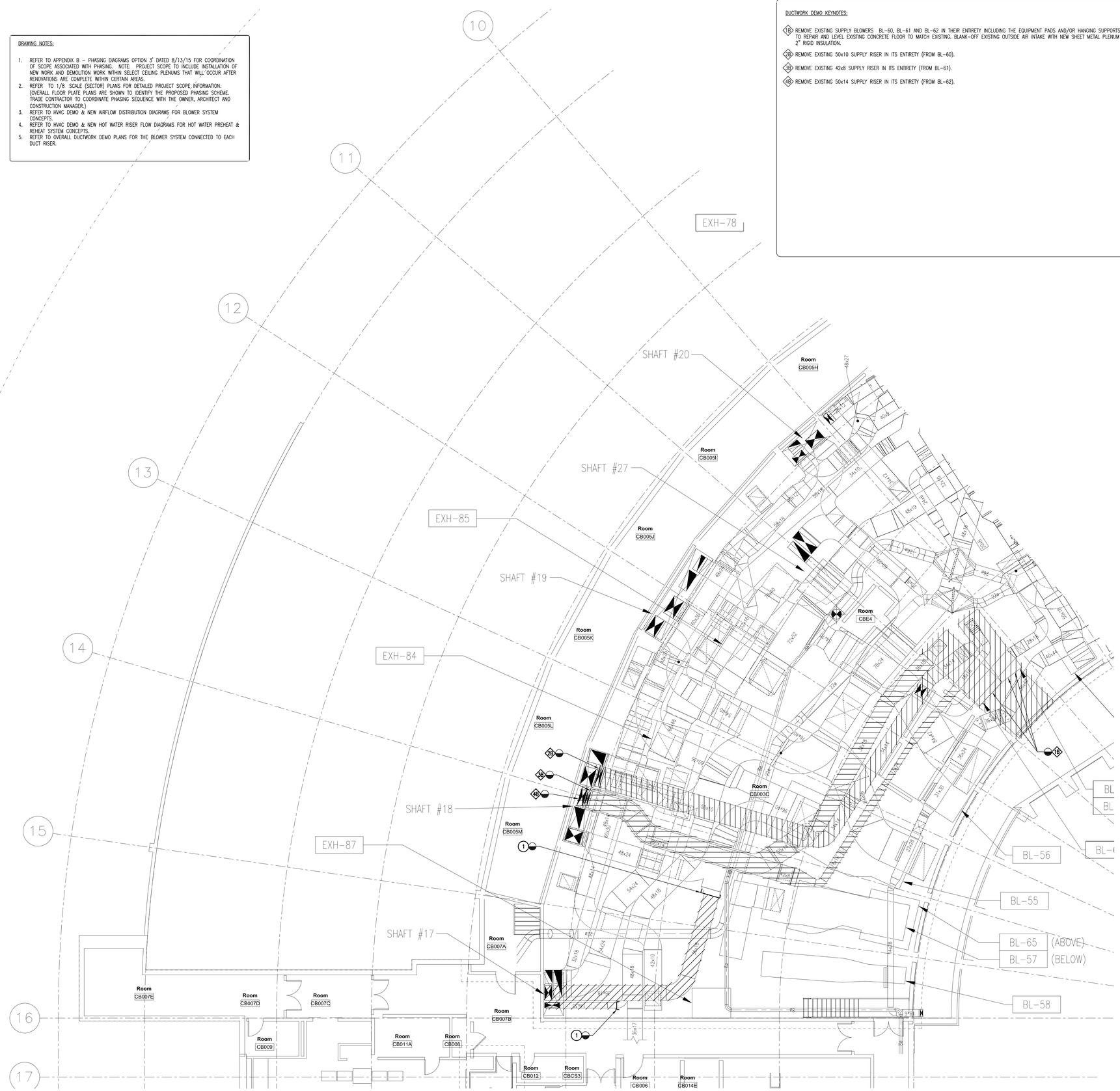
DUCTWORK DEMO KEYNOTES:

18 REMOVE EXISTING SUPPLY BLOWERS BL-60, BL-61 AND BL-62 IN THEIR ENTIRETY INCLUDING THE EQUIPMENT PADS AND/OR HANGING SUPPORTS. GC TO REPAIR AND LEVEL EXISTING CONCRETE FLOOR TO MATCH EXISTING. BLANK-OFF EXISTING OUTSIDE AIR INTAKE WITH NEW SHEET METAL PLENUM AND 2" RIGID INSULATION.

28 REMOVE EXISTING 50x10 SUPPLY RISER IN ITS ENTIRETY (FROM BL-60).

38 REMOVE EXISTING 42x8 SUPPLY RISER IN ITS ENTIRETY (FROM BL-61).

48 REMOVE EXISTING 50x14 SUPPLY RISER IN ITS ENTIRETY (FROM BL-62).



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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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HVAC BASEMENT DUCT DEMO PLAN SECTOR B

HD-1.1.0B

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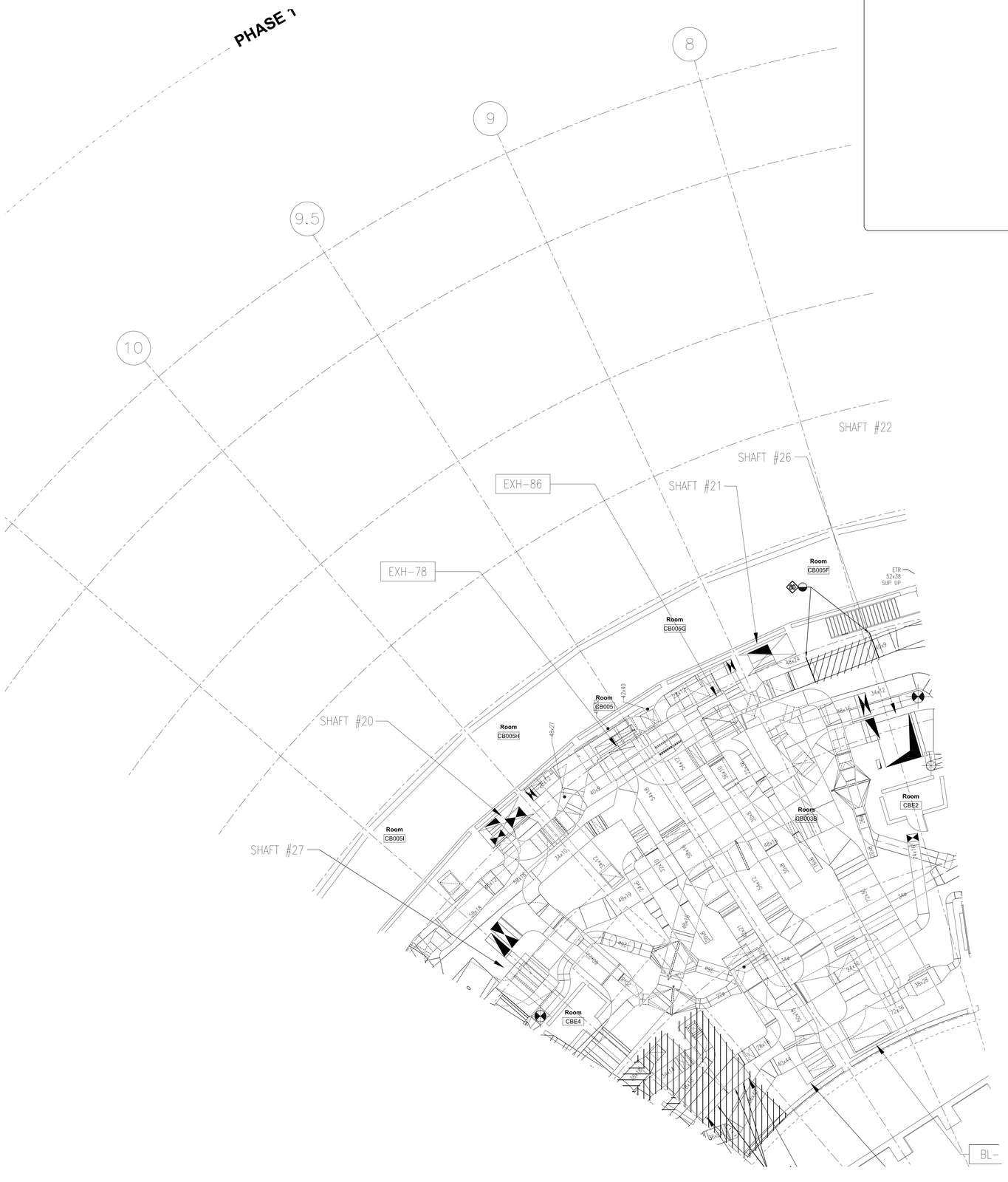
DUCTWORK DEMO KEYNOTES:



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UCONN HEALTH

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HVAC BASEMENT DUCT DEMO PLAN SECTOR C

HD-1.1.0C

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5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

DUCTWORK DEMO KEYNOTES:

10. REMOVE EXISTING SUPPLY BLOWER BL-50 IN ITS ENTIRETY INCLUDING THE EQUIPMENT PAD. GC TO REPAIR AND LEVEL EXISTING CONCRETE FLOOR TO MATCH EXISTING. BLANK-OFF EXISTING OUTSIDE AIR INTAKE WITH NEW SHEET METAL PLENUM AND 2" RIGID INSULATION.
20. REMOVE EXISTING 32x45 SUPPLY RISER IN ITS ENTIRETY (FROM BL-50).
30. REMOVE EXISTING SUPPLY BLOWER BL-51 IN ITS ENTIRETY INCLUDING THE EQUIPMENT PAD. GC TO REPAIR AND LEVEL EXISTING CONCRETE FLOOR TO MATCH EXISTING. AFTER THE NEW OUTSIDE AIR INTAKE IS INSTALLED FOR NEW AHU BL-133, BLANK-OFF ANY EXCESS AREA AROUND THE EXISTING OUTSIDE AIR INTAKE WITH NEW SHEET METAL PLENUM AND 2" RIGID INSULATION.
40. CUT AND REMOVE EXISTING 50x32 SUPPLY RISER UP TO GROUND LEVEL FLOOR SLAB TO ALLOW FOR NEW AIRFLOW MEASURING CONTROL STATION IN THE VERTICAL. SEE DRAWING H-6.0.1.
50. CUT AND REMOVE EXISTING SECTION OF 60x32 SUPPLY DUCT TO ALLOW FOR NEW AIRFLOW MEASURING CONTROL STATION IN THE HORIZONTAL.
60. CUT AND REMOVE EXISTING 50x26 RETURN RISER UP TO GROUND LEVEL FLOOR SLAB TO ALLOW FOR NEW AIRFLOW MEASURING CONTROL STATION IN THE VERTICAL. SEE DRAWING H-6.0.1.
70. CUT AND REMOVE EXISTING 54x28 RETURN RISER UP TO GROUND LEVEL FLOOR SLAB TO ALLOW FOR NEW AIRFLOW MEASURING CONTROL STATION IN THE VERTICAL. SEE DRAWING H-6.0.1.
80. CUT AND REMOVE EXISTING SECTION OF 48x24 RETURN DUCT TO ALLOW FOR NEW AIRFLOW MEASURING CONTROL STATION IN THE HORIZONTAL.
90. REMOVE EXISTING RETURN BLOWER BL-80 IN ITS ENTIRETY INCLUDING THE EQUIPMENT PAD. GC TO REPAIR AND LEVEL EXISTING CONCRETE FLOOR TO MATCH EXISTING.

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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HVAC BASEMENT DUCT DEMO PLAN SECTOR D

HD-1.1.0D

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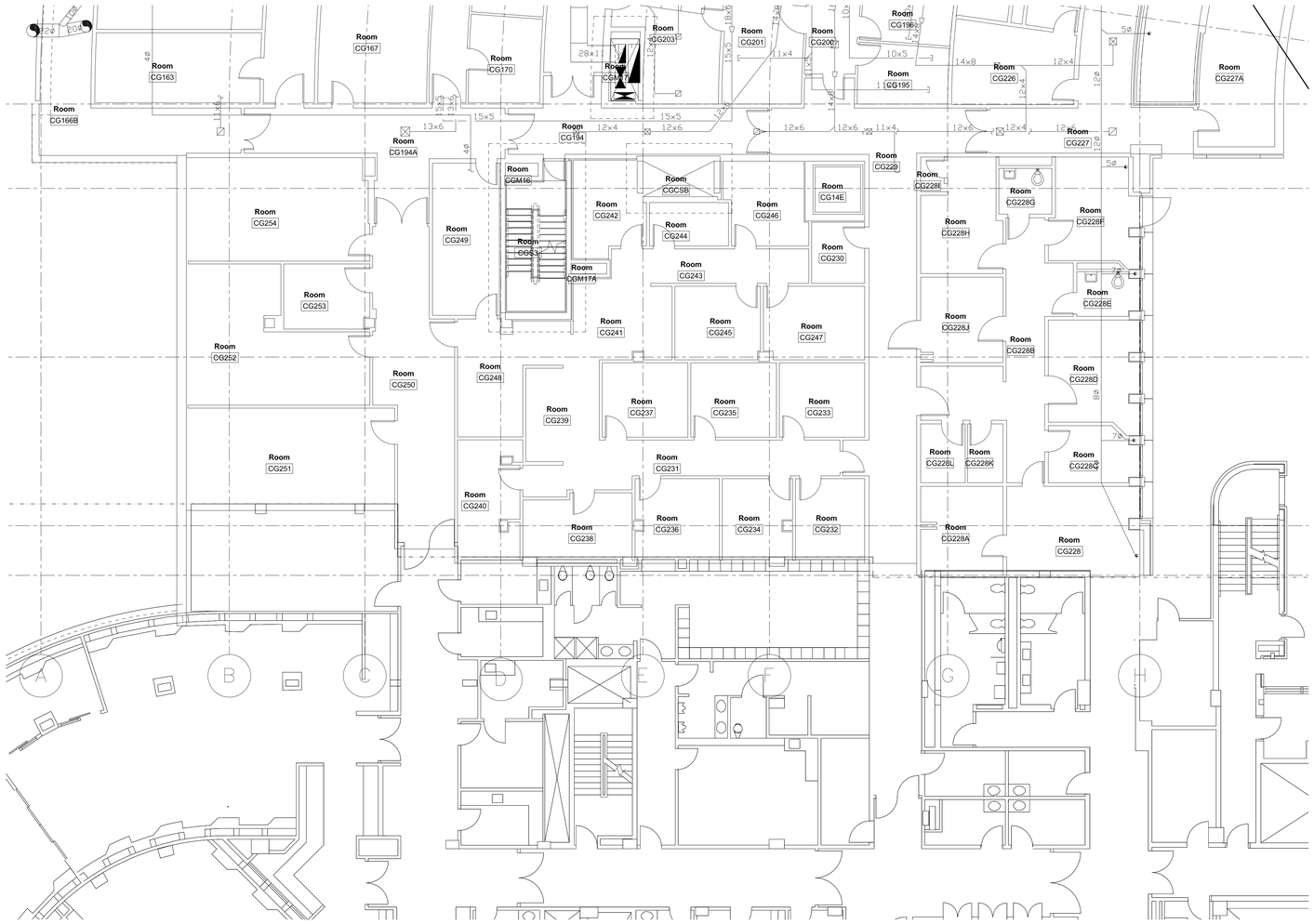

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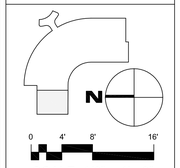

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HVAC GROUND FLOOR DUCT DEMO PLAN SECTOR A

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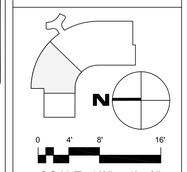

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HVAC GROUND FLOOR DUCT DEMO PLAN SECTOR B

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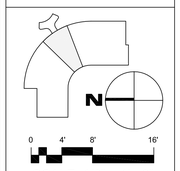
2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)
3. REFER TO HVAC DEMO & NEW AIRFLOW DISTRIBUTION DIAGRAMS FOR BLOWER SYSTEM CONCEPTS.
4. REFER TO HVAC DEMO & NEW HOT WATER RISER FLOW DIAGRAMS FOR HOT WATER PREHEAT & REHEAT SYSTEM CONCEPTS.
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

DUCTWORK DEMO KEYNOTES:

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC GROUND FLOOR DUCT DEMO PLAN SECTOR C

HD-1.1.1C

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
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GENERAL DUCTWORK DEMO NOTES:

1. CUT, CAP AND SEAL DUCTWORK
2. TEMPORARY CAP DUCTWORK AND RECONNECT PER NEW WORK DRAWING.
3. EXISTING DUCTWORK RISER TO REMAIN. CUT & CAP DISTRIBUTION DUCTWORK BACK TO DUCT MAIN AS REQUIRED.
4. CUT AND REMOVE ALL DUCTWORK, PIPING AND ALL ASSOCIATED COMPONENTS LOCATED WITHIN THE "FULL RENOVATION" BOUNDARIES UNLESS INDICATED OTHERWISE. CAP AND SEAL DUCTWORK AND PIPING AS REQUIRED. COORDINATE DEMOLITION BOUNDARY LIMITATIONS WITH ARCHITECTURAL DEMOLITION DRAWINGS.
5. EXISTING DUCTWORK LOCATED WITHIN "FULL RENOVATION" BOUNDARY TO REMAIN AND TIE INTO NEW RISER TAKE-OFF.
6. EXISTING DUCTWORK RISER ON THIS FLOOR TO BE DEMOLISHED. REFER TO AIRFLOW DISTRIBUTION DIAGRAMS FOR OVERALL RISER DEMOLITION SCOPE.
7. DISCONNECT AND REMOVE EXISTING INDUCTION UNIT. CUT AND CAP SUPPLY DUCT BACK TO MAIN WHERE THE CONSTRUCTION ZONE PERMITS, OTHERWISE CUT AND CAP AT UNIT.

DRAWING NOTES:

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5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

DUCTWORK DEMO KEYNOTES:

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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HVAC GROUND FLOOR DUCT DEMO PLAN SECTOR D

HD-1.1.1D

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4. CUT AND REMOVE ALL DUCTWORK, PIPING AND ALL ASSOCIATED COMPONENTS LOCATED WITHIN THE "LULL RENOVATION" BOUNDARIES UNLESS INDICATED OTHERWISE. CAP AND SEAL DUCTWORK AND PIPING AS REQUIRED. COORDINATE DEMOLITION BOUNDARY LIMITATIONS WITH ARCHITECTURAL DEMOLITION DRAWINGS.
5. EXISTING DUCTWORK LOCATED WITHIN "FULL RENOVATION" BOUNDARY TO REMAIN AND TIE INTO NEW RISER TAKE-OFF.
6. EXISTING DUCTWORK RISER ON THIS FLOOR TO BE DEMOLISHED. REFER TO AIRFLOW DISTRIBUTION DIAGRAMS FOR OVERALL RISER DEMOLITION SCOPE.
7. DISCONNECT AND REMOVE EXISTING INDUCTION UNIT. CUT AND CAP SUPPLY DUCT BACK TO MAIN WHERE THE CONSTRUCTION ZONE PERMITS, OTHERWISE CUT AND CAP AT UNIT.

DRAWING NOTES:

1. REFER TO APPENDIX B – PHASING DIAGRAMS OPTION 3' DATED 8/13/15 FOR COORDINATION OF SCOPE ASSOCIATED WITH PHASING. NOTE: PROJECT SCOPE TO INCLUDE INSTALLATION OF NEW WORK AND DEMOLITION WORK WITHIN SELECT CEILING PLENUMS THAT WILL OCCUR AFTER RENOVATIONS ARE COMPLETE WITHIN CERTAIN AREAS.
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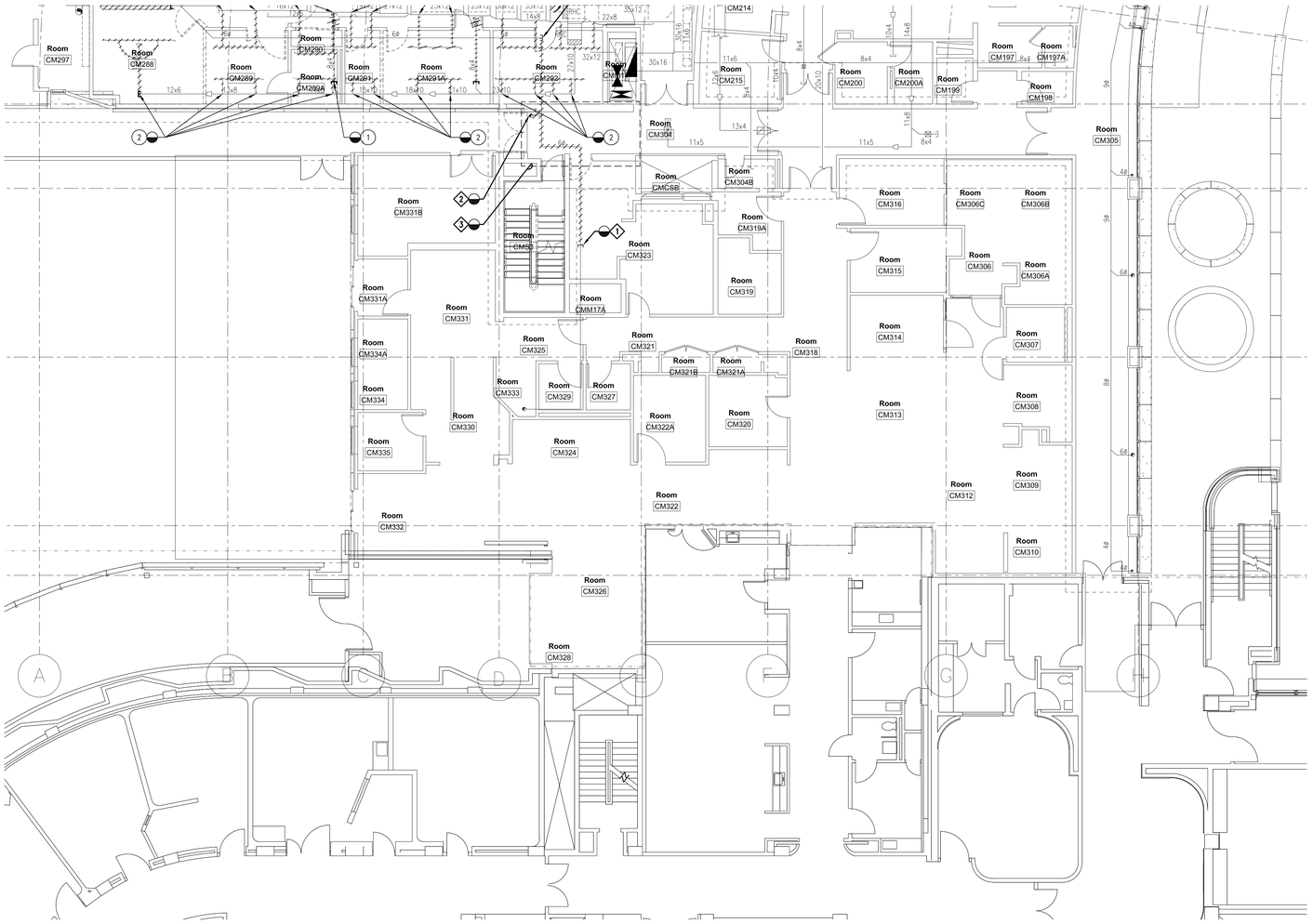
4. REFER TO HVAC DEMO & NEW HOT WATER RISER FLOW DIAGRAMS FOR HOT WATER PREHEAT & REHEAT SYSTEM CONCEPTS.
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

DUCTWORK DEMO KEYNOTES:

1. DISCONNECT EXISTING 6"ø INDUCTION UNIT SUPPLY DUCT AND REROUTE AROUND NEW 2-HR RATED VESTIBULE.
2. DISCONNECT AND REMOVE EXISTING 3"ø INDUCTION UNIT SUPPLY DUCT UP TO FIRST FLOOR. RECONNECT FROM ABOVE.
3. REROUTE ALL EXISTING HVAC SYSTEMS AROUND NEW 2-HR RATED VESTIBULE.



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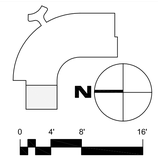

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
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HVAC MAIN FLOOR DUCT DEMO PLAN SECTOR A

HD-1.1.2A

BID DOCUMENTS

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GENERAL DUCTWORK DEMO NOTES:

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5. EXISTING DUCTWORK LOCATED WITHIN "FULL RENOVATION" BOUNDARY TO REMAIN AND TIE INTO NEW RISER TAKE-OFF.
6. EXISTING DUCTWORK RISER ON THIS FLOOR TO BE DEMOLISHED. REFER TO AIRFLOW DISTRIBUTION DIAGRAMS FOR OVERALL RISER DEMOLITION SCOPE.
7. DISCONNECT AND REMOVE EXISTING INDUCTION UNIT. CUT AND CAP SUPPLY DUCT BACK TO MAIN WHERE THE CONSTRUCTION ZONE PERMITS, OTHERWISE CUT AND CAP AT UNIT.

DRAWING NOTES:

1. REFER TO APPENDIX B – PHASING DIAGRAMS OPTION 3' DATED 8/13/15 FOR COORDINATION OF SCOPE ASSOCIATED WITH PHASING. NOTE: PROJECT SCOPE TO INCLUDE INSTALLATION OF NEW WORK AND DEMOLITION WORK WITHIN SELECT CEILING PLENUMS THAT WILL OCCUR AFTER RENOVATIONS ARE COMPLETE WITHIN CERTAIN AREAS.
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3. REFER TO HVAC DEMO & NEW AIRFLOW DISTRIBUTION DIAGRAMS FOR BLOWER SYSTEM CONCEPTS.
4. REFER TO HVAC DEMO & NEW HOT WATER RISER FLOW DIAGRAMS FOR HOT WATER PREHEAT & REHEAT SYSTEM CONCEPTS.
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

DUCTWORK DEMO KEYNOTES:

1. DEMOLISH EXISTING SUPPLY & RETURN SUPPORTING GIFT SHOP TO ALLOW NEW ZONING FROM NEW BL-131. (NOTE: MEP SERVICES PASSING THROUGH SPACE TO REMAIN.)
2. EXISTING EXH-90 EXHAUST DUCT TO NO LONGER SUPPORT THE NEW MULTI-SPECIALTY CLINIC. CUT AND CAP INDICATED BRANCH DUCTS BACK TO MAIN. EXISTING DUCT MAIN TO REMAIN IN PLACE.
3. REMOVE SECTION OF 12x10 RETURN DUCT (EXH-85) TO CUT-IN A NEW FIRE SMOKE DAMPER AND NEW SMOKE DETECTOR.
4. EXISTING INDUCTION UNIT SUPPLY AIR GOING UP TO FIRST FLOOR SHALL BE RE-FED FROM ABOVE. SEE NEW FIRST FLOOR DUCTWORK DRAWING (TYPICAL FOR 2 SUPPLY RISERS).

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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HVAC MAIN FLOOR DUCT DEMO PLAN SECTOR B

HD-1.1.2B

BID DOCUMENTS

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GENERAL DUCTWORK DEMO NOTES:

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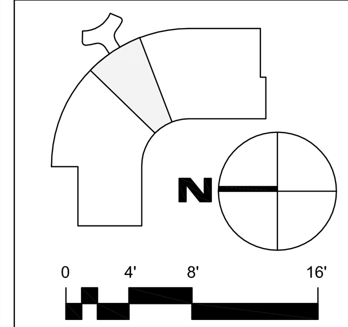
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

DUCTWORK DEMO KEYNOTES:

1C DEMOLISH EXISTING SUPPLY & RETURN SUPPORTING GIFT SHOP TO ALLOW NEW ZONING FROM NEW BL-131. (NOTE: MEP SERVICES PASSING THROUGH SPACE TO REMAIN.)

2C COMPLETE DEMO

NO. | REVISION | DATE



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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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HVAC MAIN FLOOR DUCT DEMO PLAN SECTOR C

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5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

DUCTWORK DEMO KEYNOTES:

10. ALL EXISTING HVAC SYSTEMS IN THE DENTAL IMPLANT PROGRAM SHALL REMAIN. RECONNECT EXISTING SUPPLY & RETURN DUCT MAINS TO NEW AHU BL-130A&B. RECONNECT EXISTING EXHAUST DUCT MAINS TO NEW EXHAUST FAN EXH-151.
20. COMPLETE DEMO
30. ALL EXISTING DUCTWORK RISERS IN SHAFT 26 SHALL REMAIN.
40. EXISTING 36x10 SUPPLY DUCT TO TEMPORARILY CONNECT TO NEW SUPPLY DUCT MAIN SUPPORTING THE DENTAL WAITING ROOM DURING PHASE 1.
50. EXISTING 35x12 RETURN DUCT TO TEMPORARILY CONNECT TO NEW RETURN DUCT MAIN SUPPORTING THE DENTAL WAITING ROOM DURING PHASE 1.
60. REMOVE SECTION OF 10x8 SUPPLY DUCT (BL-56) TO CUT-IN A NEW FIRE SMOKE DAMPER AND NEW SMOKE DETECTOR.
70. REMOVE SECTION OF 12x10 RETURN DUCT (EXH-85) TO CUT-IN A NEW FIRE SMOKE DAMPER AND NEW SMOKE DETECTOR.
80. EXISTING INDUCTION UNIT SUPPLY AIR GOING UP TO FIRST FLOOR SHALL BE RE-FED FROM ABOVE. SEE NEW FIRST FLOOR DUCTWORK DRAWING (TYPICAL FOR 2 SUPPLY RISERS).
90. RELOCATE EXISTING 11"ø INDUCTION UNIT SUPPLY MAIN OUTSIDE THE 2-HR RATED STAIRWELL. SEE NEW WORK DRAWING.

NO.	REVISION	DATE

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

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HVAC MAIN FLOOR DUCT DEMO PLAN SECTOR D

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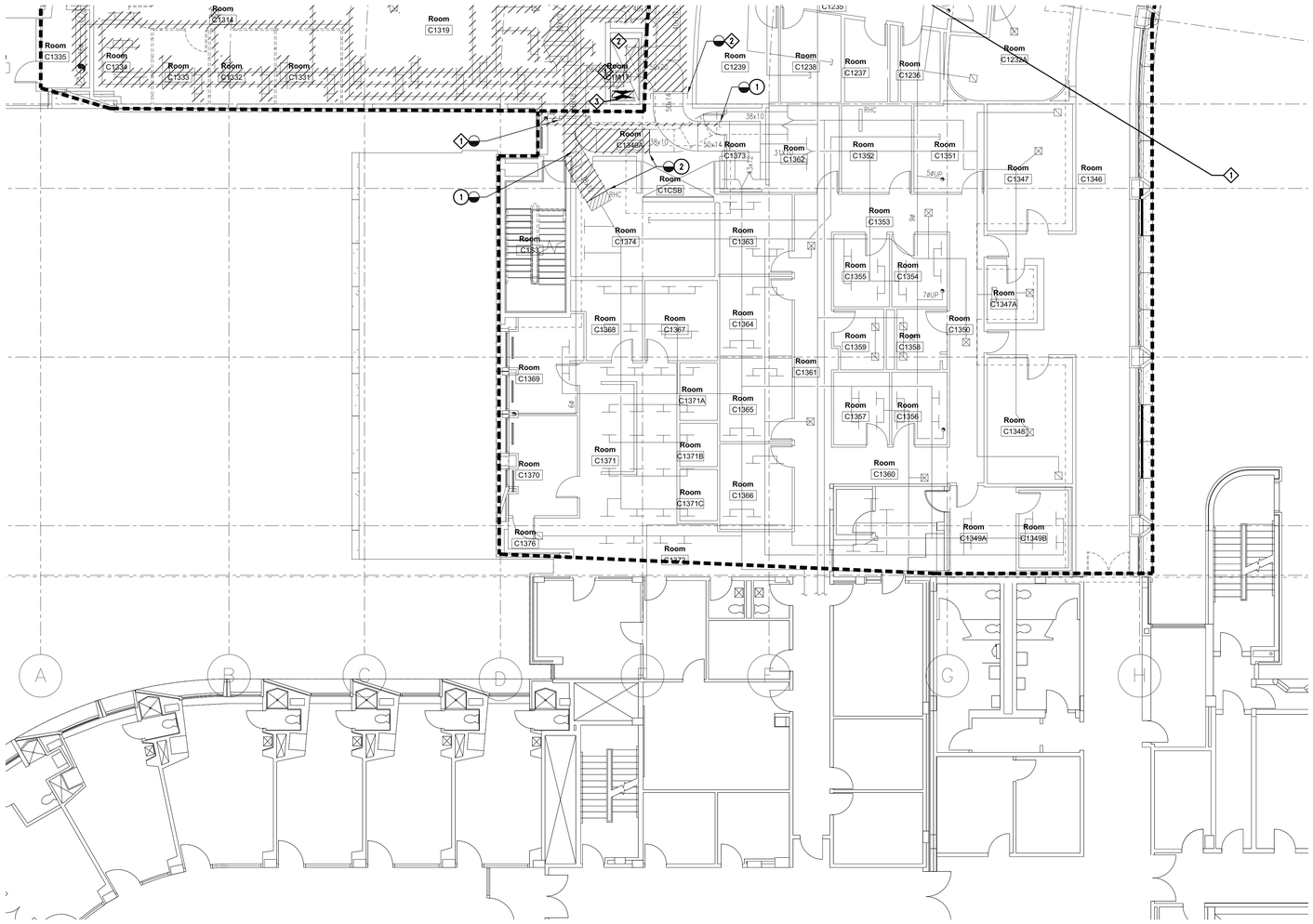
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

DUCTWORK DEMO KEYNOTES:

1. EXISTING SUPPLY BLOWER BL-55 TO NO LONGER SUPPORT THE FIRST FLOOR VIA SHAFTS 17, 18, 19 & 20. CUT AND REMOVE TERMINAL DEVICES, BRANCH DUCTWORK, MAINS AND RISER AS INDICATED. EXISTING TO REMAIN DUCTWORK MAINS SHALL BE RECONNECTED TO NEW BLOWER SYSTEM BL-131 (REFER TO NEW WORK DRAWINGS). REBALANCE EXISTING SYSTEM AS REQUIRED.
2. EXISTING RETURN/RELIEF BLOWER EXH-84 TO NO LONGER SUPPORT THE FIRST FLOOR VIA SHAFTS 17, 18 & 19. CUT AND REMOVE TERMINAL DEVICES, BRANCH DUCTWORK, MAINS AND RISERS AS INDICATED. EXISTING TO REMAIN DUCTWORK MAINS SHALL BE RECONNECTED TO NEW BLOWER SYSTEM BL-131 (REFER TO NEW WORK DRAWINGS). REBALANCE EXISTING SYSTEM AS REQUIRED.
3. EXISTING SUPPLY BLOWER BL-56 TO NO LONGER SUPPORT THE FIRST FLOOR VIA SHAFTS 17 & 18. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCH DUCTWORK AND MAINS ASSOCIATED WITH THE SYSTEM BACK TO THE RESPECTIVE SHAFT. REBALANCE EXISTING SYSTEM AS REQUIRED.



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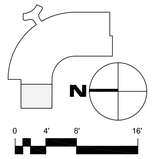

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC FIRST FLOOR DUCT DEMO PLAN SECTOR A

HD-1.1.3A

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	xxx
FILE NAME:	

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GENERAL DUCTWORK DEMO NOTES:

1. CUT, CAP AND SEAL DUCTWORK
2. TEMPORARY CAP DUCTWORK AND RECONNECT PER NEW WORK DRAWING.
3. EXISTING DUCTWORK RISER TO REMAIN. CUT & CAP DISTRIBUTION DUCTWORK BACK TO DUCT MAIN AS REQUIRED.
4. CUT AND REMOVE ALL DUCTWORK, PIPING AND ALL ASSOCIATED COMPONENTS LOCATED WITHIN THE "FULL RENOVATION" BOUNDARIES UNLESS INDICATED OTHERWISE. CAP AND SEAL DUCTWORK AND PIPING AS REQUIRED. COORDINATE DEMOLITION BOUNDARY LIMITATIONS WITH ARCHITECTURAL DEMOLITION DRAWINGS.
5. EXISTING DUCTWORK LOCATED WITHIN "FULL RENOVATION" BOUNDARY TO REMAIN AND TIE INTO NEW RISER TAKE-OFF.
6. EXISTING DUCTWORK RISER ON THIS FLOOR TO BE DEMOLISHED. REFER TO AIRFLOW DISTRIBUTION DIAGRAMS FOR OVERALL RISER DEMOLITION SCOPE.
7. DISCONNECT AND REMOVE EXISTING INDUCTION UNIT. CUT AND CAP SUPPLY DUCT BACK TO MAIN WHERE THE CONSTRUCTION ZONE PERMITS, OTHERWISE CUT AND CAP AT UNIT.

DRAWING NOTES:

1. REFER TO APPENDIX B – PHASING DIAGRAMS OPTION 3' DATED 8/13/15 FOR COORDINATION OF SCOPE ASSOCIATED WITH PHASING. NOTE: PROJECT SCOPE TO INCLUDE INSTALLATION OF NEW WORK AND DEMOLITION WORK WITHIN SELECT CEILING PLENUMS THAT WILL OCCUR AFTER RENOVATIONS ARE COMPLETE WITHIN CERTAIN AREAS.
2. REFER TO 1/8 SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)
3. REFER TO HVAC DEMO & NEW AIRFLOW DISTRIBUTION DIAGRAMS FOR BLOWER SYSTEM CONCEPTS.
4. REFER TO HVAC DEMO & NEW HOT WATER RISER FLOW DIAGRAMS FOR HOT WATER PREHEAT & REHEAT SYSTEM CONCEPTS.
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

DUCTWORK DEMO KEYNOTES:

1. EXISTING TO REMAIN BUT FED FROM NEW UNIT
2. PORTIONS OF THE EXISTING EXHAUST DUCT RISER IN SHAFT 20 TO BE DEMOLISHED (REFER TO DEMO AIRFLOW DIAGRAMS). EXISTING EXHAUST SYSTEM EXH-79 TO REMAIN AND BE REBALANCED TO A REDUCED AIRFLOW CAPACITY.
3. EXISTING SUPPLY BLOWER BL-55 TO NO LONGER SUPPORT THE FIRST FLOOR VIA SHAFTS 17, 18, 19 & 20. CUT AND REMOVE TERMINAL DEVICES, BRANCH DUCTWORK, MAINS AND RISER AS INDICATED. EXISTING TO REMAIN DUCTWORK MAINS SHALL BE RECONNECTED TO NEW BLOWER SYSTEM BL-131 (REFER TO NEW WORK DRAWINGS). REBALANCE EXISTING SYSTEM AS REQUIRED.
4. EXISTING RETURN/RELIEF BLOWER EXH-84 TO NO LONGER SUPPORT THE FIRST FLOOR VIA SHAFTS 17, 18 & 19. CUT AND REMOVE TERMINAL DEVICES, BRANCH DUCTWORK, MAINS AND RISERS AS INDICATED. EXISTING TO REMAIN DUCTWORK MAINS SHALL BE RECONNECTED TO NEW BLOWER SYSTEM BL-131 (REFER TO NEW WORK DRAWINGS). REBALANCE EXISTING SYSTEM AS REQUIRED.
5. EXISTING SUPPLY AIR SYSTEM BL-60 (100% O.A.) TO BE DEMOLISHED.
6. EXISTING SUPPLY AIR SYSTEM BL-61 (100% O.A.) TO BE DEMOLISHED.
7. EXISTING SUPPLY AIR SYSTEM BL-62 (100% O.A.) TO BE DEMOLISHED.
8. EXISTING SUPPLY BLOWER BL-56 TO NO LONGER SUPPORT THE FIRST FLOOR VIA SHAFTS 17 & 18. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCH DUCTWORK AND MAINS ASSOCIATED WITH THE SYSTEM BACK TO THE RESPECTIVE SHAFT. REBALANCE EXISTING SYSTEM AS REQUIRED.
9. EXISTING SUPPLY BLOWER EXH-85 TO NO LONGER SUPPORT THE FIRST FLOOR VIA SHAFT 18. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCH DUCTWORK AND MAINS ASSOCIATED WITH THE SYSTEM BACK TO SHAFT 18. REBALANCE EXISTING SYSTEM AS REQUIRED.
10. EXISTING SUPPLY AIR BLOWER BL-56 TO REMAIN SUPPORTING THE MAIN LOBBY. ALL TERMINALS DEVICES, BRANCH DUCTWORK, MAINS AND RISER SHALL REMAIN. REBALANCE EXISTING SYSTEM AS REQUIRED.
11. EXISTING RETURN/RELIEF BLOWER EXH-85 TO REMAIN SUPPORTING THE MAIN LOBBY. CUT AND REMOVE TERMINAL DEVICES AND BRANCH DUCTWORK AS INDICATED. DUCT MAIN AND RISER SHALL REMAIN. CONNECT EXISTING DUCT MAIN TO NEW, RELOCATED RETURN GRILLES (SEE NEW WORK DRAWINGS). REBALANCE EXISTING SYSTEM AS REQUIRED.

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GENERAL DUCTWORK DEMO NOTES:

1. CUT, CAP AND SEAL DUCTWORK
2. TEMPORARY CAP DUCTWORK AND RECONNECT PER NEW WORK DRAWING.
3. EXISTING DUCTWORK RISER TO REMAIN. CUT & CAP DISTRIBUTION DUCTWORK BACK TO DUCT MAIN AS REQUIRED.
4. CUT AND REMOVE ALL DUCTWORK, PIPING AND ALL ASSOCIATED COMPONENTS LOCATED WITHIN THE "FULL RENOVATION" BOUNDARIES UNLESS INDICATED OTHERWISE. CAP AND SEAL DUCTWORK AND PIPING AS REQUIRED. COORDINATE DEMOLITION BOUNDARY LIMITATIONS WITH ARCHITECTURAL DEMOLITION DRAWINGS.
5. EXISTING DUCTWORK LOCATED WITHIN "FULL RENOVATION" BOUNDARY TO REMAIN AND TIE INTO NEW RISER TAKE-OFF.
6. EXISTING DUCTWORK RISER ON THIS FLOOR TO BE DEMOLISHED. REFER TO AIRFLOW DISTRIBUTION DIAGRAMS FOR OVERALL RISER DEMOLITION SCOPE.
7. DISCONNECT AND REMOVE EXISTING INDUCTION UNIT. CUT AND CAP SUPPLY DUCT BACK TO MAIN WHERE THE CONSTRUCTION ZONE PERMITS, OTHERWISE CUT AND CAP AT UNIT.

DRAWING NOTES:

1. REFER TO APPENDIX B – PHASING DIAGRAMS OPTION 3" DATED 8/13/15 FOR COORDINATION OF SCOPE ASSOCIATED WITH PHASING. NOTE: PROJECT SCOPE TO INCLUDE INSTALLATION OF NEW WORK AND DEMOLITION WORK WITHIN SELECT CEILING PLENUMS THAT WILL OCCUR AFTER RENOVATIONS ARE COMPLETE WITHIN CERTAIN AREAS.
2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)
3. REFER TO HVAC DEMO & NEW AIRFLOW DISTRIBUTION DIAGRAMS FOR BLOWER SYSTEM CONCEPTS.
4. REFER TO HVAC DEMO & NEW HOT WATER RISER FLOW DIAGRAMS FOR HOT WATER PREHEAT & REHEAT SYSTEM CONCEPTS.
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

DUCTWORK DEMO KEYNOTES:

2. EXISTING EXHAUST SYSTEM EXH-80 TO BE DEMOLISHED. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCH DUCTWORK AND MAINS ASSOCIATED WITH THE SYSTEM BACK TO SHAFT.
6. PORTIONS OF THE EXISTING EXHAUST DUCT RISER IN SHAFT 20 TO BE DEMOLISHED (REFER TO DEMO AIRFLOW DIAGRAMS). EXISTING EXHAUST SYSTEM EXH-79 TO REMAIN AND BE REBALANCED TO A REDUCED AIRFLOW CAPACITY.
1. EXISTING SUPPLY BLOWER BL-55 TO NO LONGER SUPPORT THE FIRST FLOOR VIA SHAFTS 17, 18, 19 & 20. CUT AND REMOVE TERMINAL DEVICES, BRANCH DUCTWORK, MAINS AND RISER AS INDICATED. EXISTING TO REMAIN DUCTWORK MAINS SHALL BE RECONNECTED TO NEW BLOWER SYSTEM BL-131 (REFER TO NEW WORK DRAWINGS). REBALANCE EXISTING SYSTEM AS REQUIRED.
3. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCH DUCTWORK AND MAINS ASSOCIATED EXHAUST SYSTEM EXH-90 BACK TO SHAFT. CAP AND SEAL DUCTWORK INSIDE SHAFT 26. REBALANCE EXISTING SYSTEM AS REQUIRED.
4. EXISTING SUPPLY AIR BLOWER BL-56 TO REMAIN SUPPORTING THE MAIN LOBBY. CUT AND REMOVE ALL TERMINALS DEVICES. ALL BRANCH DUCTWORK, MAINS AND RISER SHALL REMAIN. REBALANCE EXISTING SYSTEM AS REQUIRED.
5. EXISTING RETURN/RELIEF BLOWER EXH-85 TO REMAIN SUPPORTING THE MAIN LOBBY. CUT AND REMOVE TERMINAL DEVICES AND BRANCH DUCTWORK AS INDICATED. DUCT MAIN AND RISER SHALL REMAIN. CONNECT EXISTING DUCT MAIN TO NEW, RELOCATED RETURN GRILLES (SEE NEW WORK DRAWINGS). REBALANCE EXISTING SYSTEM AS REQUIRED.

NO.	REVISION	DATE

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SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC FIRST FLOOR DUCT DEMO PLAN SECTOR C

HD-1.1.3C

BID DOCUMENTS

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GENERAL DUCTWORK DEMO NOTES:

1. CUT, CAP AND SEAL DUCTWORK
2. TEMPORARY CAP DUCTWORK AND RECONNECT PER NEW WORK DRAWING.
3. EXISTING DUCTWORK RISER TO REMAIN. CUT & CAP DISTRIBUTION DUCTWORK BACK TO DUCT MAIN AS REQUIRED.
4. CUT AND REMOVE ALL DUCTWORK, PIPING AND ALL ASSOCIATED COMPONENTS LOCATED WITHIN THE "FULL RENOVATION" BOUNDARIES UNLESS INDICATED OTHERWISE. CAP AND SEAL DUCTWORK AND PIPING AS REQUIRED. COORDINATE DEMOLITION BOUNDARY LIMITATIONS WITH ARCHITECTURAL DEMOLITION DRAWINGS.
5. EXISTING DUCTWORK LOCATED WITHIN "FULL RENOVATION" BOUNDARY TO REMAIN AND TIE INTO NEW RISER TAKE-OFF.
6. EXISTING DUCTWORK RISER ON THIS FLOOR TO BE DEMOLISHED. REFER TO AIRFLOW DISTRIBUTION DIAGRAMS FOR OVERALL RISER DEMOLITION SCOPE.
7. DISCONNECT AND REMOVE EXISTING INDUCTION UNIT. CUT AND CAP SUPPLY DUCT BACK TO MAIN WHERE THE CONSTRUCTION ZONE PERMITS, OTHERWISE CUT AND CAP AT UNIT.

DRAWING NOTES:

1. REFER TO APPENDIX B – PHASING DIAGRAMS OPTION 3" DATED 8/13/15 FOR COORDINATION OF SCOPE ASSOCIATED WITH PHASING. NOTE: PROJECT SCOPE TO INCLUDE INSTALLATION OF NEW WORK AND DEMOLITION WORK WITHIN SELECT CEILING PLENUMS THAT WILL OCCUR AFTER RENOVATIONS ARE COMPLETE WITHIN CERTAIN AREAS.
2. REFER TO 1/8 SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)
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4. REFER TO HVAC DEMO & NEW HOT WATER RISER FLOW DIAGRAMS FOR HOT WATER PREHEAT & REHEAT SYSTEM CONCEPTS.
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

DUCTWORK DEMO KEYNOTES:

9. EXISTING SUPPLY RISER AND DISTRIBUTION TO REMAIN AS PART OF THE EXISTING INDUCTION SYSTEM BL-63. SUPPLY DUCTWORK FEEDS THE EXISTING TO REMAIN INDUCTION UNITS ON LEVEL 2.
10. EXISTING SUPPLY AIR SYSTEM BL-50 (100% O.A.) TO BE DEMOLISHED. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCHES, MAINS, RISERS AND EQUIPMENT.
6. EXISTING SUPPLY AIR SYSTEM BL-51 TO BE DEMOLISHED. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCHES, MAINS, RISERS AND EQUIPMENT.
7. PORTIONS OF THE EXISTING EXHAUST DUCT RISER IN SHAFT 24 TO BE DEMOLISHED (REFER TO DEMO AIRFLOW DIAGRAMS). EXISTING DUCT MAIN TO BE DISCONNECTED FROM EXHAUST SYSTEM EXH-79 AND RECONNECTED TO NEW BLOWER SYSTEM BL-130A&B (SEE NEW WORK DRAWINGS). EXISTING EXHAUST SYSTEM EXH-79 TO REMAIN AND BE REBALANCED TO A REDUCED AIRFLOW CAPACITY.
2. EXISTING EXHAUST SYSTEM EXH-80 TO BE DEMOLISHED. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCH DUCTWORK AND MAINS ASSOCIATED WITH THE SYSTEM BACK TO SHAFT.
8. EXISTING EXHAUST DUCT RISER CONNECTED TO EXISTING EXHAUST SYSTEM EXH-79 IN SHAFT 23 TO BE CUT AND CAPPED IN BASEMENT.
1. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCH DUCTWORK AND MAINS ASSOCIATED EXHAUST SYSTEM EXH-100 BACK TO SHAFT. CAP AND SEAL DUCTWORK INSIDE SHAFT 26. REBALANCE EXISTING SYSTEM AS REQUIRED.
3. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCH DUCTWORK AND MAINS ASSOCIATED EXHAUST SYSTEM EXH-90 BACK TO SHAFT. CAP AND SEAL DUCTWORK INSIDE SHAFT 26. REBALANCE EXISTING SYSTEM AS REQUIRED.
4. EXISTING SUPPLY AIR BLOWER BL-56 TO REMAIN SUPPORTING THE MAIN LOBBY. ALL TERMINALS DEVICES, BRANCH DUCTWORK, MAINS AND RISER SHALL REMAIN. REBALANCE EXISTING SYSTEM AS REQUIRED.
5. EXISTING RETURN/RELIEF BLOWER EXH-85 TO REMAIN SUPPORTING THE MAIN LOBBY. CUT AND REMOVE TERMINAL DEVICES AND BRANCH DUCTWORK AS INDICATED. DUCT MAIN AND RISER SHALL REMAIN. CONNECT EXISTING DUCT MAIN TO NEW, RELOCATED RETURN GRILLES (SEE NEW WORK DRAWINGS). REBALANCE EXISTING SYSTEM AS REQUIRED.

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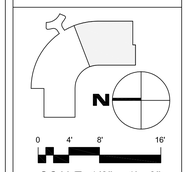

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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FARMINGTON, CT 06030

HVAC FIRST FLOOR DUCT DEMO PLAN SECTOR D

HD-1.1.3D

BID DOCUMENTS

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5. EXISTING DUCTWORK LOCATED WITHIN "FULL RENOVATION" BOUNDARY TO REMAIN AND TIE INTO NEW RISER TAKE-OFF.
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7. DISCONNECT AND REMOVE EXISTING INDUCTION UNIT. CUT AND CAP SUPPLY DUCT BACK TO MAIN WHERE THE CONSTRUCTION ZONE PERMITS, OTHERWISE CUT AND CAP AT UNIT.

DRAWING NOTES:

1. REFER TO APPENDIX B – PHASING DIAGRAMS OPTION 3' DATED 8/13/15 FOR COORDINATION OF SCOPE ASSOCIATED WITH PHASING. NOTE: PROJECT SCOPE TO INCLUDE INSTALLATION OF NEW WORK AND DEMOLITION WORK WITHIN SELECT CEILING PLENUMS THAT WILL OCCUR AFTER RENOVATIONS ARE COMPLETE WITHIN CERTAIN AREAS.
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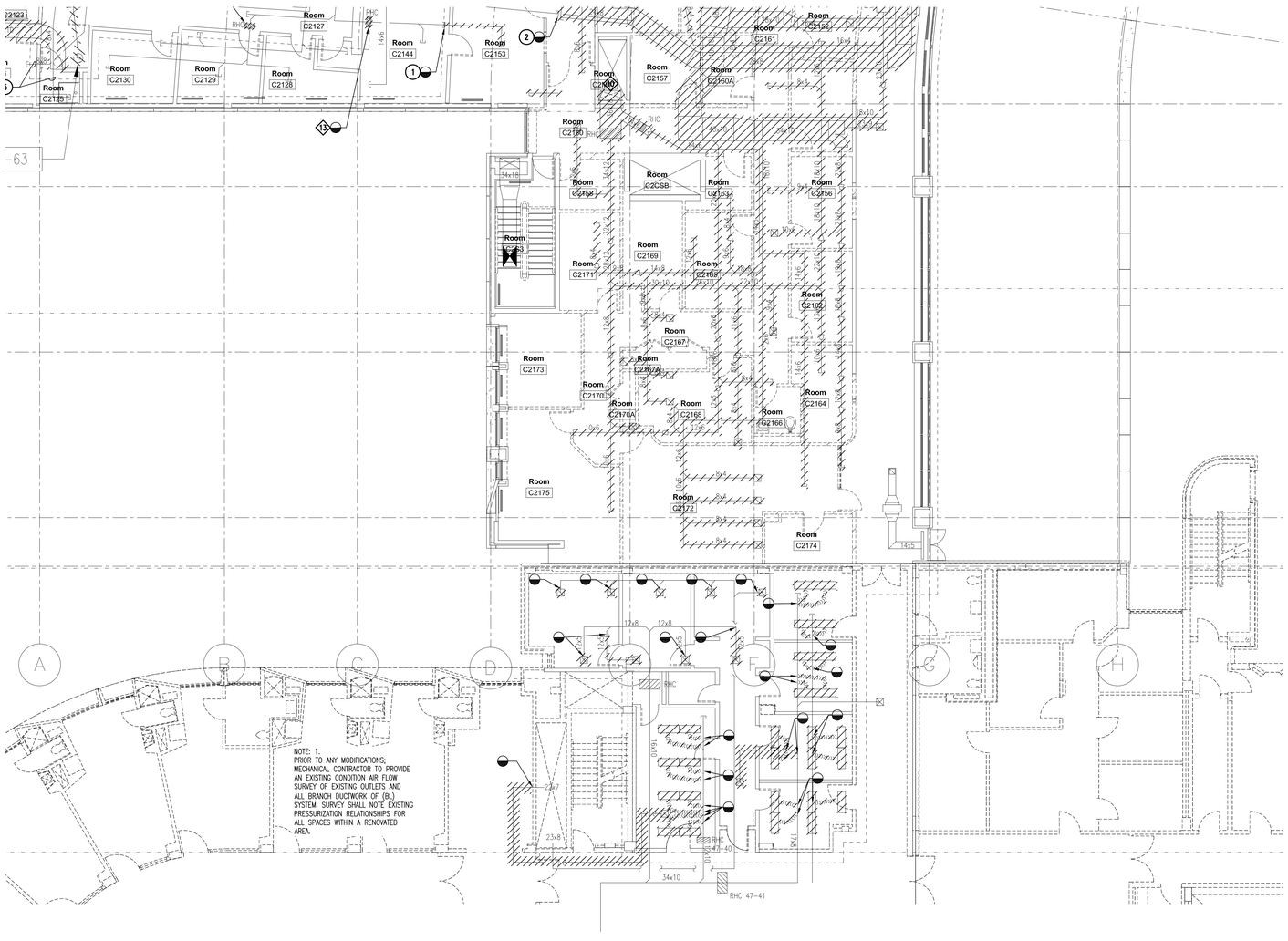
3. REFER TO HVAC DEMO & NEW AIRFLOW DISTRIBUTION DIAGRAMS FOR BLOWER SYSTEM CONCEPTS.
4. REFER TO HVAC DEMO & NEW HOT WATER RISER FLOW DIAGRAMS FOR HOT WATER PREHEAT & REHEAT SYSTEM CONCEPTS.
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

DUCTWORK DEMO KEYNOTES:

10. EXISTING SUPPLY BLOWER BL-56 TO NO LONGER SUPPORT THE SECOND FLOOR VIA SHAFT 17. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCH DUCTWORK AND MAINS ASSOCIATED WITH THE SYSTEM BACK TO SHAFT 17. REBALANCE EXISTING SYSTEM AS REQUIRED.



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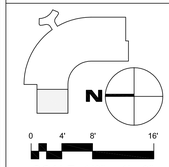

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC SECOND FLOOR DUCT DEMO PLAN SECTOR A

HD-1.1.4A

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JOB NO:	1302
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FILE NAME:	

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GENERAL DUCTWORK DEMO NOTES:

1. CUT, CAP AND SEAL DUCTWORK
2. TEMPORARY CAP DUCTWORK AND RECONNECT PER NEW WORK DRAWING.
3. EXISTING DUCTWORK RISER TO REMAIN. CUT & CAP DISTRIBUTION DUCTWORK BACK TO DUCT MAIN AS REQUIRED.
4. CUT AND REMOVE ALL DUCTWORK, PIPING AND ALL ASSOCIATED COMPONENTS LOCATED WITHIN THE "LULL RENOVATION" BOUNDARIES UNLESS INDICATED OTHERWISE. CAP AND SEAL DUCTWORK AND PIPING AS REQUIRED. COORDINATE DEMOLITION BOUNDARY LIMITATIONS WITH ARCHITECTURAL DEMOLITION DRAWINGS.
5. EXISTING DUCTWORK LOCATED WITHIN "FULL RENOVATION" BOUNDARY TO REMAIN AND TIE INTO NEW RISER TAKE-OFF.
6. EXISTING DUCTWORK RISER ON THIS FLOOR TO BE DEMOLISHED. REFER TO AIRFLOW DISTRIBUTION DIAGRAMS FOR OVERALL RISER DEMOLITION SCOPE.
7. DISCONNECT AND REMOVE EXISTING INDUCTION UNIT. CUT AND CAP SUPPLY DUCT BACK TO MAIN WHERE THE CONSTRUCTION ZONE PERMITS, OTHERWISE CUT AND CAP AT UNIT.

DRAWING NOTES:

1. REFER TO APPENDIX B – PHASING DIAGRAMS OPTION 3' DATED 8/13/15 FOR COORDINATION OF SCOPE ASSOCIATED WITH PHASING. NOTE: PROJECT SCOPE TO INCLUDE INSTALLATION OF NEW WORK AND DEMOLITION WORK WITHIN SELECT CEILING PLENUMS THAT WILL OCCUR AFTER RENOVATIONS ARE COMPLETE WITHIN CERTAIN AREAS.
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5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

DUCTWORK DEMO KEYNOTES:

1. EXISTING EXHAUST SYSTEM EXH-94 TO BE DEMOLISHED. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCH DUCTWORK AND MAINS ASSOCIATED WITH THE SYSTEM BACK TO SHAFT.
2. EXISTING EXHAUST SYSTEM EXH-95 TO BE DEMOLISHED. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCH DUCTWORK AND MAINS ASSOCIATED WITH THE SYSTEM BACK TO SHAFT.
3. EXISTING EXHAUST SYSTEM EXH-93 TO BE DEMOLISHED. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCH DUCTWORK AND MAINS ASSOCIATED WITH THE SYSTEM BACK TO SHAFT.
4. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCH DUCTWORK AND MAINS ASSOCIATED EXHAUST SYSTEM EXH-88 BACK TO SHAFT. CAP AND SEAL DUCTWORK INSIDE SHAFT 27. REBALANCE EXISTING SYSTEM AS REQUIRED.
5. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCH DUCTWORK AND MAINS ASSOCIATED EXHAUST SYSTEM EXH-96 BACK TO SHAFT. CAP AND SEAL DUCTWORK INSIDE SHAFT 27. REBALANCE EXISTING SYSTEM AS REQUIRED.
6. EXISTING SUPPLY AIR SYSTEM BL-60 (100% O.A.) TO BE DEMOLISHED. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCHES, MAINS, RISERS AND EQUIPMENT.
7. EXISTING SUPPLY AIR SYSTEM BL-61 (100% O.A.) TO BE DEMOLISHED. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCHES, MAINS, RISERS AND EQUIPMENT.
8. EXISTING SUPPLY AIR SYSTEM BL-62 (100% O.A.) TO BE DEMOLISHED. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCHES, MAINS, RISERS AND EQUIPMENT.
9. EXISTING RETURN/RELIEF BLOWER EXH-85 SHALL NO LONGER SUPPORT THE SECOND FLOOR. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCH DUCTWORK AND MAINS ASSOCIATED WITH THE SYSTEM BACK TO SHAFT. REBALANCE EXISTING SYSTEM AS REQUIRED.
10. EXISTING SUPPLY BLOWER BL-56 TO NO LONGER SUPPORT THE SECOND FLOOR VIA SHAFT 17. CUT AND REMOVE ALL TERMINAL DEVICES, BRANCH DUCTWORK AND MAINS ASSOCIATED WITH THE SYSTEM BACK TO SHAFT 17. REBALANCE EXISTING SYSTEM AS REQUIRED.
11. EXISTING 48x14 AND 50x13 RETURN DUCT MAINS (FROM EXH-85) SHALL TEMPORARILY BE CONNECTED TO THE NEW RETURN DUCT TAKE-OFF FROM SHAFT 18 FOR THE DURATION OF PHASE 1. INSTALL THE PERMANENT AVCMS INDICATED ON THE NEW WORK DRAWING DURING PHASE 1 TO MAINTAIN AIRFLOW CONTROL.
12. EXISTING INDUCTION UNIT SHALL REMAIN.
13. REMOVE EXISTING REHEAT COIL, T-STAT AND CONTROLS. PROVIDE NEW DUCTWORK SECTION TO RECONNECT EXISTING DUCTWORK.

NO.	REVISION	DATE

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0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
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HVAC SECOND FLOOR DUCT DEMO PLAN SECTOR B

HD-1.1.4B

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DUCTWORK DEMO KEYNOTES:

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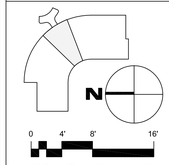

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
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HVAC SECOND FLOOR DUCT DEMO PLAN SECTOR C

HD-1.1.4C

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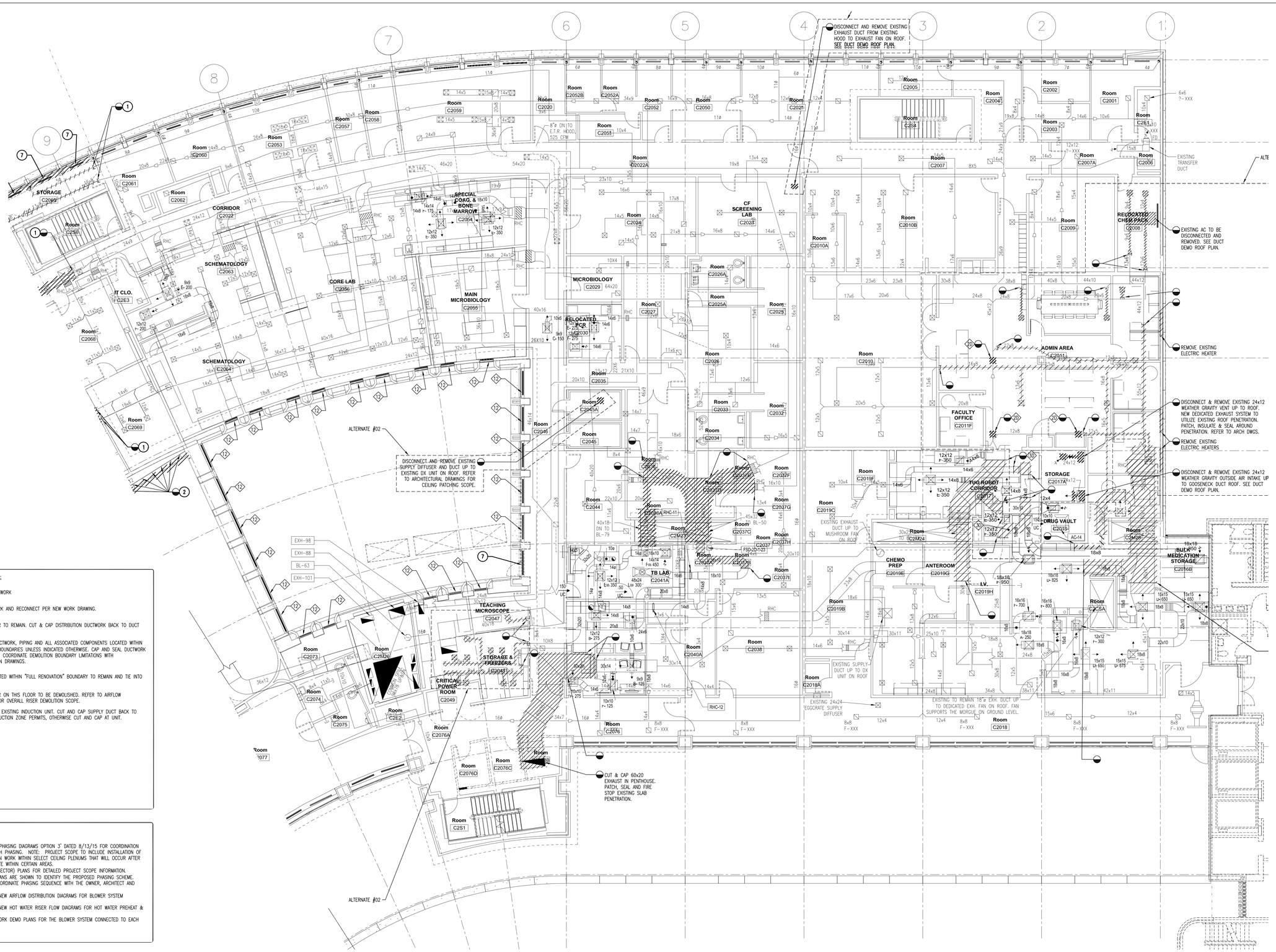

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DUCTWORK DEMO KEYNOTES:

10 EXISTING INDUCTION UNIT SHALL REMAIN.

20 DISCONNECT AND REMOVE EXISTING RETURN GRILLE. PATCH AND SEAL RETURN DUCT MAIN.

30 REMOVE EXISTING DUCT SECTION AND RECONNECT BRANCH TO NEW SUPPLY MAIN. SEE NEW WORK DRAWING.

NO.	REVISION	DATE

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

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HVAC SECOND FLOOR DUCT DEMO PLAN SECTOR D

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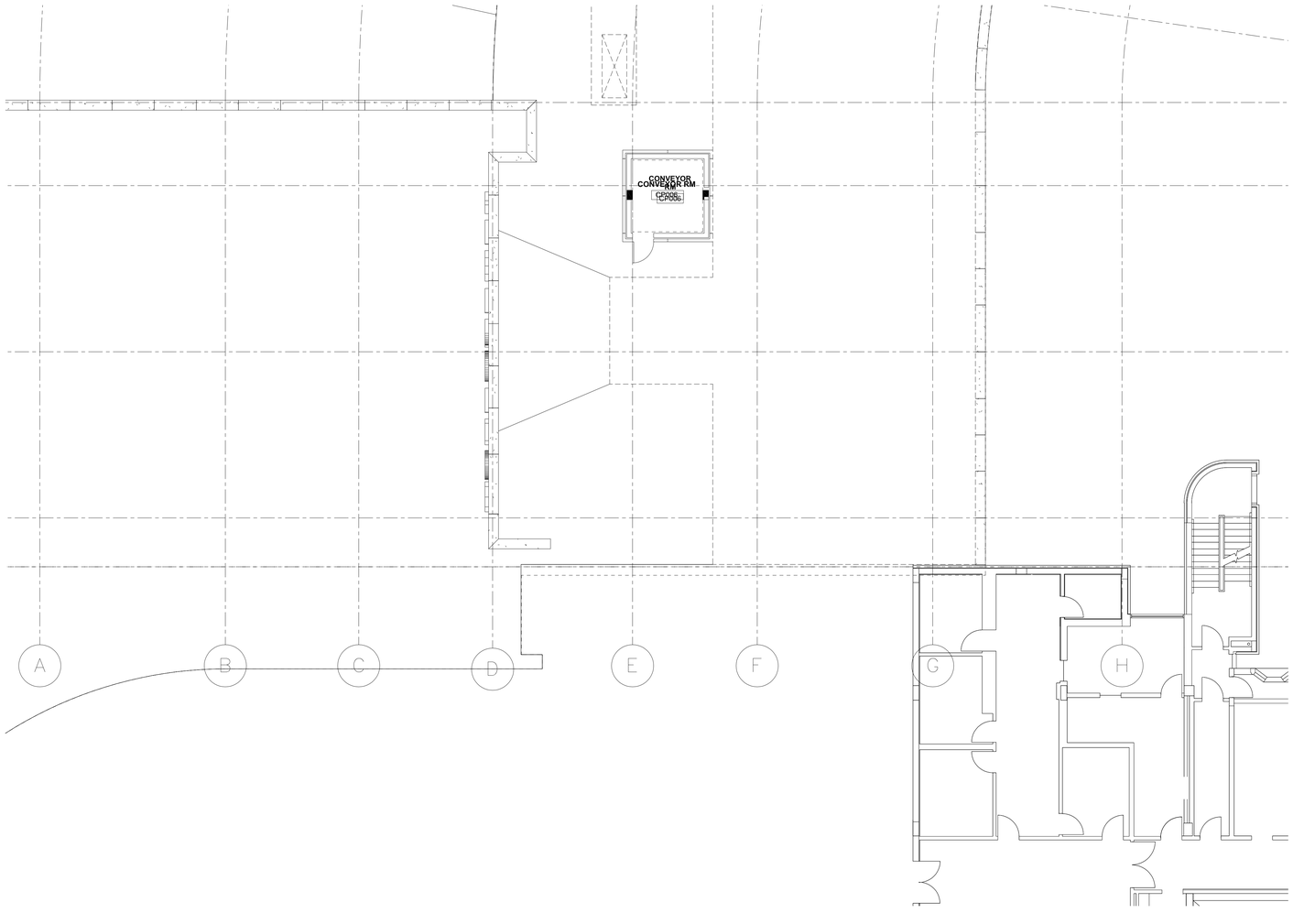
DUCTWORK DEMO KEYNOTES:



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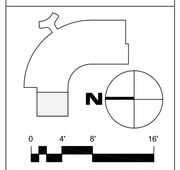

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UCONN HEALTH

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HVAC ROOF & PH DUCT DEMO PLAN SECTOR A

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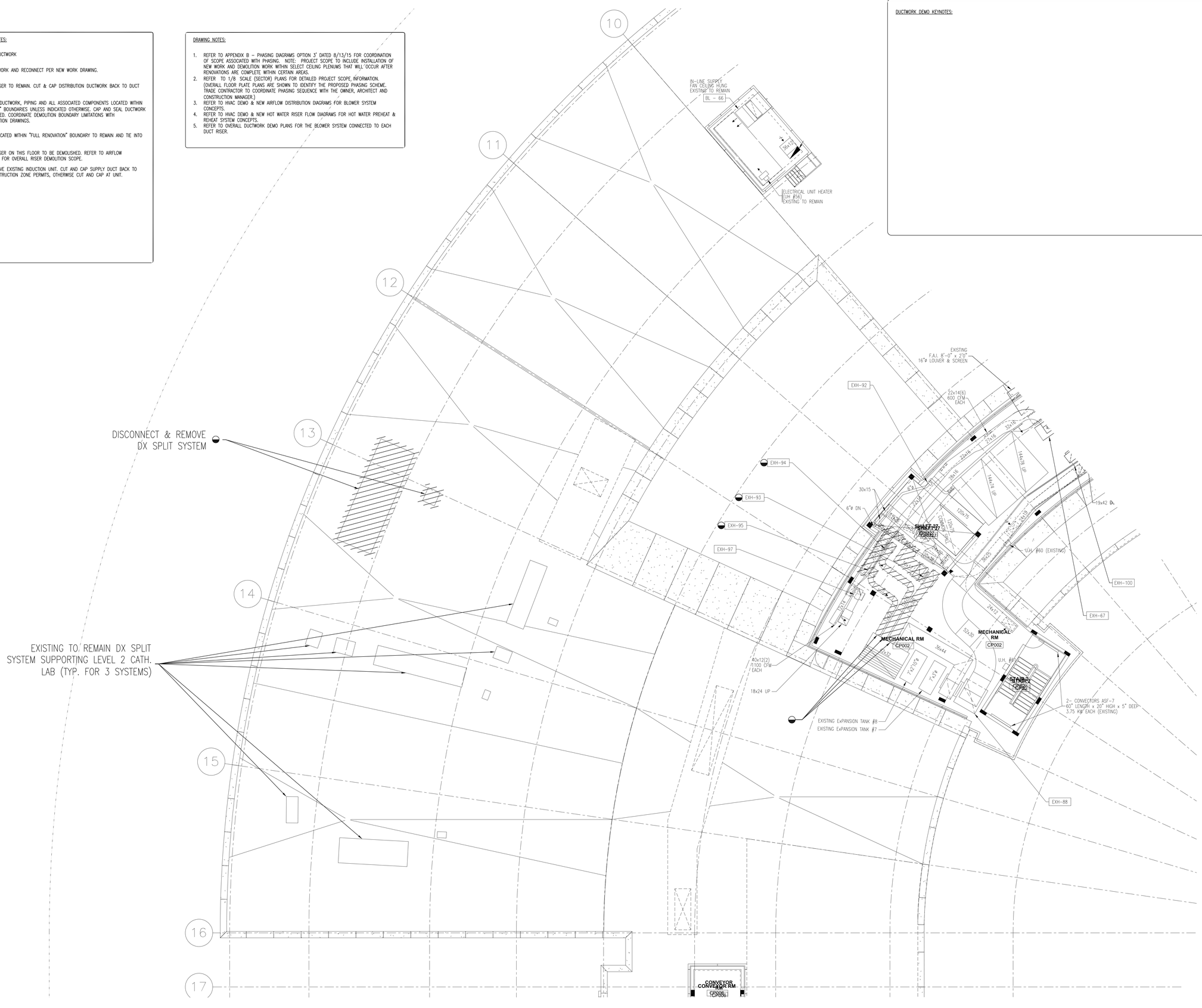

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UCONN HEALTH

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HVAC ROOF & PH DUCT DEMO PLAN SECTOR B

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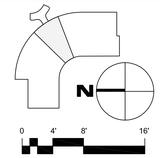
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

DUCTWORK DEMO KEYNOTES:

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC ROOF & PH DUCT DEMO PLAN SECTOR C

HD-1.1.5C

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	MCL
FILE NAME:	

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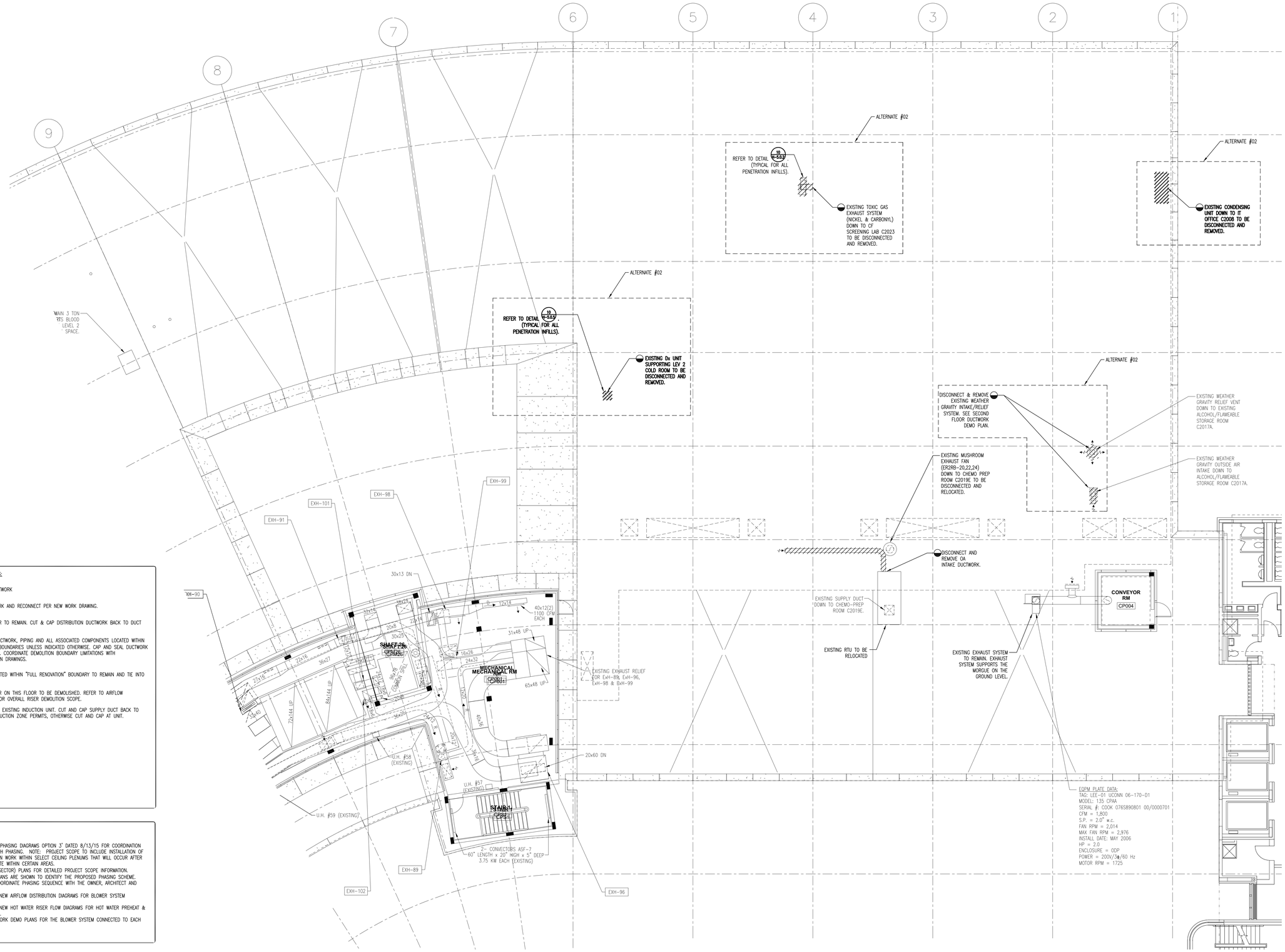

GENERAL DUCTWORK DEMO NOTES:

1. CUT, CAP AND SEAL DUCTWORK
2. TEMPORARY CAP DUCTWORK AND RECONNECT PER NEW WORK DRAWING.
3. EXISTING DUCTWORK RISER TO REMAIN. CUT & CAP DISTRIBUTION DUCTWORK BACK TO DUCT MAIN AS REQUIRED.
4. CUT AND REMOVE ALL DUCTWORK, PIPING AND ALL ASSOCIATED COMPONENTS LOCATED WITHIN THE "FULL RENOVATION" BOUNDARIES UNLESS INDICATED OTHERWISE. CAP AND SEAL DUCTWORK AND PIPING AS REQUIRED. COORDINATE DEMOLITION BOUNDARY LIMITATIONS WITH ARCHITECTURAL DEMOLITION DRAWINGS.
5. EXISTING DUCTWORK LOCATED WITHIN "FULL RENOVATION" BOUNDARY TO REMAIN AND TIE INTO NEW RISER TAKE-OFF.
6. EXISTING DUCTWORK RISER ON THIS FLOOR TO BE DEMOLISHED. REFER TO AIRFLOW DISTRIBUTION DIAGRAMS FOR OVERALL RISER DEMOLITION SCOPE.
7. DISCONNECT AND REMOVE EXISTING INDUCTION UNIT. CUT AND CAP SUPPLY DUCT BACK TO MAIN WHERE THE CONSTRUCTION ZONE PERMITS, OTHERWISE CUT AND CAP AT UNIT.

DRAWING NOTES:

1. REFER TO APPENDIX B – PHASING DIAGRAMS OPTION 3" DATED 8/13/15 FOR COORDINATION OF SCOPE ASSOCIATED WITH PHASING. NOTE: PROJECT SCOPE TO INCLUDE INSTALLATION OF NEW WORK AND DEMOLITION WORK WITHIN SELECT CEILING PLENUMS THAT WILL OCCUR AFTER RENOVATIONS ARE COMPLETE WITHIN CERTAIN AREAS.
2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)
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5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

DUCTWORK DEMO KEYNOTES:

NO.	REVISION	DATE

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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HVAC ROOF & PH DUCT DEMO PLAN SECTOR D

HD-1.1.5D

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
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FILE NAME:	

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J:\JOBS\1330000.QN\HVAC\QN-HD-1.0.5 - LEVEL PH&R DEMO DUCT.DWG 12-09-2015 15:40:11 - mcl

GENERAL PIPING DEMO NOTES:

1. CUT, CAP AND SEAL PIPING.
2. TEMPORARY CAP PIPING. REFER TO NEW PIPING DRAWING.
3. DISCONNECT AND REMOVE EXISTING INDUCTION UNITS, CONTROL VALVES AND WIRING. CUT AND TEMPORARILY CAP EXISTING SCHWS&R PIPING. EXISTING SCHWS&R TO RECONNECT TO NEW FINNED TUBE RADIATION. SEE NEW PIPING DRAWINGS.

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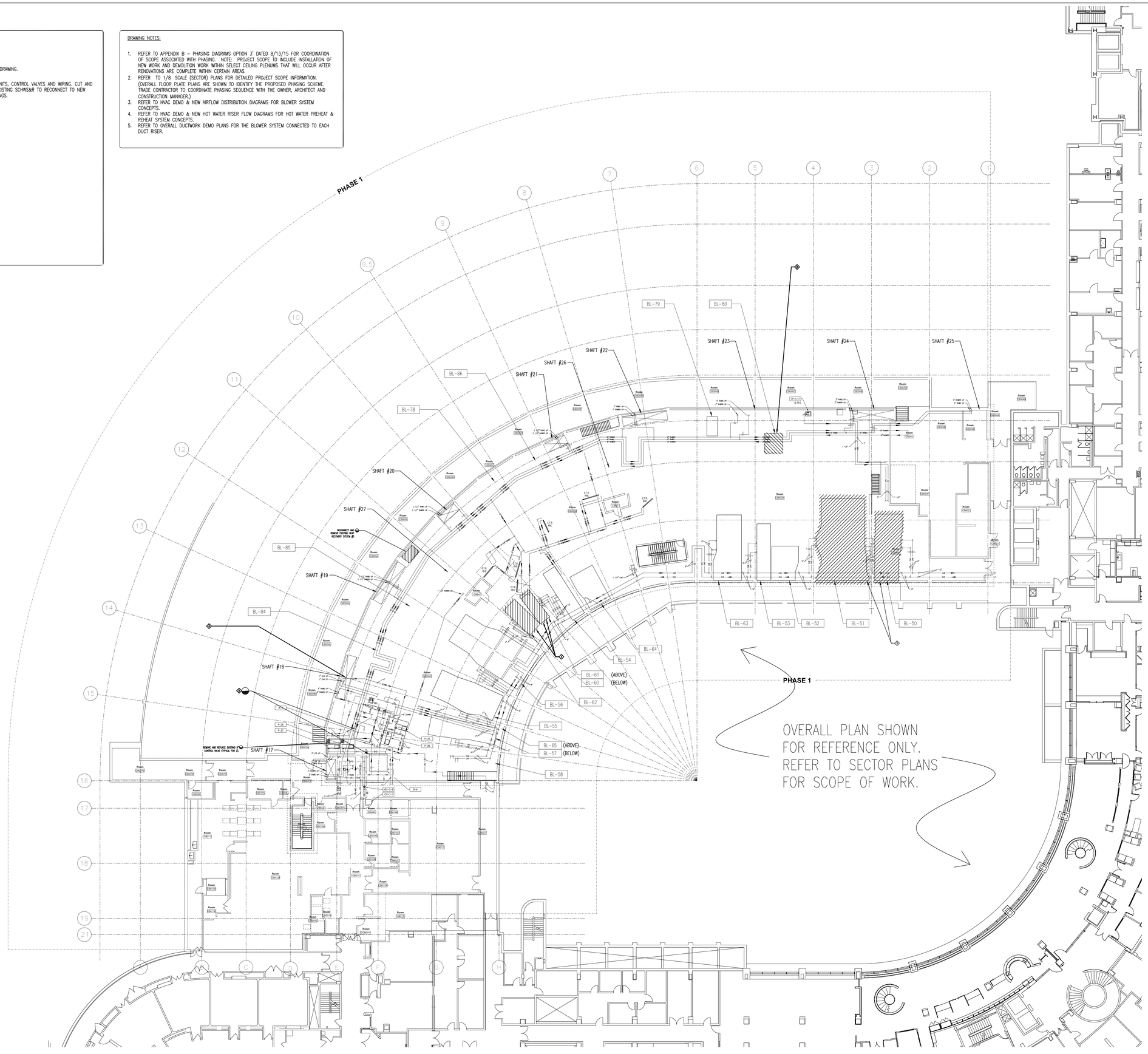

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/16" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C
RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC BASEMENT PIPING DEMO PLAN OVERALL

HD-2.0.0

BID DOCUMENTS

SCALE:	1/16" = 1'-0"
JOB NO:	1302
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FILE NAME:	

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GENERAL PIPING DEMO NOTES:

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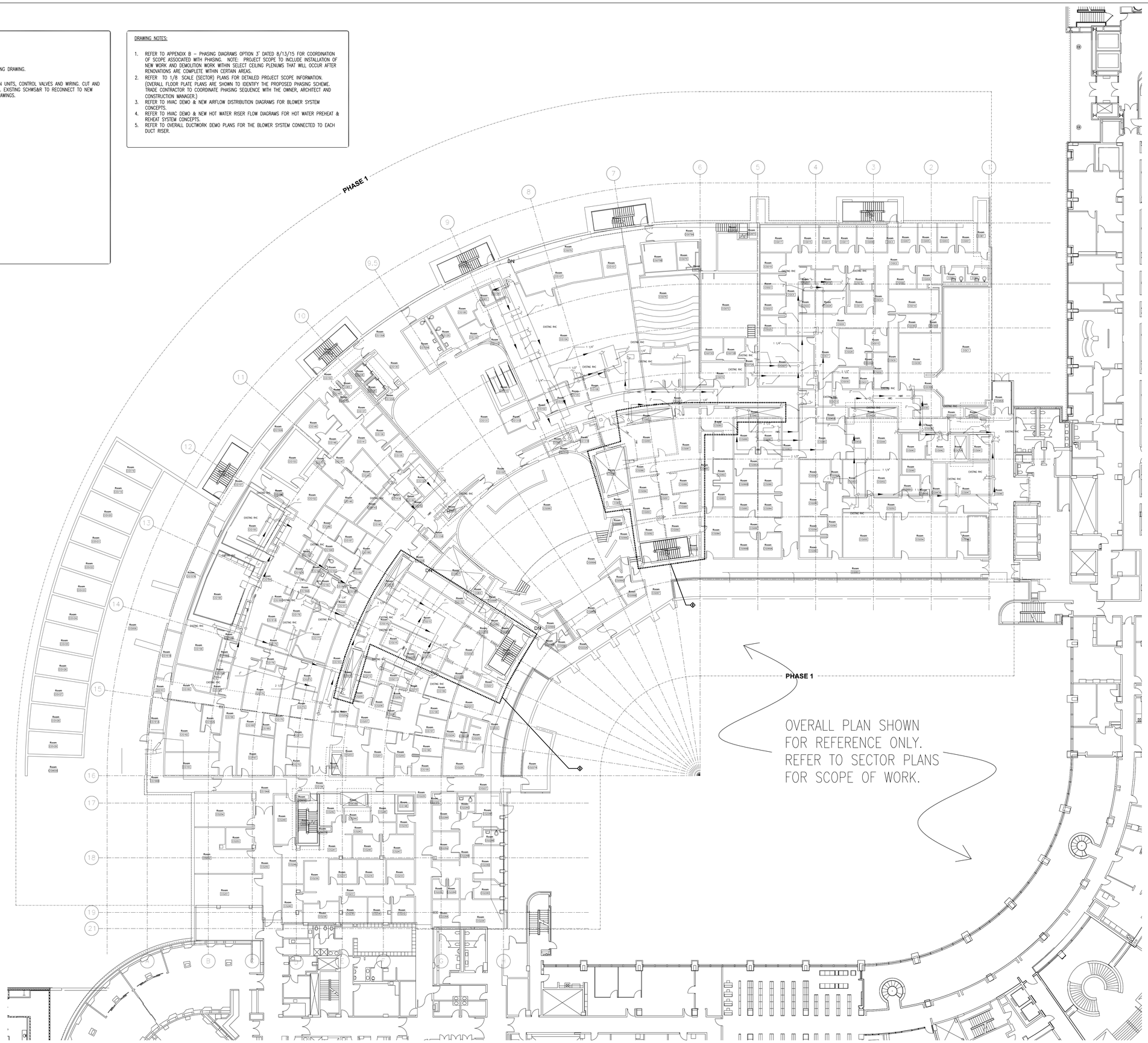

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/16" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC GROUND FLOOR PIPING DEMO PLAN OVERALL

HD-2.0.1

BID DOCUMENTS

SCALE:	1/16" = 1'-0"
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GENERAL PIPING DEMO NOTES:

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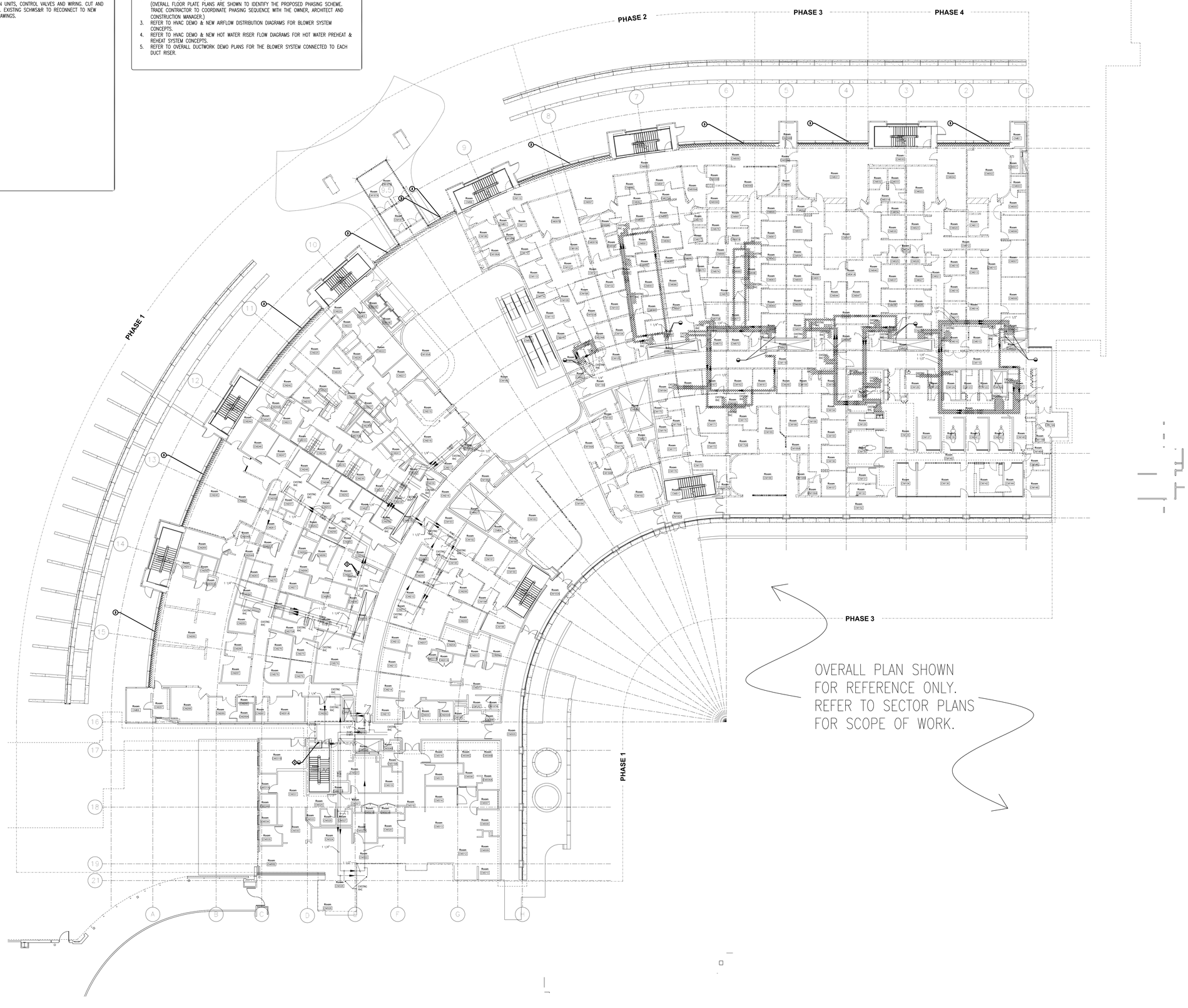

NO.	REVISION	DATE

SCALE: 1/16" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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HVAC MAIN FLOOR PIPING DEMO PLAN OVERALL

HD-2.0.2

BID DOCUMENTS

SCALE:	1/16" = 1'-0"
JOB NO:	1302
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GENERAL PIPING DEMO NOTES:

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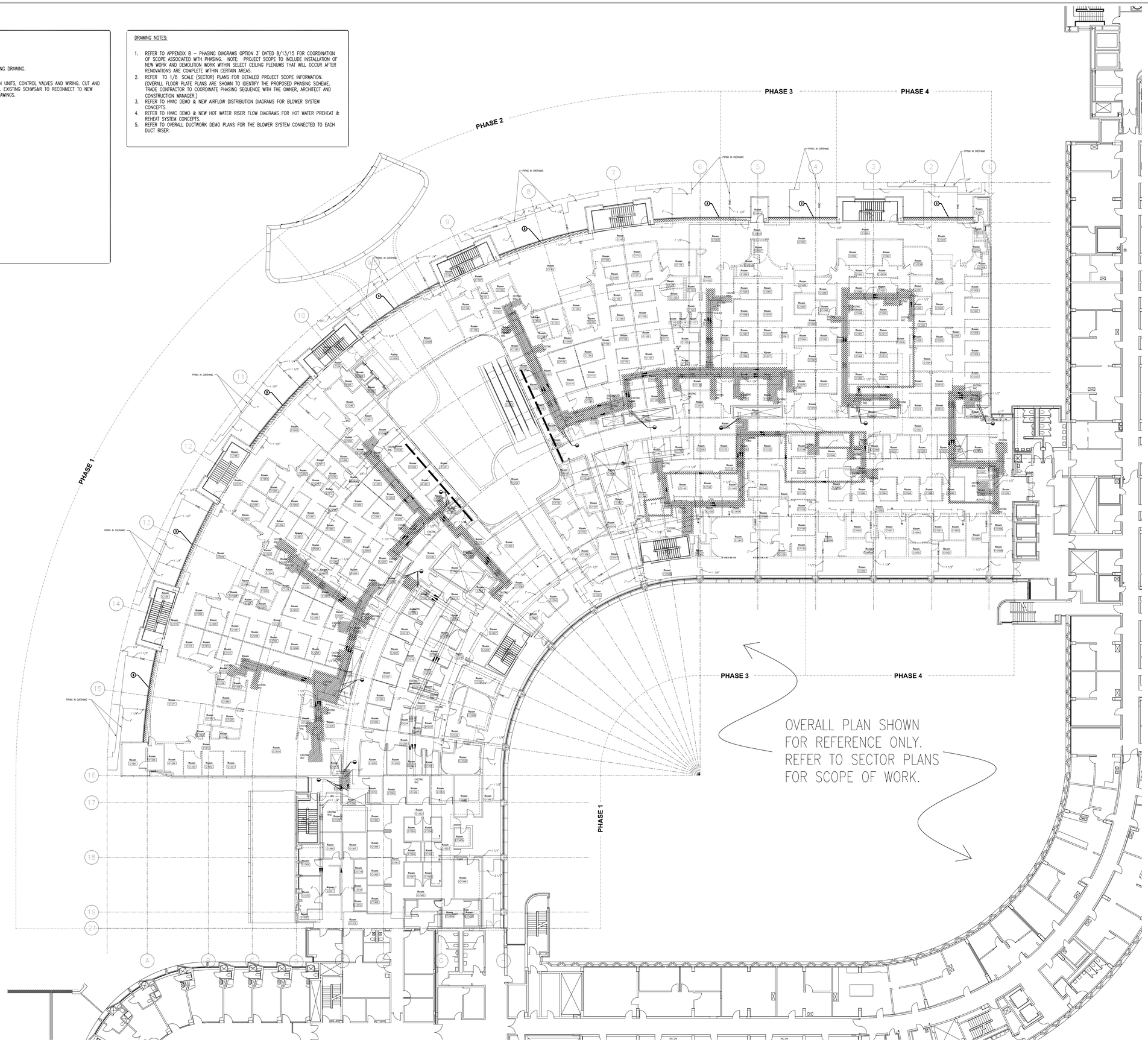

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/16" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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FARMINGTON, CT 06030

HVAC FIRST FLOOR PIPING DEMO PLAN OVERALL

HD-2.0.3

BID DOCUMENTS

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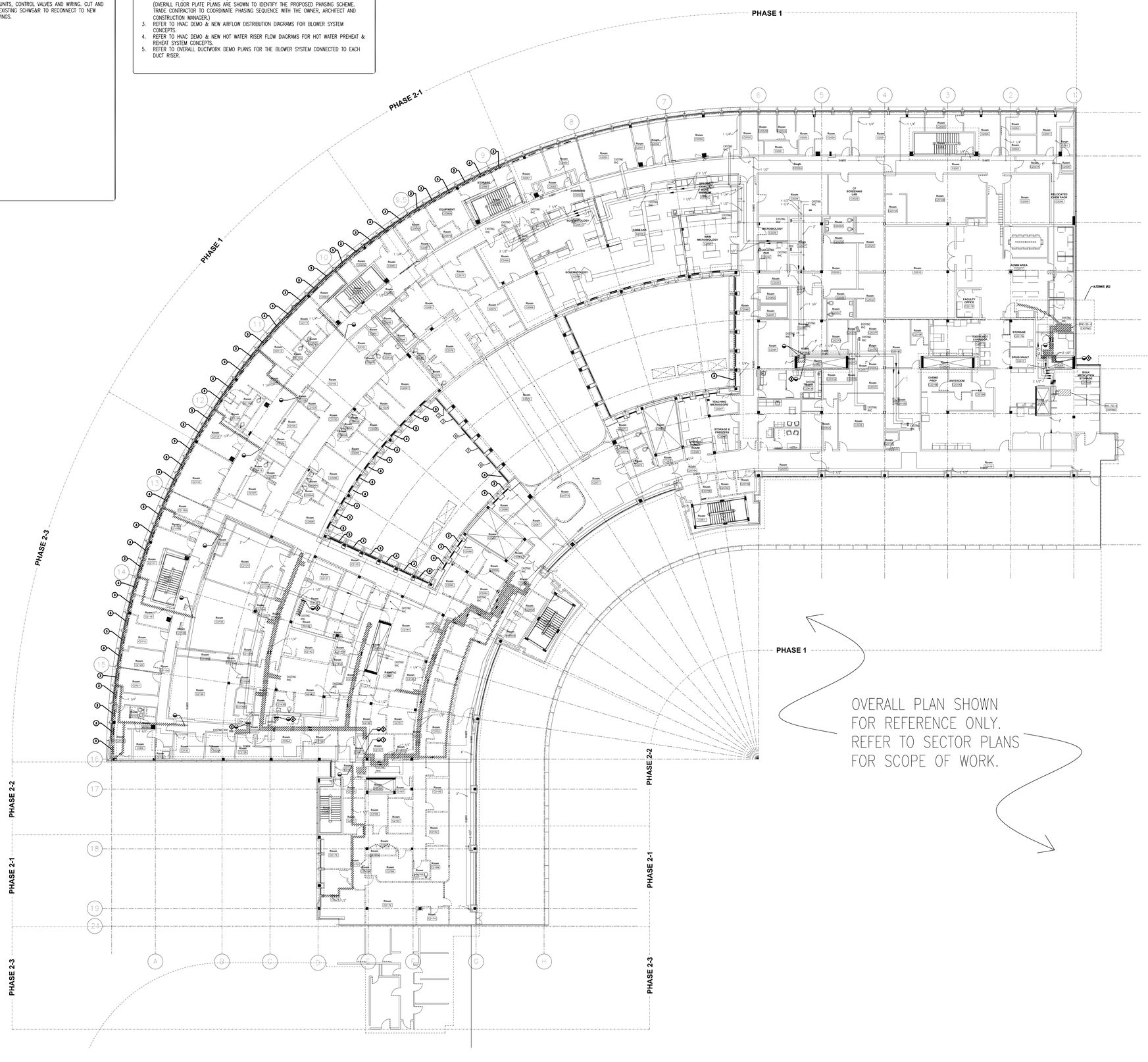

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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HVAC SECOND FLOOR PIPING DEMO PLAN OVERALL

HD-2.0.4

BID DOCUMENTS

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FILE NAME:	

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GENERAL PIPING DEMO NOTES:

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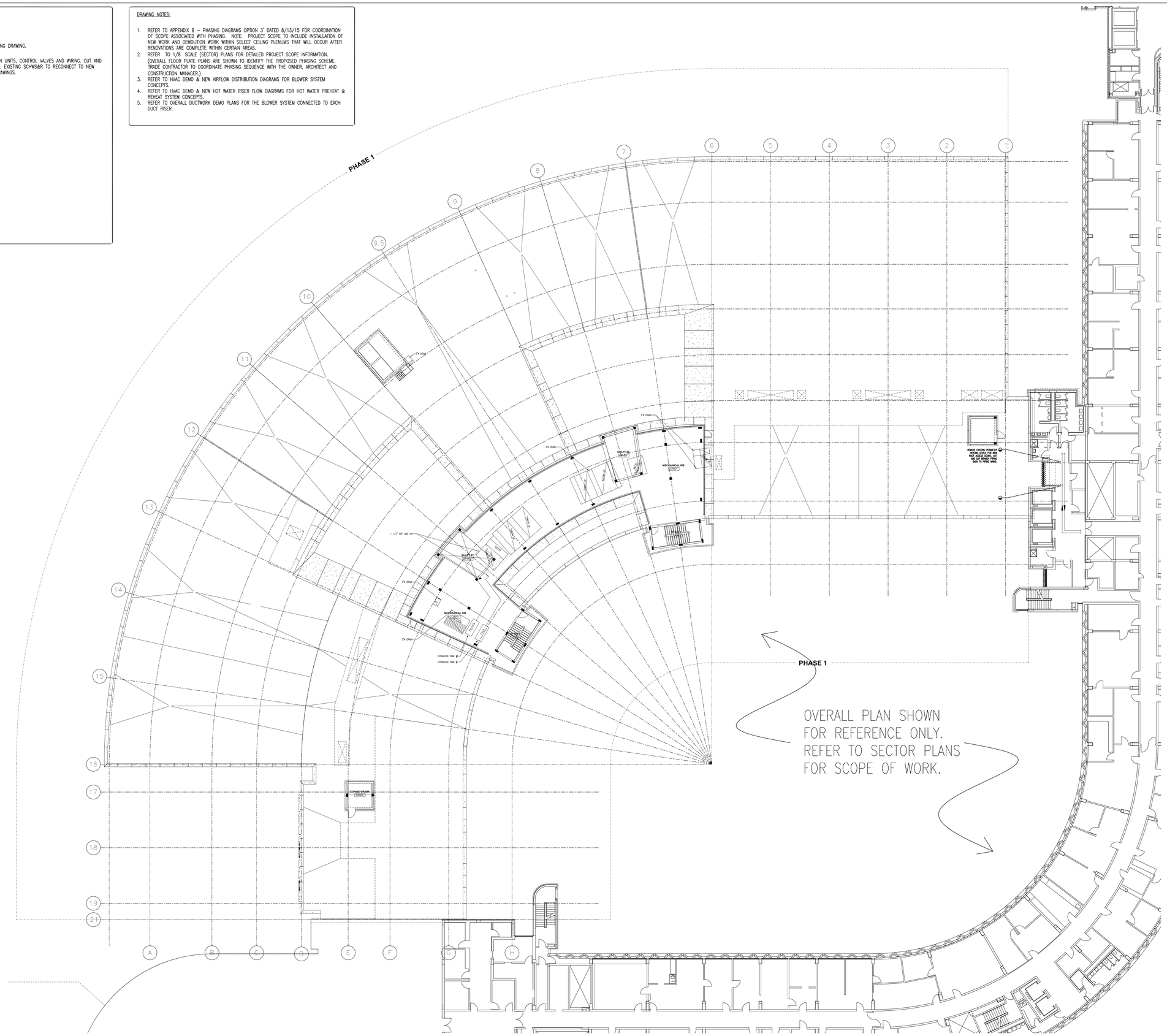
PHASE 1
PHASE 1
OVERALL PLAN SHOWN
FOR REFERENCE ONLY.
REFER TO SECTOR PLANS
FOR SCOPE OF WORK.
MECHANICAL RM
MECHANICAL RM
CONVEYOR RM
REMOVE EXISTING PERIMETER HEATING DUCT FOR NEW ROOF ACCESS DOOR. RE-INSTALL DUCT TO BACK TO PYING MARC.
1 1/2" DIP LINE DN
EXPANSION TANK #1
EXPANSION TANK #2
7'x 36dp
7'x DRAIN
7'x DRAIN
7'x DRAIN
7'x DRAIN
7'x DRAIN
SHAFT 2B
SHAFT 2C
SHAFT 2D
SHAFT 2E
SHAFT 2F
SHAFT 2G
SHAFT 2H
SHAFT 2I
SHAFT 2J
SHAFT 2K
SHAFT 2L
SHAFT 2M
SHAFT 2N
SHAFT 2O
SHAFT 2P
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SHAFT 2S
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SHAFT 2CB
SHAFT 2CC
SHAFT 2CD
SHAFT 2CE
SHAFT 2CF
SHAFT 2CG
SHAFT 2CH
SHAFT 2CI
SHAFT 2CJ
SHAFT 2CK
SHAFT 2CL
SHAFT 2CM
SHAFT 2CN
SHAFT 2CO
SHAFT 2CP
SHAFT 2CQ
SHAFT 2CR
SHAFT 2CS
SHAFT 2CT
SHAFT 2CU
SHAFT 2CV
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GENERAL PIPING DEMO NOTES:

1. CUT, CAP AND SEAL PIPING.
2. TEMPORARY CAP PIPING. REFER TO NEW PIPING DRAWING.
3. DISCONNECT AND REMOVE EXISTING INDUCTION UNITS, CONTROL VALVES AND WIRING. CUT AND TEMPORARILY CAP EXISTING SCHWS&R PIPING. EXISTING SCHWS&R TO RECONNECT TO NEW FINNED TUBE RADIATION. SEE NEW PIPING DRAWINGS.

DRAWING NOTES:

1. REFER TO APPENDIX B – PHASING DIAGRAMS OPTION 3' DATED 8/13/15 FOR COORDINATION OF SCOPE ASSOCIATED WITH PHASING. NOTE: PROJECT SCOPE TO INCLUDE INSTALLATION OF NEW WORK AND DEMOLITION WORK WITHIN SELECT CEILING PLENUMS THAT WILL OCCUR AFTER RENOVATIONS ARE COMPLETE WITHIN CERTAIN AREAS.
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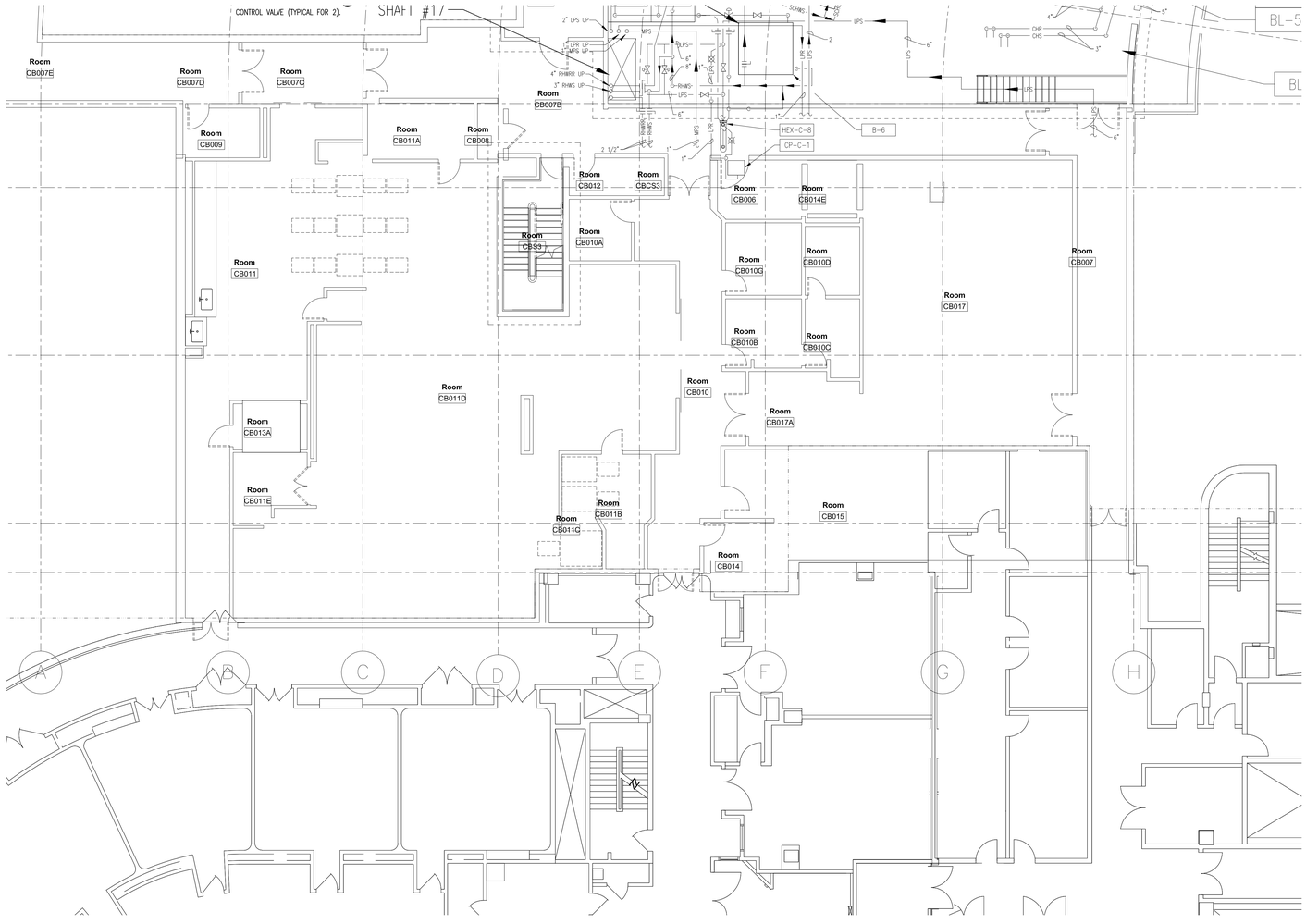
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

PIPING DEMO KEYNOTES:

1



NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC BASEMENT PIPING DEMO PLAN SECTOR A

HD-2.1.0A

BID DOCUMENTS

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JOB NO:	1302
DATE:	12/10/2015
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FILE NAME:	

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GENERAL PIPING DEMO NOTES:

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PIPING DEMO KEYNOTES:

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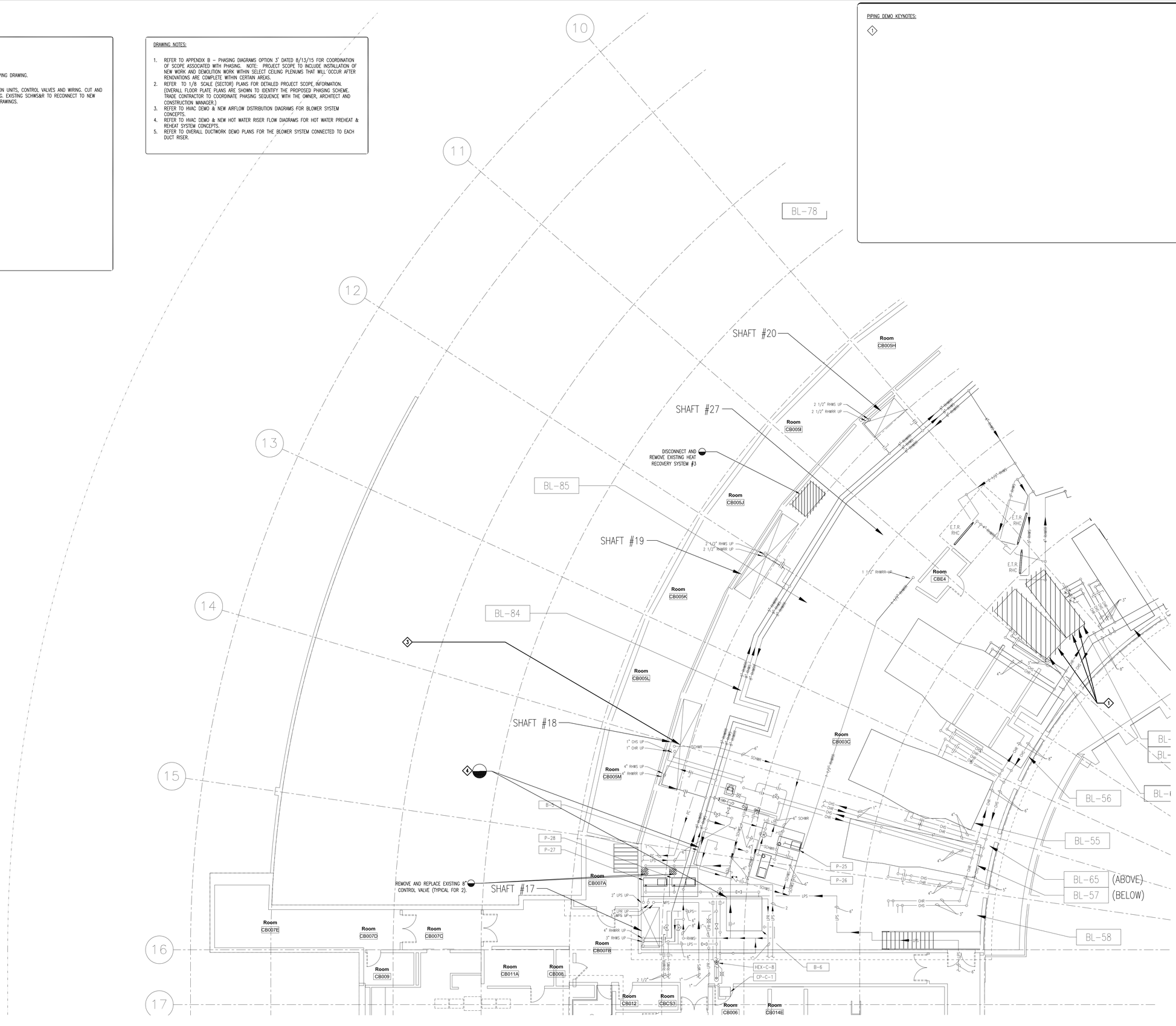

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SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

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BUILDING C RENOVATION

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HVAC BASEMENT PIPING DEMO PLAN SECTOR B

HD-2.1.0B

BID DOCUMENTS

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FILE NAME:	

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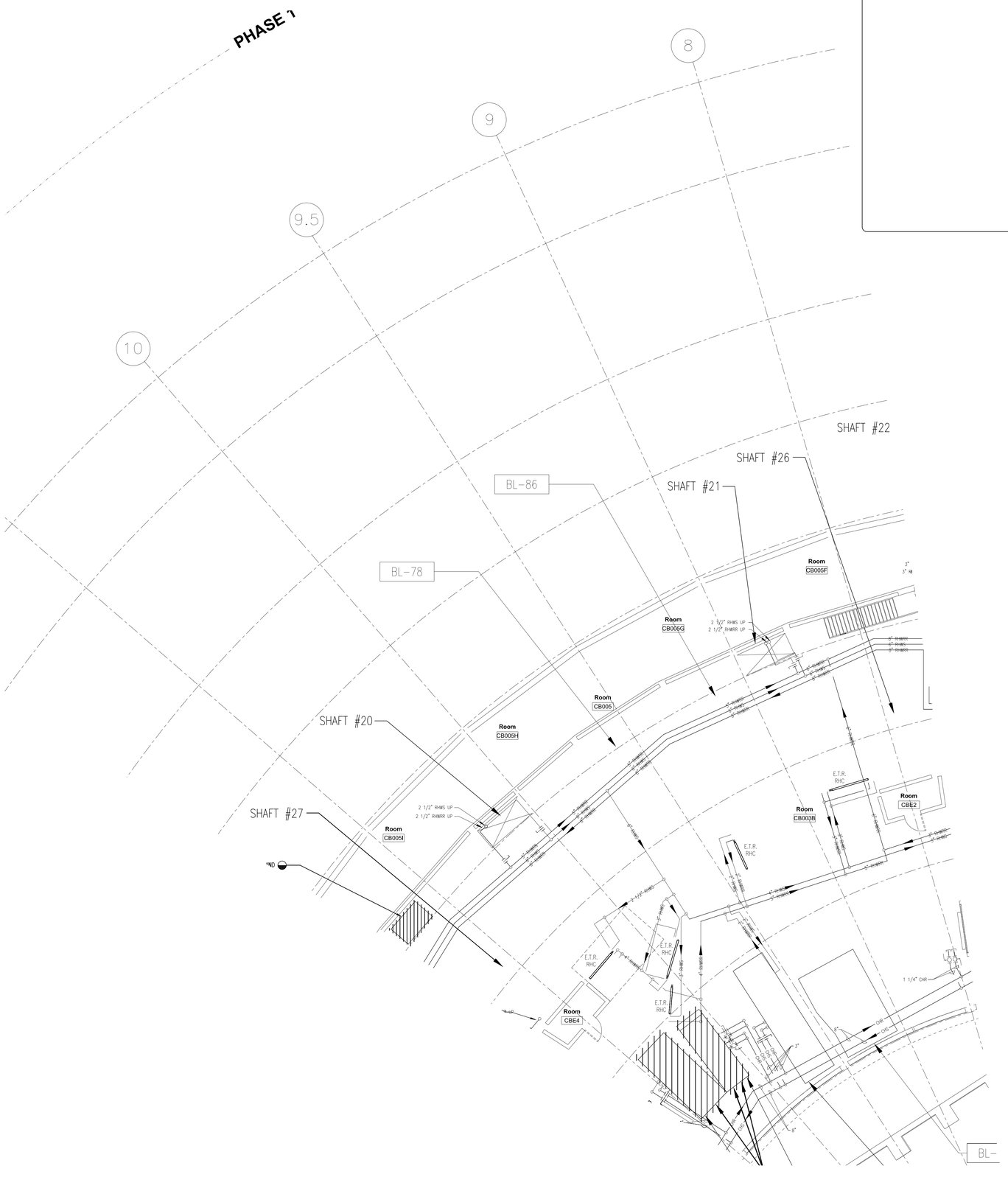

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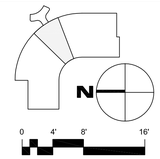

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC BASEMENT PIPING DEMO PLAN SECTOR C

HD-2.1.0C

BID DOCUMENTS

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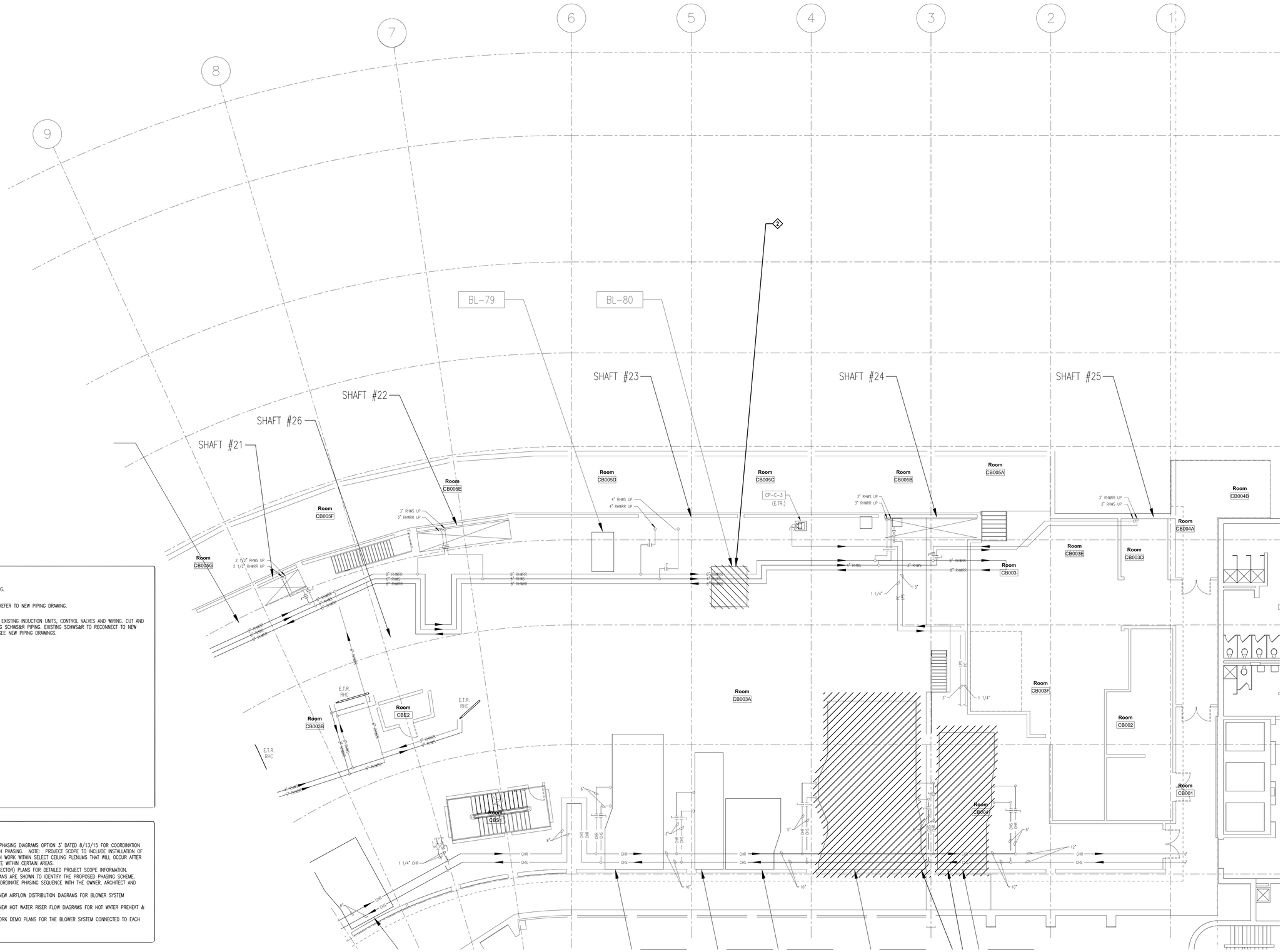

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PIPING DEMO KEYNOTES:

1. DISCONNECT, CUT AND REMOVE EXISTING CONTROLS AND 6" CHS&R BRANCH PIPING. PERMANENTLY CAP BRANCH PIPING BACK TO MAINS.

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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FARMINGTON, CT 06030

HVAC BASEMENT PIPING DEMO PLAN SECTOR D

HD-2.1.0D

BID DOCUMENTS

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JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	MCL
FILE NAME:	

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PIPING DEMO KEYNOTES:

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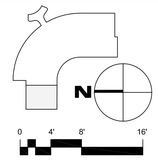
NO.	REVISION	DATE



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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC GROUND FLOOR PIPING DEMO PLAN SECTOR A

HD-2.1.1A

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	MCL
FILE NAME:	

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GENERAL PIPING DEMO NOTES:

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PIPING DEMO KEYNOTES:

1. CUT AND REMOVE EXISTING INDUCTION UNITS ALONG PERIMETER.

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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HVAC GROUND FLOOR PIPING DEMO PLAN SECTOR B

HD-2.1.1B

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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HVAC GROUND FLOOR PIPING DEMO PLAN SECTOR C

HD-2.1.1C

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UCONN HEALTH

(UCONN PROJECT # 901737)

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HVAC GROUND FLOOR PIPING DEMO PLAN SECTOR D

HD-2.1.1D

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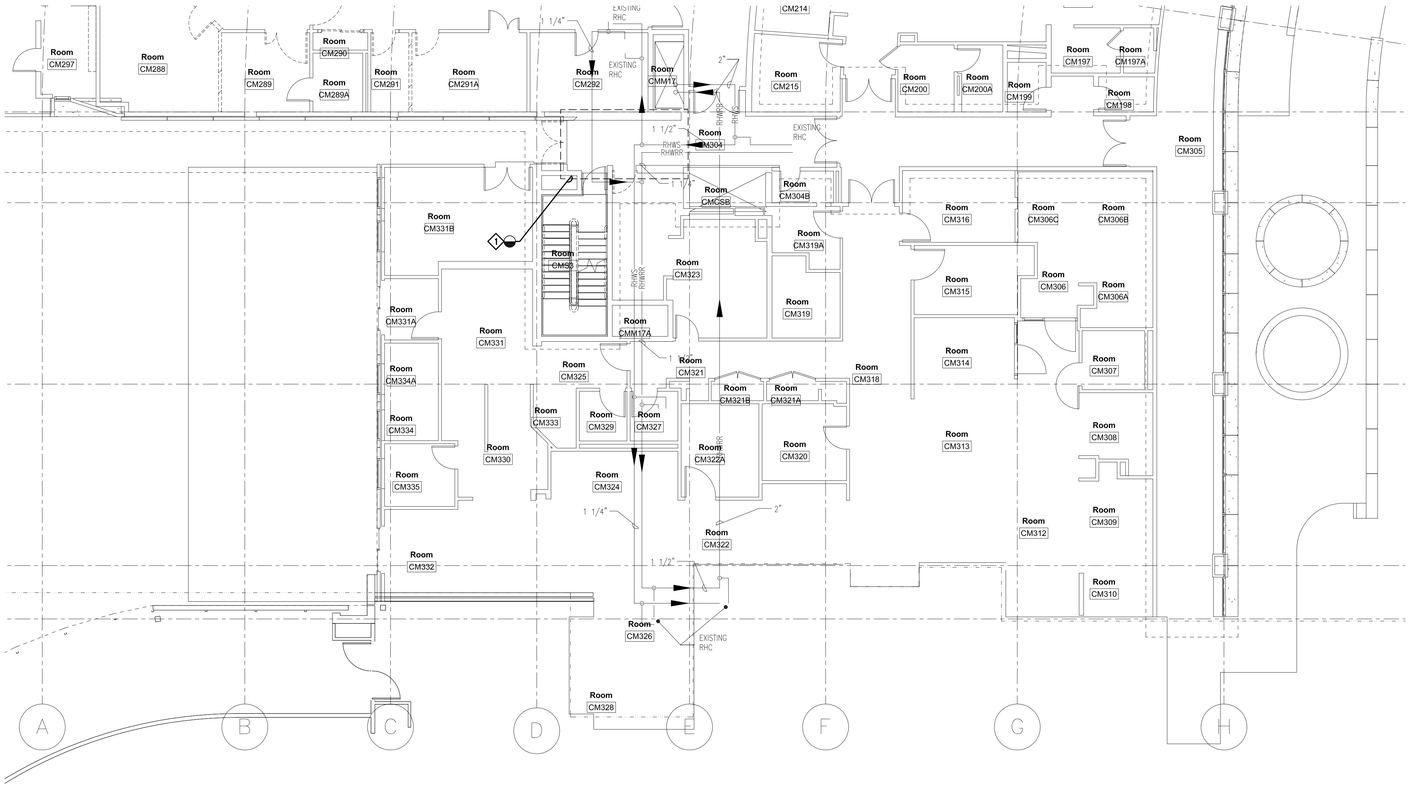
PIPING DEMO KEYNOTES:

1. REROUTE ALL EXISTING HVAC SYSTEMS AROUND NEW 2-HR RATED VESTIBULE.



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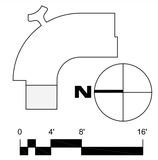

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC MAIN FLOOR PIPING DEMO PLAN SECTOR A

HD-2.1.2A

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	MCL
FILE NAME:	

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GENERAL PIPING DEMO NOTES:

1. CUT, CAP AND SEAL PIPING.
2. TEMPORARY CAP PIPING. REFER TO NEW PIPING DRAWING.
3. DISCONNECT AND REMOVE EXISTING INDUCTION UNITS, CONTROL VALVES AND WIRING. CUT AND TEMPORARILY CAP EXISTING SCHWS&R PIPING. EXISTING SCHWS&R TO RECONNECT TO NEW FINNED TUBE RADIATION. SEE NEW PIPING DRAWINGS.

DRAWING NOTES:

1. REFER TO APPENDIX B – PHASING DIAGRAMS OPTION 3' DATED 8/13/15 FOR COORDINATION OF SCOPE ASSOCIATED WITH PHASING. NOTE: PROJECT SCOPE TO INCLUDE INSTALLATION OF NEW WORK AND DEMOLITION WORK WITHIN SELECT CEILING PLENUMS THAT WILL OCCUR AFTER RENOVATIONS ARE COMPLETE WITHIN CERTAIN AREAS.
2. REFER TO 1/8 SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)
3. REFER TO HVAC DEMO & NEW AIRFLOW DISTRIBUTION DIAGRAMS FOR BLOWER SYSTEM CONCEPTS.
4. REFER TO HVAC DEMO & NEW HOT WATER RISER FLOW DIAGRAMS FOR HOT WATER PREHEAT & REHEAT SYSTEM CONCEPTS.
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

PIPING DEMO KEYNOTES:

1. CUT AND CAP 3/4" HWS&R BACK TO PIPING MAIN. DISCONNECT AND REMOVE EXISTING CONTROL VALVE, CONTROLS AND WIRING.

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
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HVAC MAIN FLOOR PIPING DEMO PLAN SECTOR B

HD-2.1.2B

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	MCL
FILE NAME:	

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GENERAL PIPING DEMO NOTES:

1. CUT, CAP AND SEAL PIPING.
2. TEMPORARY CAP PIPING. REFER TO NEW PIPING DRAWING.
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DRAWING NOTES:

1. REFER TO APPENDIX B – PHASING DIAGRAMS OPTION 3" DATED 8/13/15 FOR COORDINATION OF SCOPE ASSOCIATED WITH PHASING. NOTE: PROJECT SCOPE TO INCLUDE INSTALLATION OF NEW WORK AND DEMOLITION WORK WITHIN SELECT CEILING PLENUMS THAT WILL OCCUR AFTER RENOVATIONS ARE COMPLETE WITHIN CERTAIN AREAS.
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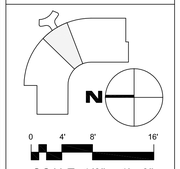
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

PIPING DEMO KEYNOTES:

1. NOT USED

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC MAIN FLOOR PIPING DEMO PLAN SECTOR C

HD-2.1.2C

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1352
DATE:	12/10/2015
DRAWN BY:	MCL
FILE NAME:	

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GENERAL PIPING DEMO NOTES:

1. CUT, CAP AND SEAL PIPING.
2. TEMPORARY CAP PIPING. REFER TO NEW PIPING DRAWING.
3. DISCONNECT AND REMOVE EXISTING INDUCTION UNITS, CONTROL VALVES AND WIRING. CUT AND TEMPORARILY CAP EXISTING SCHWS&R PIPING. EXISTING SCHWS&R TO RECONNECT TO NEW FINNED TUBE RADIATION. SEE NEW PIPING DRAWINGS.

DRAWING NOTES:

1. REFER TO APPENDIX B – PHASING DIAGRAMS OPTION 3" DATED 8/13/15 FOR COORDINATION OF SCOPE ASSOCIATED WITH PHASING. NOTE: PROJECT SCOPE TO INCLUDE INSTALLATION OF NEW WORK AND DEMOLITION WORK WITHIN SELECT CEILING PLENUMS THAT WILL OCCUR AFTER RENOVATIONS ARE COMPLETE WITHIN CERTAIN AREAS.
2. REFER TO 1/8 SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)
3. REFER TO HVAC DEMO & NEW AIRFLOW DISTRIBUTION DIAGRAMS FOR BLOWER SYSTEM CONCEPTS.
4. REFER TO HVAC DEMO & NEW HOT WATER RISER FLOW DIAGRAMS FOR HOT WATER PREHEAT & REHEAT SYSTEM CONCEPTS.
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

PIPING DEMO KEYNOTES:

1. NOT USED

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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FARMINGTON, CT 06030

HVAC MAIN FLOOR PIPING DEMO PLAN SECTOR D

HD-2.1.2D

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	MCL
FILE NAME:	

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GENERAL PIPING DEMO NOTES:

1. CUT, CAP AND SEAL PIPING.
2. TEMPORARY CAP PIPING. REFER TO NEW PIPING DRAWING.
3. DISCONNECT AND REMOVE EXISTING INDUCTION UNITS, CONTROL VALVES AND WIRING. CUT AND TEMPORARILY CAP EXISTING SCHWS&R PIPING. EXISTING SCHWS&R TO RECONNECT TO NEW FINNED TUBE RADIATION. SEE NEW PIPING DRAWINGS.

DRAWING NOTES:

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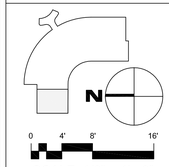
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

PIPING DEMO KEYNOTES:

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
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HVAC FIRST FLOOR PIPING DEMO PLAN SECTOR A

HD-2.1.3A

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
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FILE NAME:	

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GENERAL PIPING DEMO NOTES:

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2. TEMPORARY CAP PIPING. REFER TO NEW PIPING DRAWING.
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4. REFER TO HVAC DEMO & NEW HOT WATER RISER FLOW DIAGRAMS FOR HOT WATER PREHEAT & REHEAT SYSTEM CONCEPTS.
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

PIPING DEMO KEYNOTES:

1. CUT AND REMOVE EXISTING INDUCTION UNITS ALONG PERIMETER.

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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BUILDING C RENOVATION

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HVAC FIRST FLOOR PIPING DEMO PLAN SECTOR B

HD-2.1.3B

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	MCL
FILE NAME:	

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PIPING DEMO KEYNOTES:

1. CUT AND REMOVE EXISTING INDUCTION UNITS ALONG PERIMETER.

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

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BUILDING C RENOVATION

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HVAC FIRST FLOOR PIPING DEMO PLAN SECTOR C

HD-2.1.3C

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	MCL
FILE NAME:	

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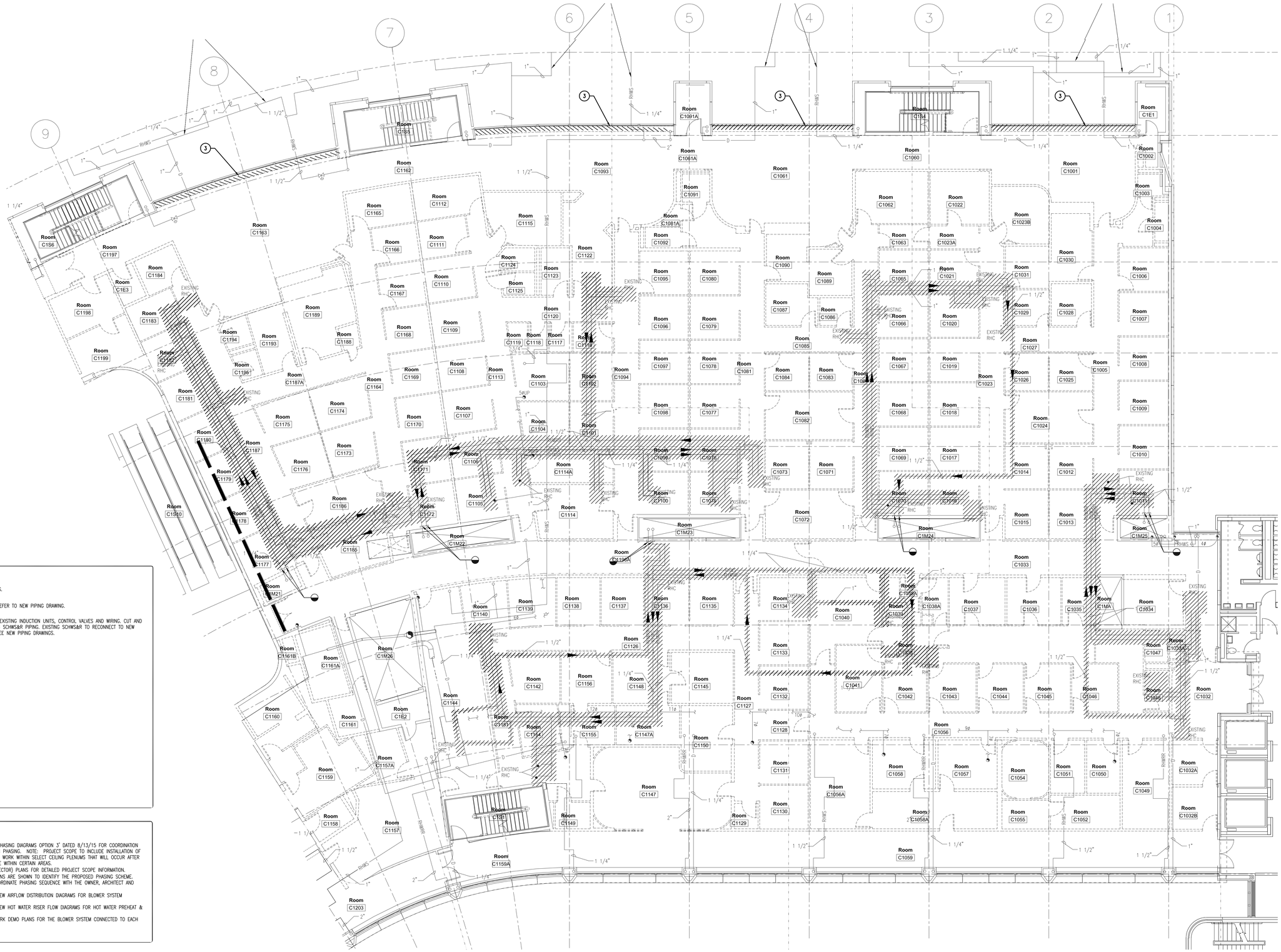

GENERAL PIPING DEMO NOTES:

1. CUT, CAP AND SEAL PIPING.
2. TEMPORARY CAP PIPING. REFER TO NEW PIPING DRAWING.
3. DISCONNECT AND REMOVE EXISTING INDUCTION UNITS, CONTROL VALVES AND WIRING. CUT AND TEMPORARILY CAP EXISTING SCHWS&R PIPING. EXISTING SCHWS&R TO RECONNECT TO NEW FINNED TUBE RADIATION. SEE NEW PIPING DRAWINGS.

DRAWING NOTES:

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4. REFER TO HVAC DEMO & NEW HOT WATER RISER FLOW DIAGRAMS FOR HOT WATER PREHEAT & REHEAT SYSTEM CONCEPTS.
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

PIPING DEMO KEYNOTES:

1. CUT AND REMOVE EXISTING INDUCTION UNITS ALONG PERIMETER.

NO.	REVISION	DATE

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC FIRST FLOOR PIPING DEMO PLAN SECTOR D

HD-2.1.3D

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	MCL
FILE NAME:	

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GENERAL PIPING DEMO NOTES:

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DRAWING NOTES:

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3. REFER TO HVAC DEMO & NEW AIRFLOW DISTRIBUTION DIAGRAMS FOR BLOWER SYSTEM CONCEPTS.
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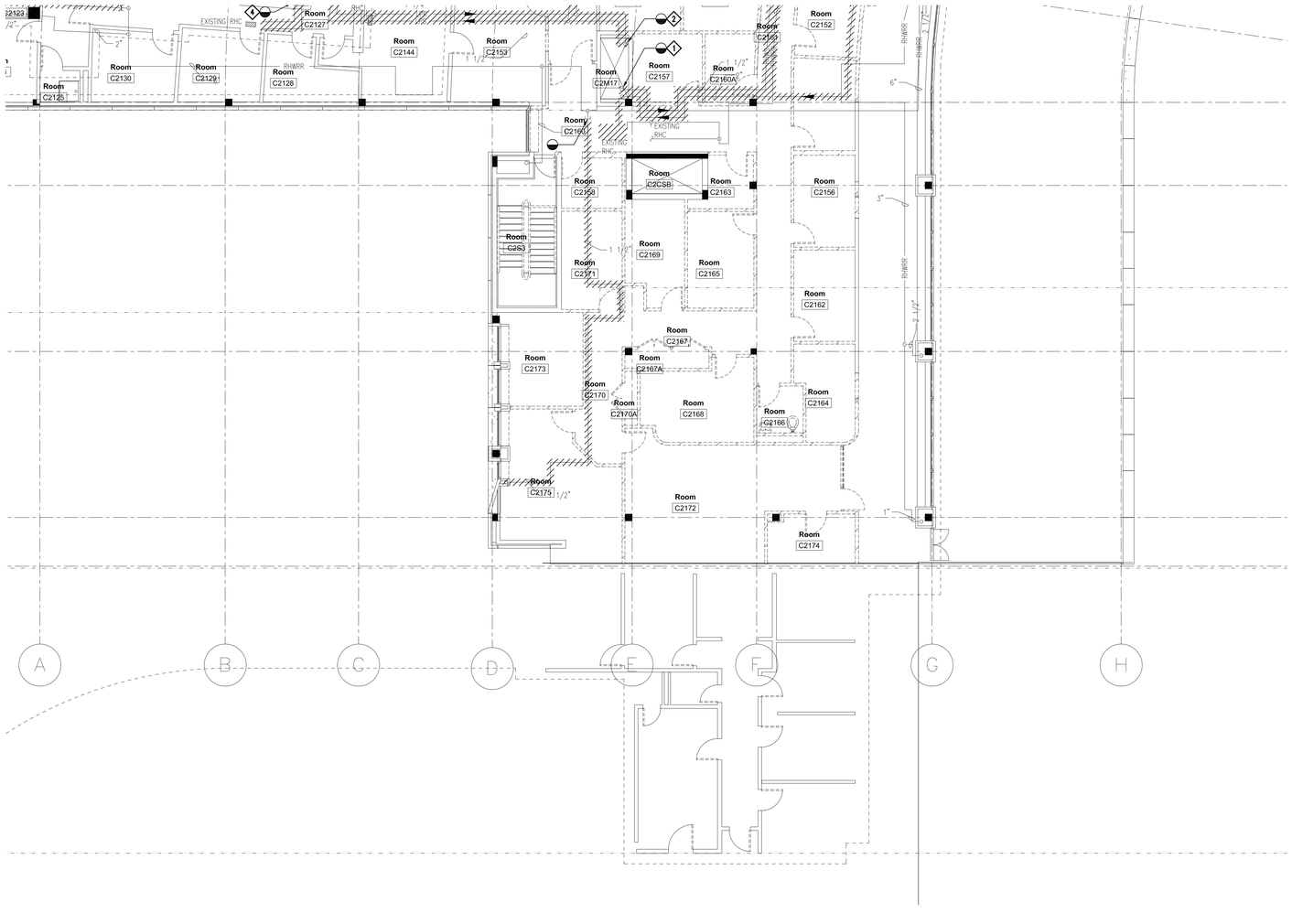
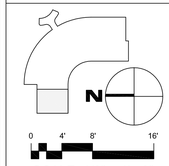
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

PIPING DEMO KEYNOTES:

1. CUT AND REMOVE EXISTING RHWS&RR DISTRIBUTION PIPING AND PIPE RISERS DOWN TO THE MAIN FLOOR.
2. CUT AND REMOVE EXISTING LPS&R DISTRIBUTION PIPING AND PIPE RISERS DOWN TO THE BASEMENT.



NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
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HVAC SECOND FLOOR PIPING DEMO PLAN SECTOR A

HD-2.1.4A

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	MCL
FILE NAME:	

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GENERAL PIPING DEMO NOTES:

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5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

PIPING DEMO KEYNOTES:

1. CUT AND REMOVE EXISTING RHWS&RR DISTRIBUTION PIPING AND PIPE RISERS DOWN TO THE MAIN FLOOR
2. CUT AND REMOVE EXISTING LPS&R DISTRIBUTION PIPING AND PIPE RISERS DOWN TO THE BASEMENT.
3. EXISTING INDUCTION UNIT SHALL REMAIN.
4. DISCONNECT AND REMOVE EXISTING T-STAT AND CONTROLS.

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC SECOND FLOOR PIPING DEMO PLAN SECTOR B

HD-2.1.4B

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	MCL
FILE NAME:	

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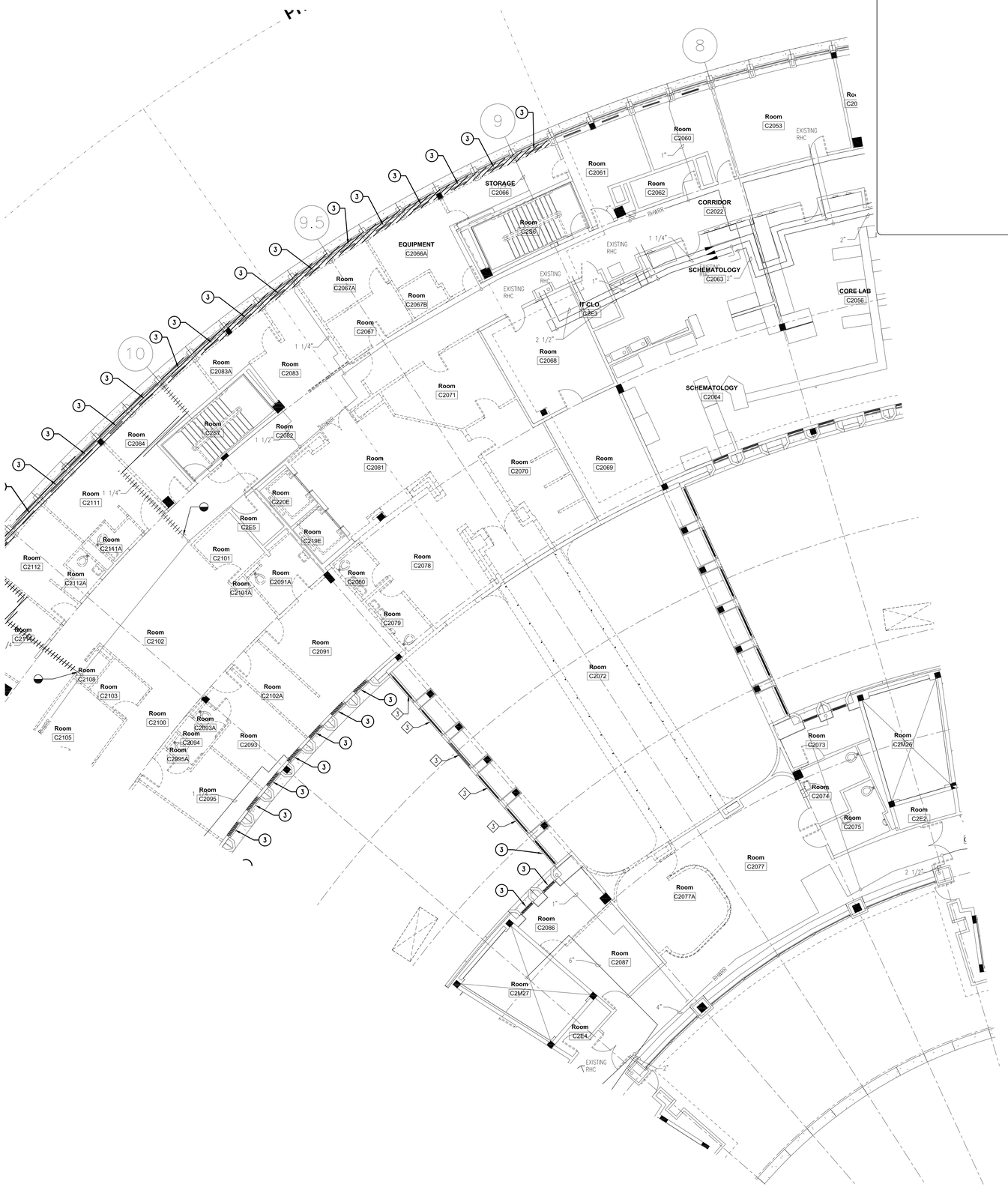
GENERAL PIPING DEMO NOTES:

1. CUT, CAP AND SEAL PIPING.
2. TEMPORARY CAP PIPING. REFER TO NEW PIPING DRAWING.
3. DISCONNECT AND REMOVE EXISTING INDUCTION UNITS, CONTROL VALVES AND WIRING. CUT AND TEMPORARILY CAP EXISTING SCHWS&R PIPING. EXISTING SCHWS&R TO RECONNECT TO NEW FINNED TUBE RADIATION. SEE NEW PIPING DRAWINGS.

DRAWING NOTES:

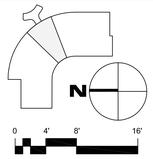
1. REFER TO APPENDIX B – PHASING DIAGRAMS OPTION 3" DATED 8/13/15 FOR COORDINATION OF SCOPE ASSOCIATED WITH PHASING. NOTE: PROJECT SCOPE TO INCLUDE INSTALLATION OF NEW WORK AND DEMOLITION WORK WITHIN SELECT CEILING PLENUMS THAT WILL OCCUR AFTER RENOVATIONS ARE COMPLETE WITHIN CERTAIN AREAS.
2. REFER TO 1/8 SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)
3. REFER TO HVAC DEMO & NEW AIRFLOW DISTRIBUTION DIAGRAMS FOR BLOWER SYSTEM CONCEPTS.
4. REFER TO HVAC DEMO & NEW HOT WATER RISER FLOW DIAGRAMS FOR HOT WATER PREHEAT & REHEAT SYSTEM CONCEPTS.
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.



PIPING DEMO KEYNOTES:

1. NOT USED

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC SECOND FLOOR PIPING DEMO PLAN SECTOR C

HD-2.1.4C

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	MCL
FILE NAME:	

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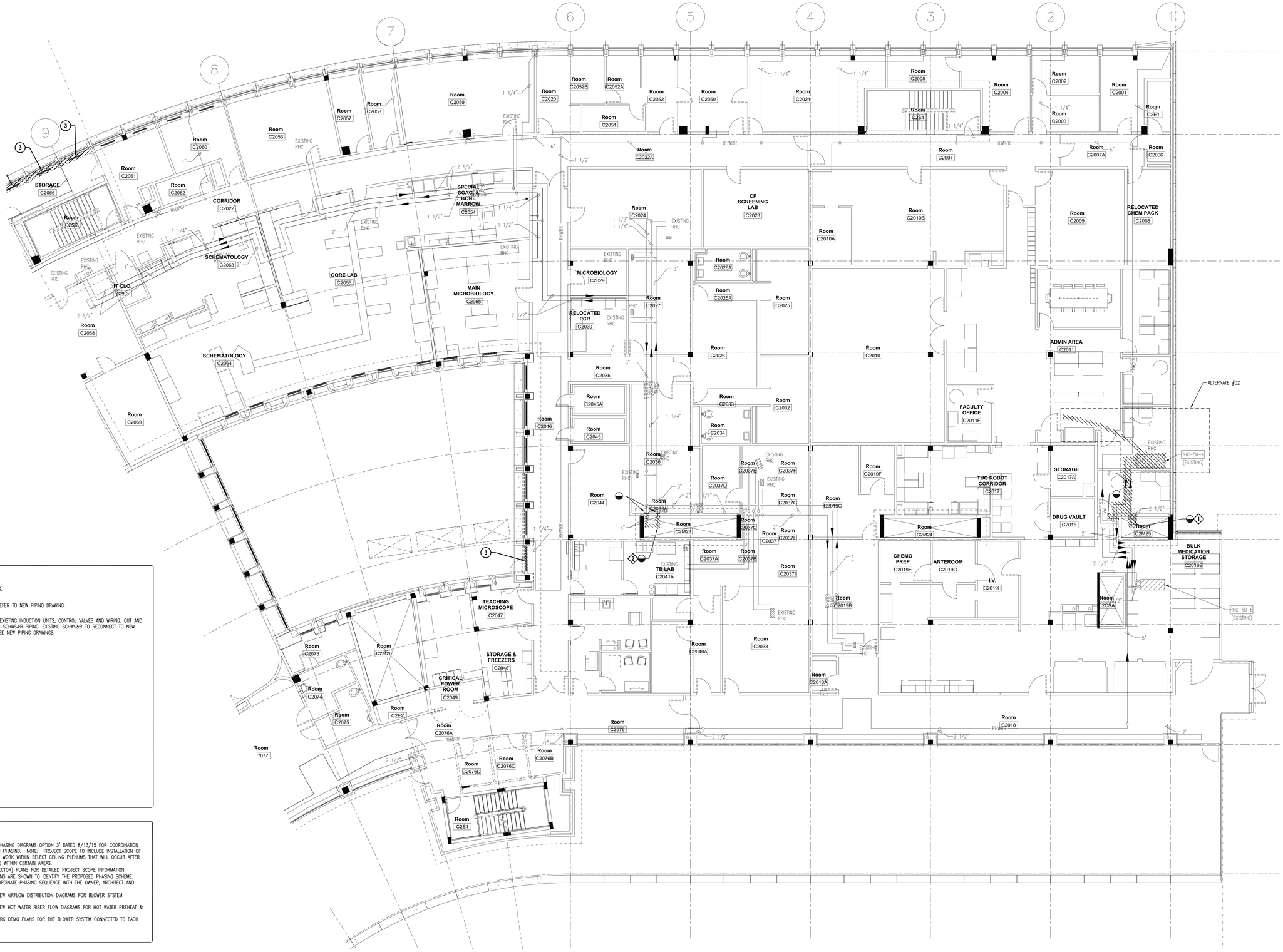

GENERAL PIPING DEMO NOTES:

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2. TEMPORARY CAP PIPING. REFER TO NEW PIPING DRAWING.
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DRAWING NOTES:

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4. REFER TO HVAC DEMO & NEW HOT WATER RISER FLOW DIAGRAMS FOR HOT WATER PREHEAT & REHEAT SYSTEM CONCEPTS.
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

PIPING DEMO KEYNOTES:

1. CUT AND REMOVE EXISTING RHWS&RR DISTRIBUTION PIPING AND PIPE RISERS DOWN TO THE BASEMENT.
2. CUT AND REMOVE EXISTING RHWS&RR DISTRIBUTION PIPING AND PIPE RISERS DOWN TO THE GROUND FLOOR.

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC SECOND FLOOR PIPING DEMO PLAN SECTOR D

HD-2.1.4D

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	MCL
FILE NAME:	

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GENERAL PIPING DEMO NOTES:

1. CUT, CAP AND SEAL PIPING.
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DRAWING NOTES:

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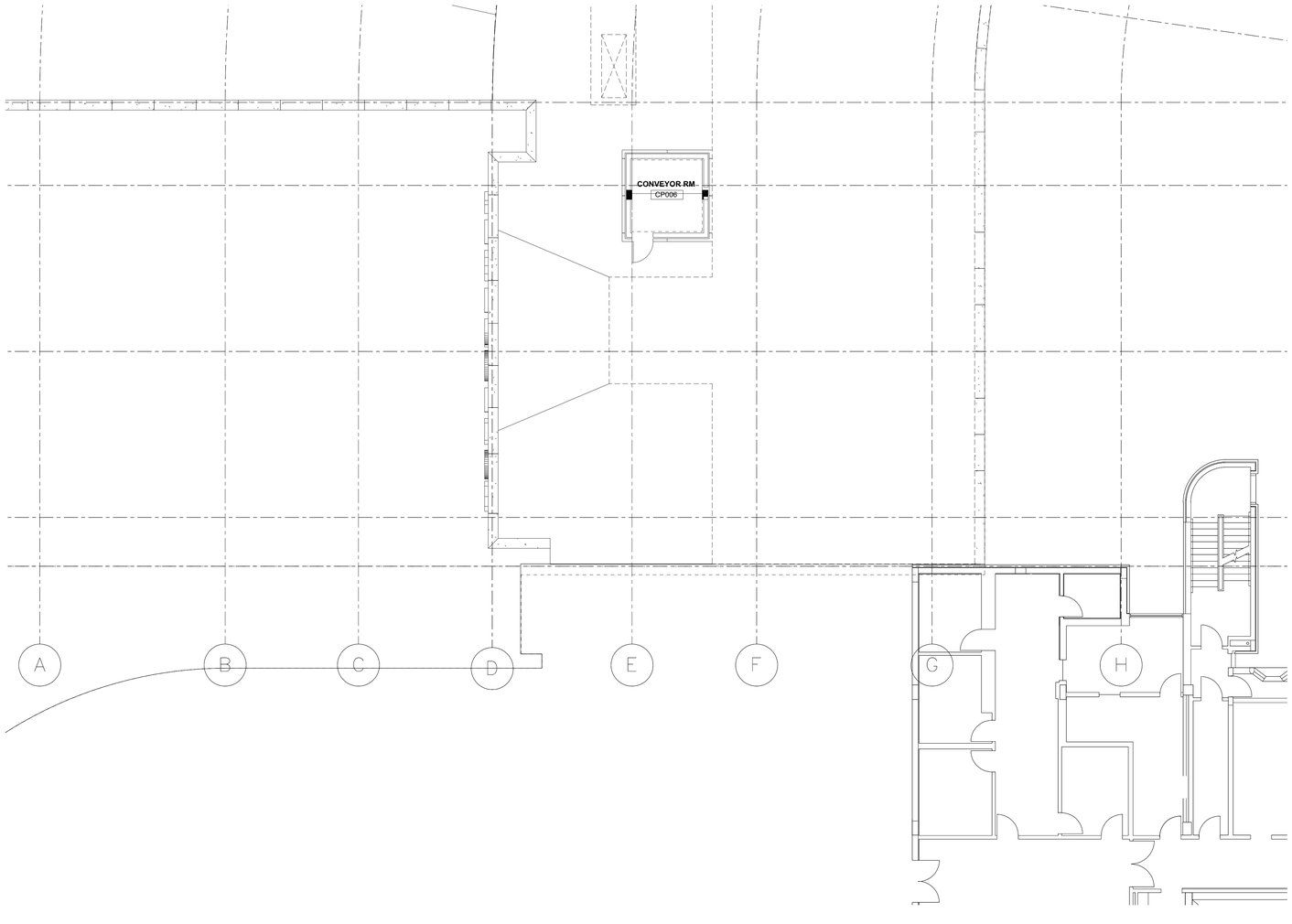
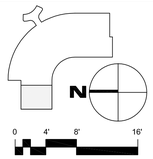
5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

PIPING DEMO KEYNOTES:

1. CUT AND REMOVE EXISTING INDUCTION UNITS ALONG PERIMETER.



NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC ROOF & PH PIPING DEMO PLAN SECTOR A

HD-2.1.5A

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SCALE:	1/8" = 1'-0"
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FILE NAME:	

GENERAL PIPING DEMO NOTES:

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DRAWING NOTES:

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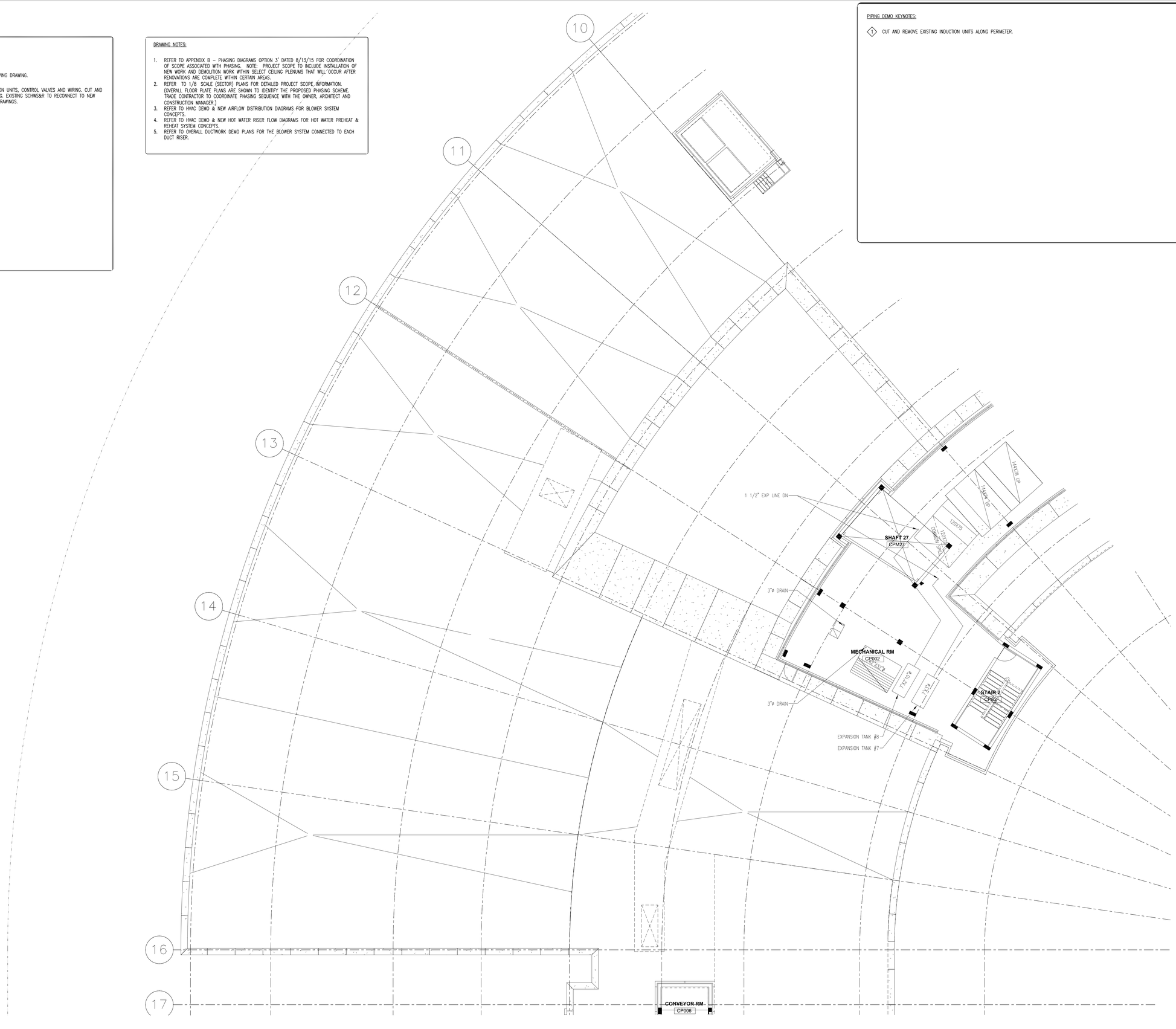
PIPING DEMO KEYNOTES:

1. CUT AND REMOVE EXISTING INDUCTION UNITS ALONG PERIMETER.



NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC ROOF & PH PIPING DEMO PLAN SECTOR B

HD-2.1.5B

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	MCL
FILE NAME:	

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GENERAL PIPING DEMO NOTES:

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DRAWING NOTES:

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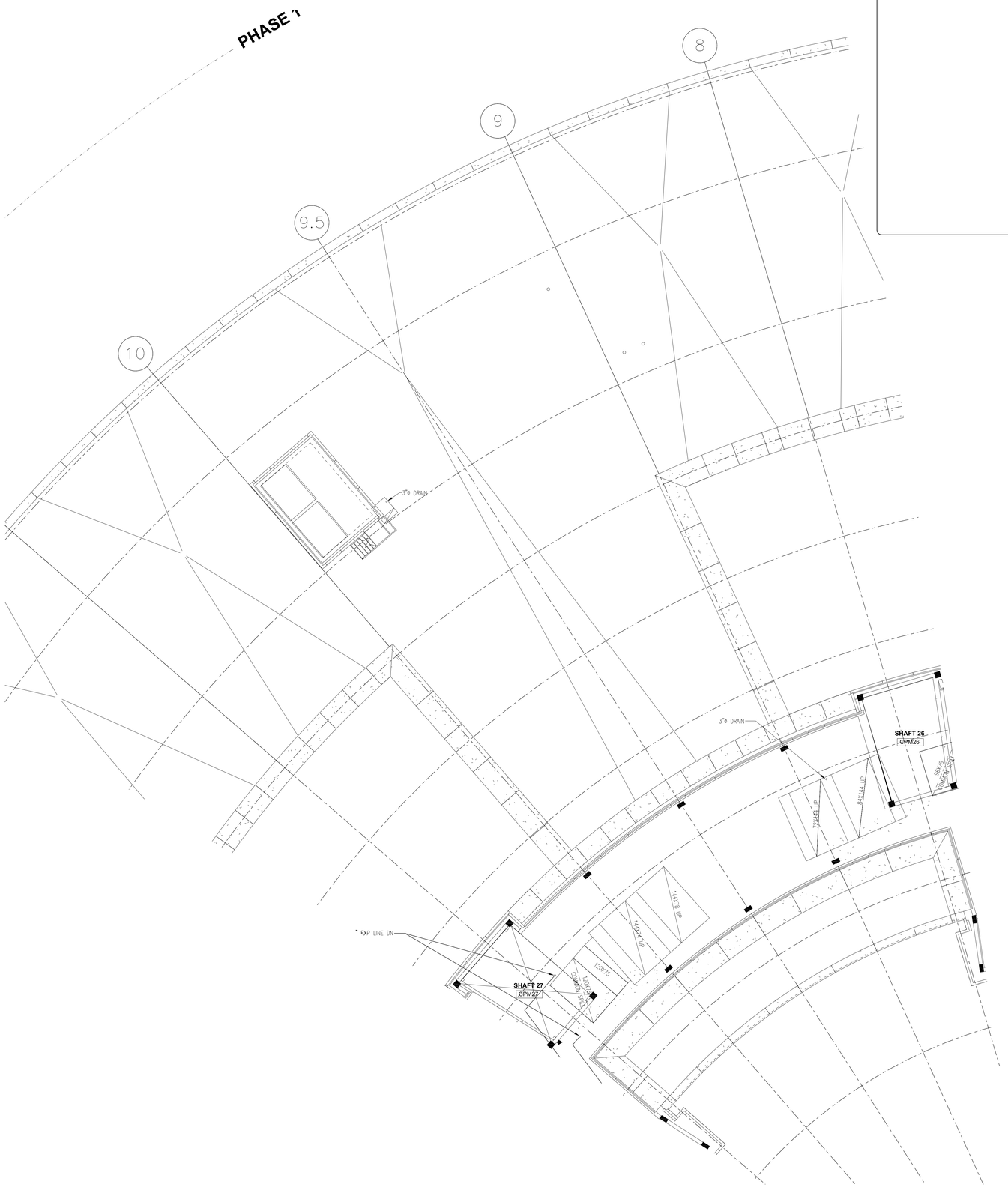
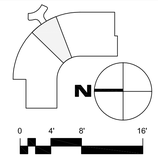


PIPING DEMO KEYNOTES:

1. CUT AND REMOVE EXISTING INDUCTION UNITS ALONG PERIMETER.

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC ROOF & PH PIPING DEMO PLAN SECTOR C

HD-2.1.5C

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	MCL
FILE NAME:	

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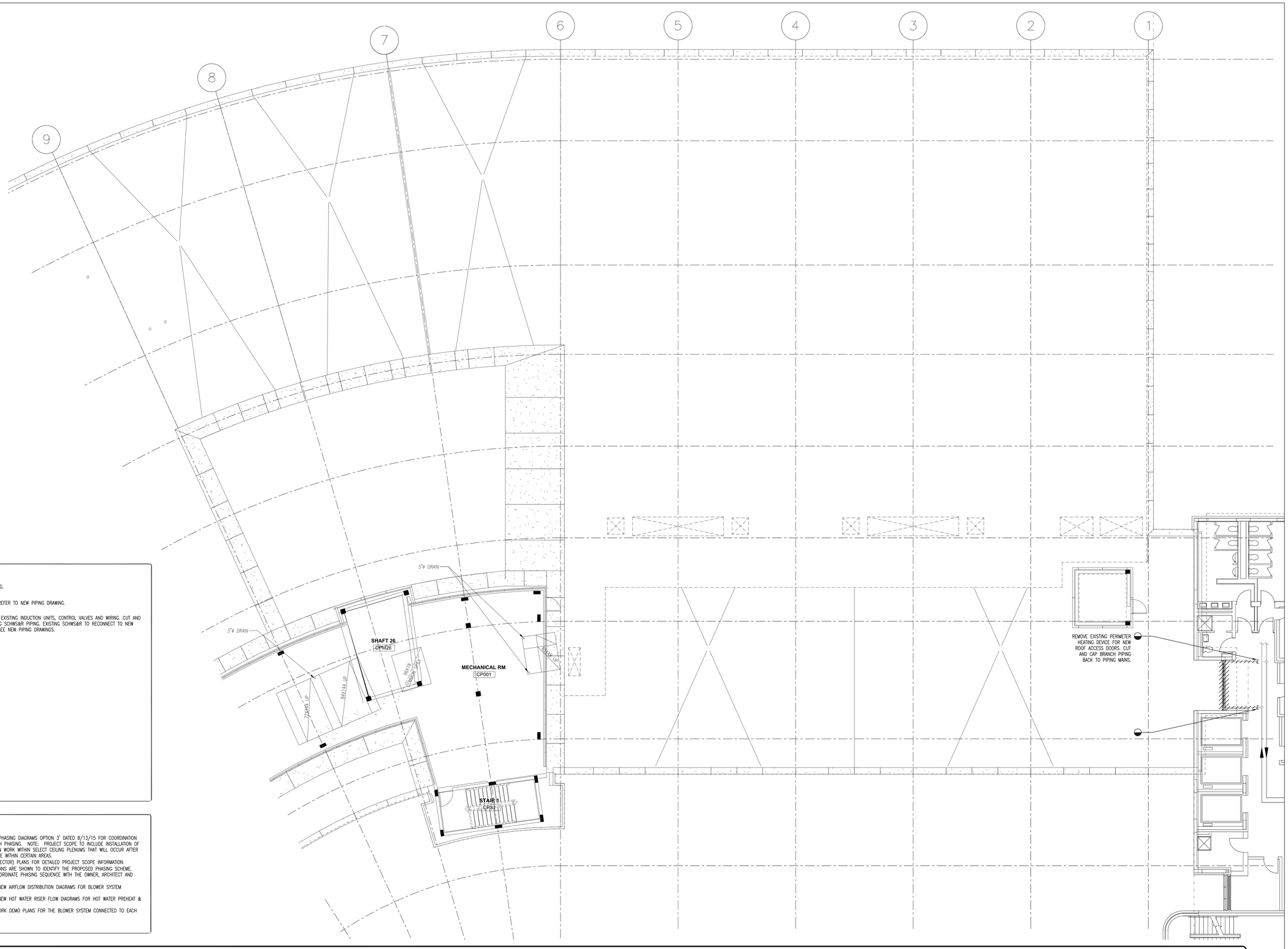

GENERAL PIPING DEMO NOTES:

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5. REFER TO OVERALL DUCTWORK DEMO PLANS FOR THE BLOWER SYSTEM CONNECTED TO EACH DUCT RISER.

PIPING DEMO KEYNOTES:

1. CUT AND REMOVE EXISTING INDUCTION UNITS ALONG PERIMETER.

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC ROOF & PH PIPING DEMO PLAN SECTOR D

HD-2.1.5D

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	MCL
FILE NAME:	

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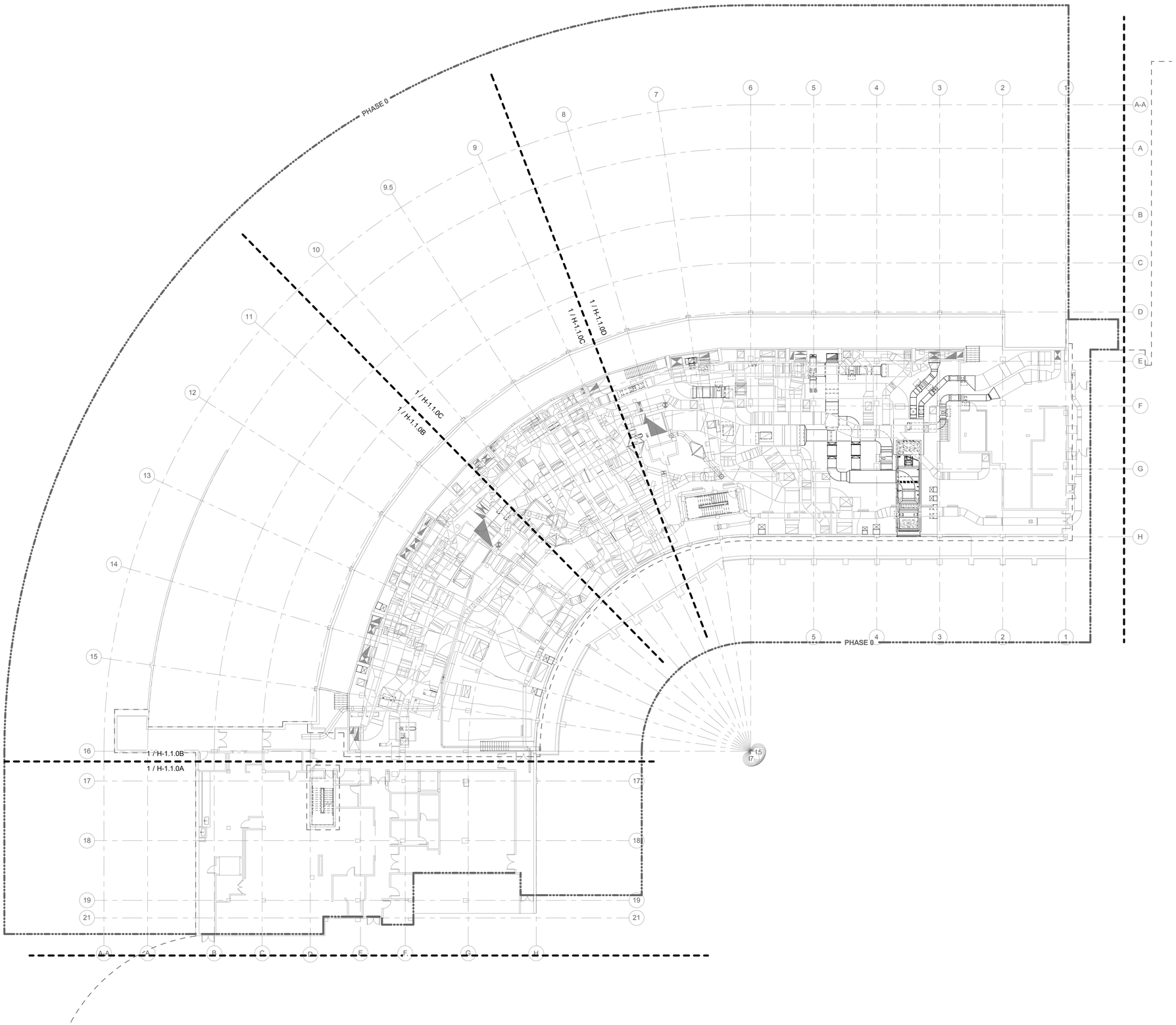

1 Basement - Duct
1/16" = 1'-0"

GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. SUPPLY ONE (1) THERMOSTAT PER VCV BOX.

4. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

NO.	REVISION	DATE

0 8' 16' 32'
SCALE: 1/16" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE,
FARMINGTON CT. 06030

HVAC BASEMENT DUCT PLAN OVERALL

H-1.0.0

BID DOCUMENTS

SCALE:	1/16" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC BASEMENT DUCT PLAN OVERALL

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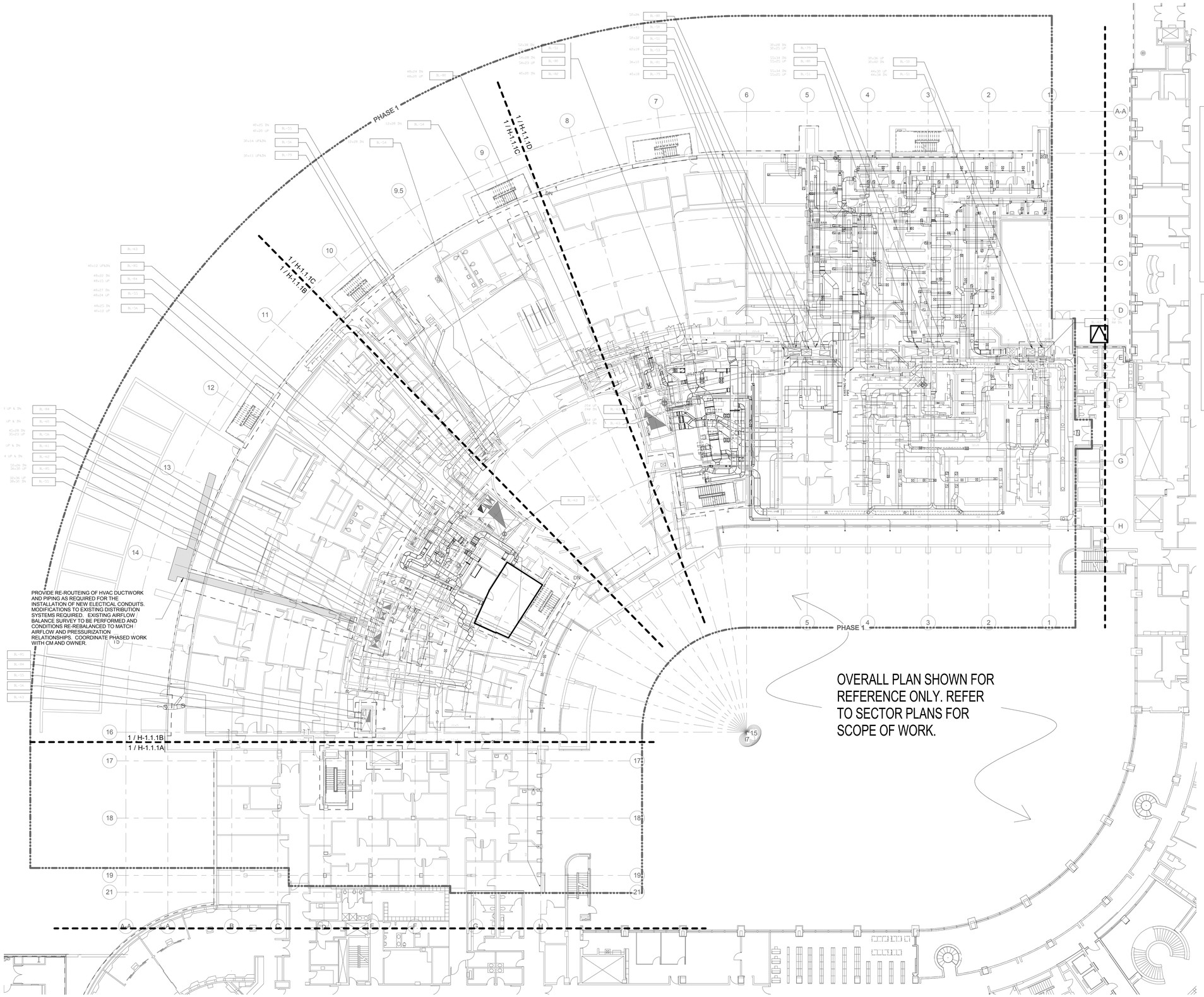

1 Ground Floor - Duct
1/16" = 1'-0"

GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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3. SUPPLY ONE (1) THERMOSTAT PER VCV BOX.

4. AIR TERMINAL BOX NUMBERING SCHEME: [FLOOR SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

KEY NOTES:

SEE A/H-0.0.3 FOR IDF ROOM VRF CONCEPT DIAGRAM.

NEW NORMAL AND EMERGENCY ELECTRIC ROOMS TO BE SEPARATE COOLING ZONE. ELECTRIC ROOMS SUPPORTED BY NEW BLOWERS SHALL HAVE A NEW VAV SUPPLY BOX WITH DUCTED RETURN. ELECTRIC ROOMS SUPPORTED BY EXISTING BLOWERS SHALL HAVE CV DUCTED SUPPLY AND RETURN WITH VOLUME DAMPERS.

EXISTING TO REMAIN FED BY BASEMENT BL SYSTEMS.

NO.	REVISION	DATE

SCALE: 1/16" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON CT. 06030

HVAC GROUND FLOOR DUCT PLAN OVERALL

H-1.0.1

BID DOCUMENTS

SCALE:	1/16" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDR
FILE NAME:	HVAC GROUND FLOOR Duct Plan OVERALL

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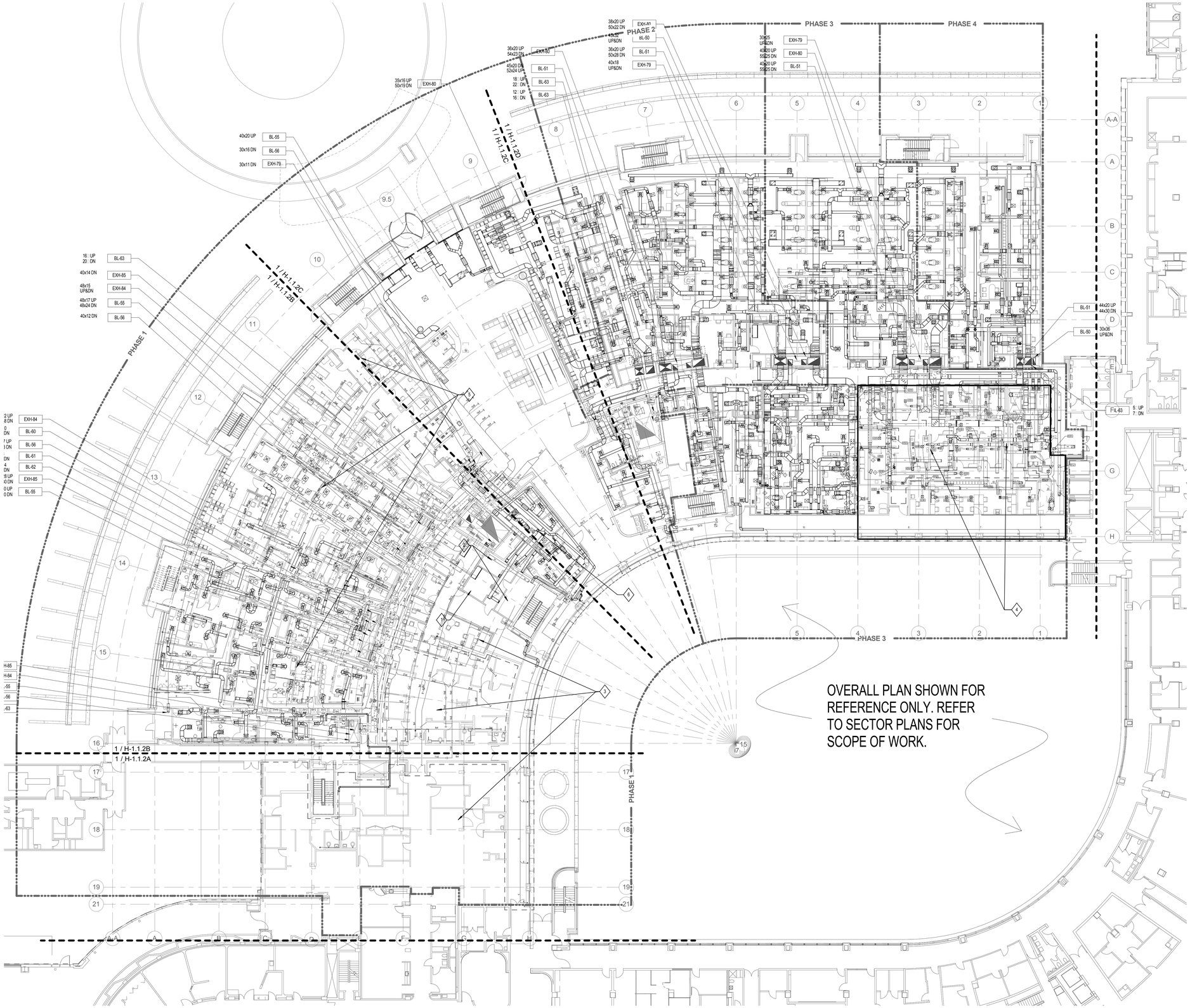
12/10/2015 10:02:21 AM



1 Main Floor - Duct
1/16" = 1'-0"

GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. SUPPLY ONE (1) THERMOSTAT PER VCV BOX.

4. AIR TERMINAL BOX NUMBERING SCHEME: [FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

KEY NOTES:

1. SEE AH-0.0.3 FOR IDF ROOM VRF CONCEPT DIAGRAM.
2. NEW NORMAL AND EMERGENCY ELECTRIC ROOMS TO BE SEPARATE COOLING ZONE. ELECTRIC ROOMS SUPPORTED BY NEW BLOWERS SHALL HAVE A NEW VAV SUPPLY BOX WITH DUCTED RETURN. ELECTRIC ROOMS SUPPORTED BY EXISTING BLOWERS SHALL HAVE CV DUCTED SUPPLY AND RETURN WITH VOLUME DAMPERS.
3. EXISTING TO REMAIN FED BY BASEMENT BL SYSTEMS.
4. RECENTLY RENOVATED. EXISTING ZONING TO REMAIN, BUT NOW TO BE FED VIA BL-130A/B WITH VCV BOXES.
5. LIGHT RENOVATION WITH NEW RE-HEAT COILS FOR NEW ZONING FED BY EXISTING BASEMENT BL SYSTEMS.
6. NEW BL-131 TO SUPPORT PHLEBOTOMY.

NO.	REVISION	DATE

SCALE: 1/16" = 1' - 0"

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BUILDING C RENOVATION

263 FARMINGTON AVE.
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HVAC MAIN FLOOR DUCT PLAN OVERALL

H-1.0.2

BID DOCUMENTS

SCALE:	1/16" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC MAIN FLOOR DUCT PLAN OVERALL

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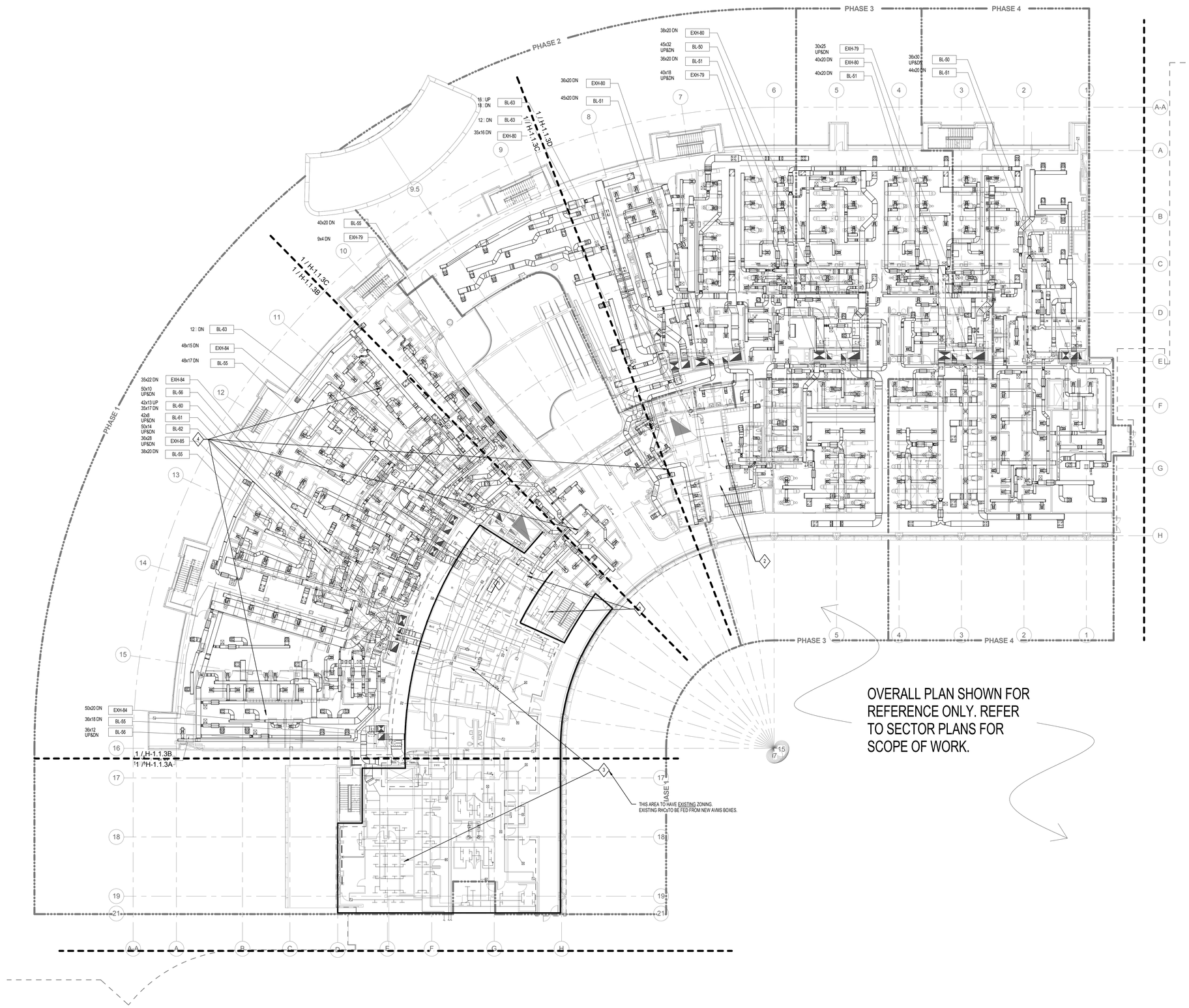

1 First Floor - Duct
1/16" = 1'-0"

GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS H0-0.0.0 & H0-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. SUPPLY ONE (1) THERMOSTAT PER VCV BOX.

4. AIR TERMINAL BOX NUMBERING SCHEME: [FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

KEY NOTES:

1. SEE A/H-0.0.3 FOR IDF ROOM VRF CONCEPT DIAGRAM.

2. NEW NORMAL AND EMERGENCY ELECTRIC ROOMS TO BE SEPARATE COOLING ZONE. ELECTRIC ROOMS SUPPORTED BY NEW BLOWERS SHALL HAVE A NEW VAV SUPPLY BOX WITH DUCTED RETURN. ELECTRIC ROOMS SUPPORTED BY EXISTING BLOWERS SHALL HAVE CV DUCTED SUPPLY AND RETURN WITH VOLUME DAMPERS.

3. EXISTING PROGRAM TO REMAIN WITH EXISTING DISTRIBUTION BUT TO BE FED BY NEW ROOF TOP BL-131 WITH NEW VCV BOXES AT SHAFT TAKE-OFFS.

4. NEWLY RENOVATED AREAS TO BE FED BY NEW ROOF TOP BL-131. EACH ZONE REPRESENTS A NEW INDIVIDUAL VCV BOX.

NO.	REVISION	DATE

SCALE: 1/16" = 1' - 0"

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BUILDING C RENOVATION

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HVAC FIRST FLOOR DUCT PLAN OVERALL

H-1.0.3

BID DOCUMENTS

SCALE:	1/16" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
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FILE NAME:	HVAC FIRST FLOOR DUCT PLAN OVER

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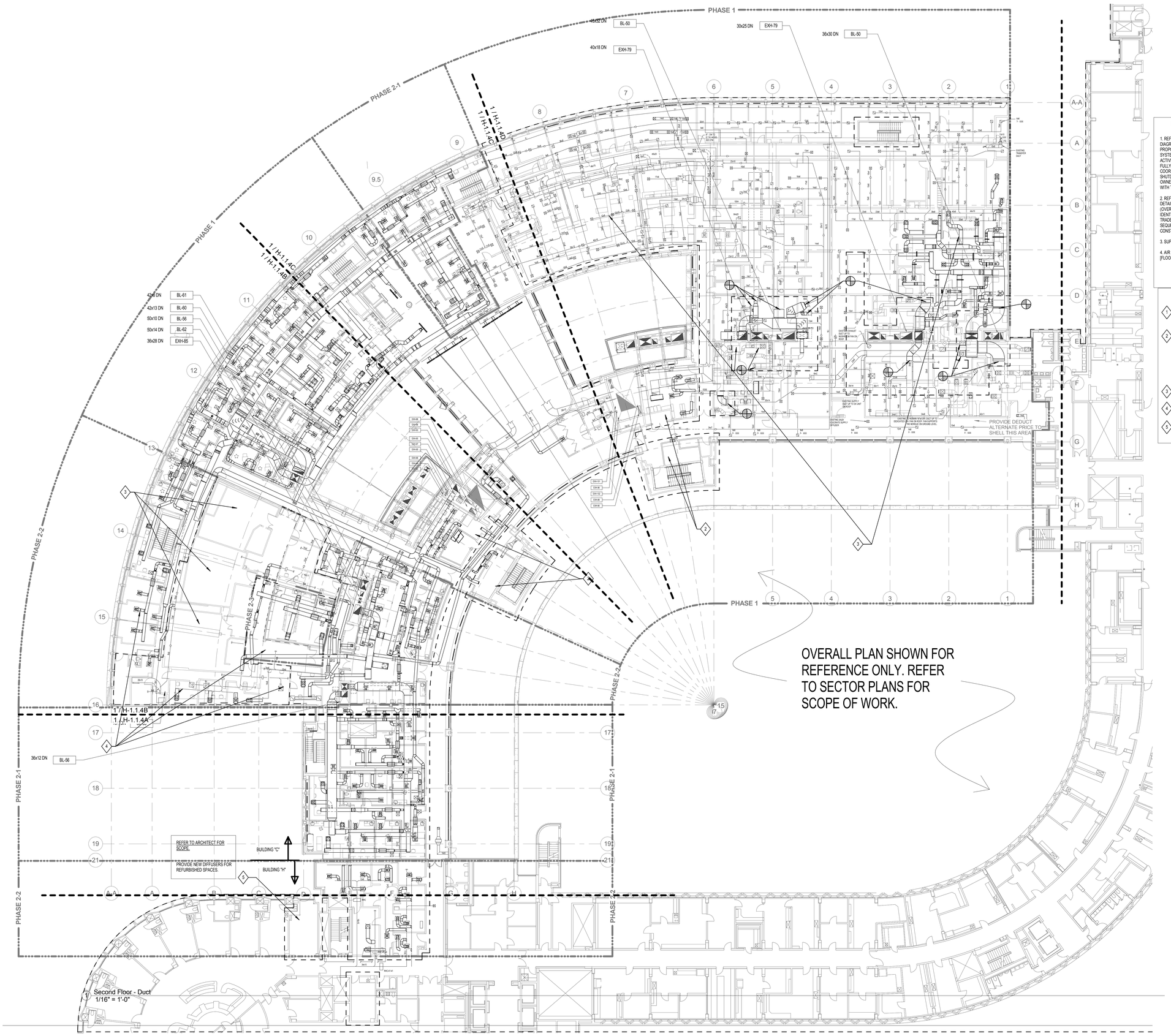

1 Second Floor - Duct
1/16" = 1'-0"

GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/IT SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. SUPPLY ONE (1) THERMOSTAT PER VCV BOX.

4. AIR TERMINAL BOX NUMBERING SCHEME: [FLOOR-SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

KEY NOTES:

1. SEE A/H-0.0.3 FOR IDF ROOM VRF CONCEPT DIAGRAM.
2. NEW NORMAL AND EMERGENCY ELECTRIC ROOMS TO BE SEPARATE COOLING ZONE. ELECTRIC ROOMS SUPPORTED BY NEW BLOWERS SHALL HAVE A NEW VAV SUPPLY BOX WITH DUCTED RETURN. ELECTRIC ROOMS SUPPORTED BY EXISTING BLOWERS SHALL HAVE CV DUCTED SUPPLY AND RETURN WITH VOLUME DAMPERS.
3. EXISTING TO REMAIN (NO RENOVATION)
4. LIMITED RENOVATION.
5. REFER TO ARCHITECT FOR SCOPE. PROVIDE NEW DIFFUSERS FOR REFURBISHED SPACES.

NO.	REVISION	DATE

SCALE: 1/16" = 1' - 0"

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HVAC SECOND FLOOR DUCT PLAN OVERALL

H-1.0.4

BID DOCUMENTS

SCALE:	1/16" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC SECOND FLOOR DUCT PLAN OVERALL

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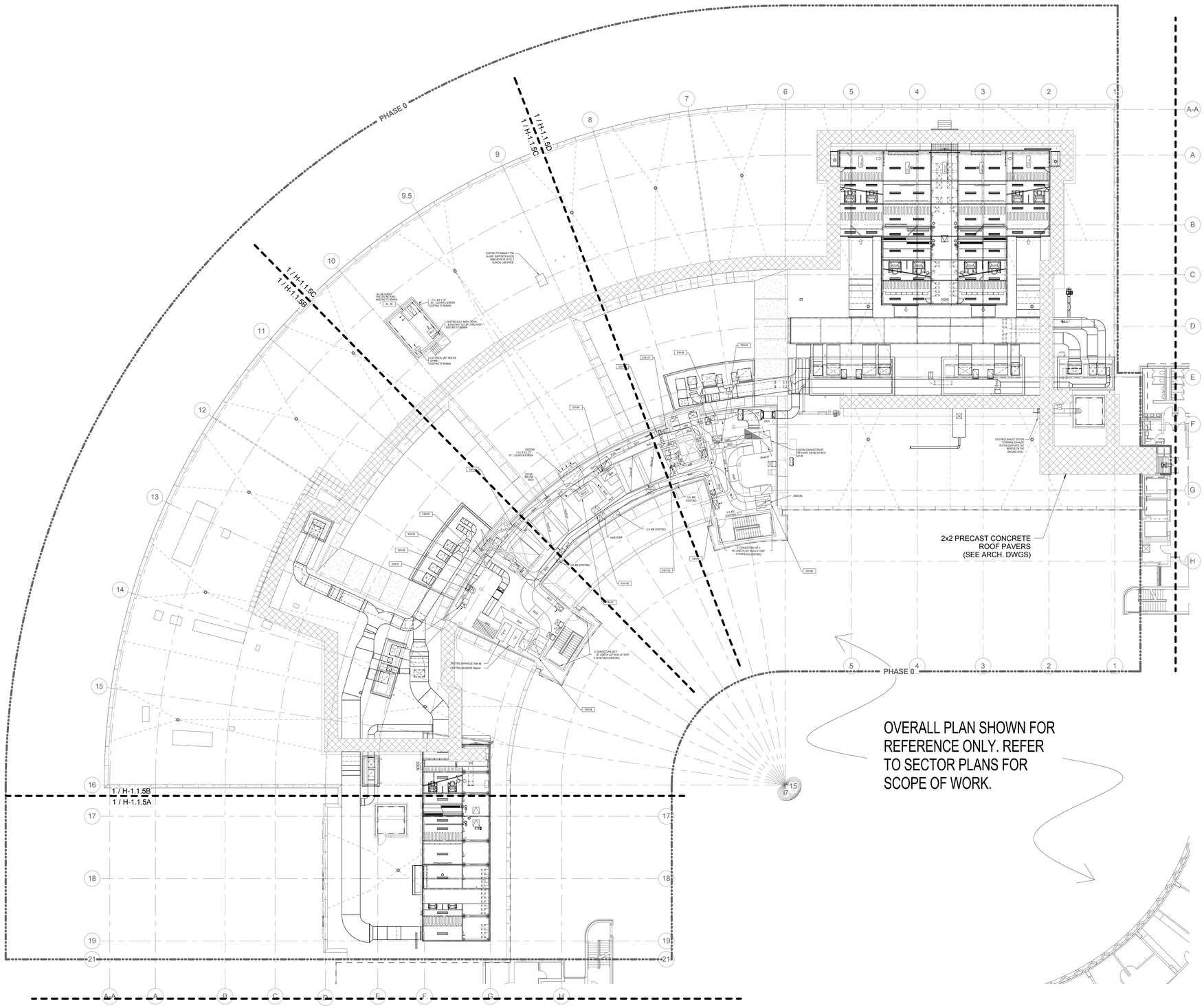

GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/FT SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. SUPPLY ONE (1) THERMOSTAT PER VCV BOX.

4. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

1 Roof/Penthouse - Duct
1/16" = 1'-0"

NO.	REVISION	DATE

0 8' 16' 32'
SCALE: 1/16" = 1' - 0"

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BUILDING C RENOVATION

263 FARMINGTON AVE.
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HVAC ROOF & PH DUCT PLAN OVERALL

H-1.0.5

BID DOCUMENTS

SCALE:	1/16" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WTB
FILE NAME:	HVAC ROOF & PH DUCT PLAN OVER

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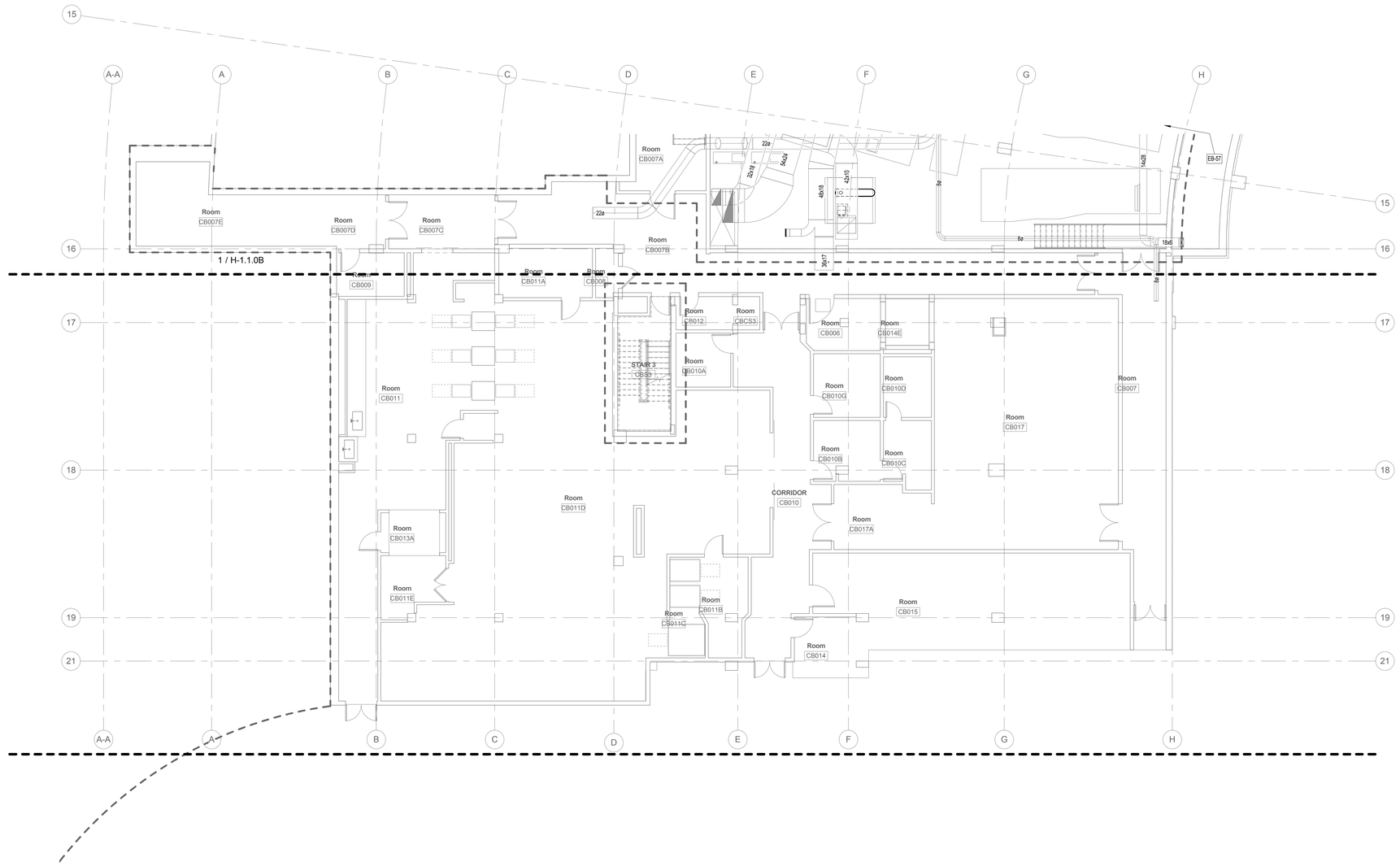
GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEPIT SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

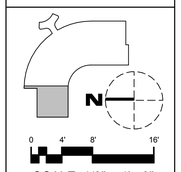
3. SUPPLY ONE (1) THERMOSTAT PER VCV BOX.

4. AIR TERMINAL BOX NUMBERING SCHEME: [FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.



1 Basement - Duct - Sector A
1/8" = 1'-0"

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

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BUILDING C RENOVATION

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HVAC BASEMENT DUCT PLAN SECTOR A

H-1.1.0A

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC BASEMENT PLAN SECTOR

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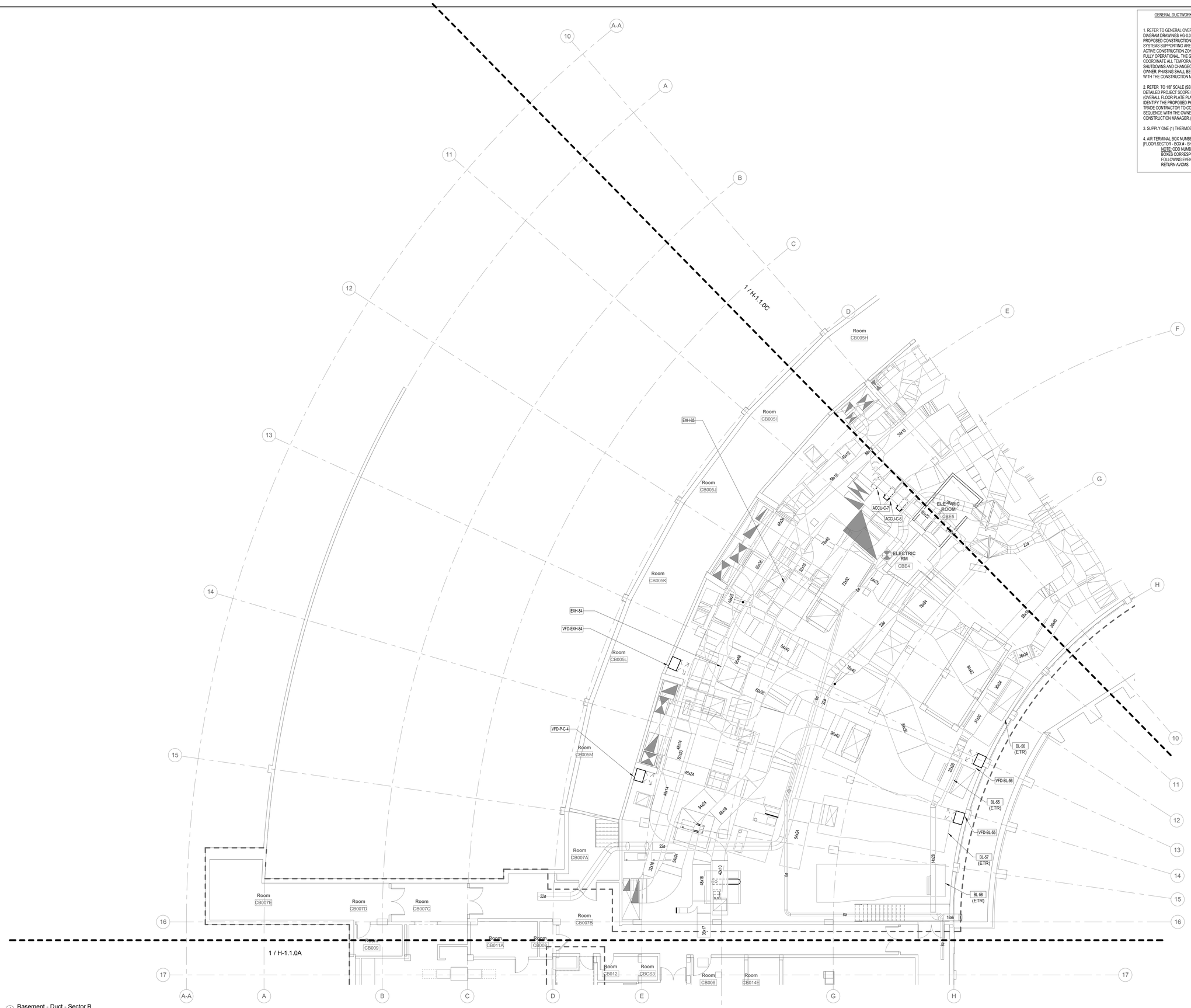
GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

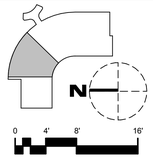
3. SUPPLY ONE (1) THERMOSTAT PER VCV BOX.

4. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.



1 Basement - Duct - Sector B
1/8" = 1'-0"

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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HVAC BASEMENT DUCT PLAN SECTOR B

H-1.1.0B

BID DOCUMENTS

SCALE:	As Indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC BASEMENT DUCT PLAN SECTOR B

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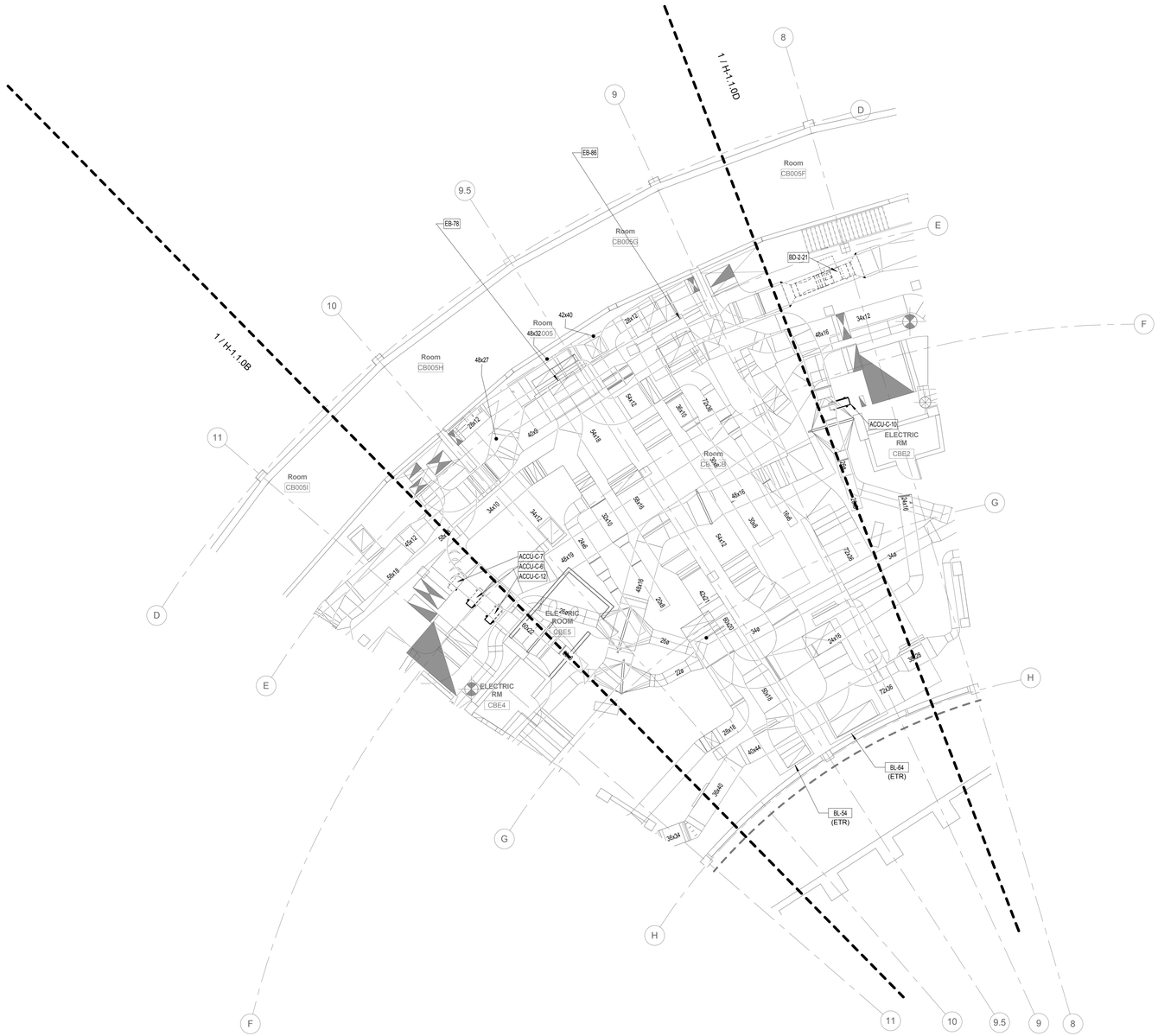
GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

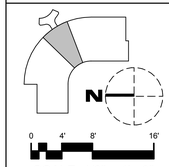
3. SUPPLY ONE (1) THERMOSTAT PER VCV BOX.

4. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.



1 Basement - Duct - Sector C
1/8" = 1'-0"

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

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BUILDING C RENOVATION

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HVAC BASEMENT DUCT PLAN SECTOR C

H-1.1.0C

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC BASEMENT DUCT PLAN SECTOR

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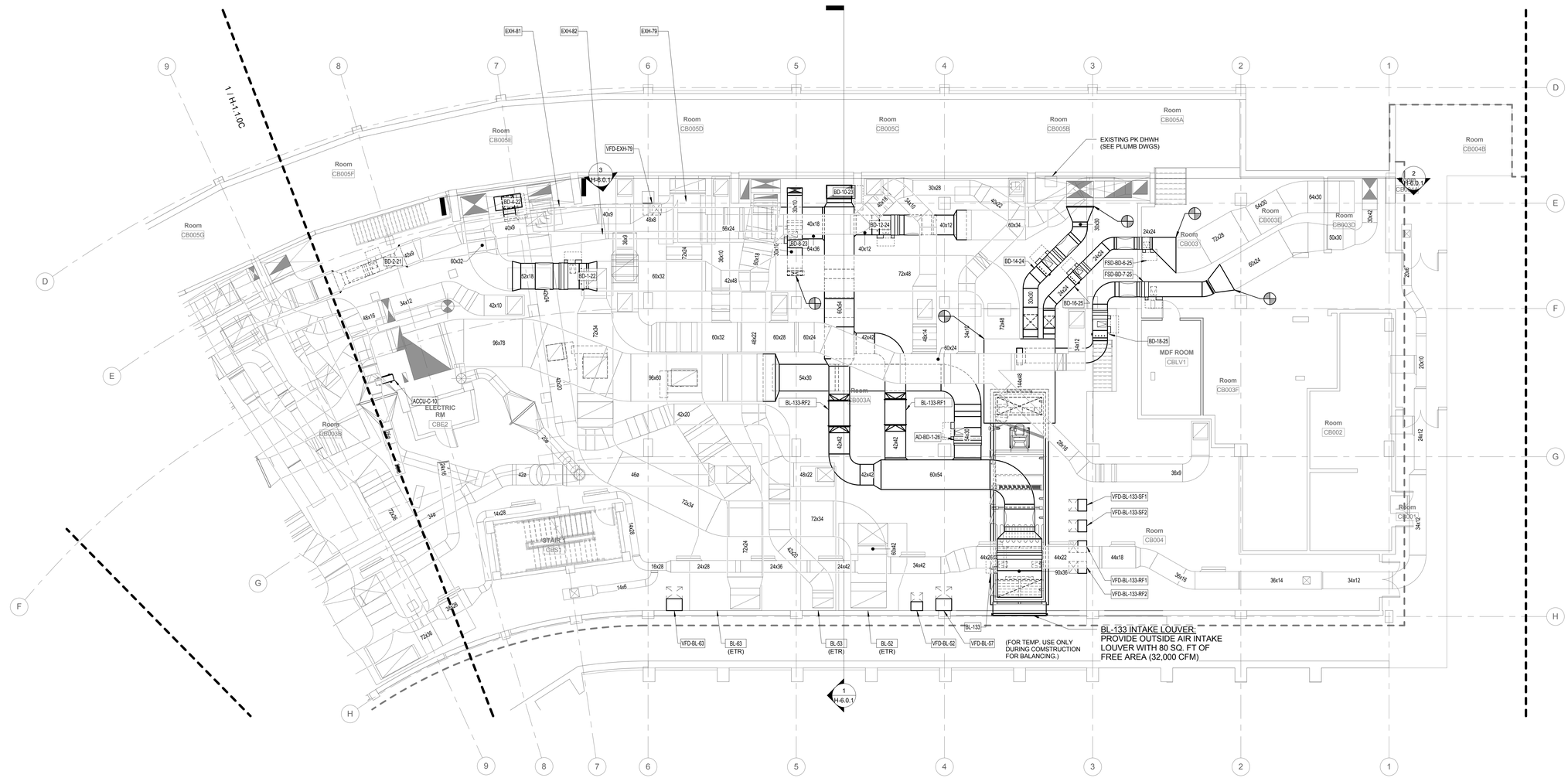
GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. SUPPLY ONE (1) THERMOSTAT PER VCV BOX.

4. AIR TERMINAL BOX NUMBERING SCHEME: [FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.



1 Basement - Duct - Sector D
1/8" = 1'-0"

NO.	REVISION	DATE

0 4' 8' 16'
SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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HVAC BASEMENT DUCT PLAN SECTOR D

H-1.1.0D

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDR
FILE NAME:	HVAC BASEMENT DUCT PLAN SECTOR D

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GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEPIT SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

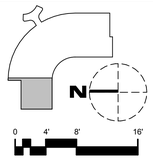
2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. SUPPLY ONE (1) THERMOSTAT PER VCV BOX.

4. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR-SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

1 Ground Floor - Duct - Sector A
1/8" = 1'-0"

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

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HVAC GROUND FLOOR DUCT PLAN SECTOR A

H-1.1.1A

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC GROUND FLOOR DUCT PLAN SECTOR

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12/10/2015 8:51:29 AM

Ground Floor - Duct - Sector B
1/8" = 1'-0"

GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. SUPPLY ONE (1) THERMOSTAT PER VCV BOX.

4. AIR TERMINAL BOX NUMBERING SCHEME: [FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

NEW DUCTWORK KEY NOTES:

1. NEW 24x6 EXHAUST DUCT REROUTED AROUND MEW ELECTRICAL AND IDF ROOMS.
2. CONNECT NEW 12x10 RETURN DUCT TO EXISTING 17x10 RETURN DUCT.
3. CONNECT NEW 14x8 SUPPLY DUCT TO EXISTING 14x8 SUPPLY DUCT. PROVIDE NEW T-STAT & CONTROLS FOR NEW ZONE SUPPORTING EXISTING TO REMAIN ROOMS CG216 & CG219
4. CONNECT NEW 48x8 TO EXISTING 48x8 SUPPLY (BL-56). EXISTING F.D. TO REMAIN.
5. CONNECT NEW 30x10 TO EXISTING 30x10 RETURN (BL-84). EXISTING F.D. TO REMAIN.

NO.	REVISION	DATE

SCALE: 1/8" = 1' - 0"

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(UCONN PROJECT # 901737)

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263 FARMINGTON AVE.
FARMINGTON CT. 06030

HVAC GROUND FLOOR DUCT PLAN SECTOR B

H-1.1.1B

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC GROUND FLOOR DUCT PLAN SECTOR B

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GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

1 Ground Floor - Duct - Sector C
1/8" = 1'-0"

NO.	REVISION	DATE

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON CT. 06030

HVAC GROUND FLOOR DUCT PLAN SECTOR C

H-1.1.1C

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC GROUND FLOOR DUCT PLAN SECTOR

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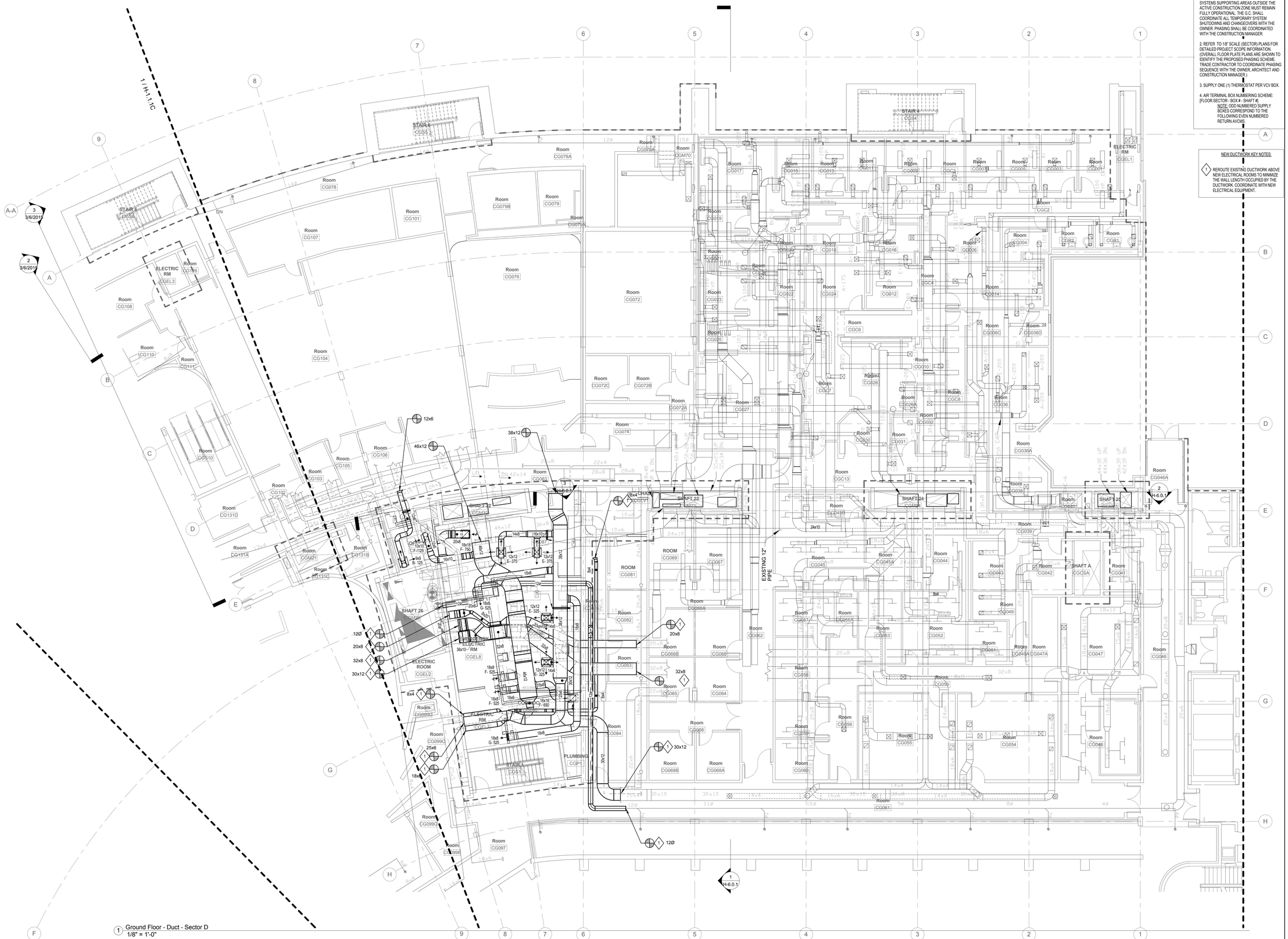

1 Ground Floor - Duct - Sector D
1/8" = 1'-0"

GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEPFT SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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3. SUPPLY ONE (1) THERMOSTAT PER VCV BOX.

4. AIR TERMINAL BOX NUMBERING SCHEME: [FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCVAS.

NEW DUCTWORK KEY NOTES:

1. REROUTE EXISTING DUCTWORK ABOVE NEW ELECTRICAL ROOMS TO MINIMIZE THE WALL LENGTH OCCUPIED BY THE DUCTWORK. COORDINATE WITH NEW ELECTRICAL EQUIPMENT.

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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HVAC GROUND FLOOR DUCT PLAN SECTOR D

H-1.1.1D

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDR
FILE NAME:	HVAC GROUND FLOOR DUCT PLAN SECTOR D.DWG

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GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEPIT SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

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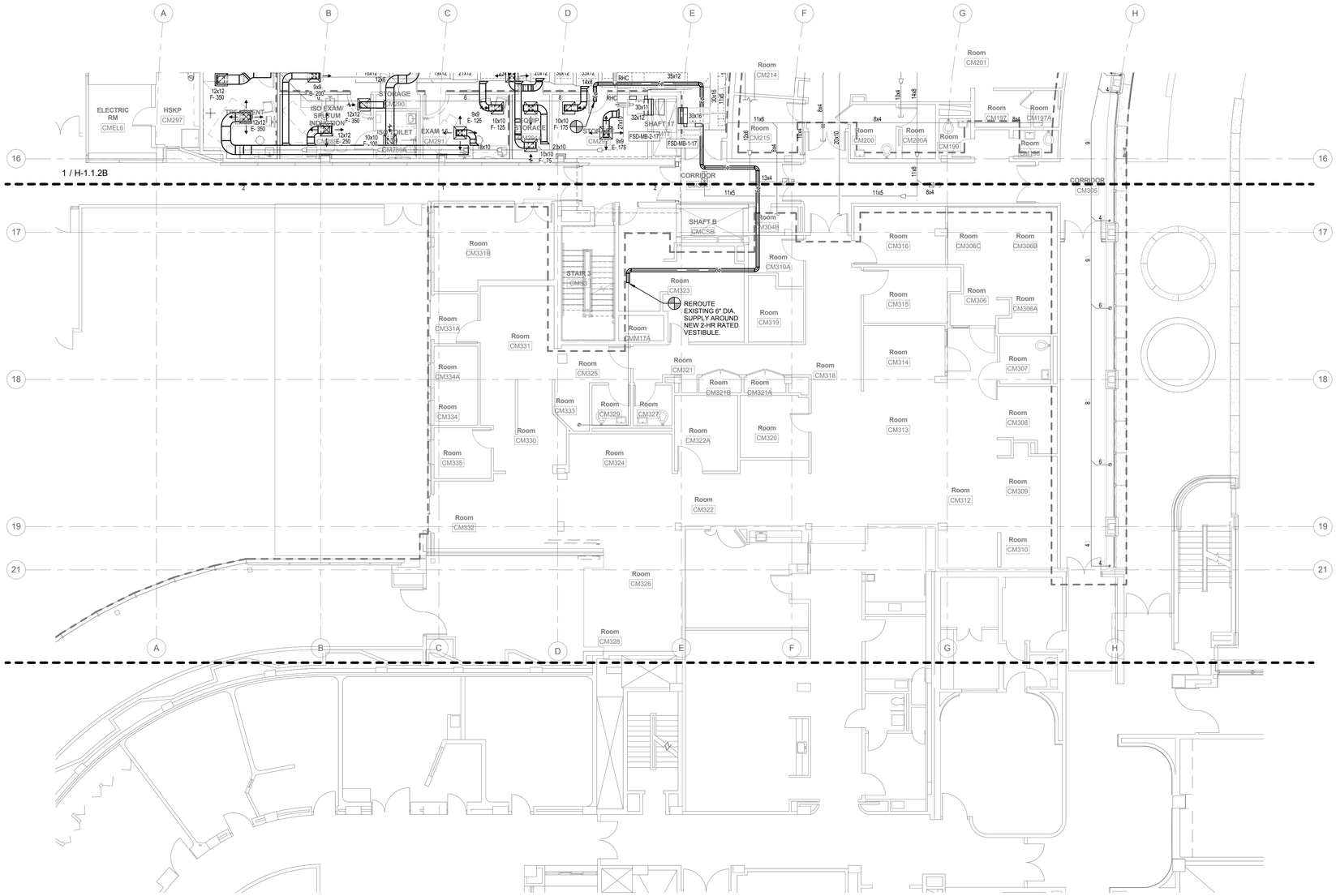
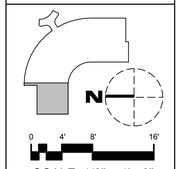
4. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.



1 Main Floor - Duct - Sector A
1/8" = 1'-0"

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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HVAC MAIN FLOOR DUCT PLAN SECTOR A

H-1.1.2A

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WTR
FILE NAME:	HVAC MAIN FLOOR DUCT PLAN SECTOR

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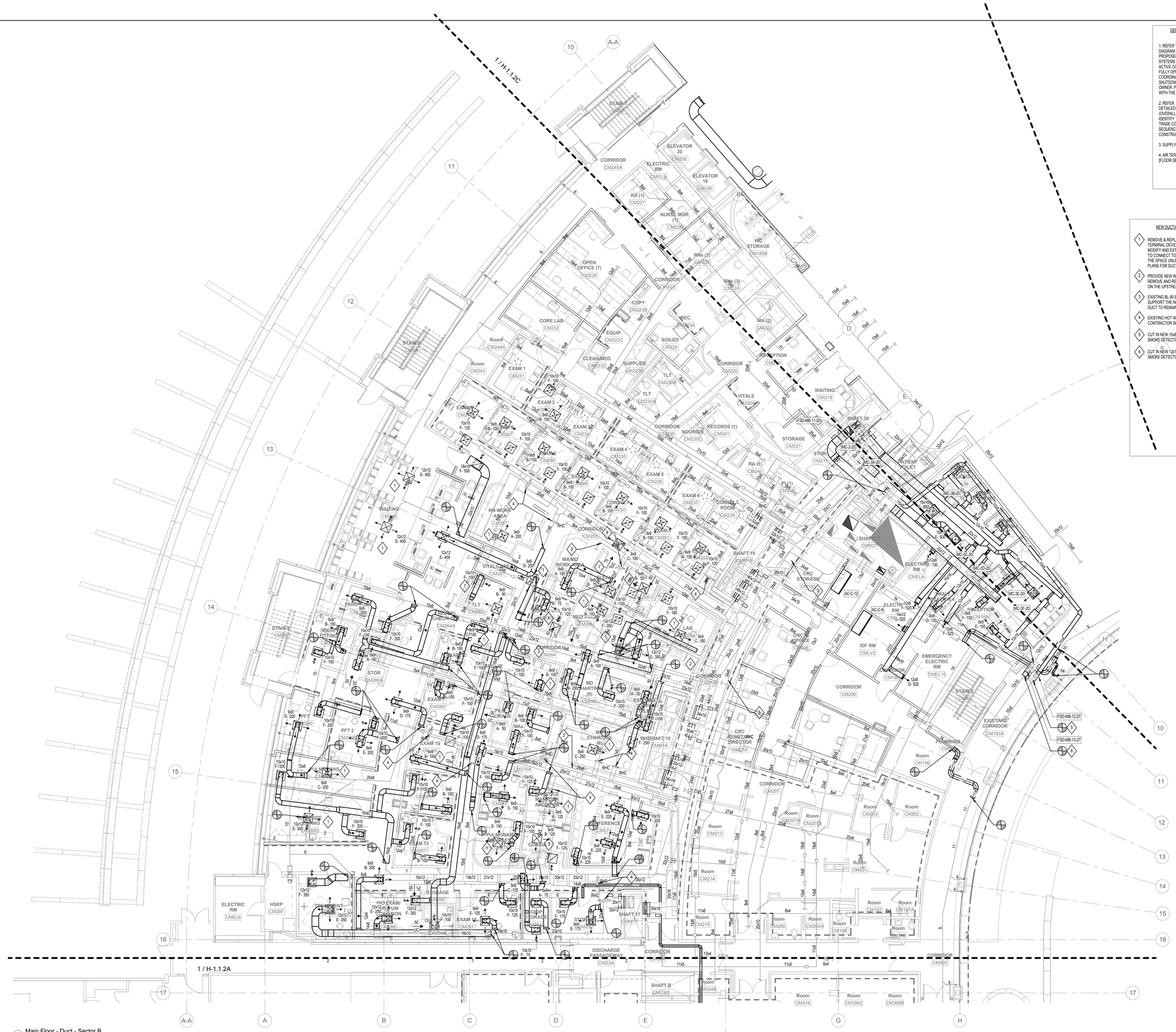

1 Main Floor - Duct - Sector B
1/8" = 1'-0"

GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HS-0.0.0 & HS-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEPIT SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. SUPPLY ONE (1) THERMOSTAT PER VCV BOX.

4. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

NEW DUCTWORK KEY NOTES:

1. REMOVE & REPLACE SUPPLY/RETURN/EXHAUST AIR TERMINAL DEVICE(S) TO ALIGN WITH NEW CEILING GRID. MODIFY AND EXTEND BRANCH DUCTWORK AS REQUIRED TO CONNECT TO EXISTING BRANCH DUCTWORK WITHIN THE SPACE UNLESS INDICATED OTHERWISE. REFER TO PLANS FOR DUCTWORK SIZES.
2. PROVIDE NEW IN-DUCT HOT WATER REHEAT COIL. REMOVE AND REPLACE APPROXIMATELY 5'-0" OF DUCT ON THE UPSTREAM AND DOWNSTREAM SIDES OF COIL.
3. EXISTING BL-90 EXHAUST DUCT TO NO LONGER SUPPORT THE NEW MULTI-SPECIALTY CLINIC. EXISTING DUCT TO REMAIN IN PLACE.
4. EXISTING HOT WATER COIL SHALL REMAIN. CONTRACTOR SHALL CLEAN EXISTING COIL.
5. CUT IN NEW 10x8 FIRE SMOKE DAMPER AND NEW SMOKE DETECTOR.
6. CUT IN NEW 12x10 FIRE SMOKE DAMPER AND NEW SMOKE DETECTOR.

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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HVAC MAIN FLOOR DUCT PLAN SECTOR B

H-1.1.2B

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
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FILE NAME:	HVAC MAIN FLOOR DUCT PLAN SECTOR B

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1 Main Floor - Duct - Sector C
1/8" = 1'-0"

GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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HVAC MAIN FLOOR DUCT PLAN SECTOR C

H-1.1.2C

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
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FILE NAME:	HVAC MAIN FLOOR DUCT PLAN SECTOR

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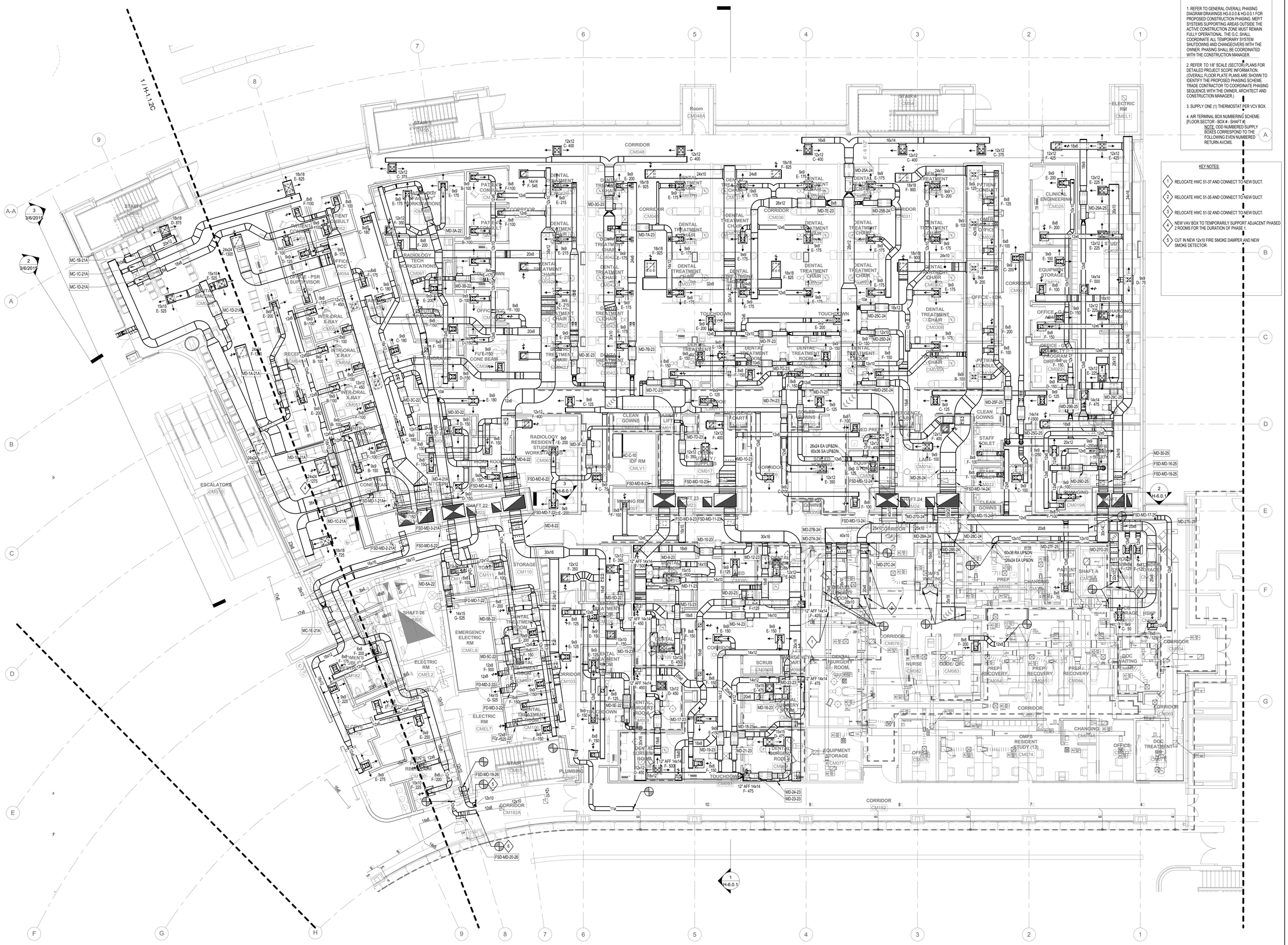

1 Main Floor - Duct - Sector D
1/8" = 1'-0"

GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

KEY NOTES:

1. RELOCATE HWC 51-37 AND CONNECT TO NEW DUCT.
2. RELOCATE HWC 51-35 AND CONNECT TO NEW DUCT.
3. RELOCATE HWC 51-32 AND CONNECT TO NEW DUCT.
4. NEW VAV BOX TO TEMPORARILY SUPPORT ADJACENT PHASED 2 ROOMS FOR THE DURATION OF PHASE I.
5. CUT IN NEW 12x10 FIRE SMOKE DAMPER AND NEW SMOKE DETECTOR.

NO.	REVISION	DATE

SCALE: 1/8" = 1' - 0"

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BUILDING C RENOVATION

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HVAC MAIN FLOOR DUCT PLAN SECTOR D

H-1.1.2D

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
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FILE NAME:	HVAC MAIN FLOOR DUCT PLAN SECTOR D.DWG

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GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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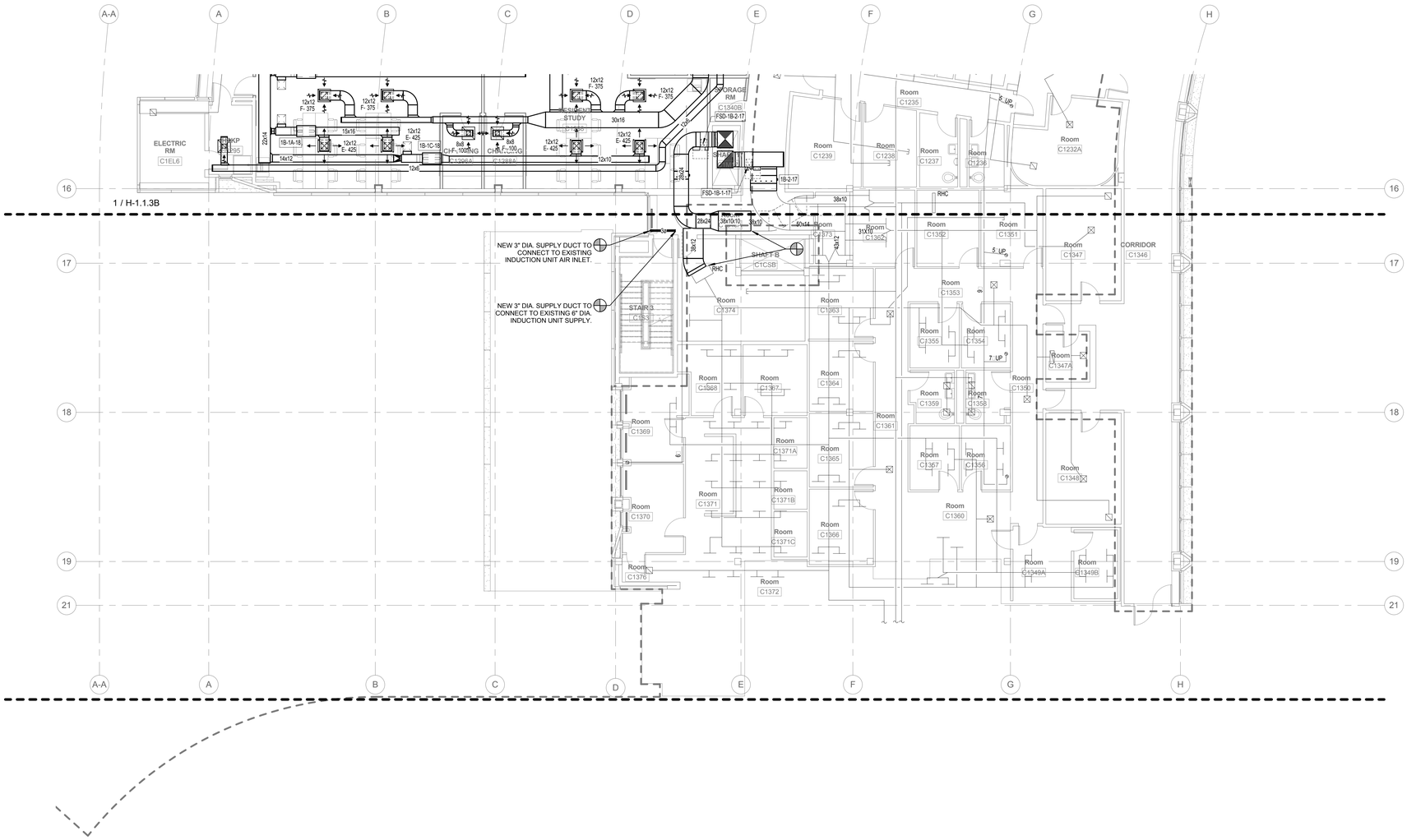
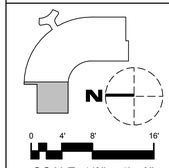


1 First Floor - Duct - Sector A
1/8" = 1'-0"

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

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HVAC FIRST FLOOR DUCT PLAN SECTOR A

H-1.1.3A

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC FIRST FLOOR DUCT PLAN SECTOR

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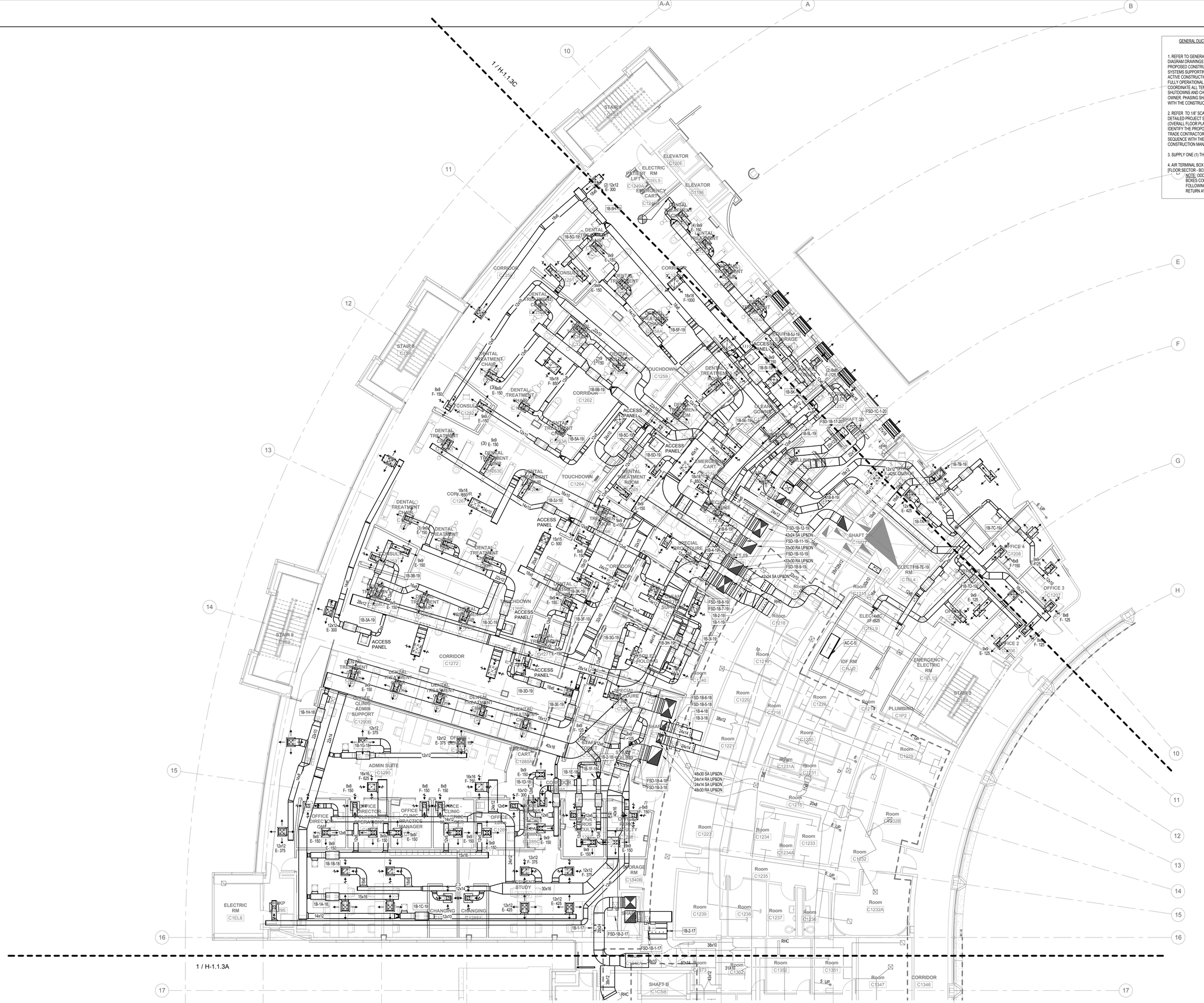

GENERAL DUCTWORK NOTES:

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2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. SUPPLY ONE (1) THERMOSTAT PER VCV BOX.

4. AIR TERMINAL BOX NUMBERING SCHEME: (FLOOR SECTOR - BOX # - SHAFT #)
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

1 First Floor - Duct - Sector B
1/8" = 1'-0"

NO.	REVISION	DATE

0 4' 8' 16'
SCALE: 1/8" = 1' - 0"

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HVAC FIRST FLOOR DUCT PLAN SECTOR B

H-1.1.3B

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC FIRST FLOOR DUCT PLAN SECTOR B

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12/10/2015 11:13 AM

1 First Floor - Duct - Sector C
1/8" = 1'-0"

GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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4. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

DUCTWORK KEY NOTES:

1. INDICATED CFM REFLECTS THE CFM IN THE ORIGINAL DESIGN DRAWINGS. TAB CONTRACTOR TO BALANCE AIRFLOW TO MATCH THE TAB REPORT.

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON CT. 06030

HVAC FIRST FLOOR DUCT PLAN SECTOR C

H-1.1.3C

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC FIRST FLOOR DUCT PLAN SECTOR

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12/10/2015 8:11:19 AM

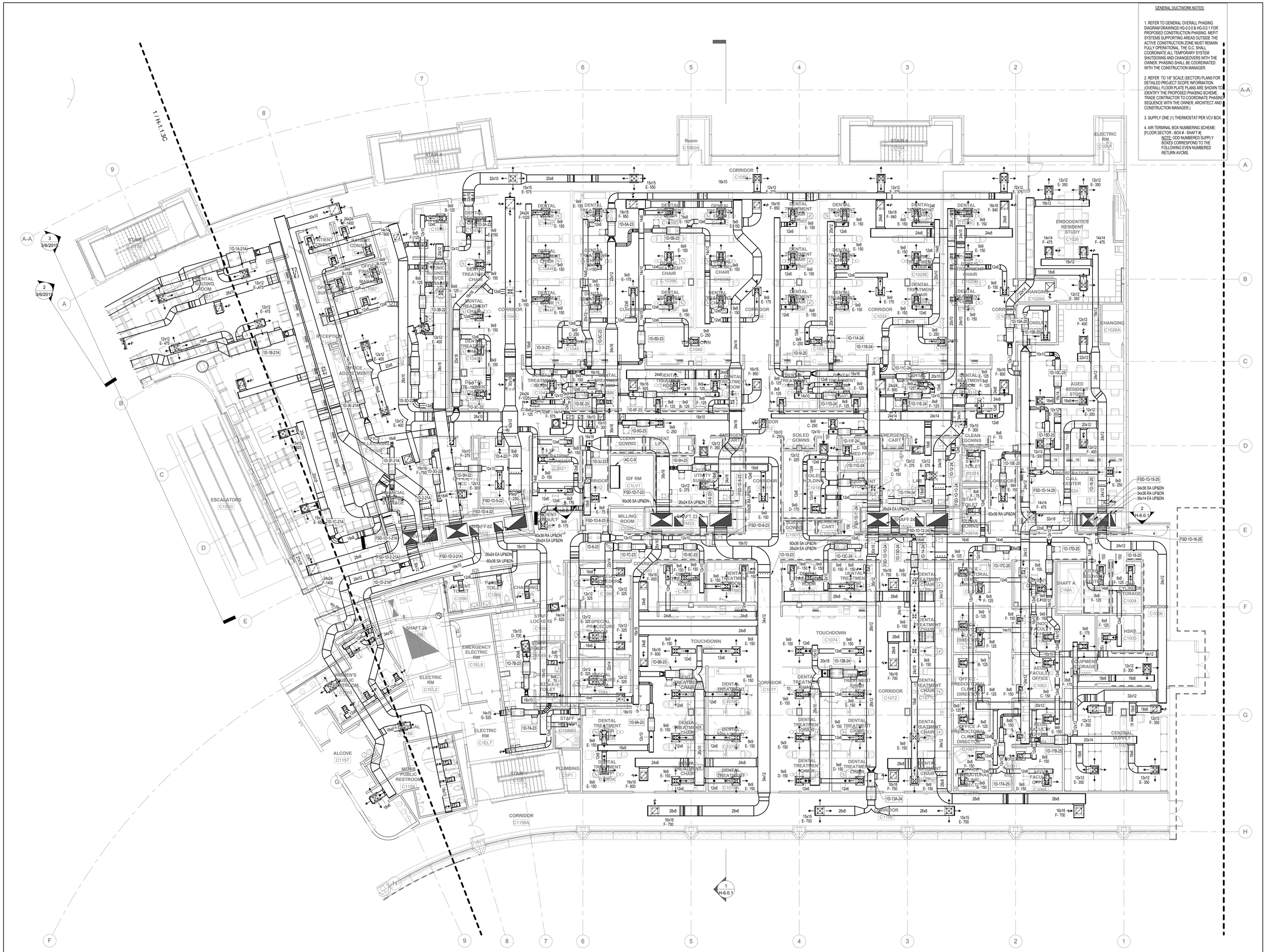
GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEPT SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. SUPPLY ONE (1) THERMOSTAT PER VCV BOX

4. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.



1 First Floor - Duct - Sector D
1/8" = 1'-0"

NO.	REVISION	DATE

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON CT. 06030

HVAC FIRST FLOOR DUCT PLAN SECTOR D

H-1.1.3D

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC FIRST FLOOR DUCT PLAN

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GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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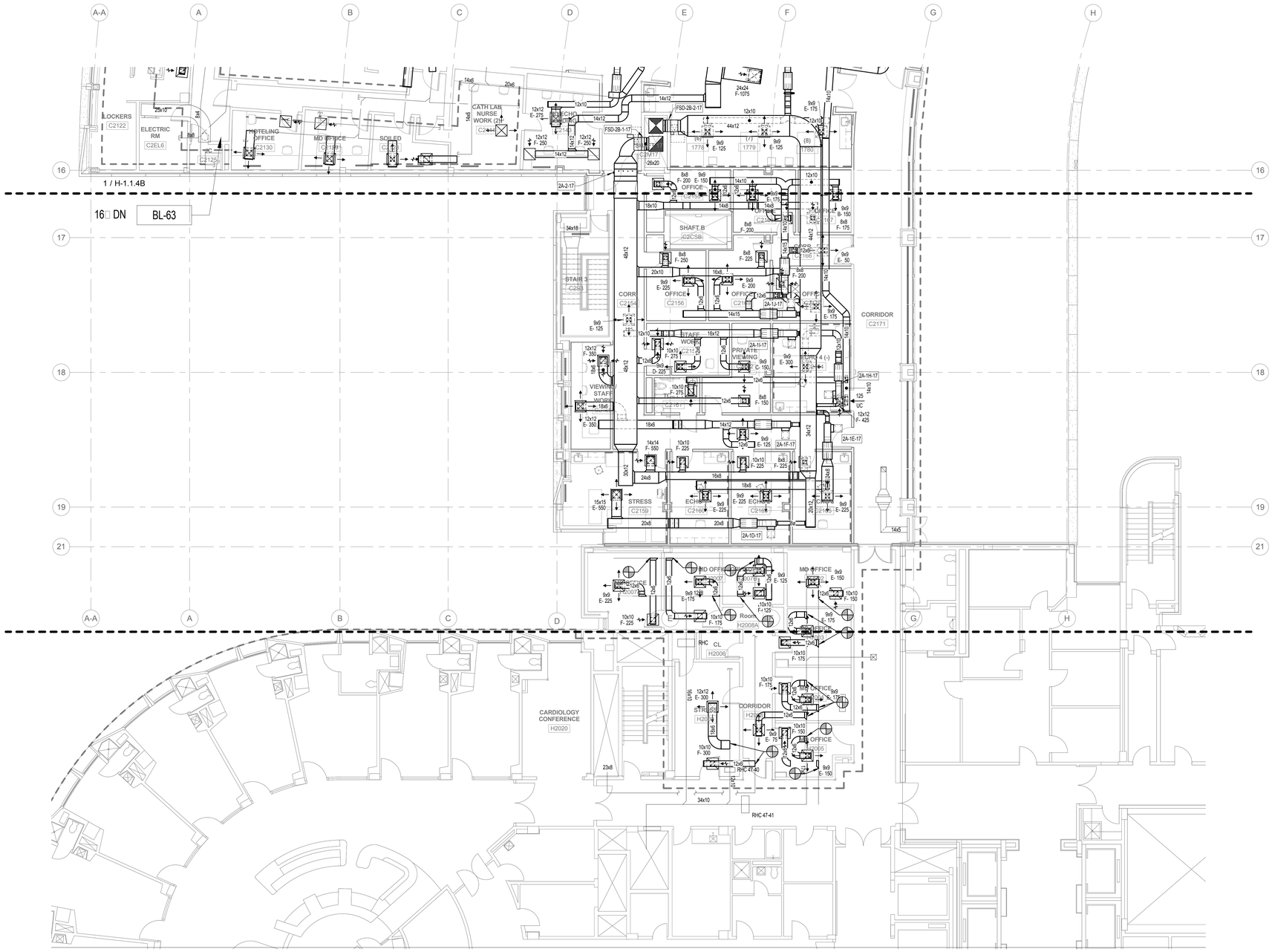
4. AIR TERMINAL BOX NUMBERING SCHEME: [FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

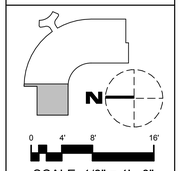
NOTES:

1. PRIOR TO ANY MODIFICATIONS; MECHANICAL CONTRACTOR TO PROVIDE AN EXISTING CONDITION AIR FLOW SURVEY OF EXISTING OUTLETS AND ALL BRANCH DUCTWORK OF A (BL) SYSTEM. SURVEY SHALL NOTE EXISTING PRESSURIZATION PELATIONSHIPS FOR ALL SPACES WITH IN THE RENOVATED AREA.



1 Second Floor - Duct - Sector A
1/8" = 1'-0"

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON CT. 06030

HVAC SECOND FLOOR DUCT PLAN SECTOR A

H-1.1.4A

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC SECOND FLOOR DUCT PLAN SECTOR

12/10/2015 8:13:31 AM

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1 Second Floor - Duct - Sector B
1/8" = 1'-0"

GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. SUPPLY ONE (1) THERMOSTAT PER VCV BOX.

4. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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FARMINGTON CT. 06030

HVAC SECOND FLOOR DUCT PLAN SECTOR B

H-1.1.4B

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC SECOND FLOOR Duct Plan C2108

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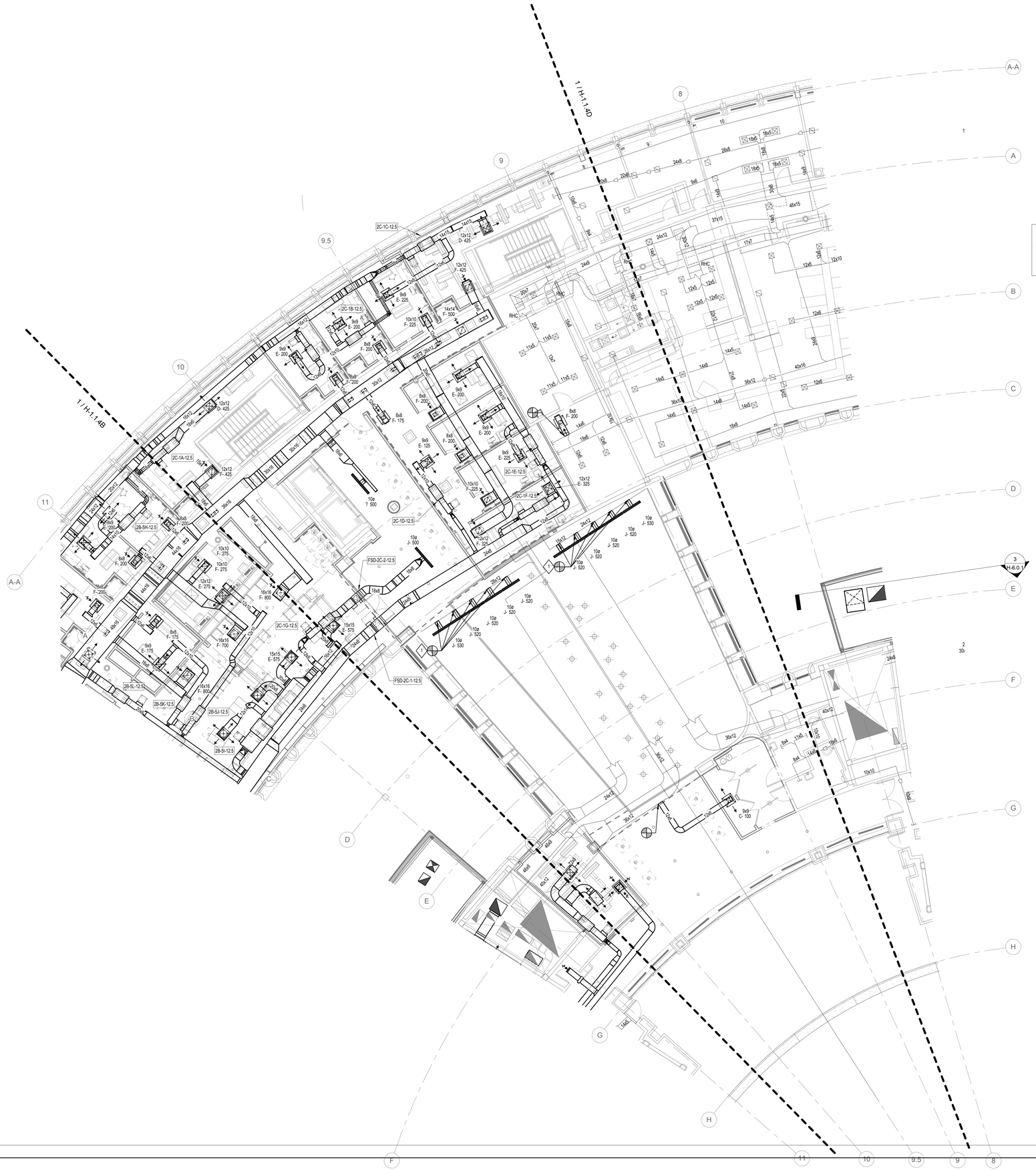

1 Second Floor - Duct - Sector C
1/8" = 1'-0"

GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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3. SUPPLY ONE (1) THERMOSTAT PER VCV BOX.

4. AIR TERMINAL BOX NUMBERING SCHEME: [FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

DUCTWORK KEY NOTES:

1. INDICATED CFM REFLECTS THE CFM IN THE ORIGINAL DESIGN DRAWINGS. TAB CONTRACTOR TO BALANCE AIRFLOW TO MATCH THE TAB REPORT.

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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HVAC SECOND FLOOR DUCT PLAN SECTOR C

H-1.1.4C

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC SECOND FLOOR Duct Plan SC.rvt

12/10/2015 11:12 AM

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GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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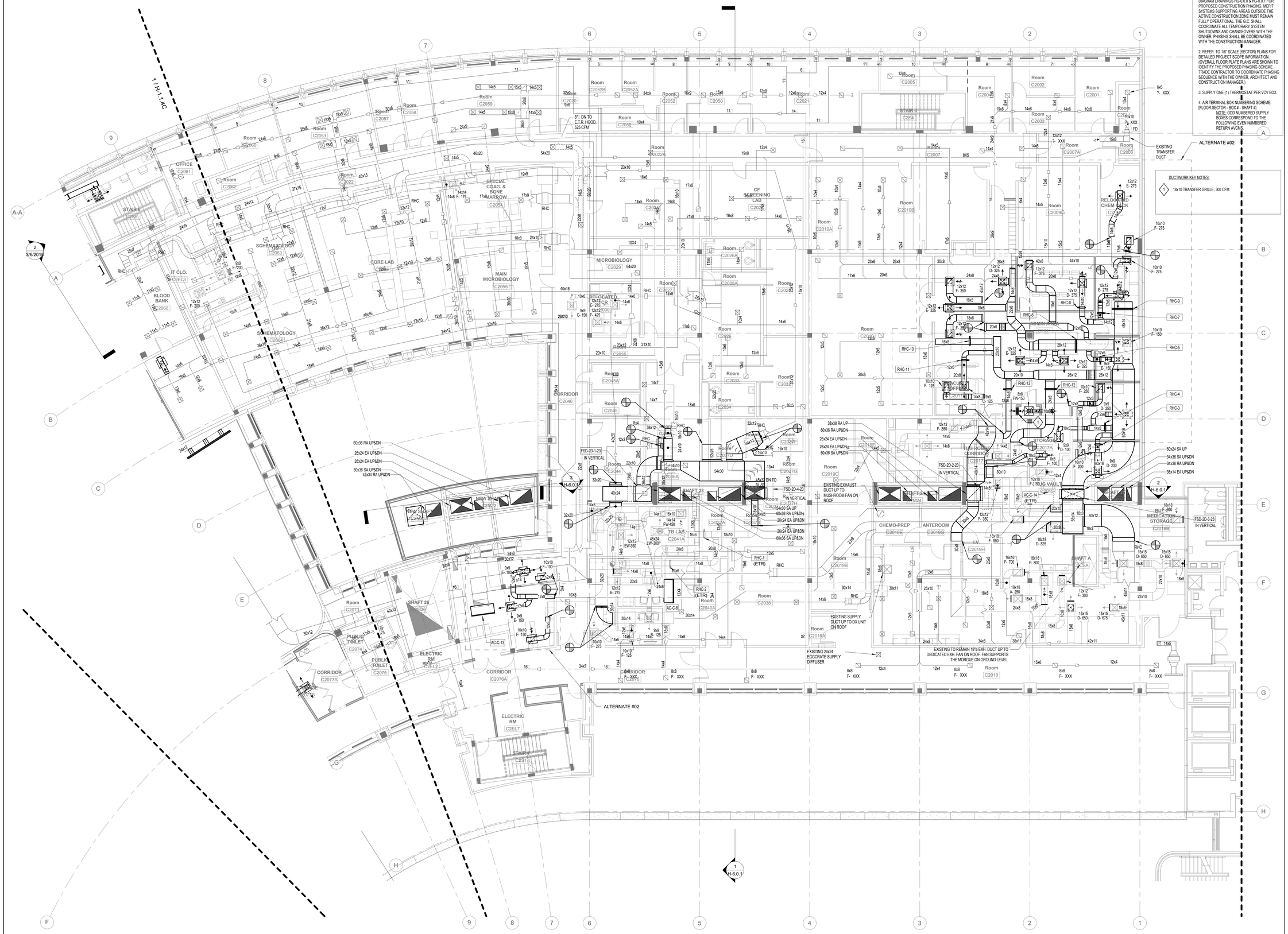
3. SUPPLY ONE (1) THERMOSTAT PER VCV BOX.

4. AIR TERMINAL BOX NUMBERING SCHEME: [FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

DUCTWORK KEY NOTES:

1. 18x10 TRANSFER GRILLE, 300 CFM



1 Second Floor - Duct - Sector D
1/8" = 1'-0"

NO.	REVISION	DATE

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HVAC SECOND FLOOR DUCT PLAN SECTOR D

H-1.1.4D

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC SECOND FLOOR DUCT PLAN SECTOR D

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GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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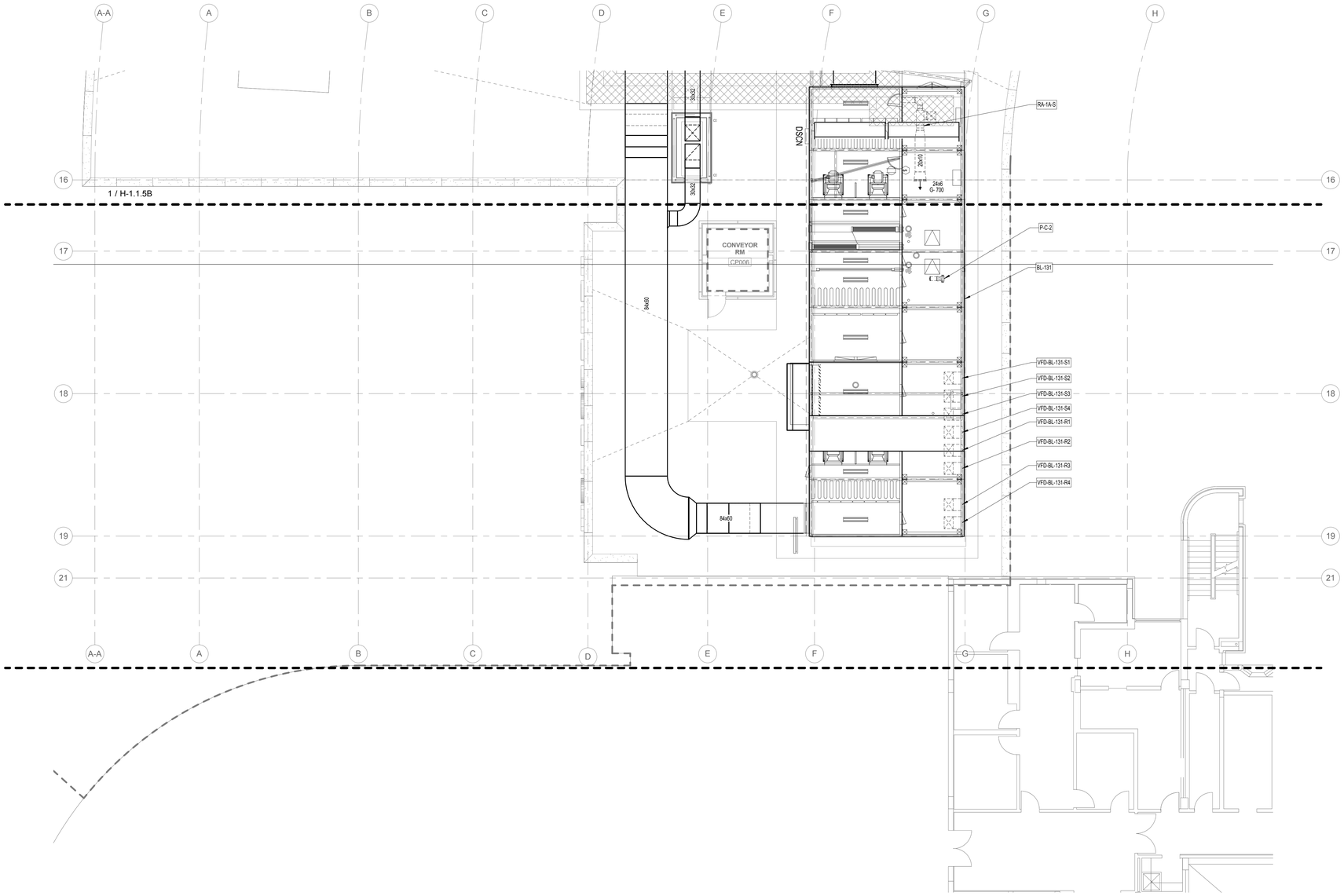
4. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.



1 Roof/Penthouse - Duct - Sector A
1/8" = 1'-0"

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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HVAC ROOF & PH DUCT PLAN SECTOR A

H-1.1.5A

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC ROOF & PH Duct Plans SECTOR

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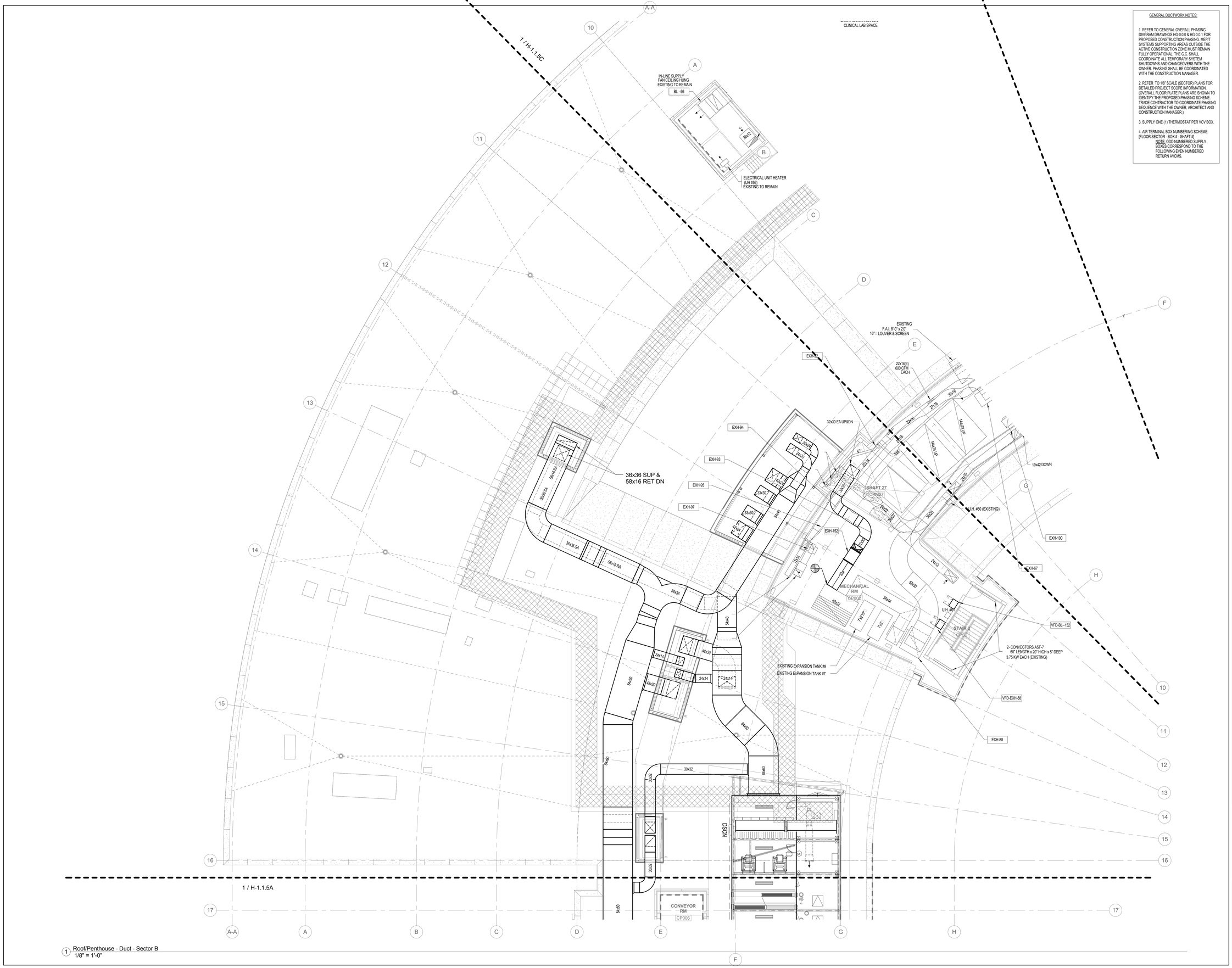

1 Roof/Penthouse - Duct - Sector B
1/8" = 1'-0"

GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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3. SUPPLY ONE (1) THERMOSTAT PER VCV BOX.

4. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN A/CMS.

NO.	REVISION	DATE

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

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BUILDING C RENOVATION

263 FARMINGTON AVE.
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HVAC ROOF & PH DUCT PLAN SECTOR B

H-1.1.5B

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WTR
FILE NAME:	HVAC ROOF & PH DUCT PLAN SECTOR

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GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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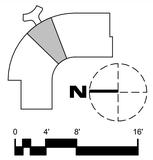
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

1 Roof/Penthouse - Duct - Sector C
1/8" = 1'-0"

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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HVAC ROOF & PH DUCT PLAN SECTOR C

H-1.1.5C

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC ROOF & PH DUCT PLAN 1302.rvt

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GENERAL DUCTWORK NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HC-0.0.0 & HC-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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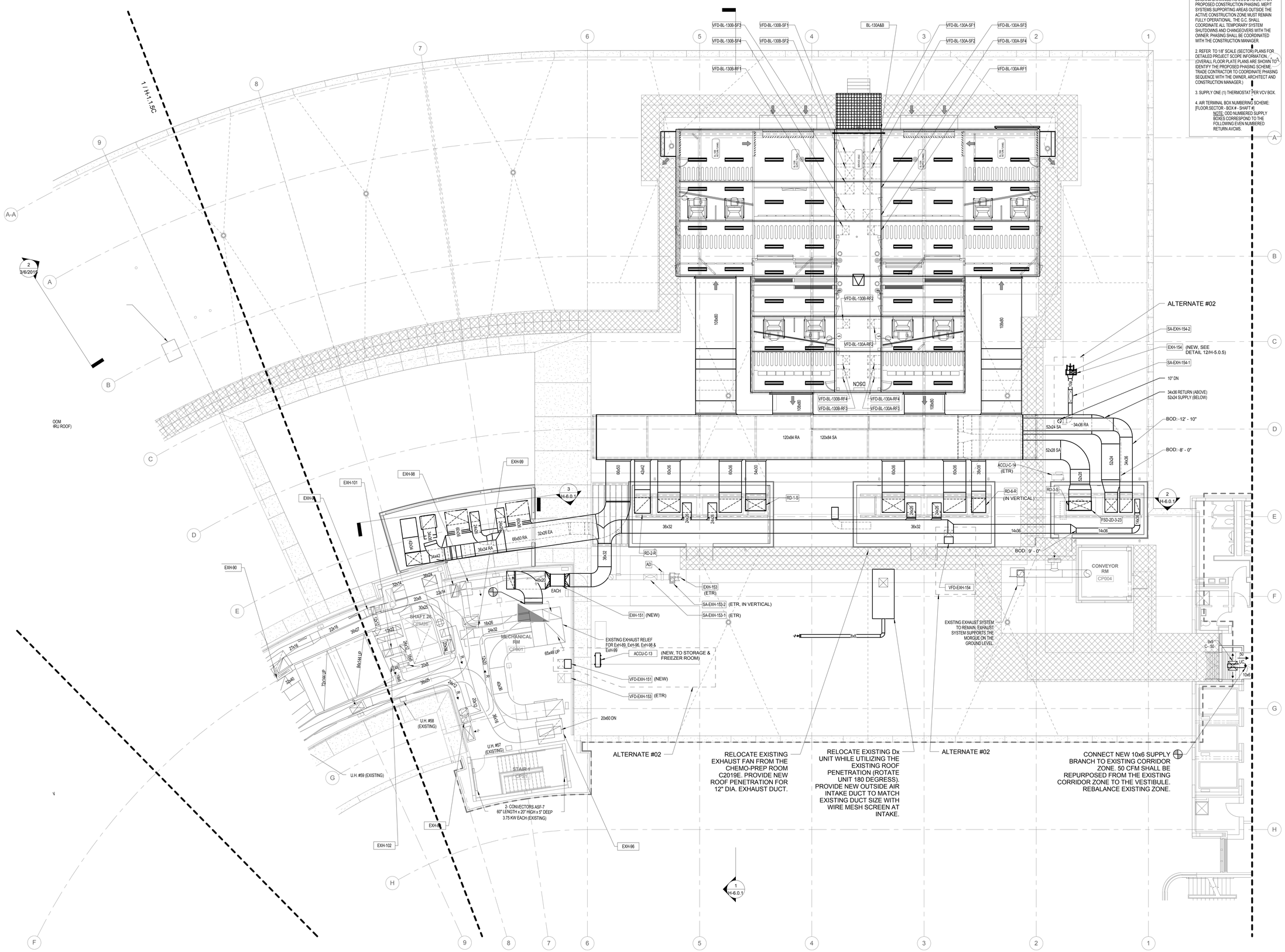
4. AIR TERMINAL BOX NUMBERING SCHEME: [FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVOMS.



1 Roof/Penthouse - Duct - Sector D
1/8" = 1'-0"

NO.	REVISION	DATE

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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FARMINGTON CT. 06030

HVAC ROOF & PH DUCT PLAN SECTOR D

H-1.1.5D

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC ROOF & PH DUCT PLAN SECTOR

12/10/2015 8:11:58 AM

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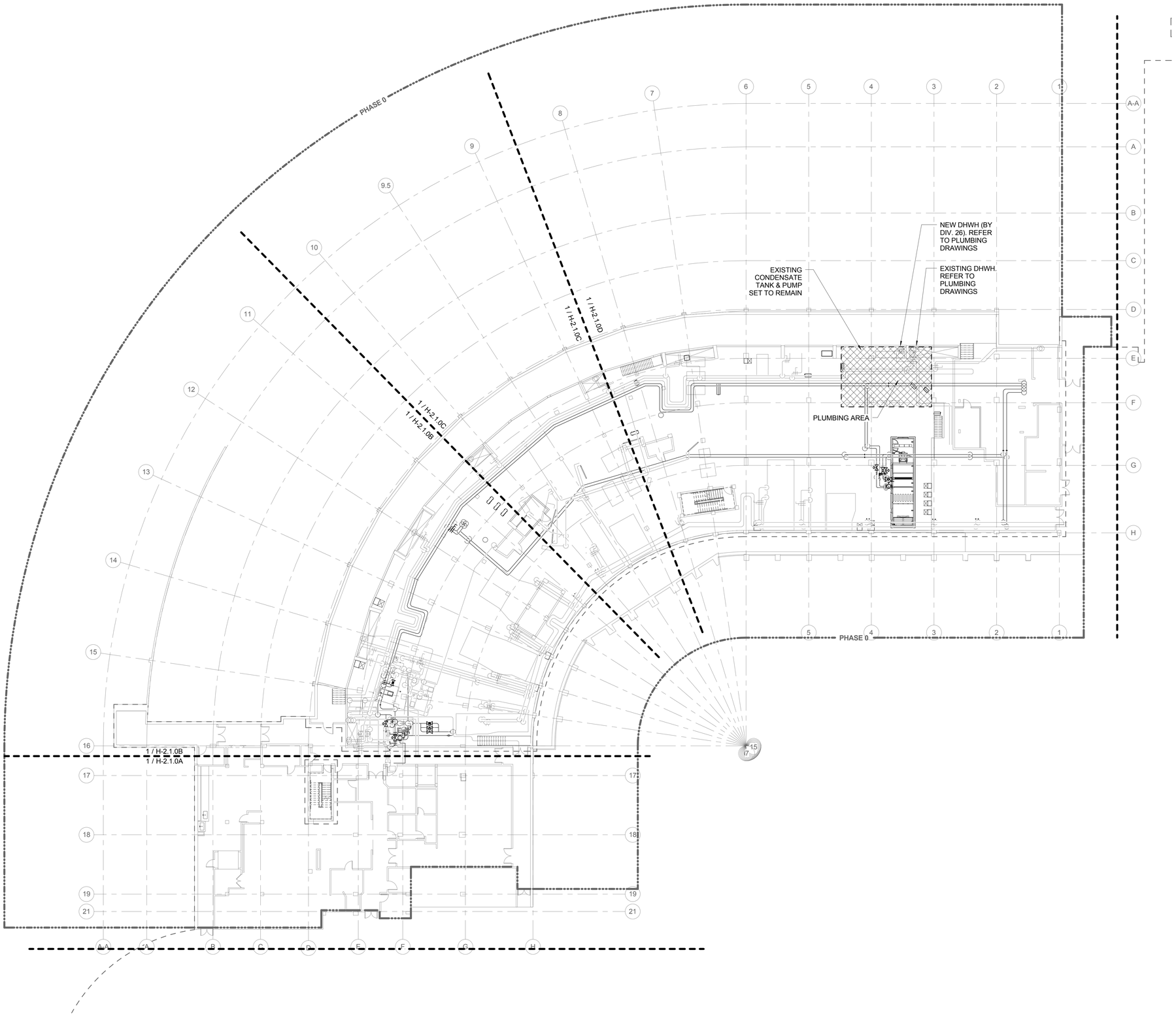

1 Basement - Pipe
1/16" = 1'-0"

GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEPIT SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

NO.	REVISION	DATE

N

0 8' 16' 32'

SCALE: 1/16" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON CT. 06030

HVAC BASEMENT PIPING PLAN OVERALL

H-2.0.0

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC BASEMENT PIPING PLAN OVERALL

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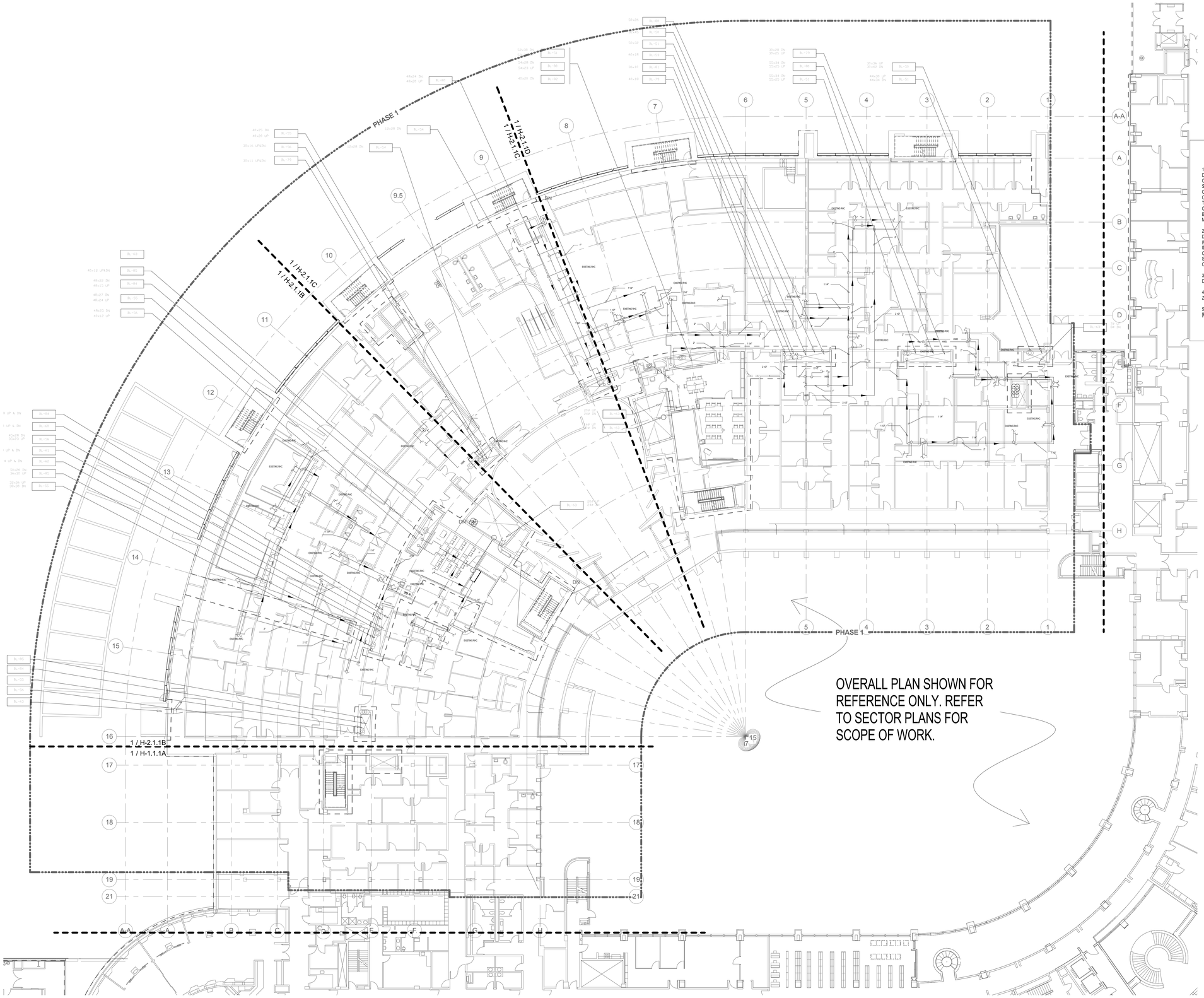
12/10/2015 9:12:02 AM



1 Ground Floor - Pipe
1/16" = 1'-0"

GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME: [FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

NO.	REVISION	DATE

N

0 8' 16' 32'

SCALE: 1/16" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON CT. 06030

HVAC GROUND FLOOR PIPING PLAN OVERALL

H-2.0.1

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WTR
FILE NAME:	HVAC GROUND FLOOR PIPING PLAN OVERALL

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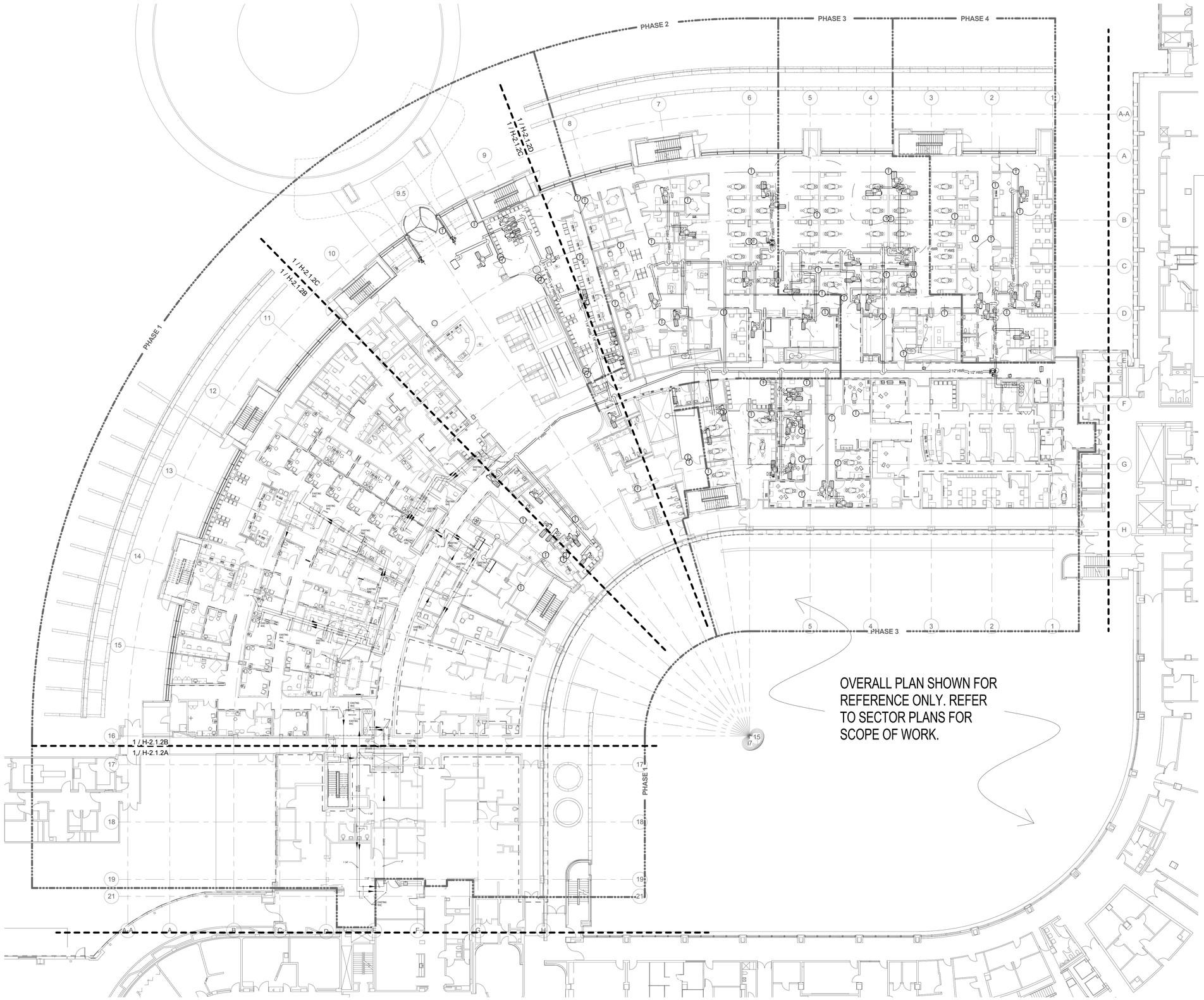

1 Main Floor - Pipe
1/16" = 1'-0"

GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

0 8' 16' 32'
SCALE: 1/16" = 1' - 0"

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UCONN HEALTH
(UCONN PROJECT # 901737)

BUILDING C RENOVATION
263 FARMINGTON AVE.
FARMINGTON CT. 06030

HVAC MAIN FLOOR PIPING PLAN OVERALL

H-2.0.2

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC MAIN FLOOR PIPING PLAN OVERALL

NO.	REVISION	DATE

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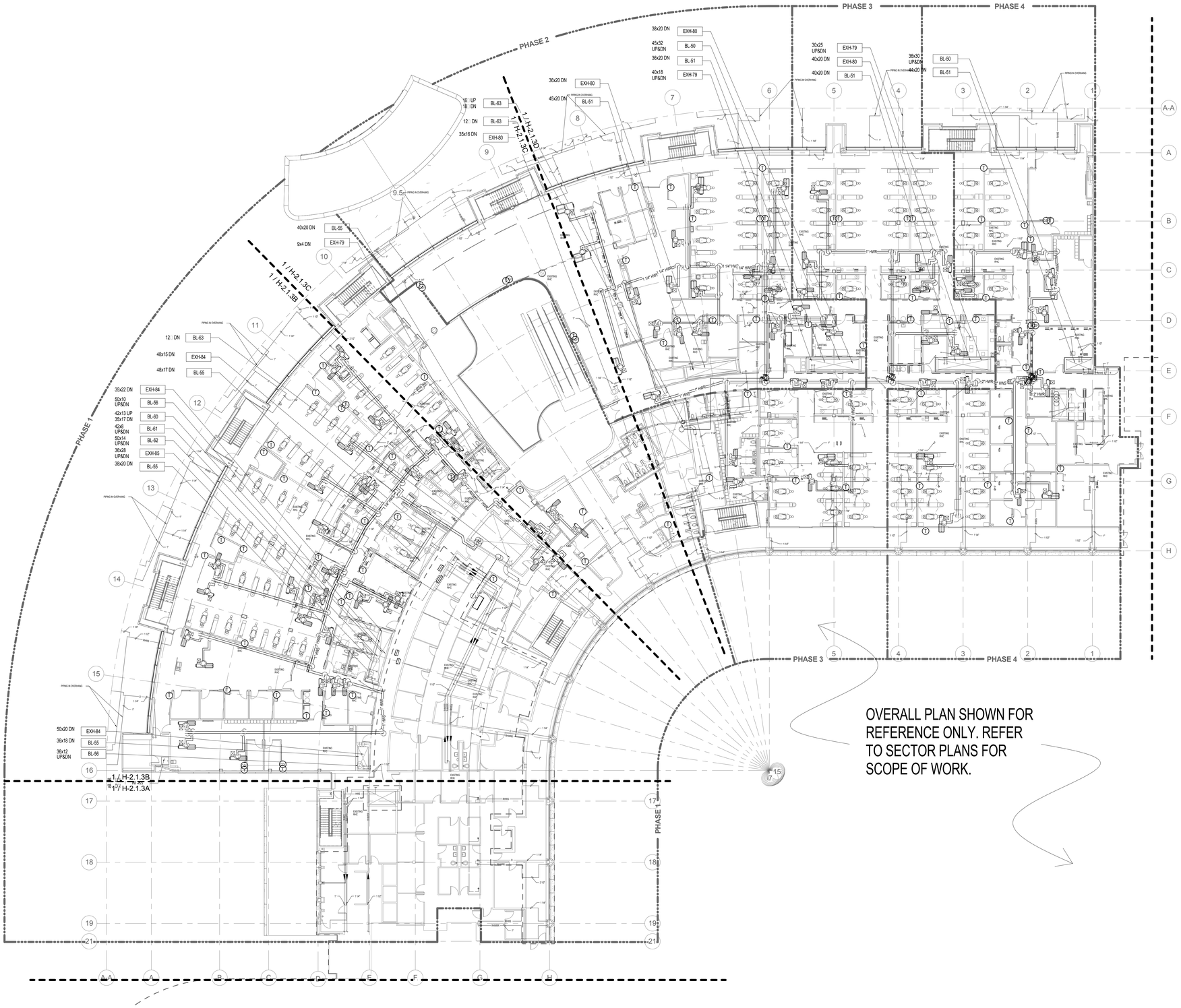

GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEPT SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME: [FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

1 First Floor - Pipe
1/16" = 1'-0"

NO.	REVISION	DATE

0 8' 16' 32'
SCALE: 1/16" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON CT. 06030

HVAC FIRST FLOOR PIPING PLAN OVERALL

H-2.0.3

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC FIRST FLOOR PIPING PLAN OVERALL

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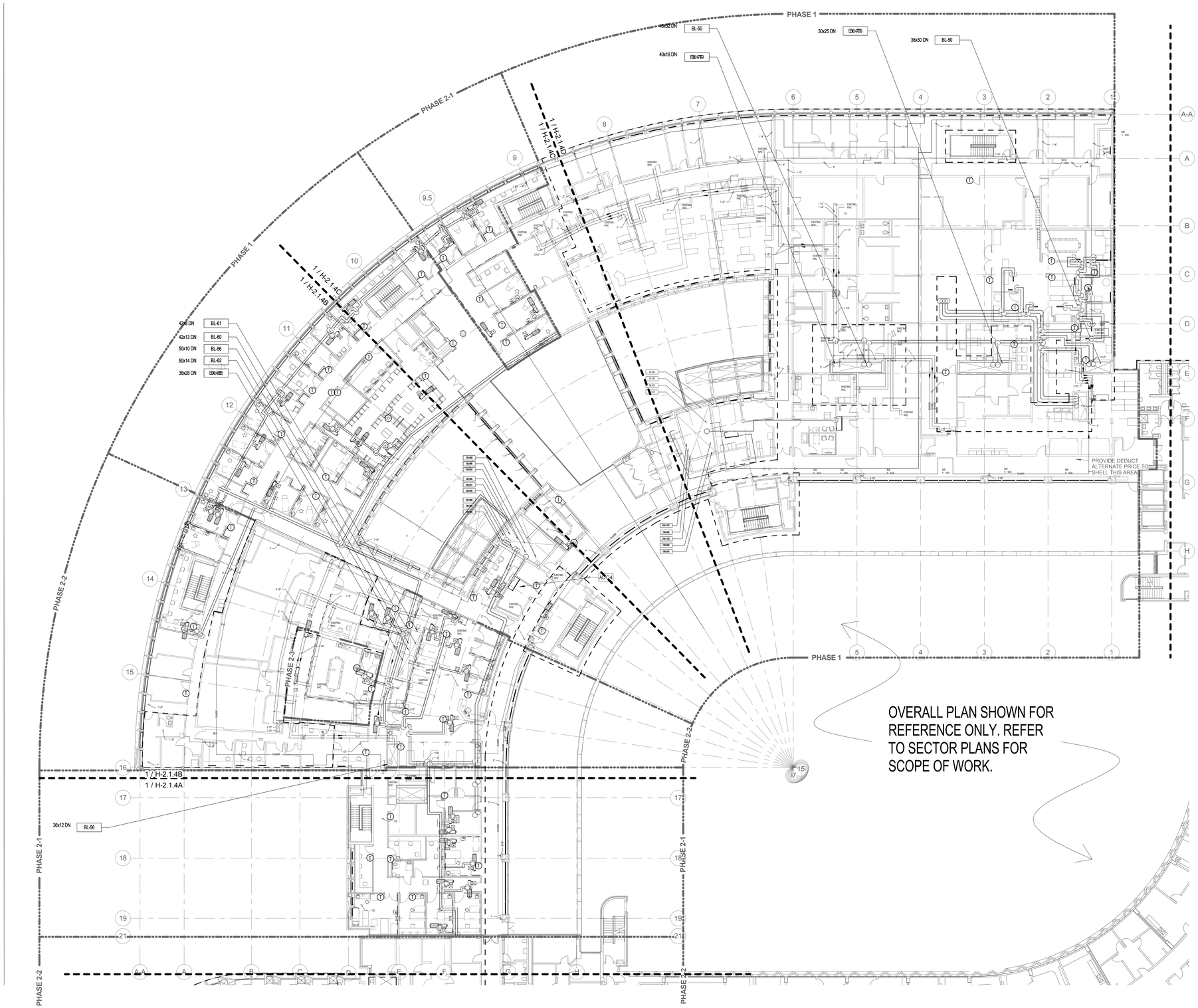

1 Second Floor - Pipe
1/16" = 1'-0"

GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME: (FLOOR.SECTOR - BOX # - SHAFT #)
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

NO.	REVISION	DATE

0 8' 16' 32'
SCALE: 1/16" = 1' - 0"

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BUILDING C RENOVATION
263 FARMINGTON AVE.
FARMINGTON CT. 06030

HVAC SECOND FLOOR PIPING PLAN OVERALL

H-2.0.4

BID DOCUMENTS

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DATE:	12/10/2015
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FILE NAME:	HVAC SECOND FLOOR PIPING PLAN OVERALL

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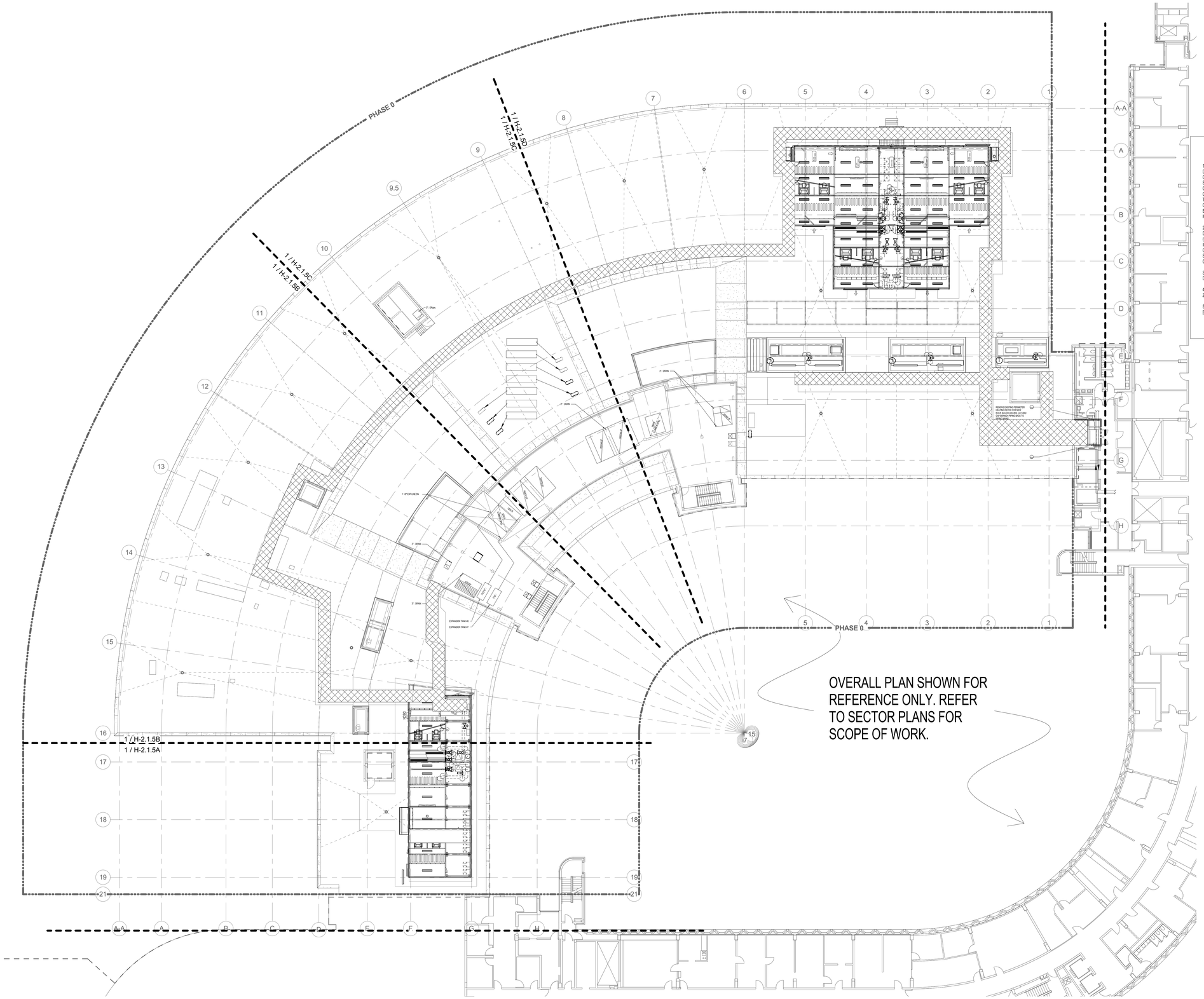

1 Roof/Penthouse - Pipe
1/16" = 1'-0"

GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCHS.

NO.	REVISION	DATE

SCALE: 1/16" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON CT. 06030

HVAC ROOF & PH PIPING PLAN OVERALL

H-2.0.5

BID DOCUMENTS

SCALE:	As indicated
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDR
FILE NAME:	HVAC ROOF & PH PIPING PLAN OVERALL

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GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEPIT SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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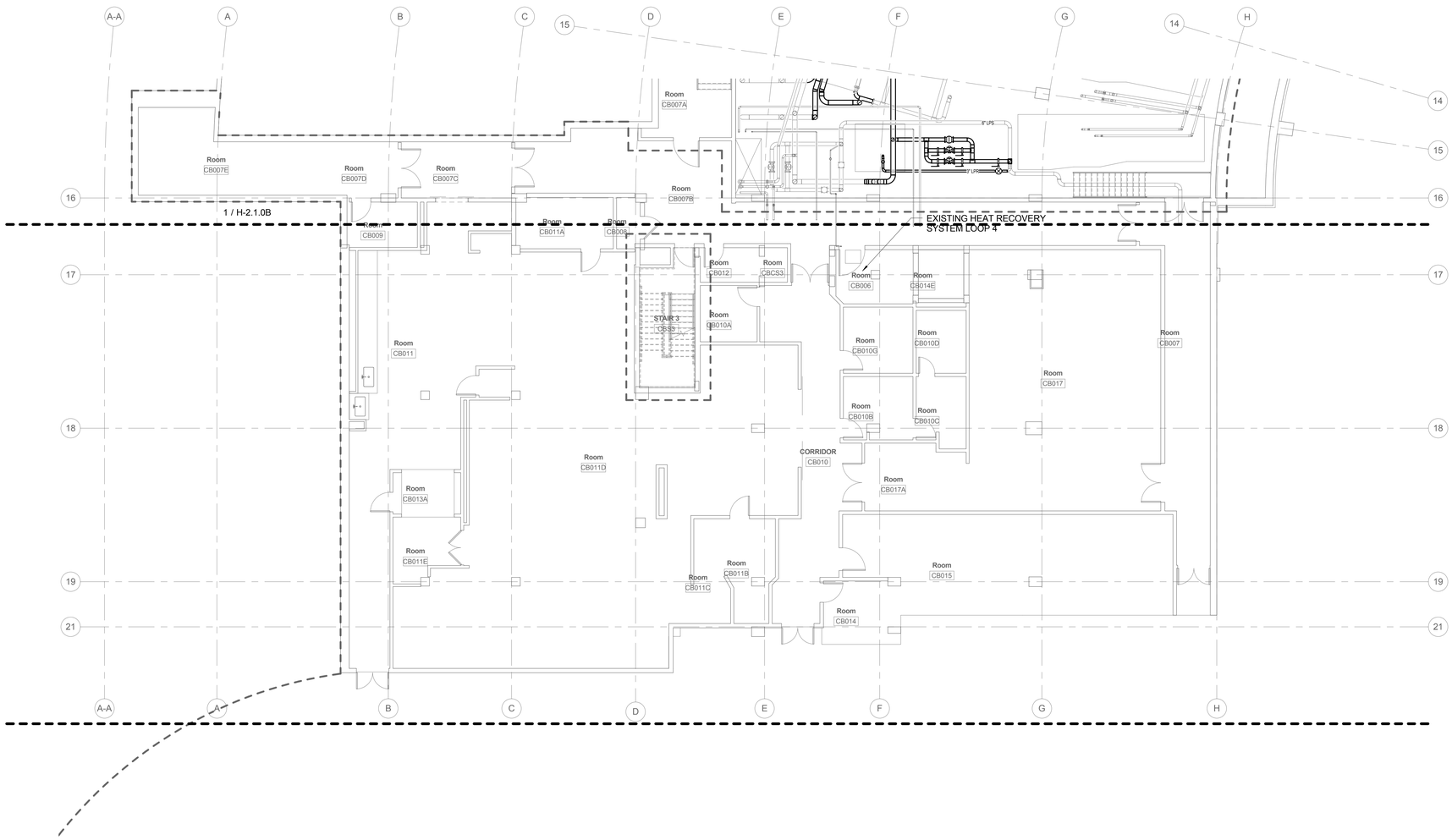
3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME: [FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.



1 Basement - Pipe - Sector A
1/8" = 1'-0"

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE,
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HVAC BASEMENT PIPING PLAN SECTOR A

H-2.1.0A

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC BASEMENT PIPING PLAN SECTOR A

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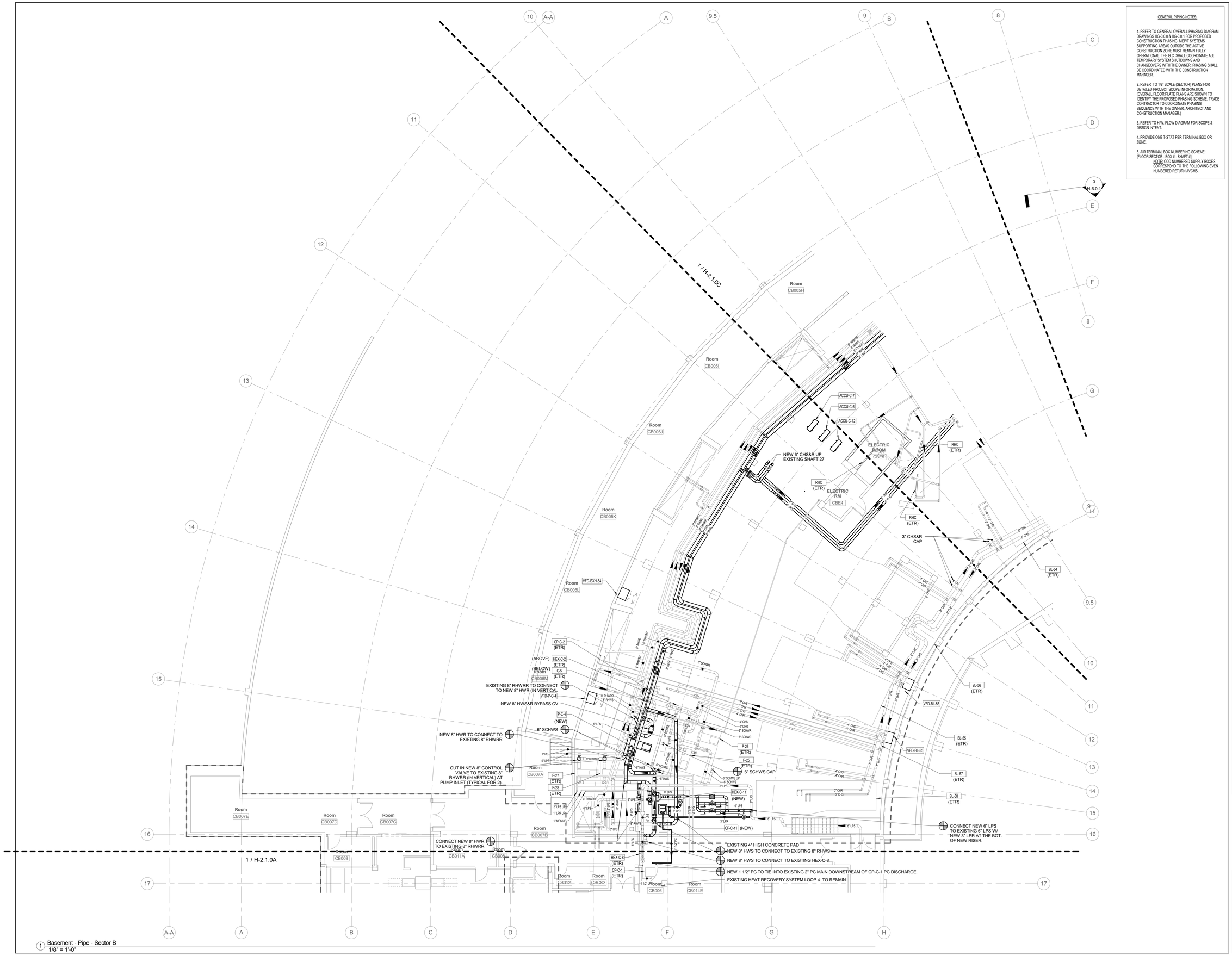

1 Basement - Pipe - Sector B
1/8" = 1'-0"

GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/IT SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

NO.	REVISION	DATE

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
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HVAC BASEMENT PIPING PLAN SECTOR B

H-2.1.0B

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WTJR
FILE NAME:	HVAC BASEMENT PIPING PLAN SECTOR

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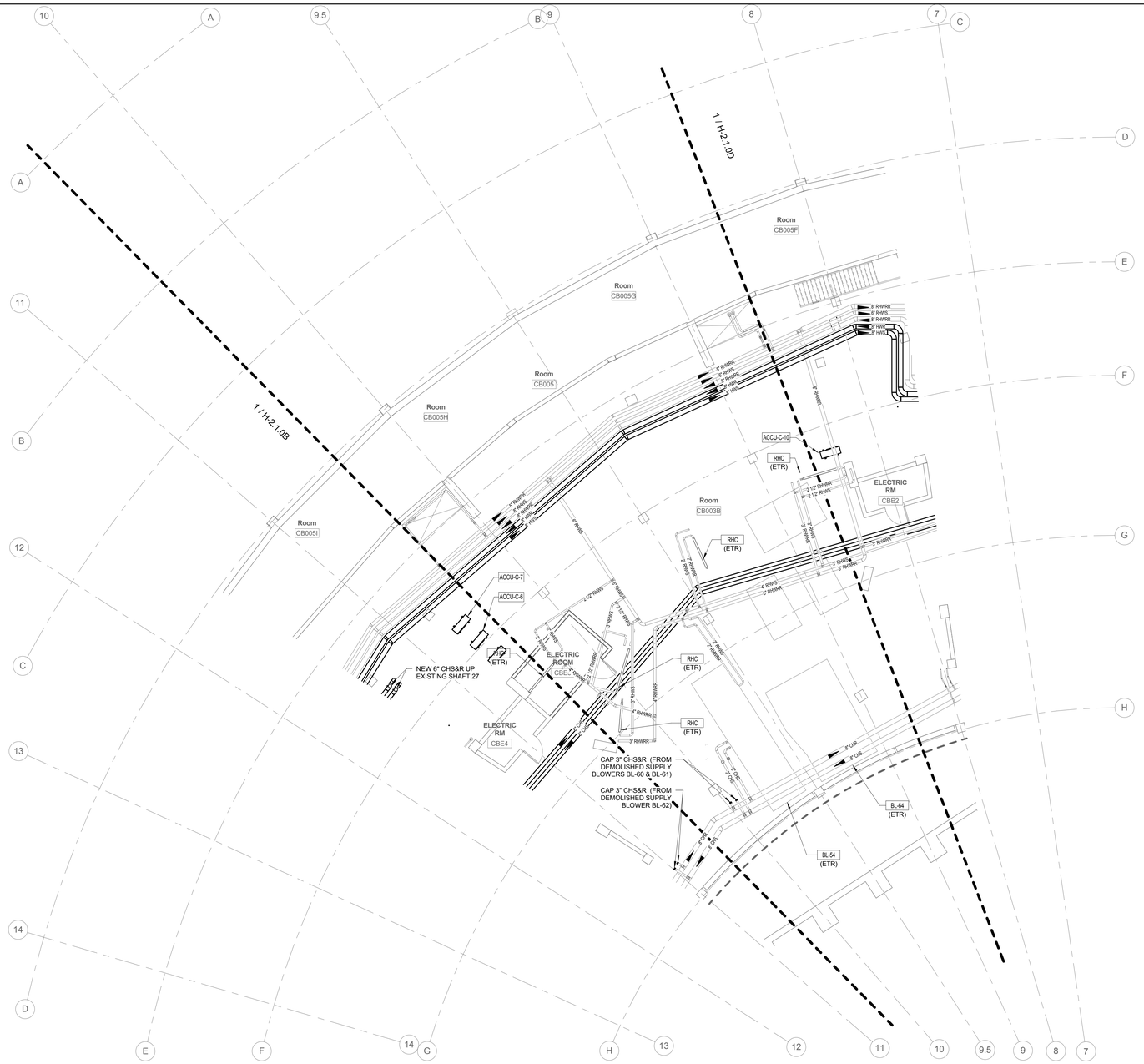

1 Basement - Pipe - Sector C
1/8" = 1'-0"

GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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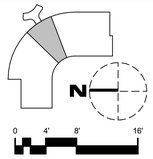
3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON CT. 06030

HVAC BASEMENT PIPING PLAN SECTOR C

H-2.1.0C

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
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FILE NAME:	HVAC BASEMENT PIPING PLAN H2.1.0C

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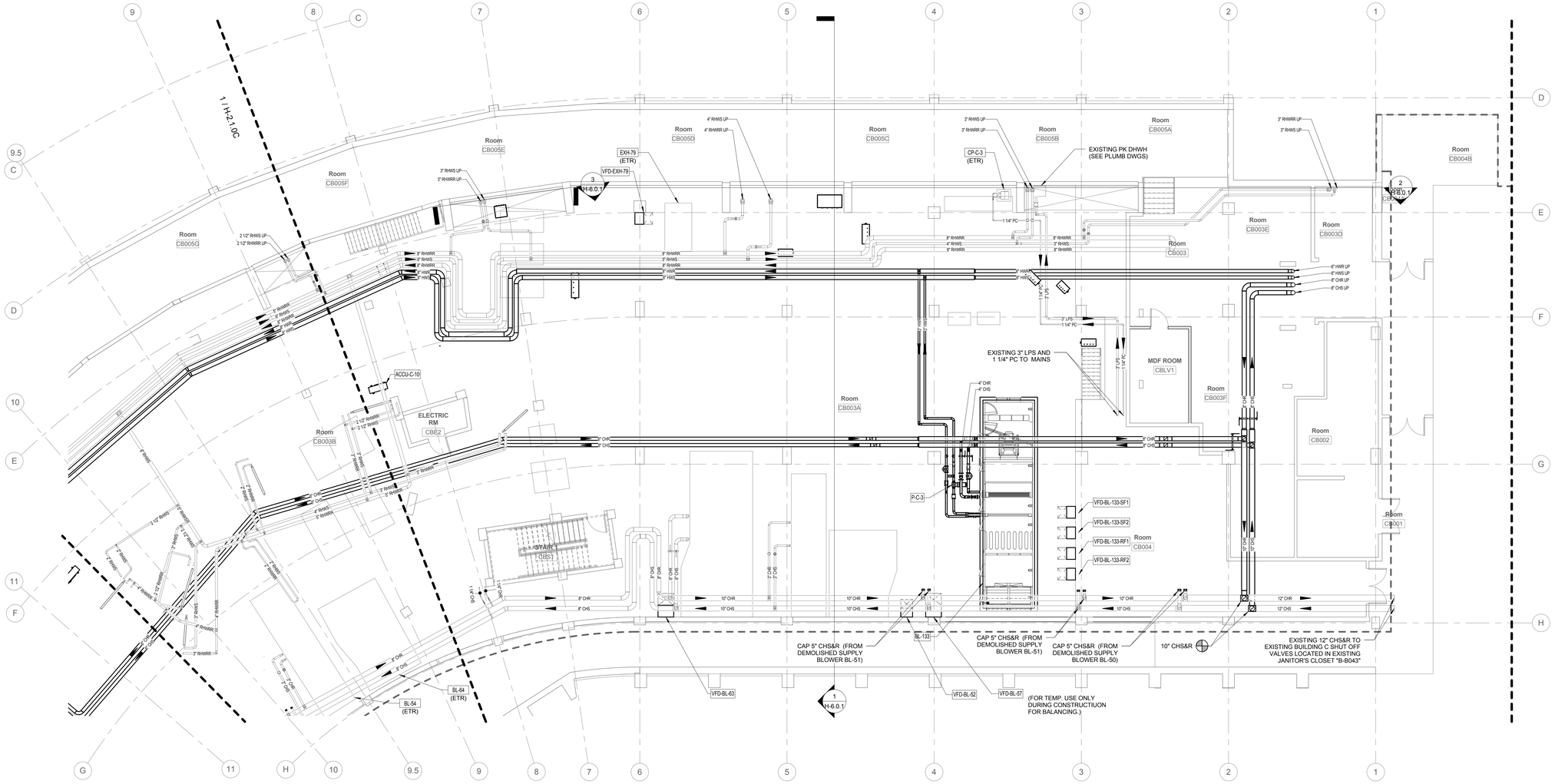
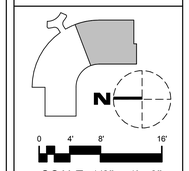


1 Basement - Pipe - Sector D
1/8" = 1'-0"

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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FARMINGTON CT. 06030

HVAC BASEMENT PIPING PLAN SECTOR D

H-2.1.0D

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
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FILE NAME:	HVAC BASEMENT PIPING PLAN SECTOR

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GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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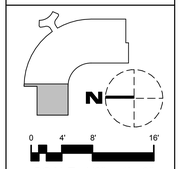
3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

1 Ground Floor - Pipe - Sector A
1/8" = 1'-0"

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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FARMINGTON CT. 06030

HVAC GROUND FLOOR PIPING PLAN SECTOR A

H-2.1.1A

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
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DATE:	12/10/2015
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FILE NAME:	HVAC GROUND FLOOR PIPING PLAN SECTOR

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1 Ground Floor - Pipe - Sector B
1/8" = 1'-0"

GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/IT SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

NO.	REVISION	DATE

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON CT. 06030

HVAC GROUND FLOOR PIPING PLAN SECTOR B

H-2.1.1B

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC GROUND FLOOR PIPING PLAN SECTOR

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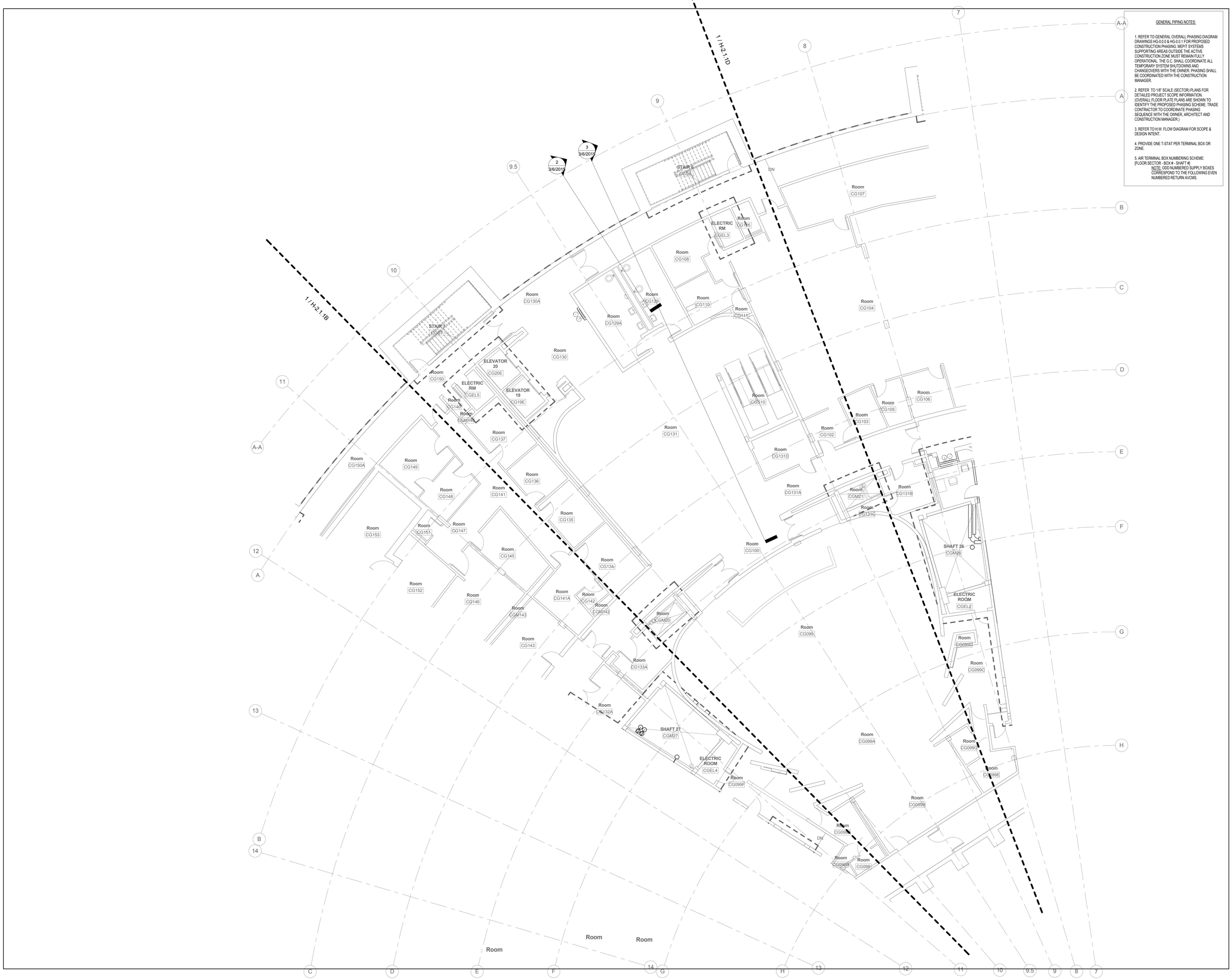
12/10/2015 10:03:36 AM



GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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5. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON CT. 06030

HVAC GROUND FLOOR PIPING PLAN SECTOR C

H-2.1.1C

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC GROUND FLOOR PIPING PLAN SECTOR C

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1 Ground Floor - Pipe - Sector C
1/8" = 1'-0"

GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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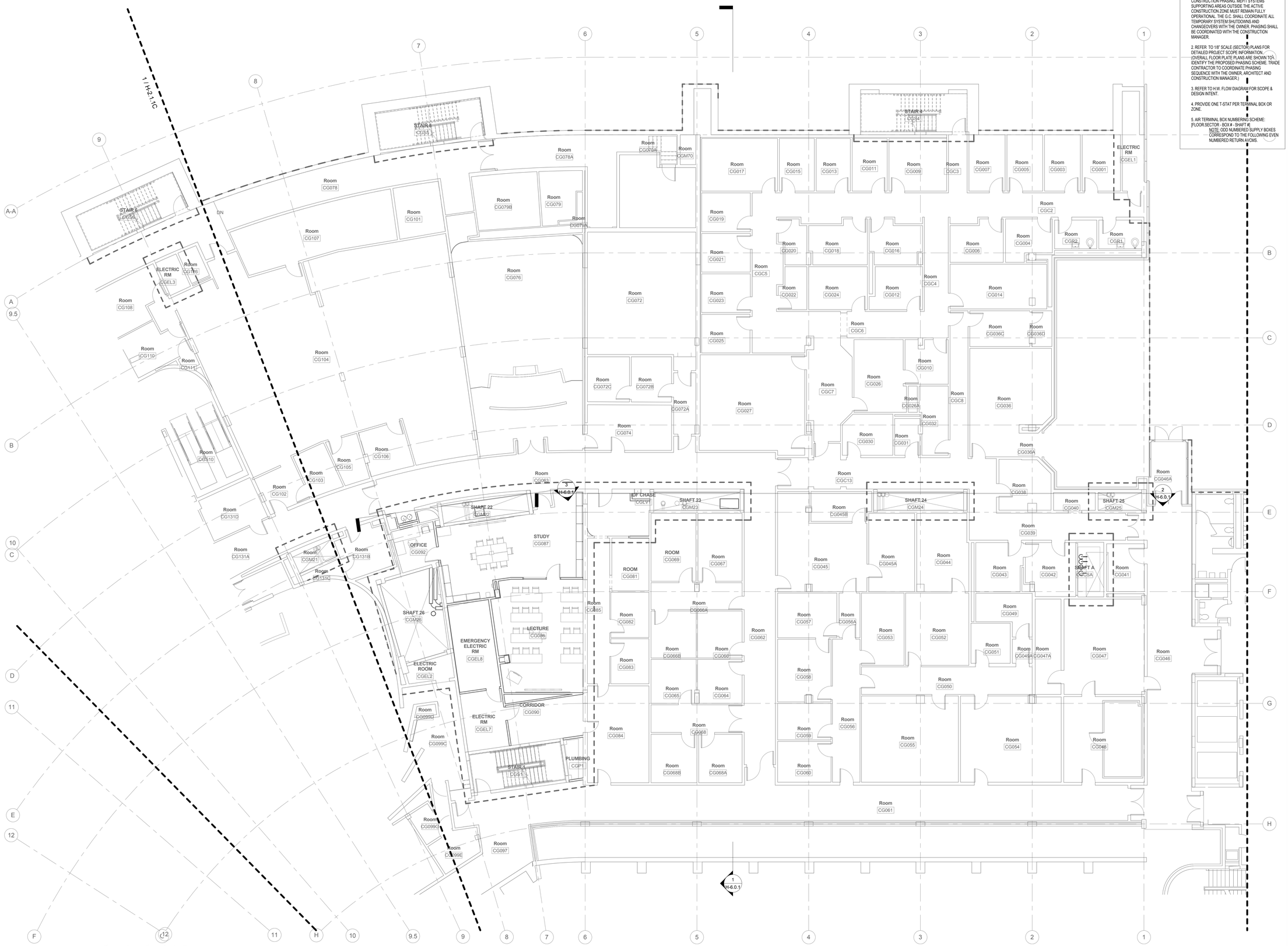
3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

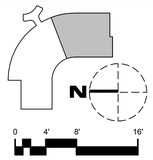
4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME: [FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN A/CMS.



1 Ground Floor - Pipe - Sector D
1/8" = 1'-0"

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

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BUILDING C RENOVATION

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HVAC GROUND FLOOR PIPING PLAN SECTOR D

H-2.1.1D

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC GROUND FLOOR PIPING PLAN SECTOR

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GENERAL PIPING NOTES:

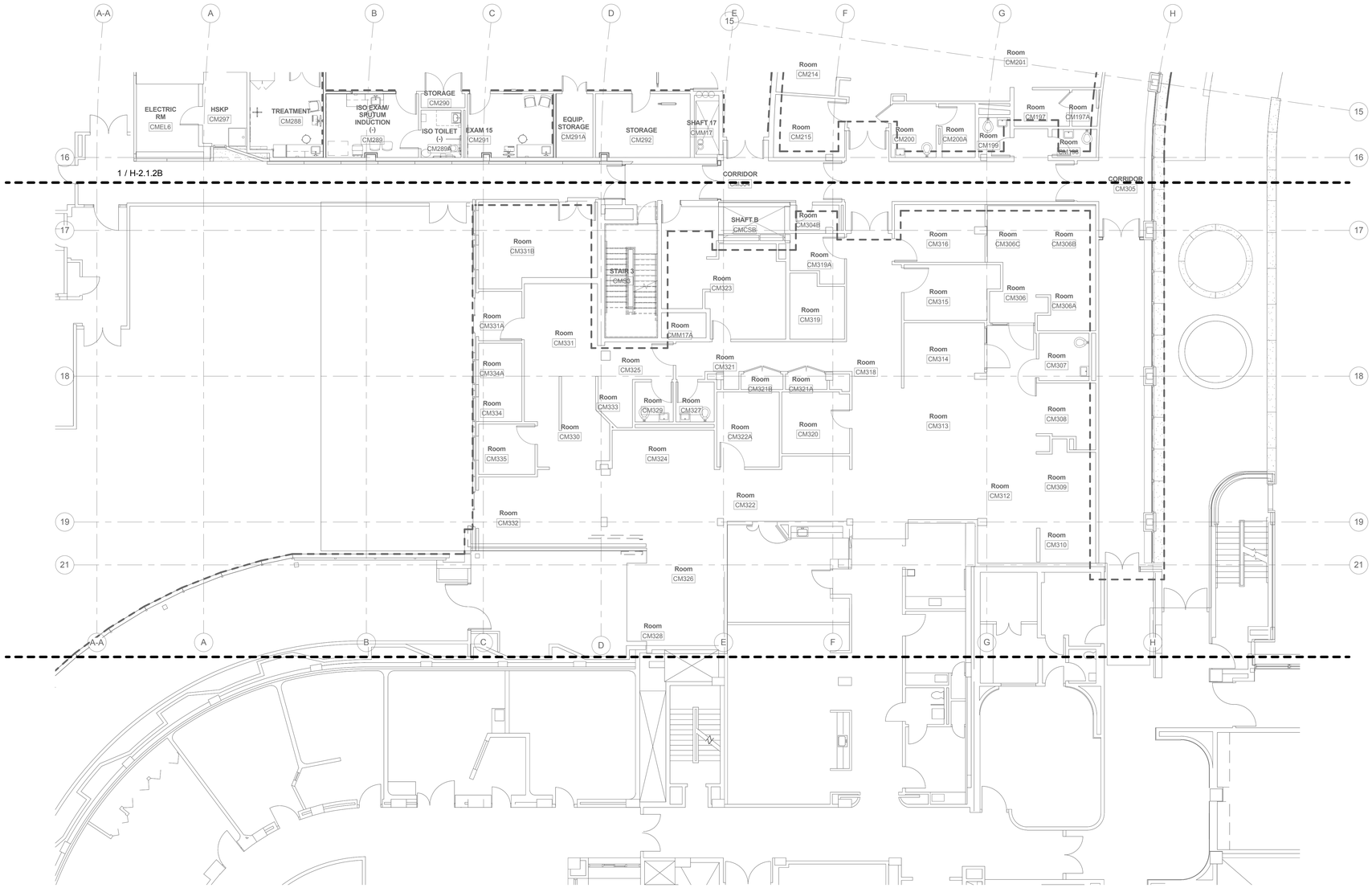
1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEPT SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.



1 Main Floor - Pipe - Sector A
1/8" = 1'-0"

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

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HVAC MAIN FLOOR PIPING PLAN SECTOR A

H-2.1.2A

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC MAIN FLOOR PIPING PLAN SECTOR

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1 Main Floor - Pipe - Sector B
1/8" = 1'-0"

GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. ME/P/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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[FLOOR SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

PIPING KEY NOTES:

1. NEW 1" SCHW&R PIPING SUPPORTING NEW FINNED TUBE RADIATION SHALL CONNECT TO EXISTING SCHW&R RISER PREVIOUSLY SUPPORTING THE INDUCTION UNITS. PROVIDE NEW BRANCH ISOLATION VALVE, CONTROL VALVE AND CONTROL WIRING. REFER TO CONTROL DIAGRAMS FOR FINNED TUBE SEQUENCE OF OPERATION. TYPICAL OFR ALL FINNED TUBE RADIATION.

NO.	REVISION	DATE

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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FARMINGTON CT. 06030

HVAC MAIN FLOOR PIPING PLAN SECTOR B

H-2.1.2B

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC MAIN FLOOR PIPING PLAN SECTOR B

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1 Main Floor - Pipe - Sector C
1/8" = 1'-0"

GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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[FLOOR.SECTOR - BOX # - SHAFT #]
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NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
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HVAC MAIN FLOOR PIPING PLAN SECTOR C

H-2.1.2C

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC MAIN FLOOR PIPING PLAN SECTOR

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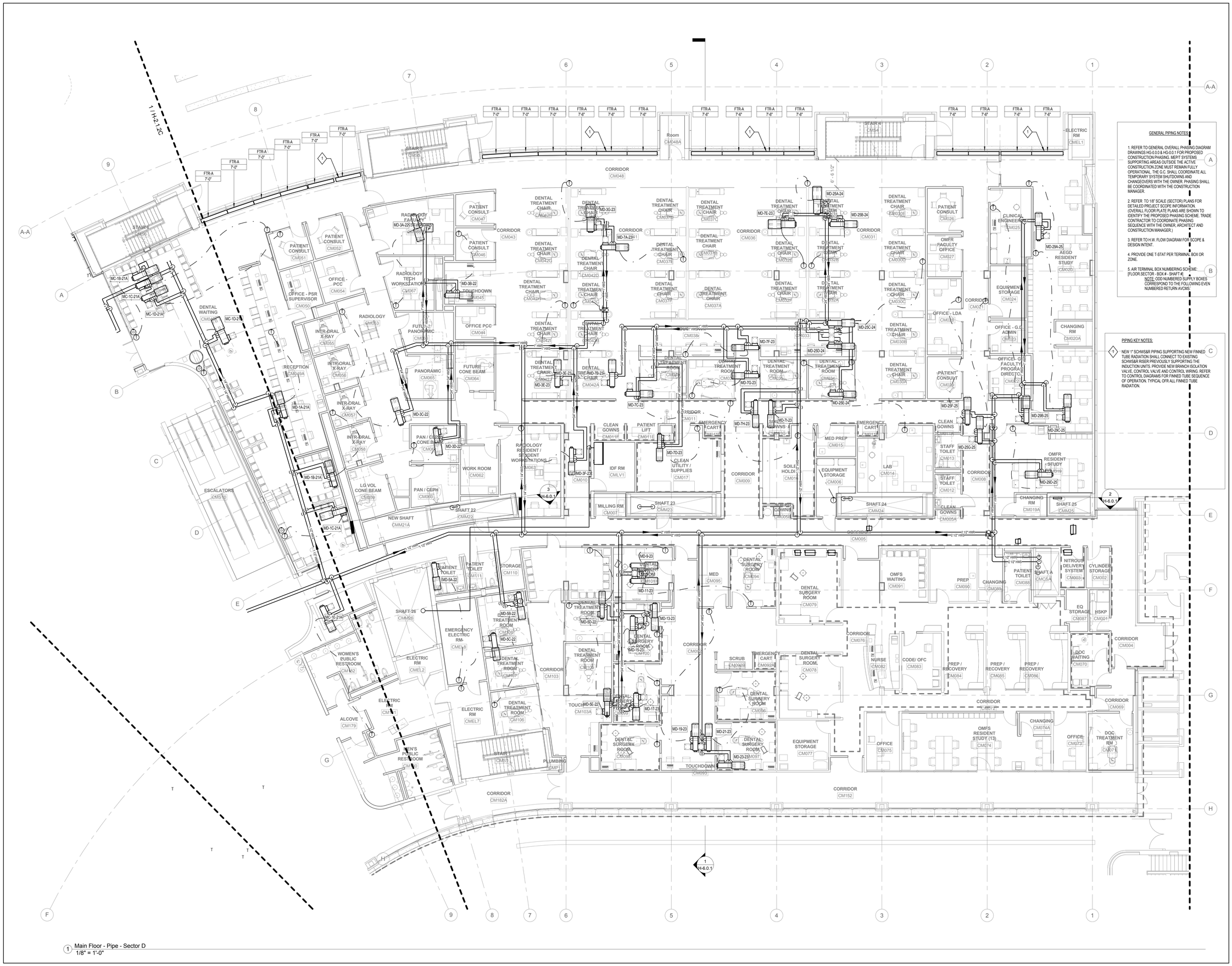

GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

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PIPING KEY NOTES:

1. NEW 1" SCHWS&R PIPING SUPPORTING NEW FINNED TUBE RADIATION SHALL CONNECT TO EXISTING SCHWS&R RISER PREVIOUSLY SUPPORTING THE INDUCTION UNITS. PROVIDE NEW BRANCH ISOLATION VALVE, CONTROL VALVE AND CONTROL WIRING. REFER TO CONTROL DIAGRAMS FOR FINNED TUBE SEQUENCE OF OPERATION. TYPICAL OFR ALL FINNED TUBE RADIATION.

1 Main Floor - Pipe - Sector D
1/8" = 1'-0"

NO.	REVISION	DATE

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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HVAC MAIN FLOOR PIPING PLAN SECTOR D

H-2.1.2D

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC-MAIN FLOOR PIPING PLAN 2.1.2D

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12/10/2018 8:13:33 AM

GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/FT SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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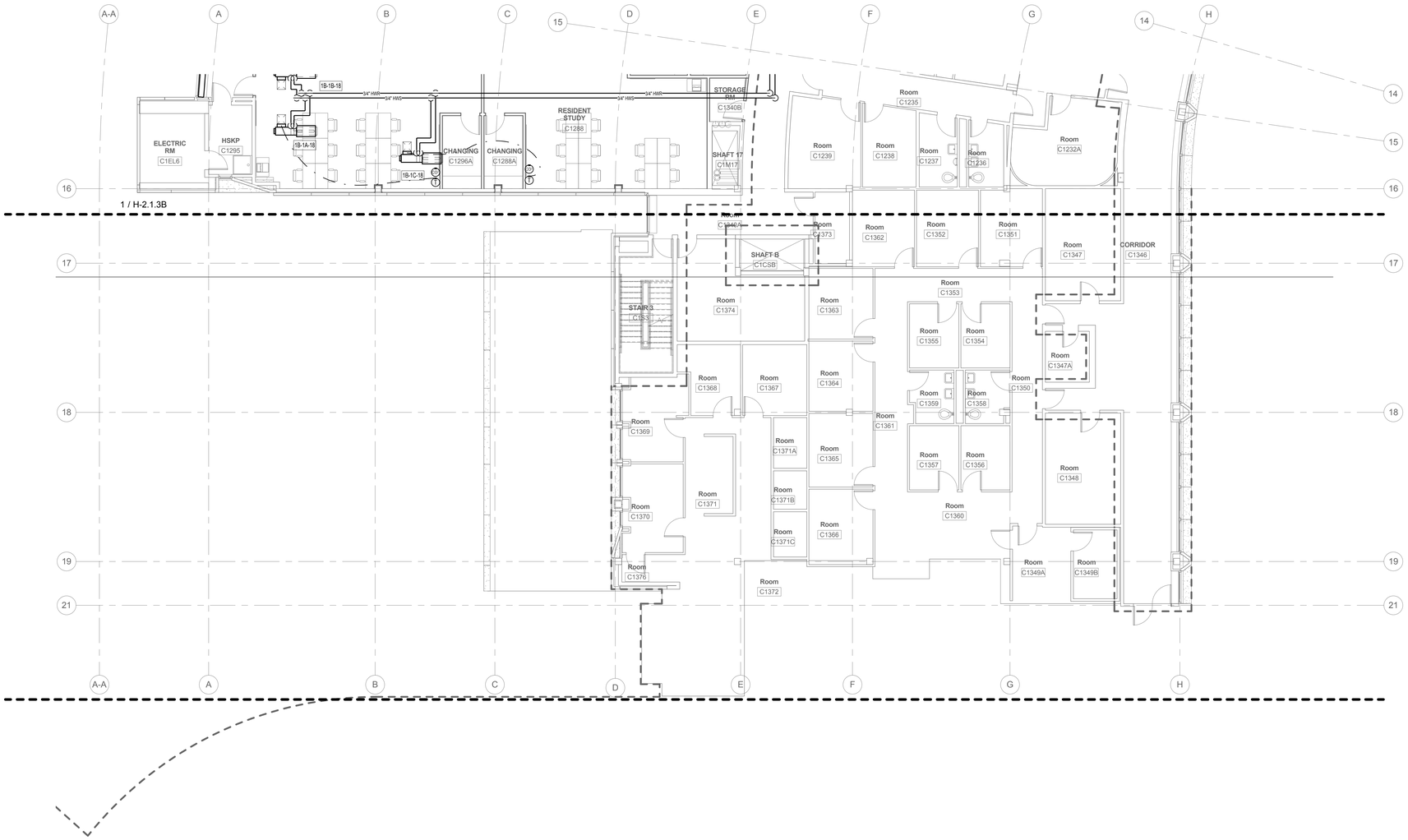
3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

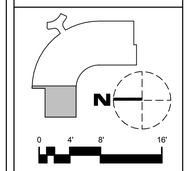
4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR:SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.



1 First Floor - Pipe - Sector A
1/8" = 1'-0"

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE,
FARMINGTON CT. 06030

HVAC FIRST FLOOR PIPING PLAN SECTOR A

H-2.1.3A

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC FIRST FLOOR PIPING PLAN SECTOR A

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PIPING KEY NOTES:

1. NEW 1" SCHWS&R PIPING SUPPORTING NEW FINNED TUBE RADIATION SHALL CONNECT TO EXISTING SCHWS&R RISER PREVIOUSLY SUPPORTING THE INDUCTION UNITS. PROVIDE NEW BRANCH ISOLATION VALVE, CONTROL VALVE AND CONTROL WIRING. REFER TO CONTROL DIAGRAMS FOR FINNED TUBE SEQUENCE OF OPERATION. TYPICAL OFR ALL FINNED TUBE RADIATION.

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3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

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NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

1 First Floor - Pipe - Sector B
1/8" = 1'-0"

NO.	REVISION	DATE

0 4' 8' 16'
SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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FARMINGTON CT. 06030

HVAC FIRST FLOOR PIPING PLAN SECTOR B

H-2.1.3B

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC FIRST FLOOR PIPING PLAN SECTOR

12/10/2015 10:09:49 AM

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1 First Floor - Pipe - Sector C
1/8" = 1'-0"

GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS H0-0.0.0 & H0-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEPIT SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON CT. 06030

HVAC FIRST FLOOR PIPING PLAN SECTOR C

H-2.1.3C

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDR
FILE NAME:	HVAC FIRST FLOOR PIPING PLAN SECTOR C.DWG

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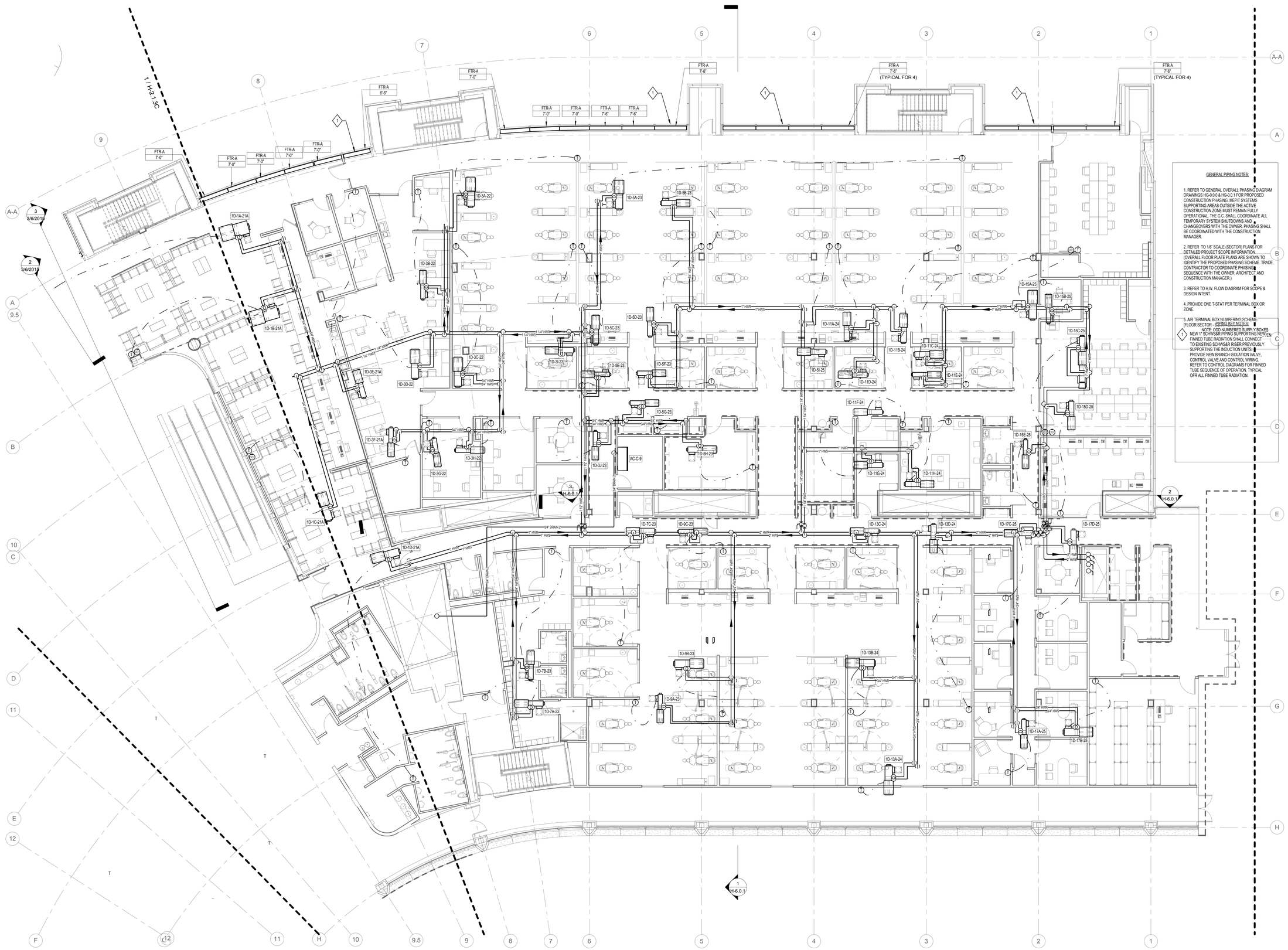
12/10/2015 8:10:43 AM



GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

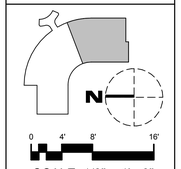
4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME: (FLOOR SECTOR - BOX NUMBER)

1 NOTE: ODD NUMBERED SUPPLY BOXES NEW 1" SCHWS&R PIPING SUPPORTING NEW EN FINNED TUBE RADIATION SHALL CONNECT TO EXISTING SCHWS&R RISER PREVIOUSLY SUPPORTING THE INDUCTION UNITS. PROVIDE NEW BRANCH ISOLATION VALVE, CONTROL VALVE AND CONTROL WIRING. REFER TO CONTROL DIAGRAMS FOR FINNED TUBE SEQUENCE OF OPERATION. TYPICAL OFR ALL FINNED TUBE RADIATION.

1 First Floor - Pipe - Sector D
1/8" = 1'-0"

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE,
FARMINGTON CT. 06030

HVAC FIRST FLOOR PIPING PLAN SECTOR D

H-2.1.3D

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC FIRST FLOOR PIPING PLAN SECTOR D

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GENERAL PIPING NOTES:

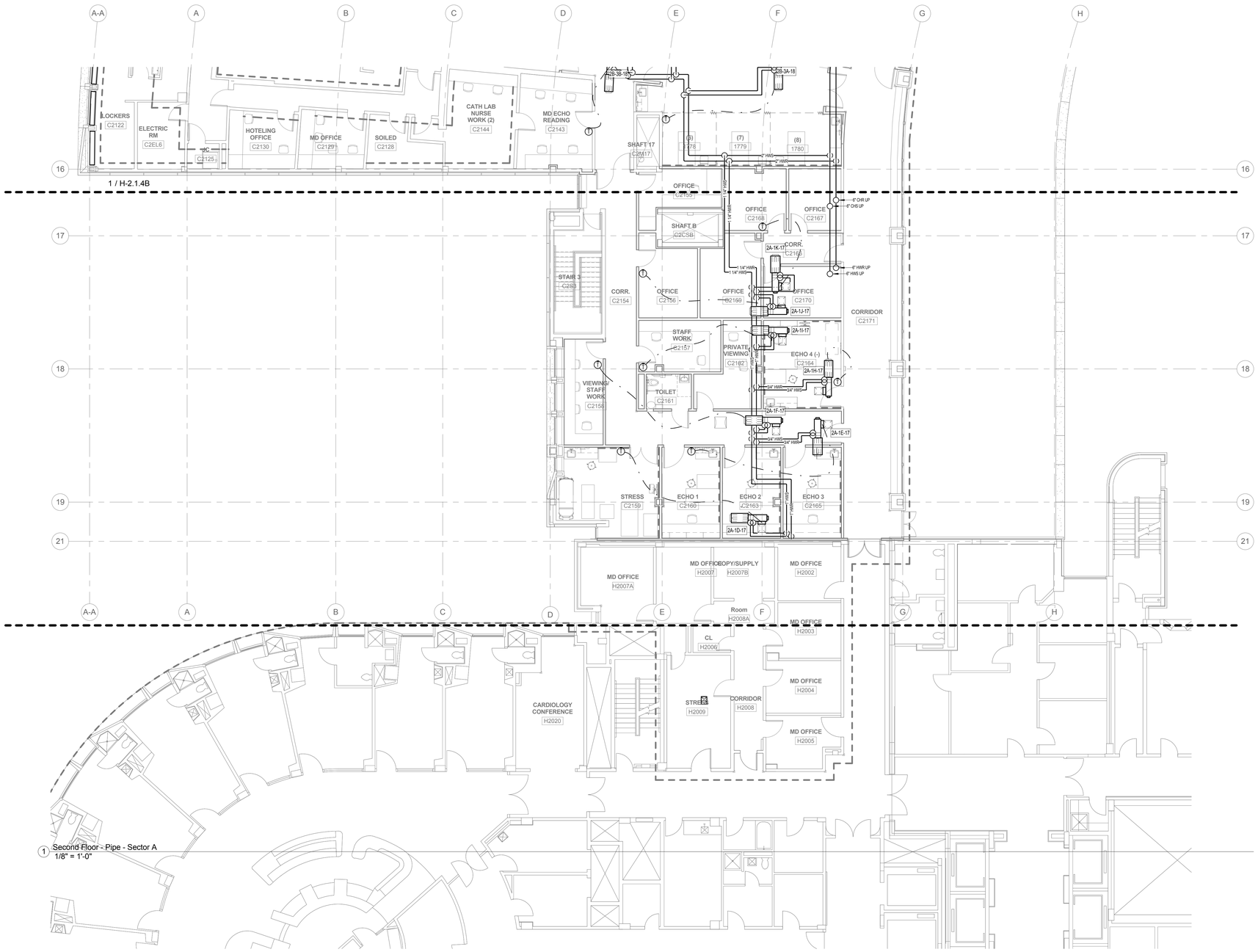
1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HC-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.



1 Second Floor - Pipe - Sector A
1/8" = 1'-0"

NO.	REVISION	DATE

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE, FARMINGTON CT. 06030

HVAC SECOND FLOOR PIPING PLAN SECTOR A

H-2.1.4A

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC SECOND FLOOR PIPING PLAN C2.168

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1 Second Floor - Pipe - Sector B
1/8" = 1'-0"

GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

PIPING KEY NOTES:

1 NEW 1" SCHWS&R PIPING SUPPORTING NEW FINNED TUBE RADIATION SHALL CONNECT TO EXISTING SCHWS&R RISER PREVIOUSLY SUPPORTING THE INDUCTION UNITS. PROVIDE NEW BRANCH ISOLATION VALVE, CONTROL VALVE AND CONTROL WIRING. REFER TO CONTROL DIAGRAMS FOR FINNED TUBE SEQUENCE OF OPERATION. TYPICAL OFR ALL FINNED TUBE RADIATION.

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

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BUILDING C RENOVATION

263 FARMINGTON AVE.
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HVAC SECOND FLOOR PIPING PLAN SECTOR B

H-2.1.4B

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC SECOND FLOOR PIPING PLAN

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12/10/2015 10:03:54 AM

1 Second Floor - Pipe - Sector C
1/8" = 1'-0"

GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

PIPING KEY NOTES:

1. NEW 1" SCHW&R PIPING SUPPORTING NEW FINNED TUBE RADIATION SHALL CONNECT TO EXISTING SCHW&R RISER PREVIOUSLY SUPPORTING THE INDUCTION UNITS. PROVIDE NEW BRANCH ISOLATION VALVE, CONTROL VALVE AND CONTROL WIRING. REFER TO CONTROL DIAGRAMS FOR FINNED TUBE SEQUENCE OF OPERATION. TYPICAL OFR ALL FINNED TUBE RADIATION.

NO.	REVISION	DATE

0 4' 8' 16'
SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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HVAC SECOND FLOOR PIPING PLAN SECTOR C

H-2.1.4C

BID DOCUMENTS

SCALE: 1/8" = 1'-0"
JOB NO: 1302
DATE: 12/10/2015
DRAWN BY: WDB
FILE NAME: HVAC SECOND FLOOR PIPING PLAN SECTOR C

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GENERAL PIPING NOTES:

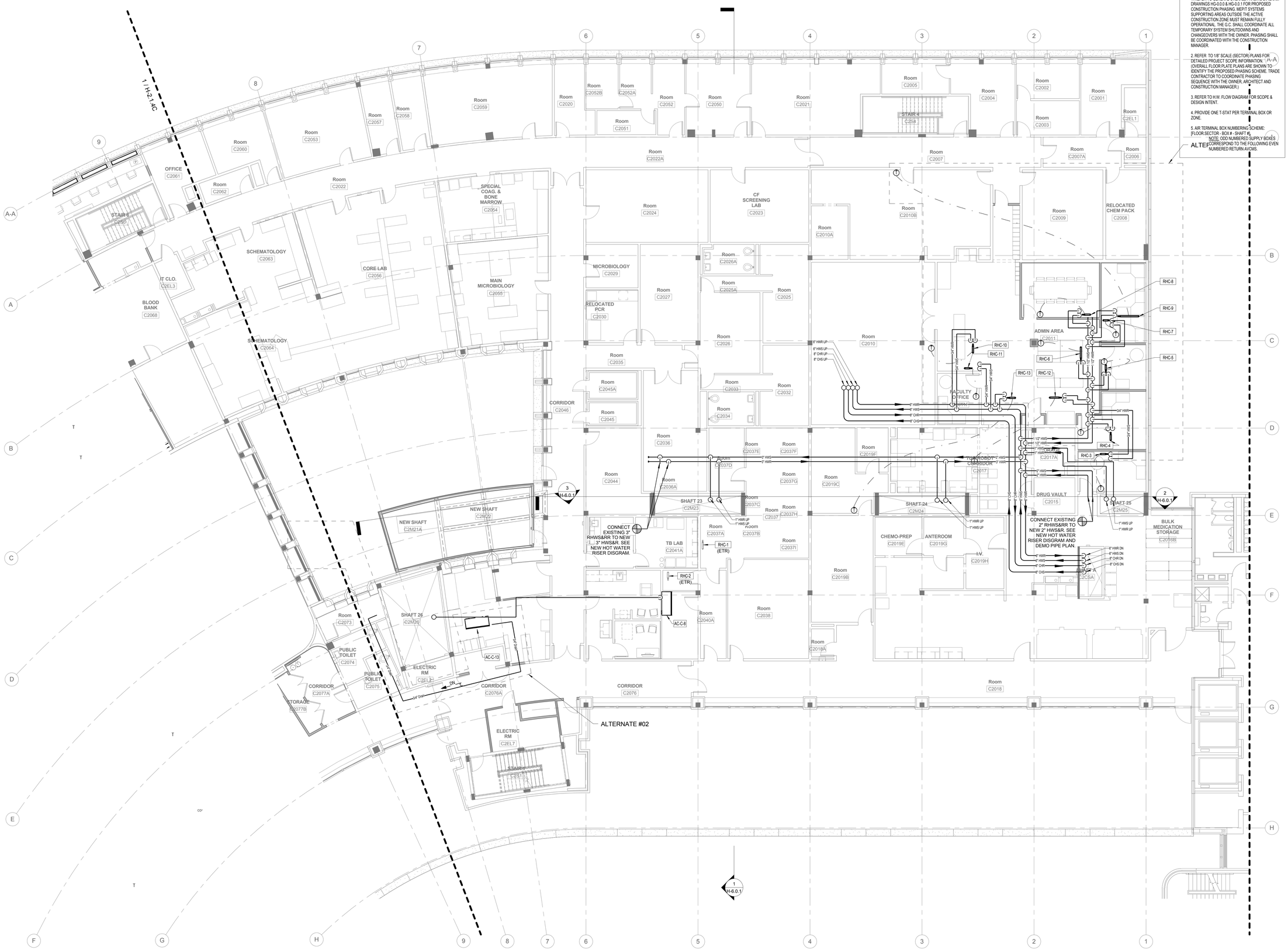
1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HC-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

2. REFER TO 1/8" SCALE (SECTOR) PLANS FOR DETAILED PROJECT SCOPE INFORMATION. (A-A (OVERALL FLOOR PLATE PLANS ARE SHOWN TO IDENTIFY THE PROPOSED PHASING SCHEME. TRADE CONTRACTOR TO COORDINATE PHASING SEQUENCE WITH THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER.)

3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME: [FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.



1 Second Floor - Pipe - Sector D
1/8" = 1'-0"

NO.	REVISION	DATE

0 4' 8' 16'
SCALE: 1/8" = 1' - 0"

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HVAC SECOND FLOOR PIPING PLAN SECTOR D

H-2.1.4D

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WTJR
FILE NAME:	HVAC SECOND FLOOR PIPING PLAN SECTOR D

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GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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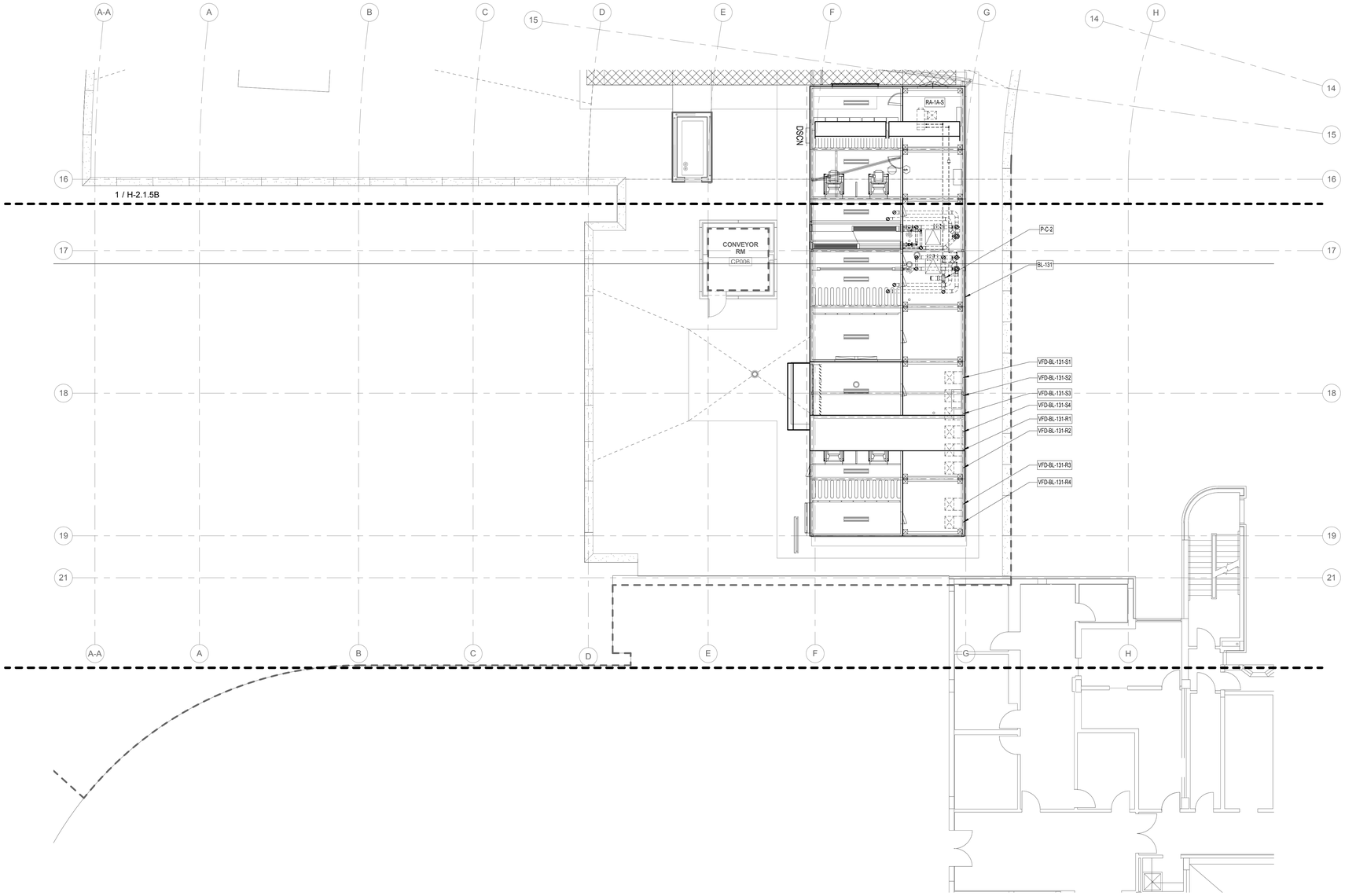
3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME:
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.



1 Roof/Penthouse - Pipe - Sector A
1/8" = 1'-0"

NO.	REVISION	DATE

N

0 4' 8' 16'

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

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BUILDING C RENOVATION

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FARMINGTON CT. 06030

HVAC ROOF & PH PIPING PLAN SECTOR A

H-2.1.5A

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC ROOF & PH PIPING PLAN C-1.dwg

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GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/FT SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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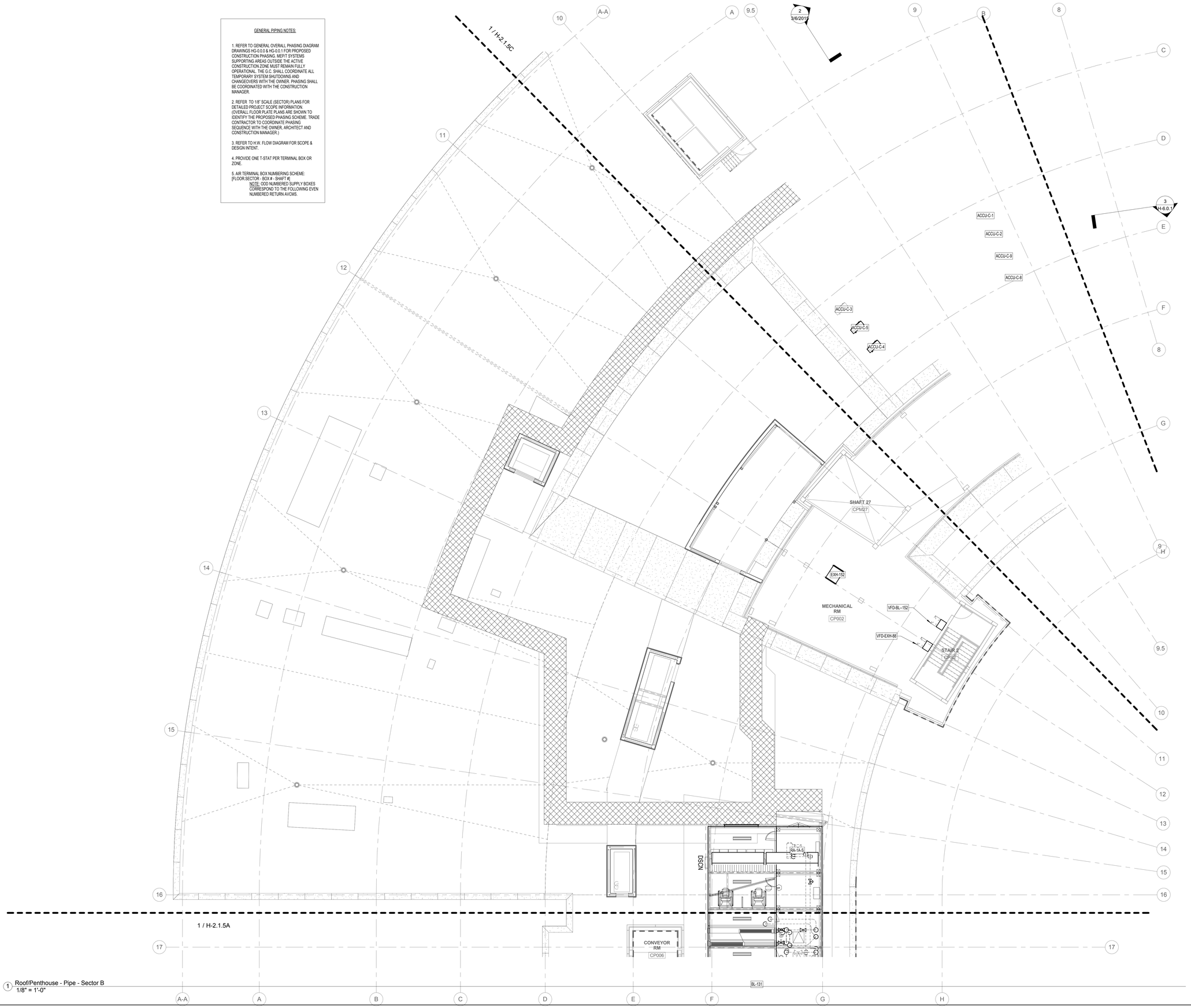
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.



1 Roof/Penthouse - Pipe - Sector B
1/8" = 1'-0"

NO.	REVISION	DATE

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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HVAC ROOF & PH PIPING PLAN SECTOR B

H-2.1.5B

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDR
FILE NAME:	HVAC ROOF & PH PIPING PLAN SECTOR B

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GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEPIT SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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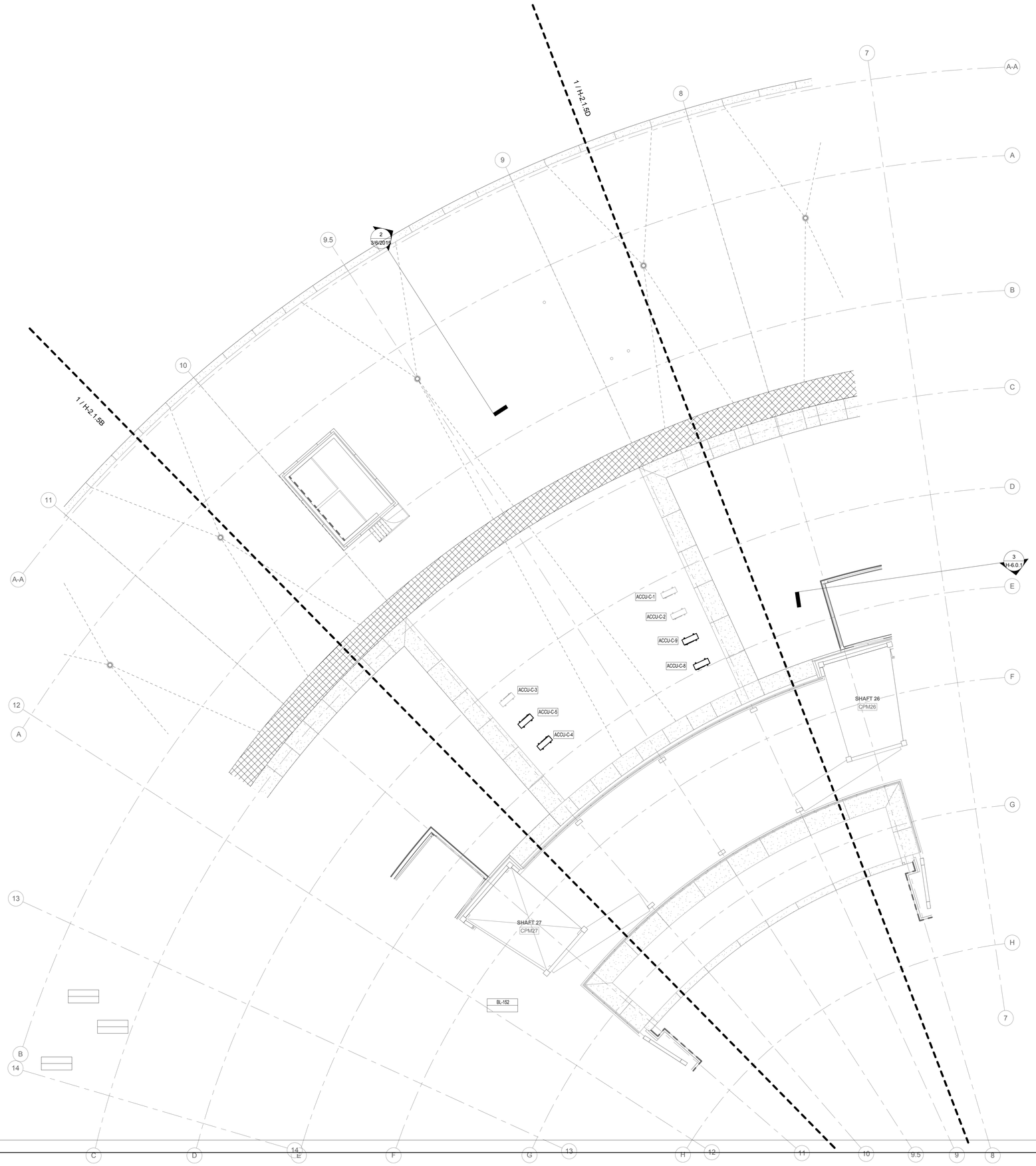
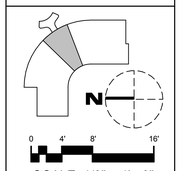
[FLOOR.SECTOR - BOX # - SHAFT #]
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVOMS.



1 Roof/Penthouse - Pipe - Sector C
1/8" = 1'-0"

NO.	REVISION	DATE



SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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FARMINGTON CT. 06030

HVAC ROOF & PH PIPING PLAN SECTOR C

H-2.1.5C

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC ROOF & PH PIPING PLAN SECTOR C

12/10/2015 8:14:17 AM

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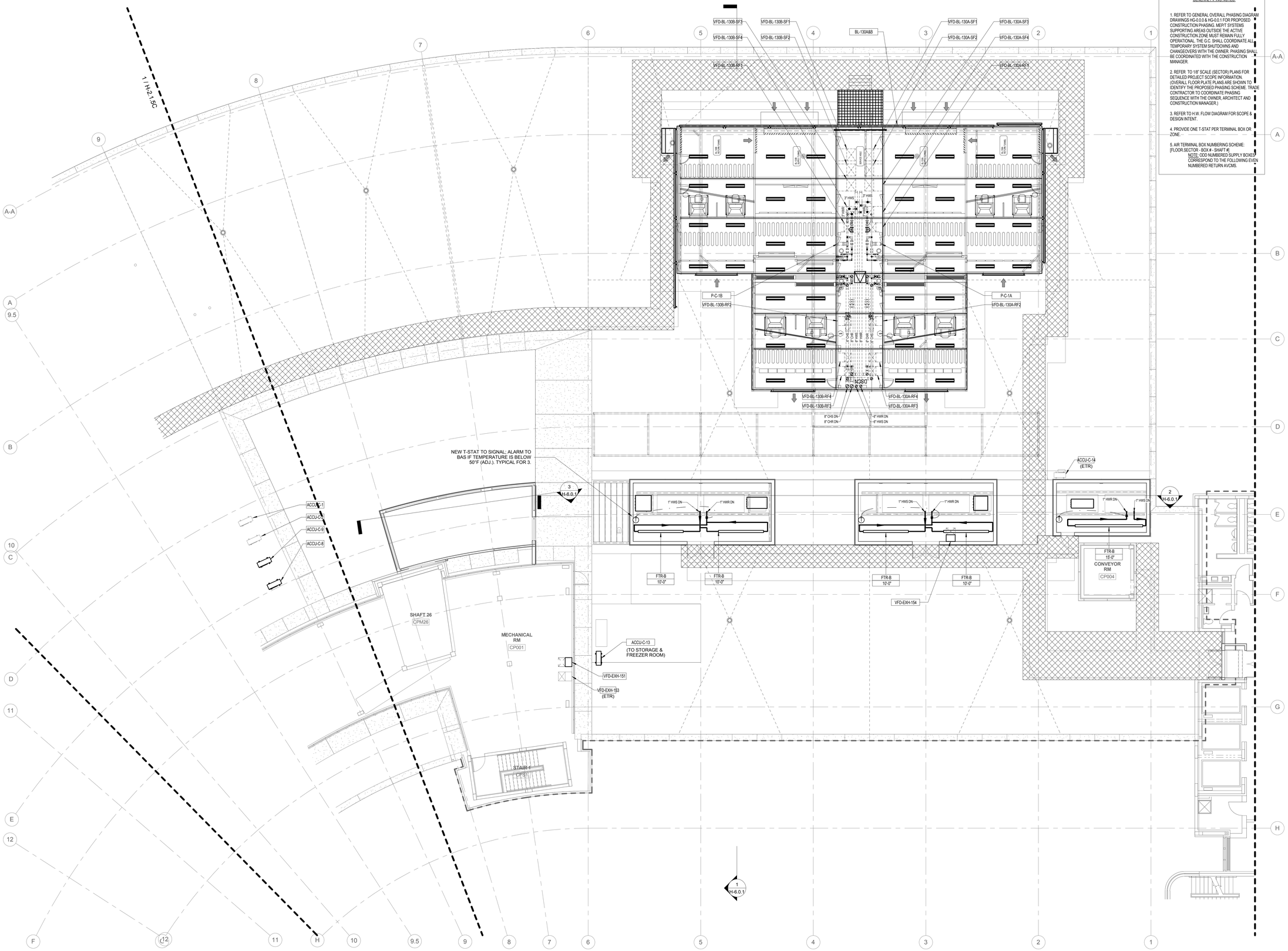

GENERAL PIPING NOTES:

1. REFER TO GENERAL OVERALL PHASING DIAGRAM DRAWINGS HG-0.0.0 & HG-0.0.1 FOR PROPOSED CONSTRUCTION PHASING. MEP/T SYSTEMS SUPPORTING AREAS OUTSIDE THE ACTIVE CONSTRUCTION ZONE MUST REMAIN FULLY OPERATIONAL. THE G.C. SHALL COORDINATE ALL TEMPORARY SYSTEM SHUTDOWNS AND CHANGEOVERS WITH THE OWNER. PHASING SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.

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3. REFER TO H.W. FLOW DIAGRAM FOR SCOPE & DESIGN INTENT.

4. PROVIDE ONE T-STAT PER TERMINAL BOX OR ZONE.

5. AIR TERMINAL BOX NUMBERING SCHEME: (FLOOR.SECTOR - BOX # - SHAFT #)
NOTE: ODD NUMBERED SUPPLY BOXES CORRESPOND TO THE FOLLOWING EVEN NUMBERED RETURN AVCMS.

1 Roof/Penthouse - Pipe - Sector D
1/8" = 1'-0"

NO.	REVISION	DATE

SCALE: 1/8" = 1' - 0"

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UCONN HEALTH

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BUILDING C RENOVATION

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HVAC ROOF & PH PIPING PLAN SECTOR D

H-2.1.5D

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	WDB
FILE NAME:	HVAC ROOF & PH PIPING PLAN SECTOR

12/10/2015 9:47 AM

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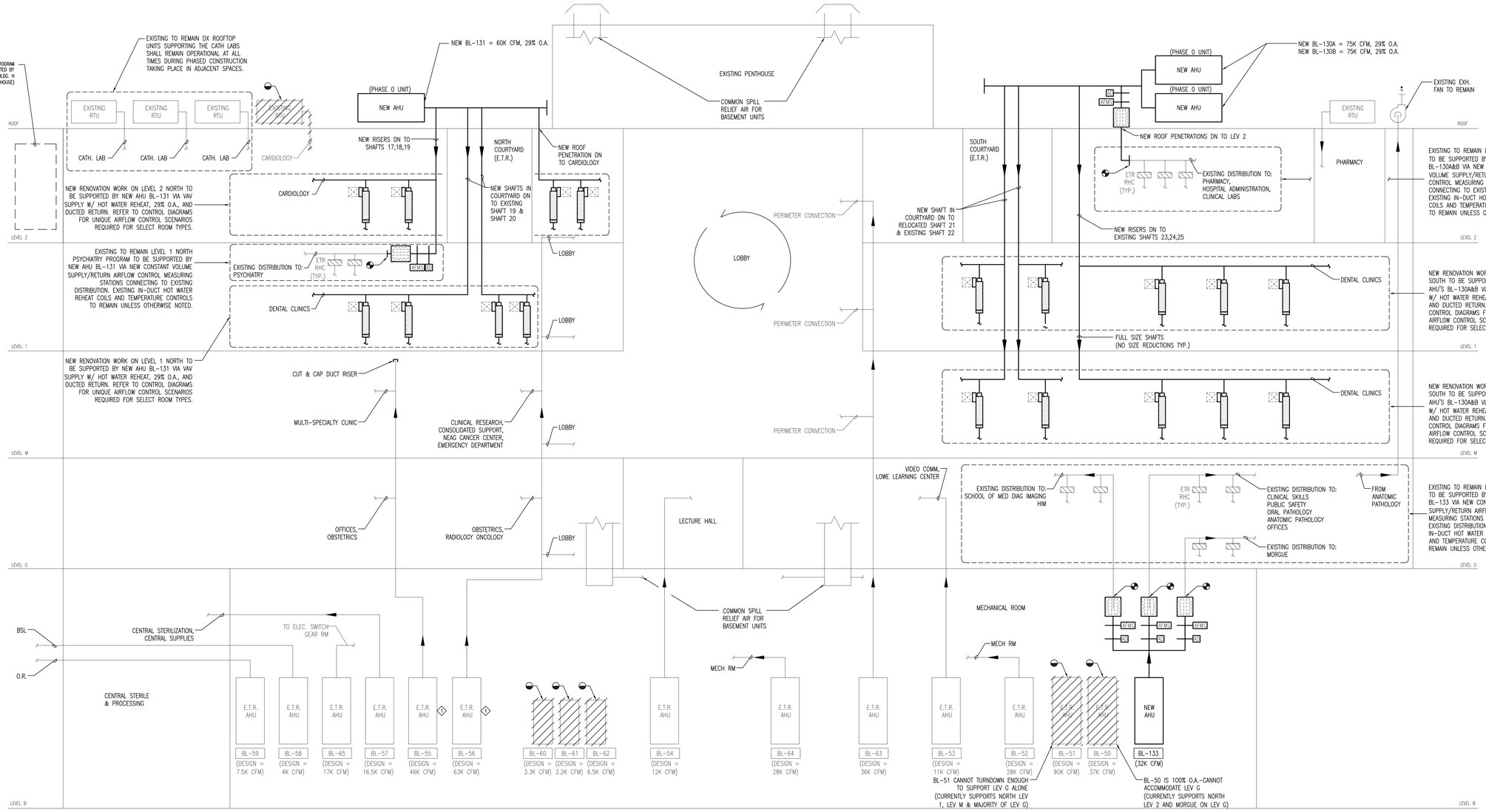

KEY NOTES:

1. REBALANCE EXISTING AHU BLOWERS BL-55 & BL-56 TO OPERATE AT THEIR REDUCED AIRFLOW SET POINT AS NOTED IN THE BLOWER REBALANCE TABLE ON DRAWING H-X.X.X. EXISTING AHU BLOWERS TO HAVE A NEW FAN MOTOR AND A NEW VFD FOR REBALACING, REFER TO THE NEW MOTOR SCHEDULE AND NEW VFD SCHEDULE.

NOTES:

1. ROOFTOP AHU'S TO BE PROVIDED WITH RETURN FAN ARRAY.
2. REFER TO BLOWER REBALANCING TABLE FOR PHASING CFM AND FINAL CFM PER AHU/BLOWER.
3. REFER TO DEMO/NEW AIR DISTRIBUTION DIAGRAMS FOR MORE DETAILS OF EXISTING AND NEW SYSTEMS.

NO.	REVISION	DATE

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC BLDG. C BLOWER ZONING CONCEPT

H-3.0.0

BID DOCUMENTS

SCALE:	N.T.S.
JOB NO:	1302
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DRAWN BY:	MCL
FILE NAME:	

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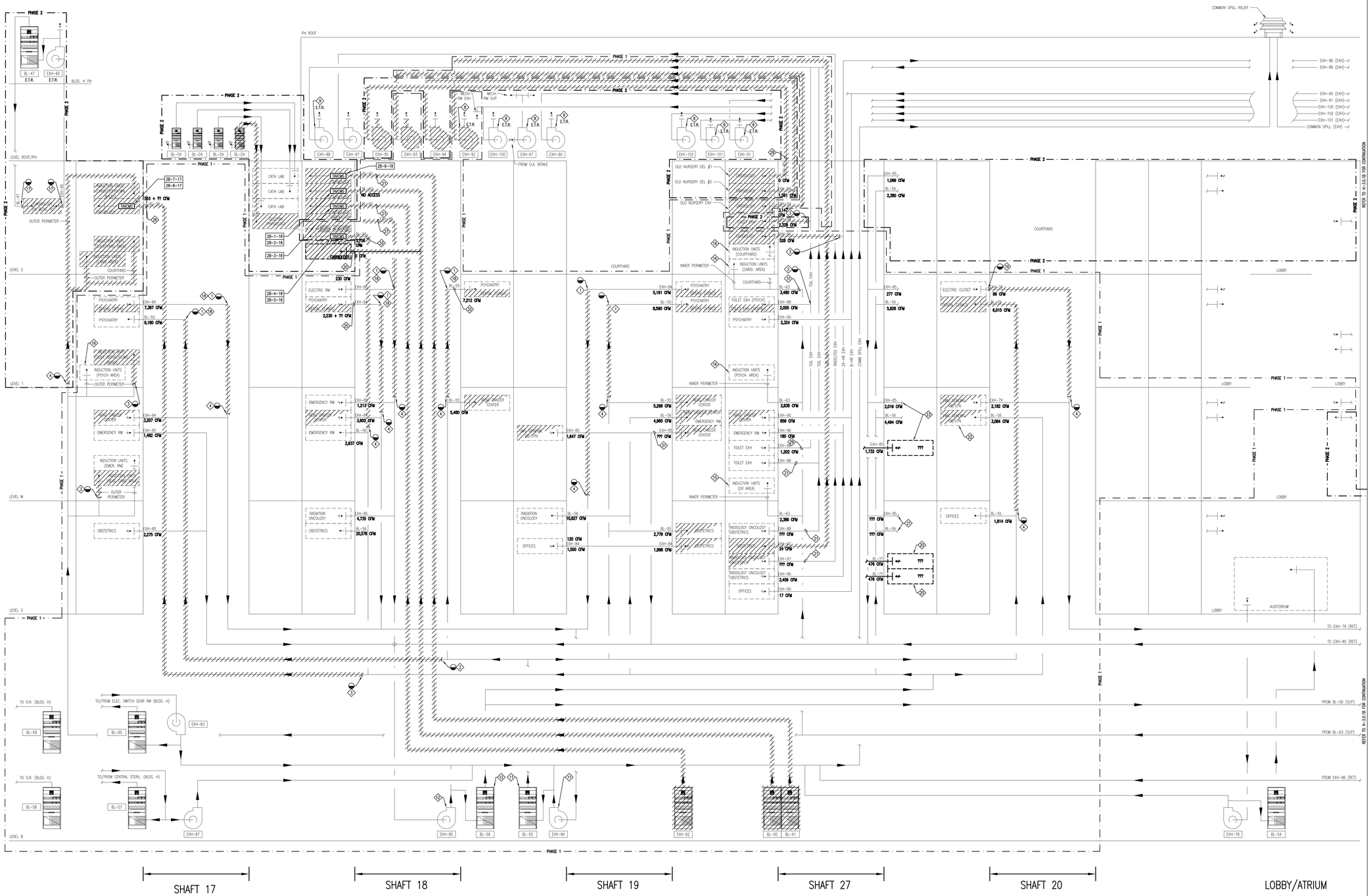

KEY NOTES:

1. PROVIDE AIRFLOW CONTROL MEASURING STATION (AFCMS) ASSEMBLY
2. TIE EXISTING EXHAUST INTO NEW GENERAL EXHAUST SYSTEM
3. CUT & CAP DISTRIBUTION DUCTWORK BACK TO DUCT MAIN
4. CUT & CAP DUCT RISER IN SHAFT
5. CONNECT EXISTING DUCTWORK TO NEW AHU BL-130A & 130B.
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NEW "TAVCMS TAG" NOMENCLATURE EXAMPLE: MD-1-25 — FLOOR, SECTOR, BLDG. C SHAFT #, AVCMS NUMBER

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3. CFM'S INDICATED ON THE FLOW DIAGRAM WERE MEASURED BY THE T.A.B. CONTRACTOR (APRIL 2015) AS PART OF A PRE-CONSTRUCTION SURVEY OF THE EXISTING CONDITIONS.
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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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FARMINGTON, CT 06030

HVAC DEMO AIRFLOW DISTRIBUTION DIAGRAM (NORTH)

HD-3.0.1A

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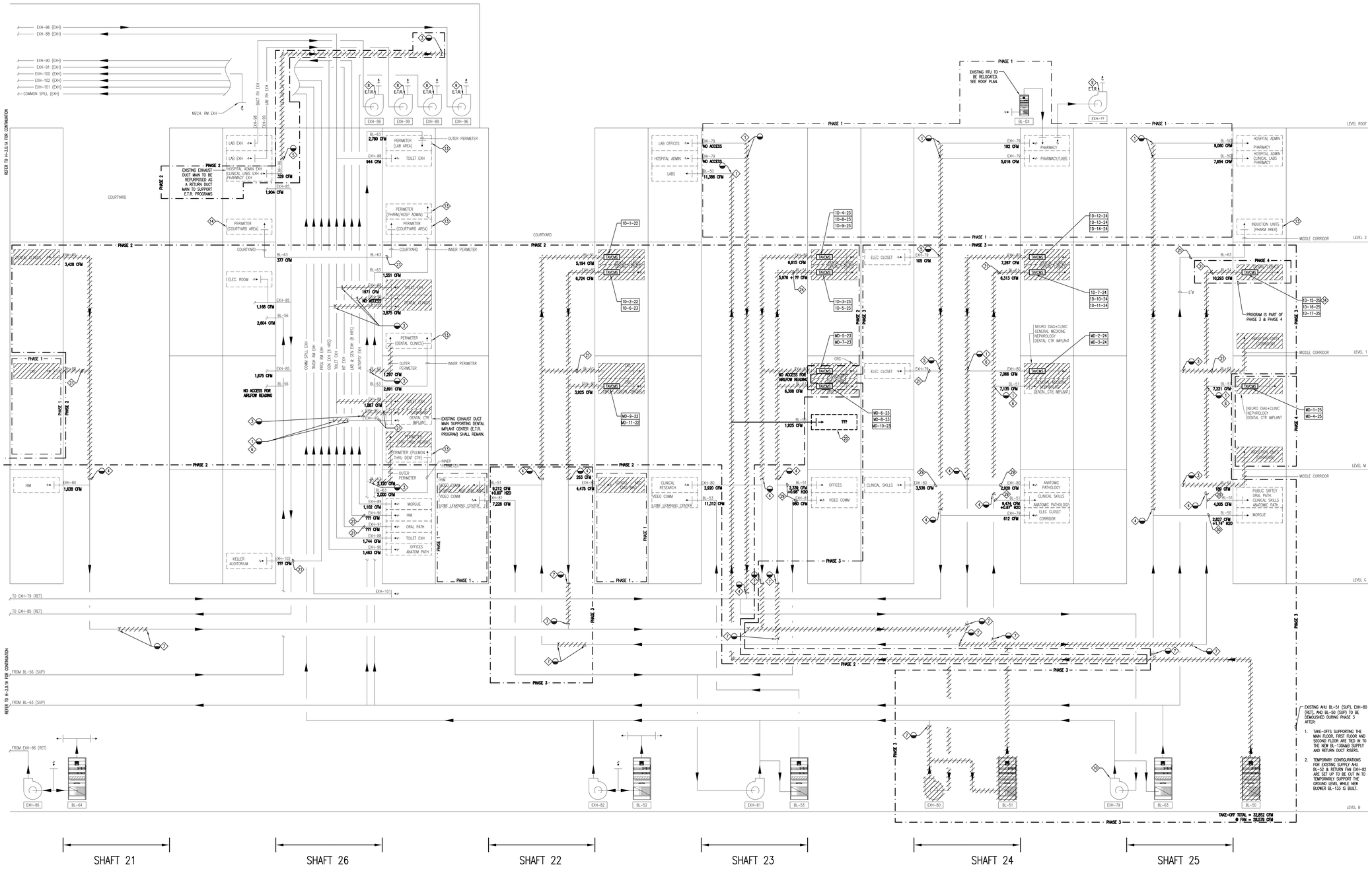

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NEW "TAVCMS TAG" NOMENCLATURE EXAMPLE: MD-1-25 — FLOOR SECTOR — BLDG. C SHAFT # — AVCMS NUMBER

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC DEMO AIRFLOW DISTRIBUTION DIAGRAM (SOUTH)

HD-3.0.1B

BID DOCUMENTS

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JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	MCL
FILE NAME:	

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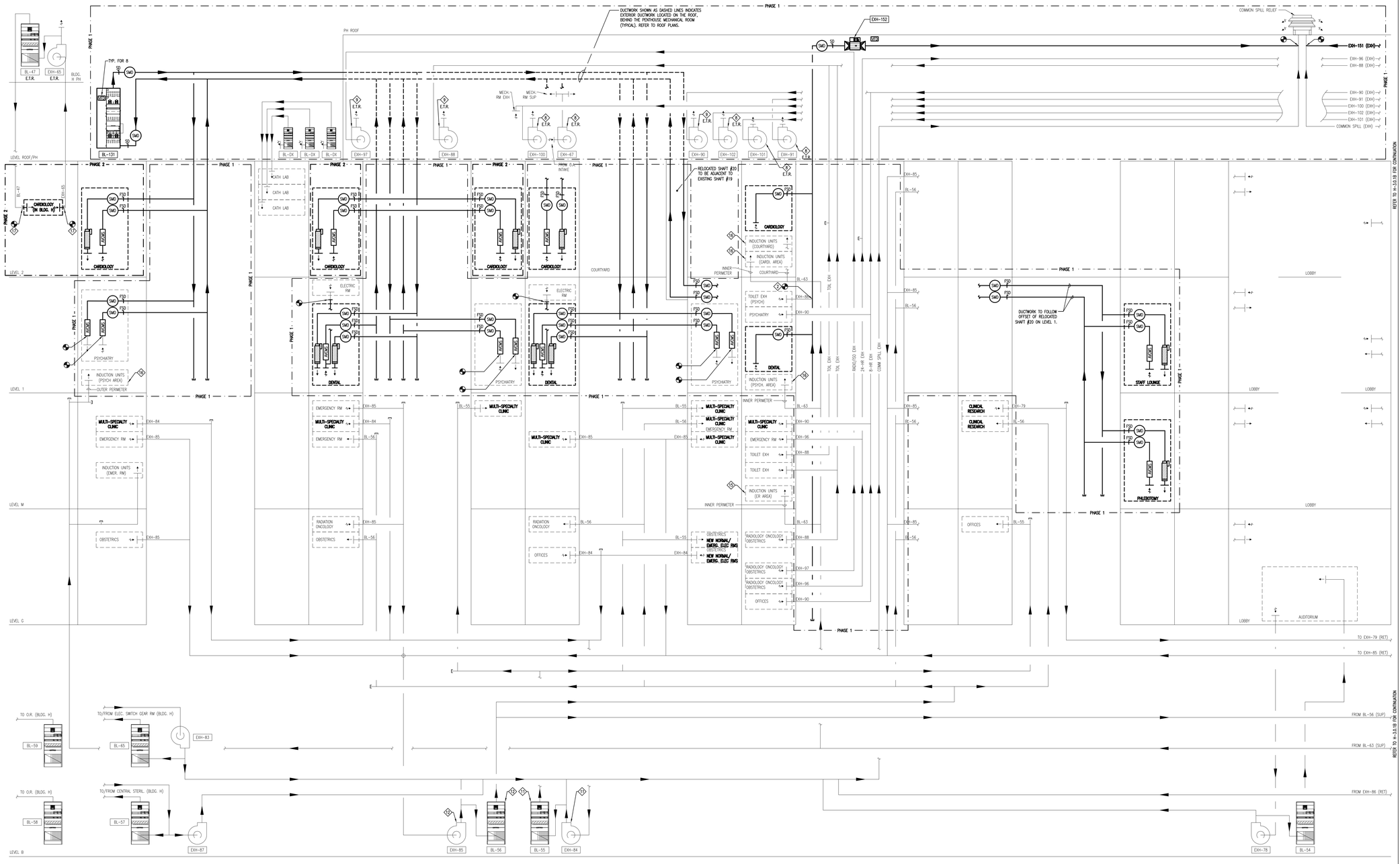

KEY NOTES:

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2. TIE EXISTING EXHAUST INTO NEW GENERAL EXHAUST SYSTEM
3. NOT USED
4. NOT USED
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10. EXISTING RETURN/RELIEF SYSTEM EXH-79 SUPPORTS E.T.R. PROGRAM(S) AND SPACES THAT ARE TO BE FULLY RENOVATED. FULLY RENOVATED SPACES SHALL CONNECT TO NEW RTU BL-130A & 130B. E.T.R. PROGRAM(S) SHALL REMAIN CONNECTED TO THE EXISTING RETURN/RELIEF SYSTEM EXH-79 AS INDICATED ON THE DRAWINGS. REBALANCE EXH-79 AS REQUIRED BASED ON THE REDUCED AIRFLOW. NOTE: THIS IS ASSUMING THE EXISTING MOTOR IS CAPABLE OF BEING RESHEAVED TO THE REDUCED AIRFLOW THAT IS CURRENTLY UNKNOWN. REFER TO ALTERNATES AND ALLOWANCES.
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12. EXISTING SUPPLY (BL-56) AND RETURN/RELIEF (EXH-85) SYSTEMS SUPPORT E.T.R. PROGRAM(S) AND SPACES THAT ARE TO BE FULLY RENOVATED. FULLY RENOVATED SPACES SHALL CONNECT TO NEW RTU BL-131. E.T.R. PROGRAM(S) SHALL REMAIN CONNECTED TO THE EXISTING SUPPLY (BL-56) AND RETURN/RELIEF (EXH-85) SYSTEMS AS INDICATED ON THE DRAWINGS. REBALANCE BLOWERS BL-56 & EXH-85 AS REQUIRED BASED ON THE REDUCED AIRFLOW. NOTE: THIS IS ASSUMING THE EXISTING MOTORS ARE CAPABLE OF BEING RESHEAVED TO THE REDUCED AIRFLOW THAT IS CURRENTLY UNKNOWN. REFER TO ALTERNATES AND ALLOWANCES.
13. EXISTING INDUCTION UNIT (BL-63) SUPPLY AIR TO BE RETURNED BY NEW RTU BL-130A & 130B.
14. EXISTING INDUCTION UNIT (BL-63) SUPPLY AIR TO CONTRIBUTE TOWARDS OVERALL BUILDING PRESSURIZATION.
15. EXISTING INDUCTION UNIT (BL-63) SUPPLY AIR TO BE RETURNED BY EXISTING BLOWER EXH-85.
16. EXISTING INDUCTION UNIT (BL-63) SUPPLY AIR TO BE RETURNED BY NEW RTU BL-131.
17. EXISTING BLOWERS BL-47 (SUP.) & EXH-65 (RET/EXH) SUPPORTING CARDIOLOGY PROGRAM IN BUILDING H (LEVEL 2) SHALL BE DISCONNECTED AND RECONNECTED TO SUPPORT THE SAME FOOTPRINT OF THE RENOVATED SPACE. TEMPORARILY CAP DISTRIBUTION DUCTWORK AND REBALANCE EXISTING BLOWERS AS REQUIRED.
18. CONNECT EXISTING DUCTWORK TO NEW AHU BL-131.

AIR FLOW DIAGRAM LEGEND:

PROGRAM = NEW FULLY RENOVATED PROGRAM SUPPORTED BY A NEW AIR HANDLING UNIT WITH NEW DISTRIBUTION.

PROGRAM = NEW PARTIALLY RENOVATED PROGRAM SUPPORTED BY AN EXISTING AIR HANDLING UNIT, EXISTING DUCT MAINS, NEW BRANCH DUCTWORK AND NEW REHEAT COILS TO REZONE SPACES.

PROGRAM A / PROGRAM B = EXISTING HVAC DISTRIBUTION SUPPORTING "PROGRAM A" SHALL REMAIN. PROVIDE NEW HVAC DISTRIBUTION TO SUPPORT "PROGRAM B".

= EXISTING PROGRAM TO REMAIN SUPPORTED BY AN EXISTING BLOWER (OR) EXISTING DISTRIBUTION TO CONNECT TO A NEW BLOWER.

INNER PERIMETER = INNER CURVE OF BUILDING C

OUTER PERIMETER = OUTER CURVE OF BUILDING C

AVCMC = AIR VOLUME CONTROL AND MEASURING STATION. INCLUDES AN AUTOMATIC DAMPER, AIR FLOW MEASURING STATION AND A SOUND ATTENUATOR IN SELECT LOCATIONS. SEE PERMANENT AIR VOLUME CONTROL AND MEASURING STATION DETAIL.

NEW AIRFLOW BLOWER DISTRIBUTION NOTES:

1. REFER TO "BUILDING C BLOWER ZONING CONCEPT" DRAWING FOR OVERALL INTENT OF NEW BLOWERS.
2. NEW SUPPLY AND RETURN DUCT RISERS SHALL BE PROVIDED FROM THE NEW UNITS. PHASE CHANGE OVER FROM EXISTING UNITS TO NEW UNITS TO BE DONE DURING PHASING OF RENOVATIONS THROUGHOUT THE BUILDING. BOTH NEW AND EXISTING AHU SYSTEMS WILL BE REQUIRED TO RUN CONCURRENTLY.

NO.	REVISION	DATE

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC NEW AIRFLOW DISTRIBUTION DIAGRAM (NORTH)

H-3.0.1A

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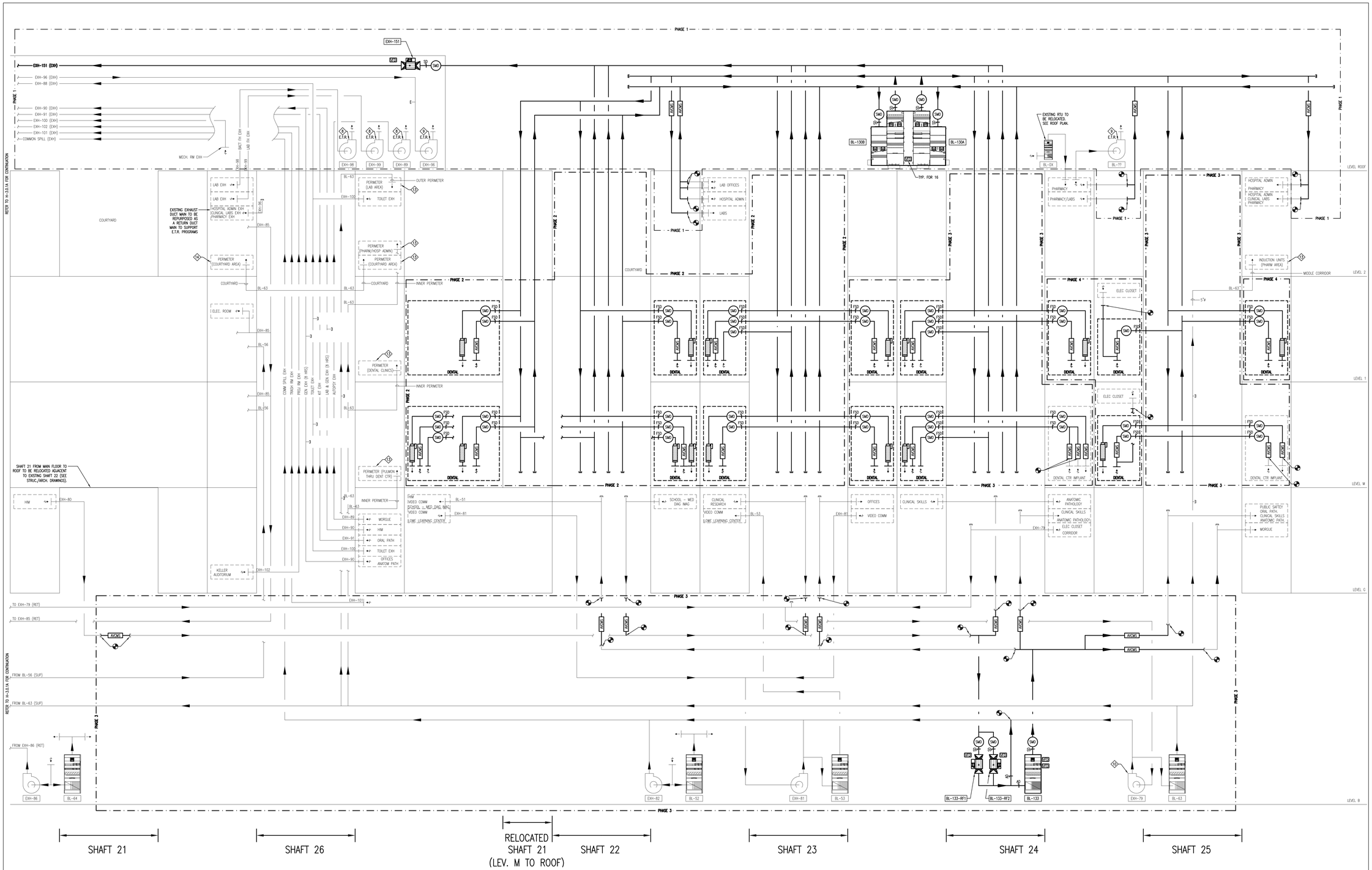

KEY NOTES:

1. NOT USED
2. TIE EXISTING EXHAUST INTO NEW GENERAL EXHAUST SYSTEM
3. NOT USED
4. NOT USED
5. CONNECT EXISTING DUCTWORK TO NEW AHU BL-130A & 130B.
6. CONNECT E.T.R. DENTAL CTR IMPLANT DISTRIBUTION DUCTWORK TO NEW AHU BL-130A & 130B.
7. CONNECT EXISTING DUCTWORK TO NEW AHU BL-133.
8. EXISTING EXHAUST FAN SUPPORTS E.T.R. PROGRAM(S) AND SHALL REMAIN. NO REBALANCE REQUIRED.
9. EXISTING EXHAUST SYSTEM SUPPORTS E.T.R. PROGRAM(S) AND SPACES THAT ARE TO BE FULLY RENOVATED. FULLY RENOVATED SPACES SHALL CONNECT TO NEW GENERAL EXHAUST SYSTEM (EXH-151 OR EXH-152). E.T.R. PROGRAM(S) SHALL REMAIN CONNECTED TO THE EXISTING EXHAUST SYSTEM. EXISTING EXHAUST SYSTEM SHALL BE REBALANCED TO THE REDUCED AIRFLOW. NOTE: THIS IS ASSUMING THE EXISTING EXHAUST MOTOR IS CAPABLE OF BEING RESHEAVED TO THE REDUCED AIRFLOW THAT IS CURRENTLY UNKNOWN. REFER TO ALTERNATES AND ALLOWANCES.
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15. EXISTING INDUCTION UNIT (BL-63) SUPPLY AIR TO BE RETURNED BY EXISTING BLOWER EXH-85.
16. EXISTING INDUCTION UNIT (BL-63) SUPPLY AIR TO BE RETURNED BY NEW RTU BL-131.
17. EXISTING BLOWERS BL-47 (SUP.) & EXH-65 (RET/EXH) SUPPORTING CARDIOLOGY PROGRAM IN BUILDING H (LEVEL 2) SHALL BE DISCONNECTED AND RECONNECTED TO SUPPORT THE SAME FOOTPRINT OF THE RENOVATED SPACE. TEMPORARILY CAP DISTRIBUTION DUCTWORK AND REBALANCE EXISTING BLOWERS AS REQUIRED.
18. CONNECT EXISTING DUCTWORK TO NEW AHU BL-131.

AIR FLOW DIAGRAM LEGEND:

PROGRAM = NEW FULLY RENOVATED PROGRAM SUPPORTED BY A NEW AIR HANDLING UNIT WITH NEW DISTRIBUTION.

PROGRAM = NEW PARTIALLY RENOVATED PROGRAM SUPPORTED BY AN EXISTING AIR HANDLING UNIT. EXISTING DUCT MAINS, NEW BRANCH DUCTWORK AND NEW REHEAT COILS TO REZONE SPACES.

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NEW AIRFLOW BLOWER DISTRIBUTION NOTES:

1. REFER TO "BUILDING C BLOWER ZONING CONCEPT" DRAWING FOR OVERALL INTENT OF NEW BLOWERS.
2. NEW SUPPLY AND RETURN DUCT RISERS SHALL BE PROVIDED FROM THE NEW UNITS. PHASE CHANGE OVER FROM EXISTING UNITS TO NEW UNITS TO BE DONE DURING PHASING OF RENOVATIONS THROUGHOUT THE BUILDING. BOTH NEW AND EXISTING AHU SYSTEMS WILL BE REQUIRED TO RUN CONCURRENTLY.

J:\JOBS\1330000.QN\HVAC\QN-H-3.0.1 - AIRFLOW RISER DIAGRAMS.DWG 12-09-2015 09:16:27 - mcl

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
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HVAC NEW AIRFLOW DISTRIBUTION DIAGRAM (SOUTH)

H-3.0.1B

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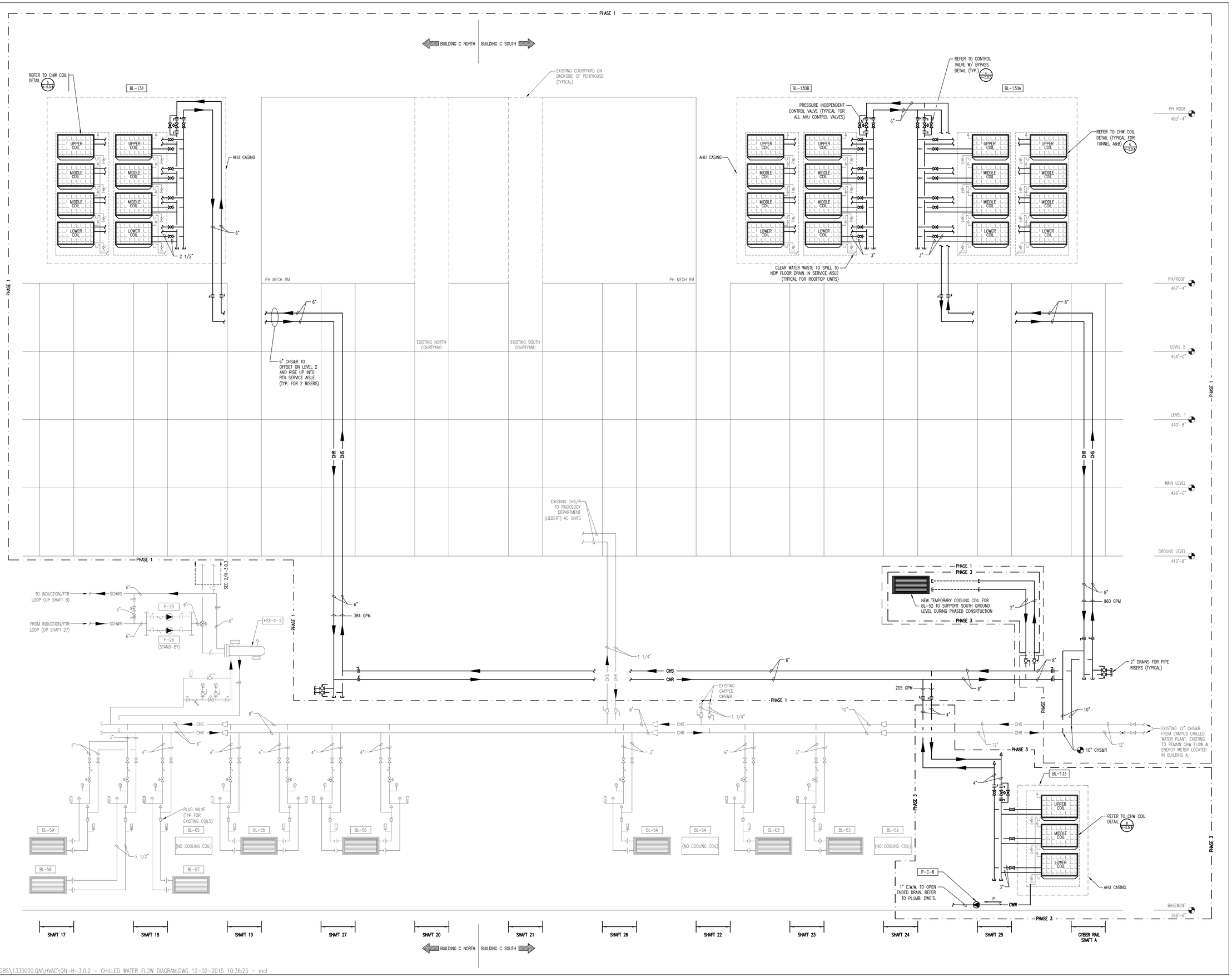

J:\JOBS\1330000.QN\HVAC\QN-H-3.0.2 - CHILLED WATER FLOW DIAGRAM.DWG 12-02-2015 10:36:25 - mcl

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HVAC CHILLED WATER RISER DIAGRAM

H-3.0.2

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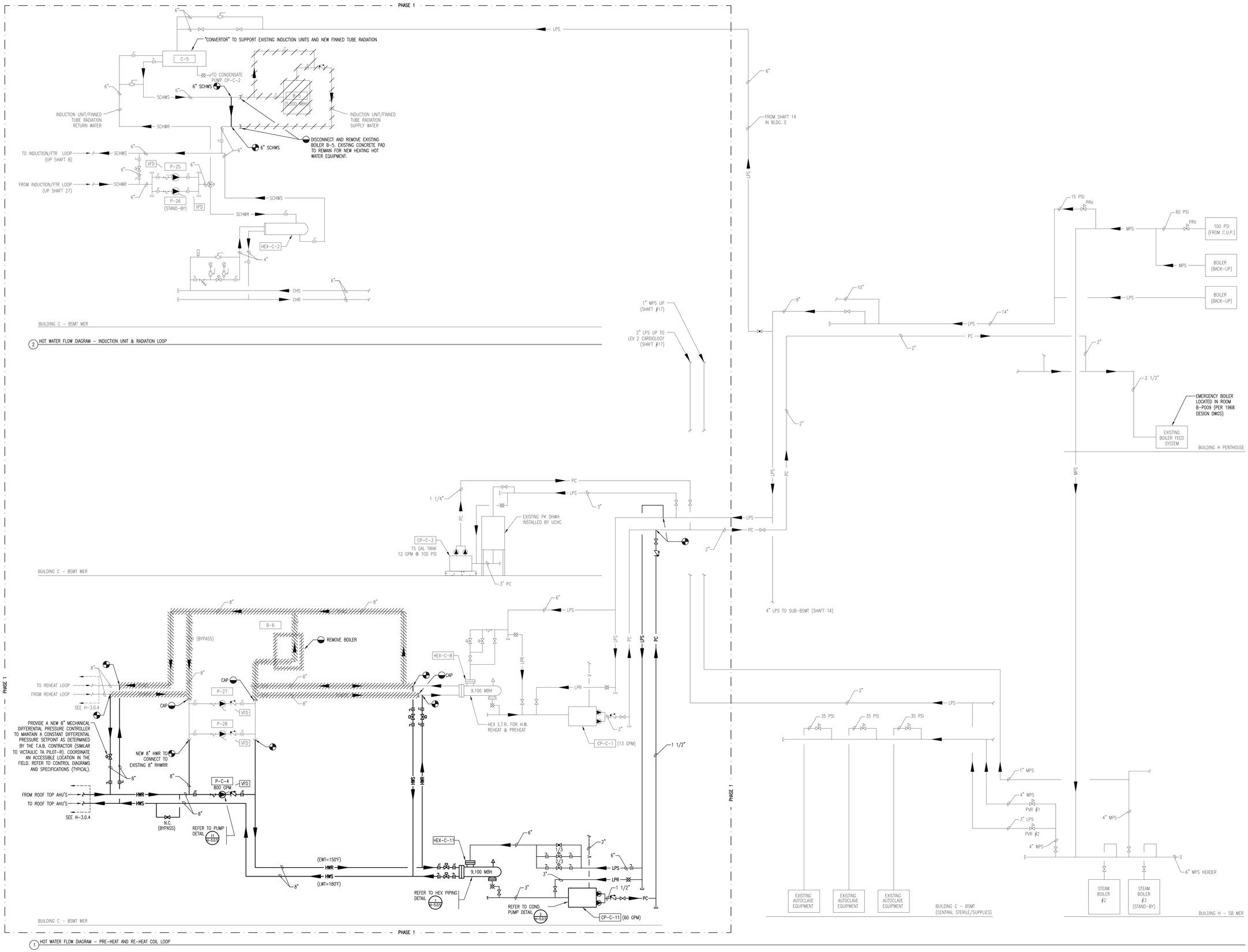

J:\JOBS\1330000.QN\HVAC\QN-H-3.0.3 - STEAM & HOT WATER FLOW DIAGRAMS.DWG 12-08-2015 13:52:55 - mcl

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
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HVAC STEAM & HOT WATER FLOW DIAGRAM

H-3.0.3

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SCALE:	N.T.S.
JOB NO:	1302
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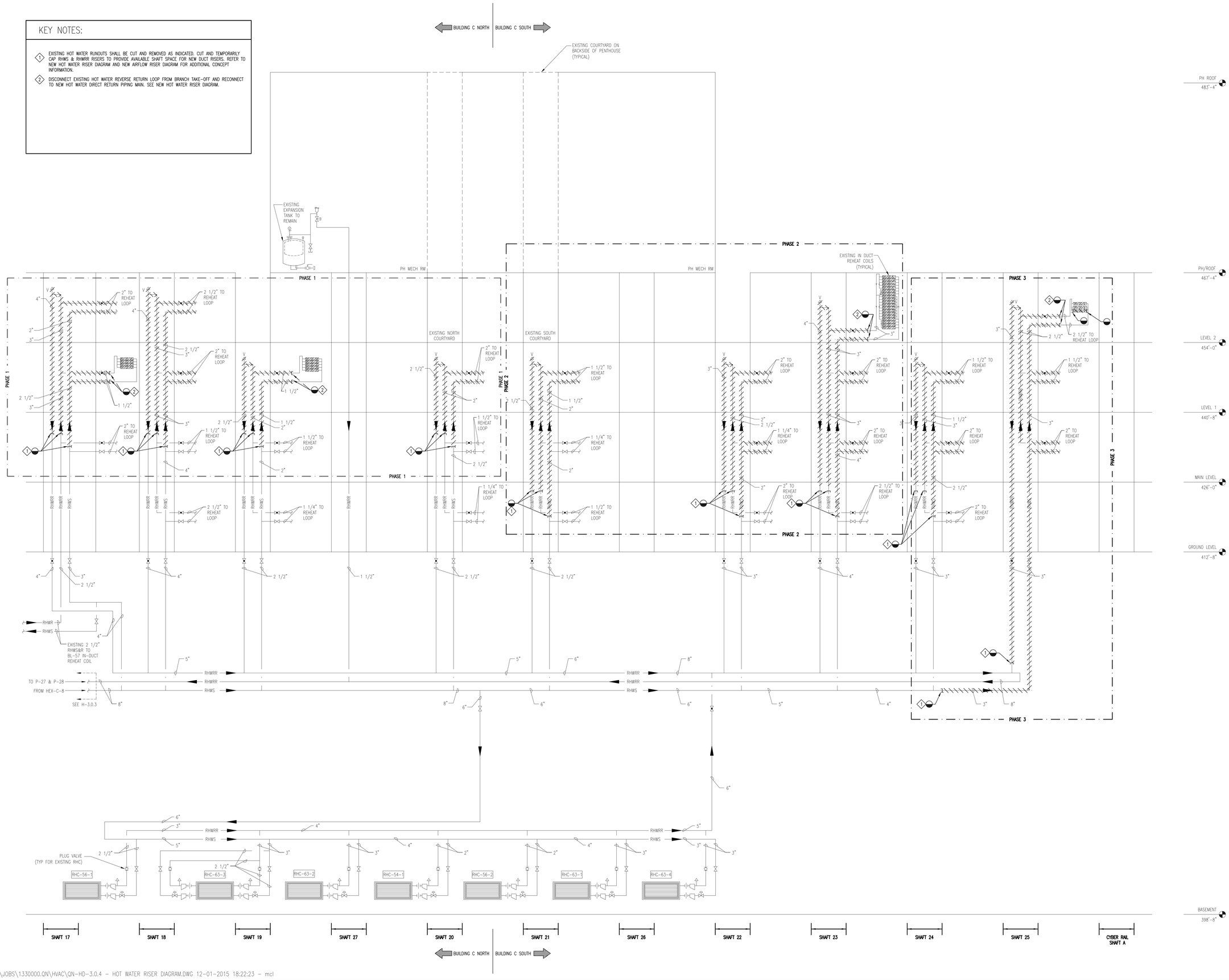
KEY NOTES:

1. EXISTING HOT WATER RUNOUTS SHALL BE CUT AND REMOVED AS INDICATED. CUT AND TEMPORARILY CAP RHWS & RHWRR RISERS TO PROVIDE AVAILABLE SHAFT SPACE FOR NEW DUCT RISERS. REFER TO NEW HOT WATER RISER DIAGRAM AND NEW AIRFLOW RISER DIAGRAM FOR ADDITIONAL CONCEPT INFORMATION.
2. DISCONNECT EXISTING HOT WATER REVERSE RETURN LOOP FROM BRANCH TAKE-OFF AND RECONNECT TO NEW HOT WATER DIRECT RETURN PIPING MAIN. SEE NEW HOT WATER RISER DIAGRAM.



J:\JOBS\1330000.QN\HVAC\QN-HD-3.0.4 - HOT WATER RISER DIAGRAM.DWG 12-01-2015 18:22:23 - mcl

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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HVAC DEMO HOT WATER RISER DIAGRAM

HD-3.0.4

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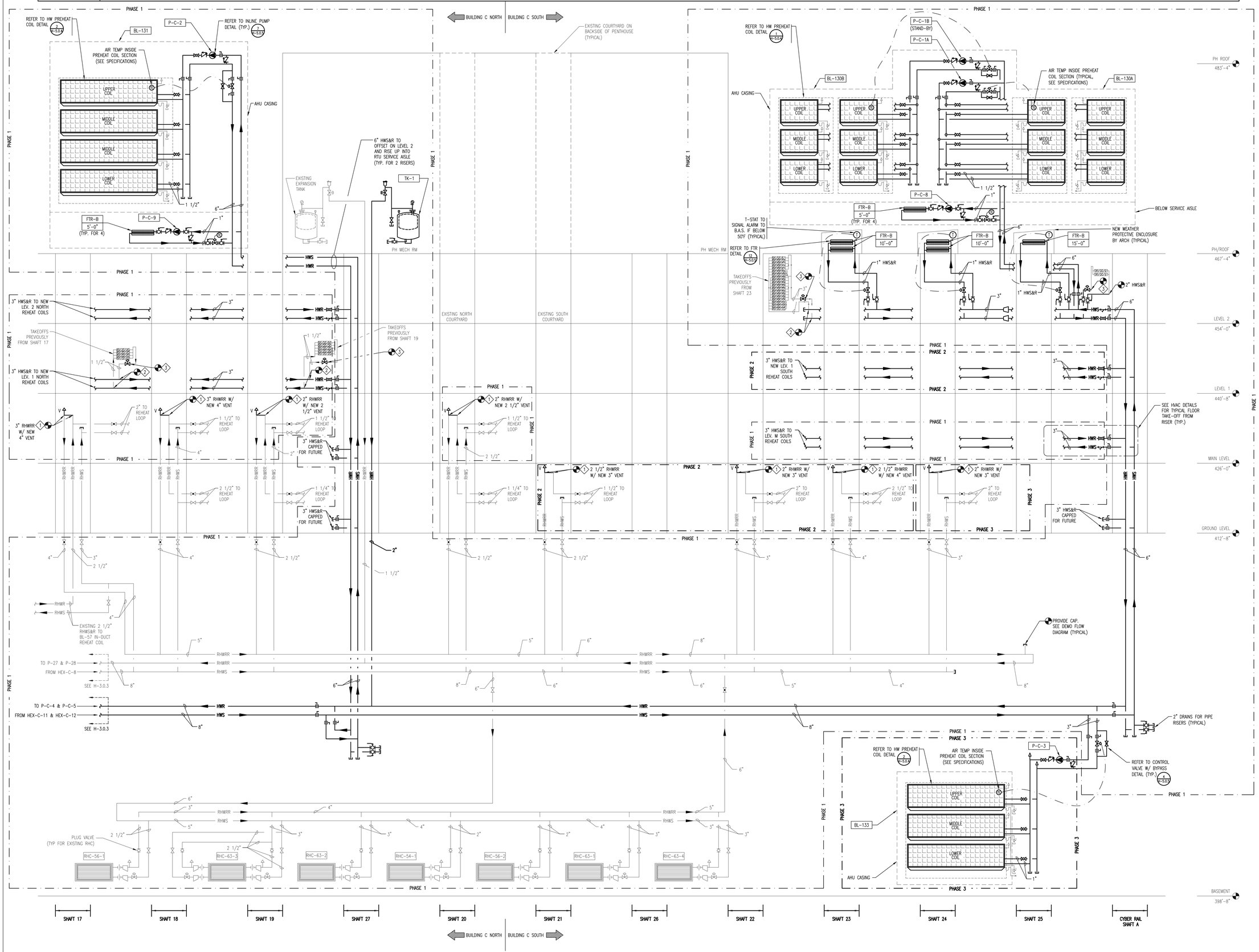
KEY NOTES:

1. RECONNECT TOP OF RHWRR RISER TO RESTORE A FUNCTIONAL REVERSE RETURN HOT WATER SYSTEM. PROVIDE A NEW VENT AT TOP OF RISER. REFER TO INDIVIDUAL PIPE RISER FOR NEW PIPE SIZE.
2. EXISTING REHEAT COILS CONNECTED TO EXISTING REVERSE RETURN BRANCH LOOP TO BE RECONNECTED TO NEW DIRECT RETURN PIPE MAINS. PROVIDE A DIFFERENTIAL PRESSURE CONTROLLER SIMILAR TO VICTAULIC "PILOT" MODEL. SEE DIAGRAM FOR PREVIOUS SHAFT TAKE-OFF.
3. CUT IN A NEW MECHANICAL DIFFERENTIAL PRESSURE CONTROLLER INTO EXISTING REHEAT HOT WATER REVERSE RETURN LOOP TO MAINTAIN A CONSTANT PRESSURE SETPOINT AS DETERMINED BY THE T.A.B. CONTRACTOR (SIMILAR TO VICTAULIC TA FUSION-P). CONTROLER SIZE SHALL MATCH PIPE SIZE INDICATED ON THE FLOW DIAGRAM. COORDINATE AN ACCESSIBLE LOCATION IN THE FIELD.



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UCONN HEALTH

(UCONN PROJECT # 901737)

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HVAC NEW HOT WATER RISER DIAGRAM

H-3.0.4

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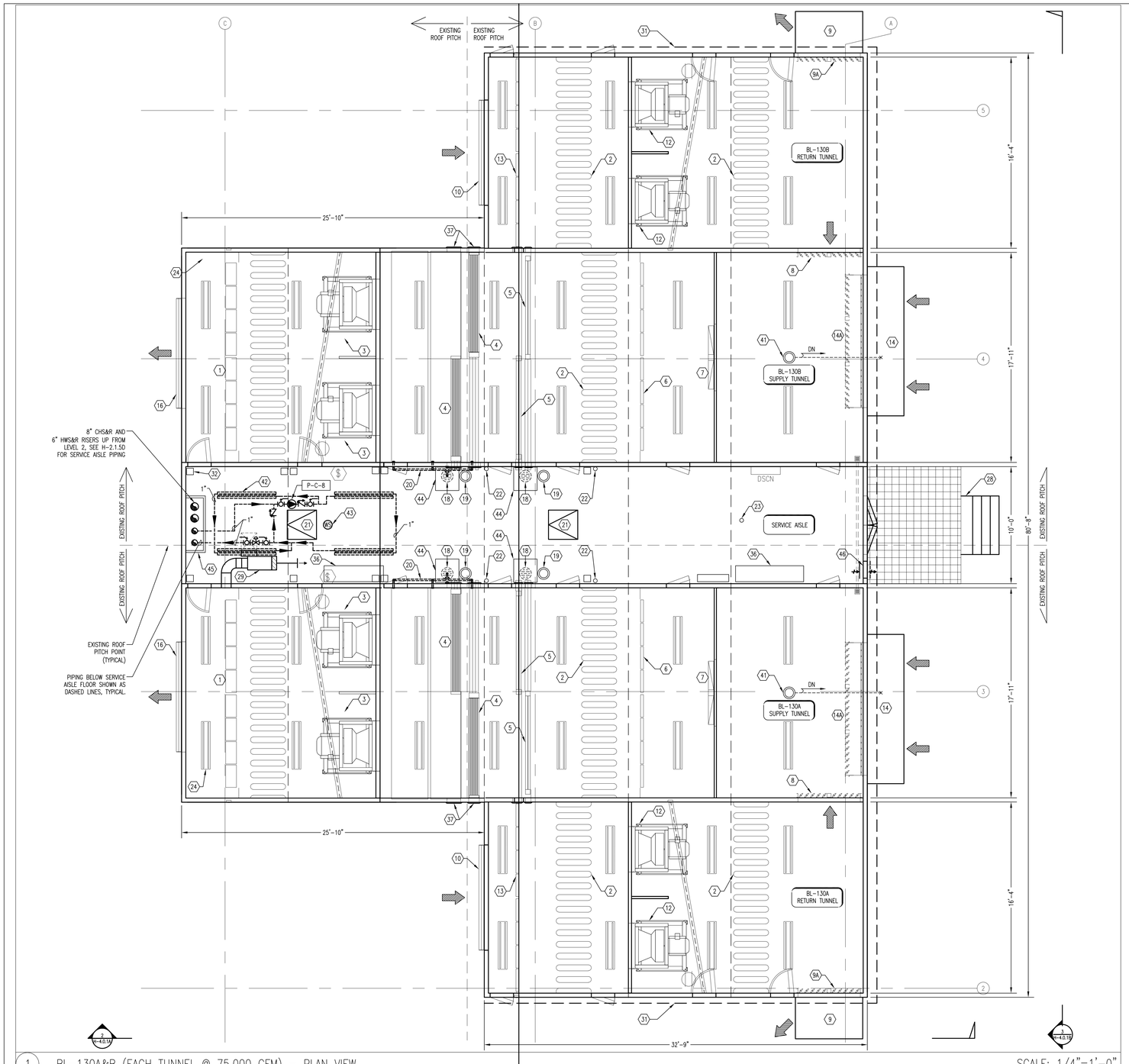
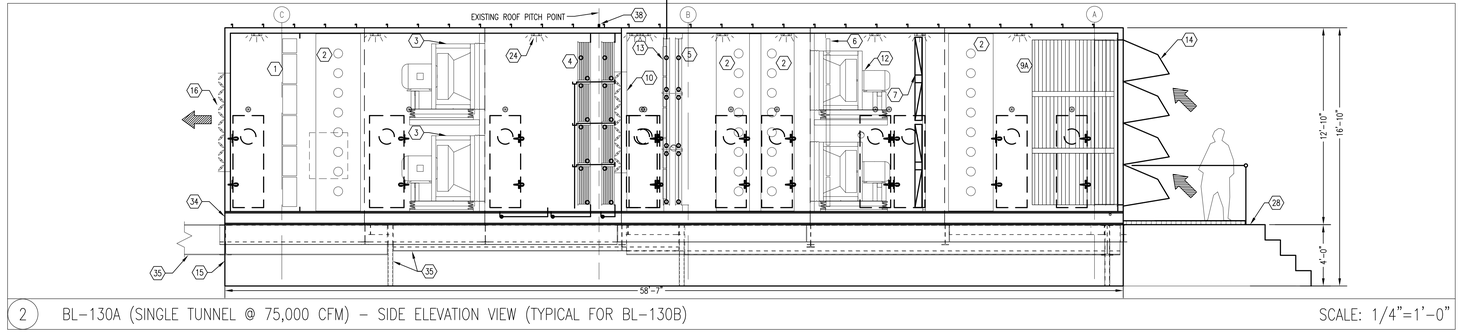


1 BL-130A&B (EACH TUNNEL @ 75,000 CFM) – PLAN VIEW

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



2 BL-130A (SINGLE TUNNEL @ 75,000 CFM) – SIDE ELEVATION VIEW (TYPICAL FOR BL-130B)

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

AHU COMPONENT KEY:

1. FINAL FILTERS:
   - 12" MERV 14
   - 176 SQ. FT. @ 426 FPM (8W x 5H ARRAY @ 24"x24", 8W x 1H ARRAY @ 24"x12")
2. SOUND ATTENUATOR: 36" LONG, 50% FREE AREA
3. SUPPLY FANS:
   - 2H x 2W FAN ARRAY
   - 18,750 CFM (EA.), 75,000 CFM (TOTAL)
   - 30 MHP @ 6.5" WC T.S.P.
4. CHILLED WATER COOLING COILS:
   - 4H x 2W (STAGGERED) @ 100"W x 30"H (EA.)
   - 167.7 SQ. FT. (TOTAL FACE AREA)
   - 450 FPM
   - 75,000 COOLING CFM (TOTAL)
   - FRONT BOLT OFF, MAINTAIN MIN. 2'-9" FROM THE CENTER LINE OF PIPE ENTERING TOP COIL CONNECTION TO BOTTOM OF SERVICE AISLE ROOF. TOP COIL CONNECTION SHALL BE 12" (CENTER LINE) BELOW TOP OF COIL CASING. SEE DETAIL 5/H-4.0.1A.
5. HOT WATER PREHEAT COILS:
   - 3H x 2W (STAGGERED) @ 96"W x 42"H (EA.)
   - 168 SQ. FT. (TOTAL FACE AREA)
   - 335 FPM @ 56,250 HEATING CFM
   - 446 FPM @ 75,000 COOLING CFM
   - FRONT BOLT OFF, MAINTAIN MIN. 2'-9" FROM THE CENTER LINE OF PIPE ENTERING TOP COIL CONNECTION TO BOTTOM OF SERVICE AISLE ROOF. TOP COIL CONNECTION SHALL BE 12" (CENTER LINE) BELOW TOP OF COIL CASING. SEE DETAIL 5/H-4.0.1A.
6. FINAL FILTERS:
   - 4" MERV 8
   - 176 SQ. FT. @ 426 FPM (8W x 5H ARRAY @ 24"x24", 8W x 1H ARRAY @ 24"x12")
7. AIR BLENDERS: 1W x 2H @ 66" DIA.
8. RETURN AIR DAMPERS: 131x66 PARALLEL BLADES
9. EXHAUST AIR RELIEF HOOD:
   - (5) TIERS @ 42.5"L x 69"W (EA.)
   - 102 SQ. FT. (TOTAL AREA)
   - 1,470 FPM @ 50% FREE AREA & 75,000 CFM (ECONOMIZER)

9A. EXHAUST AIR RELIEF DAMPER:
   - 131x66 PARALLEL BLADES
   - 60 SQ. FT. (TOTAL FACE AREA)
   - 1,470 FPM @ 85% FREE AREA, 75,000 CFM (ECONOMIZER)

10. RETURN AIR INLET DAMPER: 108x80 OPPOSED BLADES
11. NOT USED
12. RETURN FANS:
   - 2H x 2W FAN ARRAY
   - 18,750 CFM (EA.), 75,000 CFM (TOTAL)
   - 20 MHP @ 4.25" WC T.S.P.
13. RETURN AIR FILTERS:
   - 4" MERV 8
   - 176 SQ. FT. @ 426 FPM (8W x 5H ARRAY @ 24"x24", 8W x 1H ARRAY @ 24"x12")
14. OUTSIDE AIR INTAKE HOOD:
   - (4) TIERS @ 37.5"L x 153"W (EA.)
   - 160 SQ. FT. (TOTAL AREA)
   - 938 FPM @ 50% FREE AREA & 75,000 CFM (ECONOMIZER)
   - 272 FPM @ 50% FREE AREA & 21,750 CFM (29% OUTDOOR AIR)

14A. OUTSIDE AIR INTAKE DAMPER:
   - 131x138 PARALLEL BLADES
   - 125.5 SQ. FT. (TOTAL FACE AREA)
   - 703 FPM @ 85% FREE AREA, 75,000 CFM (ECONOMIZER)
   - 204 FPM @ 85% FREE AREA & 21,750 CFM (29% OUTDOOR AIR)

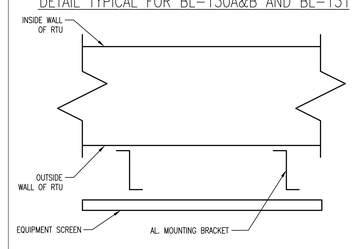
15. GENERAL CONTRACTOR TO PROVIDE INSULATED ENCLOSURE AROUND PERIMETER OF AHU. ENCLOSURE TO BE FLASHED AND SEALED. ROOFING CONTRACTOR SHALL REPAIR ROOF WITH EPDM ROOFING AND INSULATION.
16. SUPPLY AIR DISCHARGE DAMPER: 111x78 OPPOSED BLADES
17. NOT USED
18. 4" FLOOR DRAIN AND ASSOCIATED PIPING FURNISHED AND INSTALLED BY DIV. 22. AHU MANUFACTURER TO COORDINATE WITH DIV. 22.
19. DRAIN CLEAN OUT (BY DIV. 22, REFER TO PLUMBING DRAWINGS)
20. 2" COOLING COIL CONDENSATE (BELOW AHU SERVICE AISLE) TO SPILL TO FLOOR DRAIN. SEE AHU FLOOR DRAIN DETAIL 7/H-4.0.1A.
21. 30x30 HINGED ACCESS HATCH WITH RECESSED LIFT HANDLE AND STRUCTURAL SUPPORT (BY AHU MANUFACTURER). HATCH MATERIAL SHALL MATCH AHU SERVICE AISLE FLOOR.
22. FLOOR DRAIN VENT UP THRU SERVICE AISLE FLOOR, TYPICAL FOR 4 VENTS (BY DIV. 22). VENTS TO MANIFOLD IN SERVICE AISLE. COORDINATE WITH PLUMBING DRAWINGS.
23. FLOOR DRAIN VENT UP THRU AHU ROOF (BY DIV. 22). COORDINATE WITH PLUMBING DRAWINGS.
24. 4'-0" FLUORESCENT LIGHT W/ GLASS LENS (TYPICAL)

24A. FIXTURE LIGHTING

25. WALL CONSTRUCTION (4" THICK):
   - INTERIOR ALUMINUM CONSTRUCTION
   - EXTERIOR ALUMINUM CONSTRUCTION
26. CONVENIENCE OUTLETS
27. (2) 1 1/2" ATC CONDUITS W/ 8"x8"x4" J-BOX @ EACH SECTION (FOR SUPPLY & RETURN TUNNELS, TYPICAL)
28. DOUBLE DOOR ACCESS W/ PLATFORM, STAIRS AND RAILS
29. TERMINAL BOX W/ H.W. REHEAT COIL @ SERVICE AISLE, SIZE VCU-8 @ 400 CFM (ADJ.)
30. COMMON SERVICE AISLE W/ SUPPLEMENTAL STEEL TO SUPPORT PIPING (BY AHU MANUFACTURER).
31. 13'-6" HIGH LOUVERED SCREEN TO BE SIMILAR TO "GREENHECK MODEL EES-401. COORDINATE COLOR WITH THE ARCHITECT.
32. TYP. 4x4x3/16 STEEL TUBING TO SUPPORT PIPE RACK
33. SERVICE DRAIN FOR WASH DOWN AND CLEAN OUT
34. AHU C-CHANNEL (BY AHU MANUFACTURER). ALL CHANNEL MEMBERS TO BE UNIFORM HEIGHT INCLUDING CROSS MEMBERS. COORDINATE W/ STRUCTURAL ENGINEER.
35. STEEL I-BEAM SUPPORT MEMBERS (BY STRUCTURAL) TO POST UP FROM EXISTING ROOFTOP TO SUPPORT NEW AHU FROM C-CHANNEL BASE FRAME. REFER TO STRUCTURAL DRAWINGS.
36. VFD ZONE (VFD'S TO BE PROVIDED BY AHU MANUFACTURER, SEE SCHEDULES)
37. EXTERNAL COIL PULL
38. 3" HIGH RAIN SEPARATOR ALIGNED WITH EXISTING ROOF PITCH POINT (SEE 1/H-4.0.1B).
39. DRAIN CONNECTION
40. DRAIN PAN
41. OUTSIDE AIR PLENUM DRAIN PAN INLET W/ PITCHED DRAIN PIPING TO SPILL ON ROOF (BY AHU MANUFACTURER)
42. HOT WATER BARE FINNED TUBE RADIATION W/ RECIRCULATING PUMP BELOW THE FLOOR OF THE SERVICE AISLE. LOCATE SERVICEABLE ITEMS NEAR FLOOR ACCESS PANEL. COORDINATE FTR W/ STRUCTURAL BEAMS BELOW. REFER TO HOT WATER RISER DIAGRAM AND SCHEDULES FOR DESIGN CRITERIA.
43. WATER LEAK SENSOR SHALL BE LOCATED BELOW THE SERVICE AISLE AND SEND AN ALARM TO BAS HEAD END UPON DETECTION OF WATER.
44. 24"Lx24"Wx24"H PIT BELOW SERVICE AISLE FLOOR WITH REMOVABLE GRATING (BY AHU MANUFACTURER. SEE AHU FLOOR DRAIN DETAIL 7/H-4.0.1A.
45. 54"Lx18"Wx48"H PIT FROM TOP OF CONCRETE SLAB TO TOP OF AHU SERVICE AISLE FLOOR W/ 2" RIGID INSULATION (BY AHU MANUFACTURER). PROVIDE STRUCTURAL REINFORCEMENT AND 2" LIP ABOVE FLOOR.
46. 18x12 BAROMETRIC RELIEF DAMPER W/ WIRE-MESH SCREEN AND LOUVER.

3 BL-130A&B AIR HANDLING COMPONENT KEY

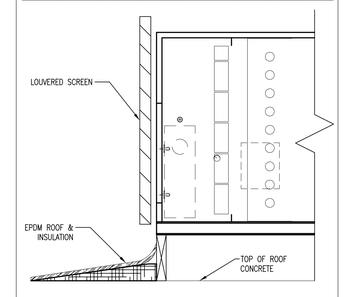
DETAIL TYPICAL FOR BL-130A&B AND BL-131



4 Z-CLIP DETAIL

SCALE: N.T.S.

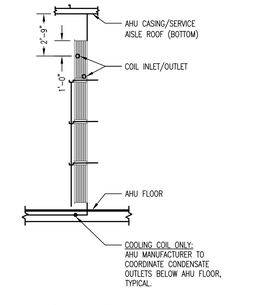
DETAIL TYPICAL FOR BL-130A&B AND BL-131



6 AHU LOUVERED SCREEN

SCALE: N.T.S.

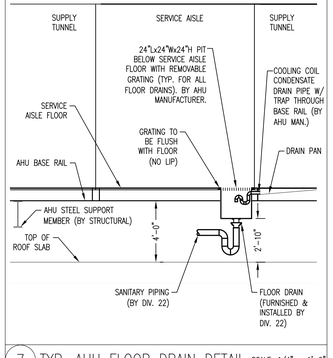
DETAIL TYPICAL FOR BL-130A&B AND BL-131



NOTES:
1. NOTED DIMENSIONS ARE TYPICAL FOR ONLY THE TOP COOLING COILS AND PREHEAT COILS IN THE ARRAY TO ALLOW ENOUGH CLEARANCE FOR TAPS OFF NEW PIPING MAINS WITHIN SERVICE AISLE.
2. TYPICAL FOR NEW AHU BLOWERS BL-130A&B AND BL-131.

5 ROOFTOP AHU COIL INLET/OUTLET DETAIL SCALE: 1/4" = 1'-0"

NOTE: REFER TO AHU DETAIL FOR SUPPLY TUNNEL QUANTITY.



7 TYP. AHU FLOOR DRAIN DETAIL SCALE: 1/4" = 1'-0"

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(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

HVAC AHU DETAILS

H-4.0.1A

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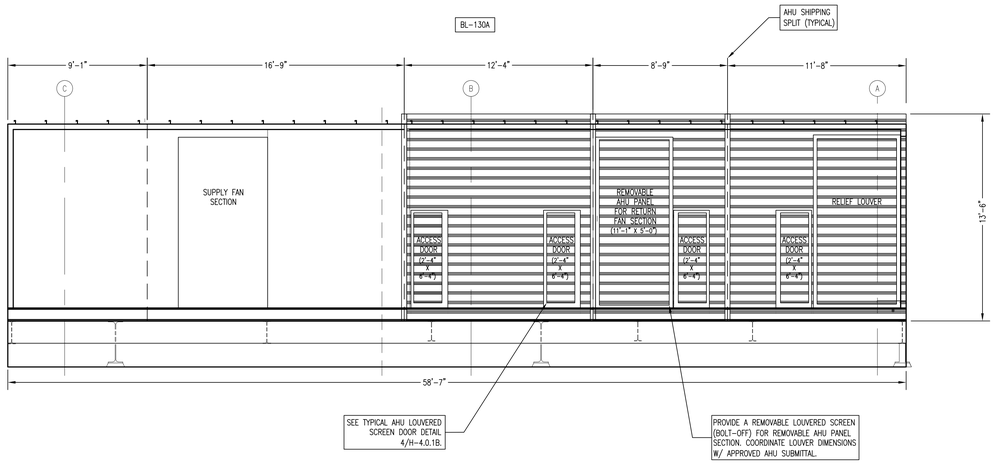
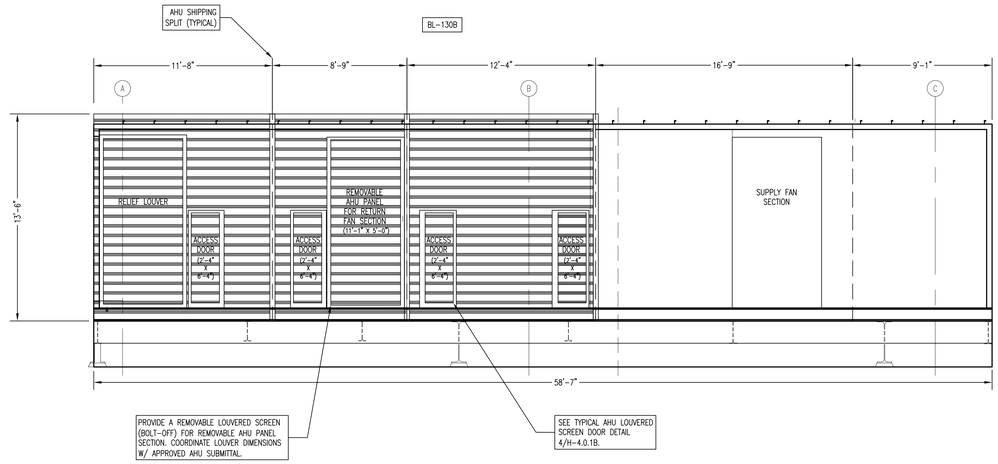
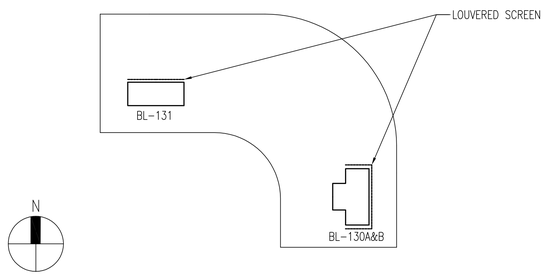


1 BL-130A&B LOUVER SCREEN DETAIL – TUNNEL BL-130A SIDE VIEW (SOUTH) SCALE: 1/4"=1'-0"



2 BL-130A&B LOUVERED SCREEN WALL DETAIL – NORTH END VIEW (TUNNEL BL-130B) SCALE: 1/4"=1'-0"

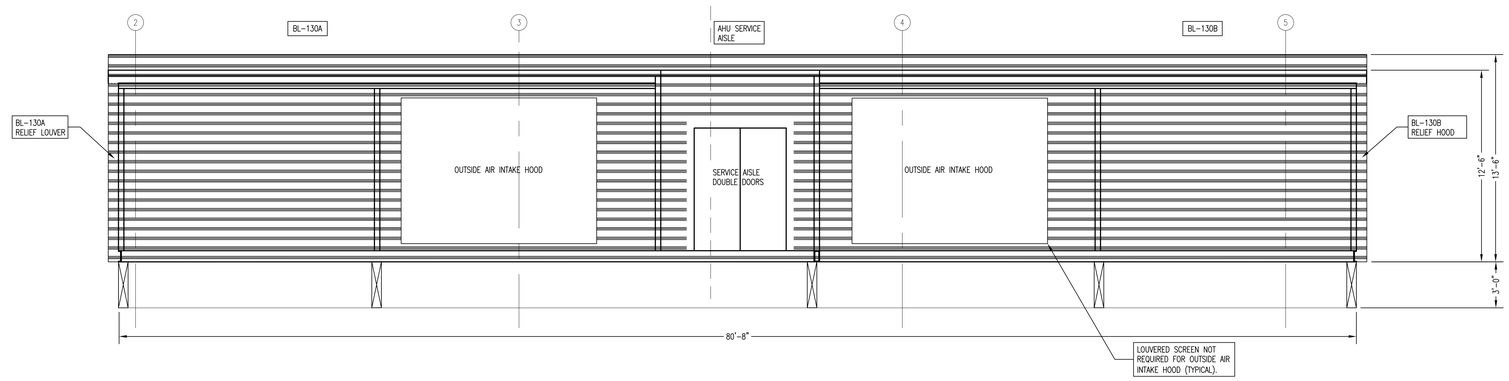


5 AHU LOUVER SCREEN KEY PLAN SCALE: NTS

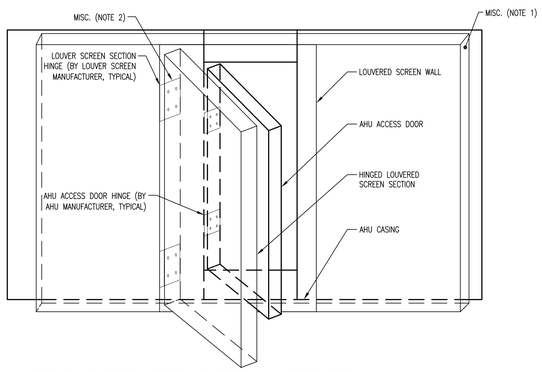
GENERAL NOTES:

1. ALL SCREEN WALL DIMENSIONS SHALL BE COORDINATED WITH THE APPROVED AHU SUBMITTAL.
2. COORDINATE THE COLOR OF THE LOUVERED SCREEN WITH THE ARCHITECT.

6 AHU LOUVER SCREEN GENERAL NOTES SCALE: NTS



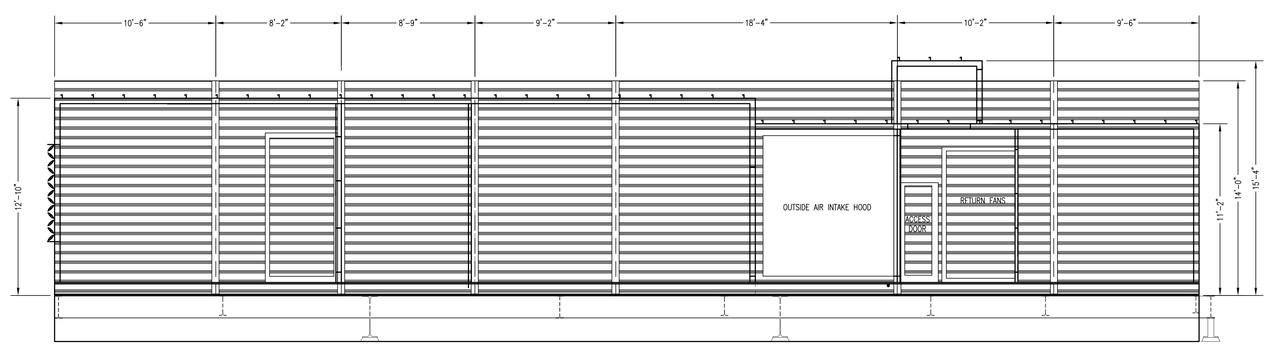
3 BL-130A&B LOUVER SCREEN DETAIL – END VIEW (EAST) SCALE: 1/4"=1'-0"



NOTES:

1. PROVIDE A HINGED LOUVER SCREEN SECTION TO COVER AHU ACCESS DOOR.
2. HINGED LOUVER SCREEN SHALL SWING OUT INDEPENDENTLY OF THE AHU ACCESS DOOR.
3. THE HINGE OF THE LOUVER SCREEN SECTION SHALL BE ON THE SAME SIDE AS THE HINGE OF THE AHU ACCESS DOOR. HINGED LOUVER SCREEN SHALL BE WIDE ENOUGH FOR AHU ACCESS DOOR TO OPEN 90 DEGREES (MIN.).
4. FRAMED OUT SCREEN WALL DIMENSIONS SHALL BE COORDINATED W/ THE APPROVED AHU SUBMITTAL.

7 AHU LOUVER SCREEN DOOR DETAIL SCALE: NTS



4 BL-133 LOUVERED SCREEN WALL DETAIL – NORTH END VIEW SCALE: 1/4"=1'-0"

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HVAC AHU DETAILS

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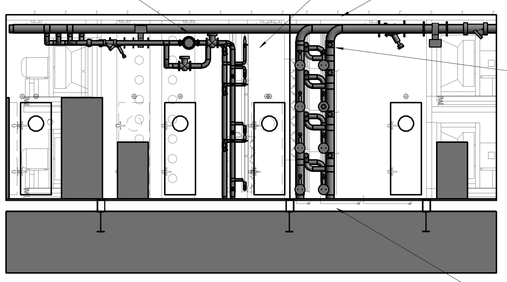
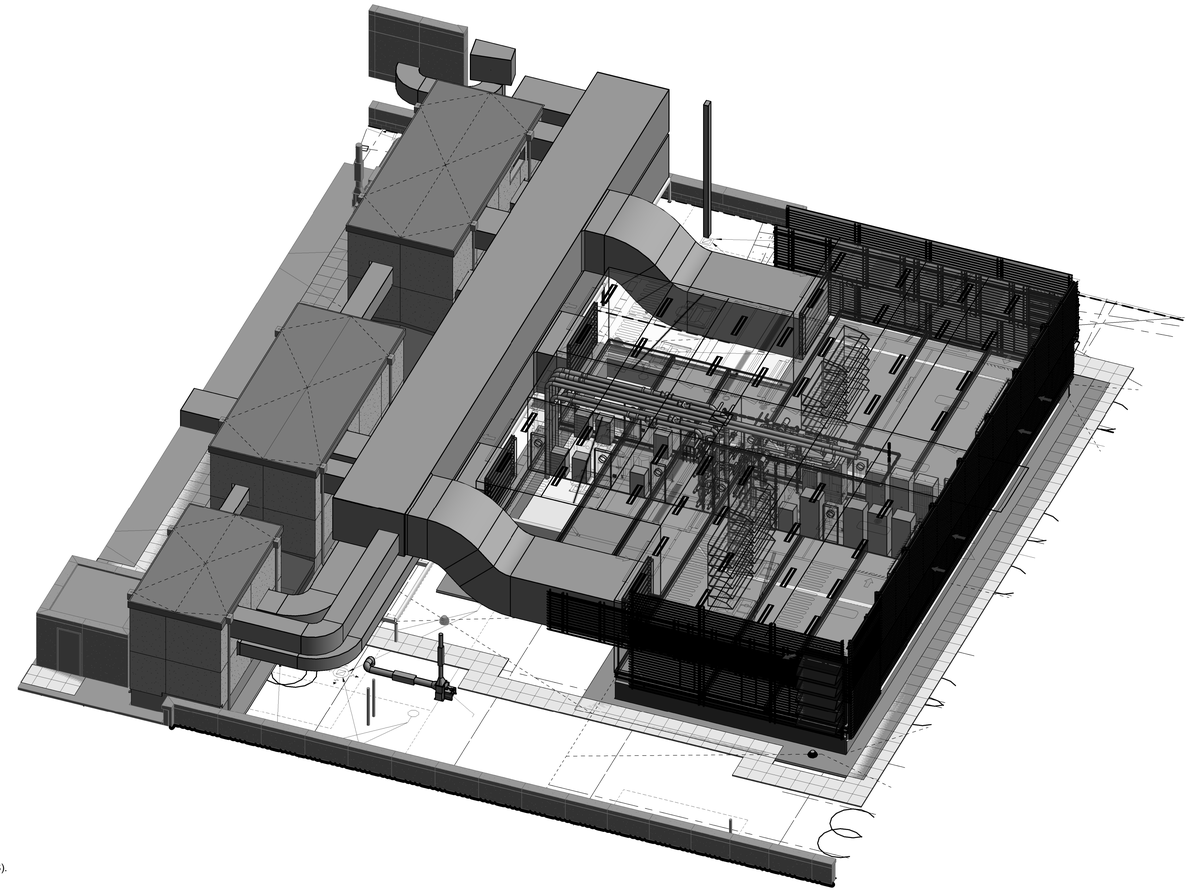
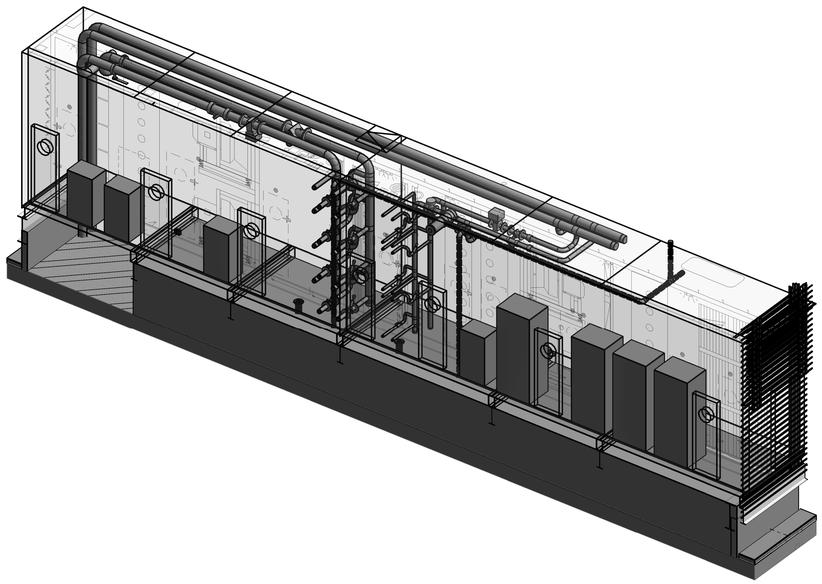


3 RTU Coil Piping Elevation



1 BL-130A&B on Roof (For Reference Only)



2 AHU-130A Piping Arrangement (Typical for BL-130B) - For Reference Only

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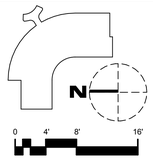

SCALE: 1/8" = 1' - 0"

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AHU COMPONENT KEY:

1. FINAL FILTERS:
   - 12" MERV 14
   - 140 SQ. FT. @ 429 FPM (7W x 5H ARRAY @ 24"x24")
2. SOUND ATTENUATOR: 36" LONG, 50% FREE AREA
3. SUPPLY FANS:
   - 2H x 2W FAN ARRAY
   - 15,000 CFM (EA.), 60,000 CFM (TOTAL)
   - 25 MHP @ 6.5" WC T.S.P.
4. CHILLED WATER COOLING COILS:
   - 4H x 2W (STAGGERED): (2) @ 85"W x 30"H (EA.) & (2) @ 85"W x 27"H (EA.)
   - 134.6 SQ. FT. (TOTAL FACE AREA)
   - 446 FPM
   - 60,000 COOLING CFM (TOTAL)
   - FRONT BOLT OFF, MAINTAIN MIN. 2'-9" FROM THE CENTER LINE OF PIPE ENTERING TOP COIL CONNECTION TO BOTTOM OF SERVICE AISLE ROOF. TOP COIL CONNECTION SHALL BE 12" (CENTER LINE) BELOW TOP OF COIL CASING. SEE DETAIL 5/H-4.0.1A.
5. HOT WATER PREHEAT COILS:
   - 3H x 1W @ 144"W x 39"H (EA.)
   - 117 SQ. FT. (TOTAL FACE AREA)
   - 385 FPM @ 45,000 HEATING CFM
   - 512 FPM @ 60,000 COOLING CFM
   - FRONT BOLT OFF, MAINTAIN MIN. 2'-9" FROM THE CENTER LINE OF PIPE ENTERING TOP COIL CONNECTION TO BOTTOM OF SERVICE AISLE ROOF. TOP COIL CONNECTION SHALL BE 12" (CENTER LINE) BELOW TOP OF COIL CASING. SEE DETAIL 5/H-4.0.1A.
6. FINAL FILTERS:
   - 4" MERV 8
   - 140 SQ. FT. @ 429 FPM (7W x 5H ARRAY @ 24"x24", 8W)
7. AIR BLENDERS: 1W x 1H @ 83" DIA.
8. RETURN AIR DAMPERS: 112x62 PARALLEL BLADES
9. EXHAUST AIR RELIEF:
   - PLENUM: 62.25"L x 300"W x 45"H (INNER DIM.)
   - INTAKES: (2) @ 40.5"L x 144"W (EA.)
   - 81 SQ. FT. (TOTAL AREA)
   - 1,481 FPM @ 50% FREE AREA & 60,000 CFM (ECONOMIZER)

9A. EXHAUST AIR RELIEF DAMPER:
   - 170x51 PARALLEL BLADES
   - 60 SQ. FT. (TOTAL FACE AREA)
   - 1,176 FPM @ 85% FREE AREA, 60,000 CFM (ECONOMIZER)

10. NOT USED
11. ROLLING SERVICE TRACK LADDER
12. RETURN FANS:
    - 2H x 2W FAN ARRAY
    - 15,000 CFM (EA.), 60,000 CFM (TOTAL)
    - 20 MHP @ 4.25" WC T.S.P.
13. RETURN AIR FILTERS:
    - 4" MERV 8
    - 134 SQ. FT. @ 448 FPM (7W x 4H ARRAY @ 24"x24", 7W x 1H ARRAY @ 24"x12", 1W x 4H ARRAY @ 12"x24")
14. OUTSIDE AIR INTAKE HOOD:
    - (4) TIERS @ 37.5"L x 123"W (EA.)
    - 128.1 SQ. FT. (TOTAL AREA)
    - 937 FPM @ 50% FREE AREA & 60,000 CFM (ECONOMIZER)
    - 272 FPM @ 50% FREE AREA & 17,400 CFM (29% OUTDOOR AIR)

14A. OUTSIDE AIR INTAKE DAMPER:
    - 112x103 PARALLEL BLADES
    - 80.1 SQ. FT. (TOTAL FACE AREA)
    - 881 FPM @ 85% FREE AREA, 60,000 CFM (ECONOMIZER)
    - 256 FPM @ 85% FREE AREA & 17,400 CFM (29% OUTDOOR AIR)

15. GENERAL CONTRACTOR TO PROVIDE INSULATED ENCLOSURE AROUND PERIMETER OF AHU. ENCLOSURE TO BE FLASHED AND SEALED. ROOFING CONTRACTOR SHALL REPAIR ROOF WITH EPDM ROOFING AND INSULATION.
16. SUPPLY AIR DISCHARGE DAMPER: 91x76 OPPOSED BLADES
17. NOT USED
18. 4" FLOOR DRAIN AND ASSOCIATED PIPING FURNISHED AND INSTALLED BY DIV. 22. AHU MANUFACTURER TO COORDINATE WITH DIV. 22.
19. DRAIN CLEAN OUT (BY DIV. 22, REFER TO PLUMBING DRAWINGS)
20. 2" COOLING COIL CONDENSATE (BELOW AHU SERVICE AISLE) TO SPILL TO FLOOR DRAIN. SEE AHU FLOOR DRAIN DETAIL 7/H-4.0.1A.
21. 30x30 HINGED ACCESS HATCH WITH RECESSED LIFT HANDLE AND STRUCTURAL SUPPORT (BY AHU MANUFACTURER). HATCH MATERIAL SHALL MATCH AHU SERVICE AISLE FLOOR.
22. FLOOR DRAIN VENT UP THRU SERVICE AISLE FLOOR, TYPICAL FOR 4 VENTS (BY DIV. 22). COORDINATE WITH PLUMBING DRAWINGS.
23. FLOOR DRAIN VENT UP THRU AHU ROOF (BY DIV. 22). COORDINATE WITH PLUMBING DRAWINGS.
24. 4'-0" FLUORESCENT LIGHT W/ GLASS LENS (TYPICAL)

24A. FIXTURE LIGHTING

25. WALL CONSTRUCTION (4" THICK):
    - INTERIOR ALUMINUM CONSTRUCTION
    - EXTERIOR ALUMINUM CONSTRUCTION
26. CONVENIENCE OUTLETS
27. (2) 1 1/2" ATC CONDUITS W/ 8"x8"x4" J-BOX @ EACH SECTION (FOR SUPPLY & RETURN TUNNELS, TYPICAL)
28. DOUBLE DOOR ACCESS W/ PLATFORM LANDING, STAIRS AND RAILS PROVIDED BY CG.
29. TERMINAL BOX W/ H.W. REHEAT COIL @ SERVICE AISLE, SIZE VCV-8 @ 400 CFM (ADJ.)
30. COMMON SERVICE AISLE W/ SUPPLEMENTAL STEEL TO SUPPORT PIPING (BY AHU MANUFACTURER).
31. 14'-0" HIGH LOUVERED SCREEN TO BE PROVIDED BY AND COORDINATED WITH THE ARCHITECT.
32. TYP. 4x4x3/16 STEEL TUBING TO SUPPORT PIPE RACK
33. SERVICE DRAIN FOR WASH DOWN AND CLEAN OUT
34. AHU C-CHANNEL (BY AHU MANUFACTURER). ALL CHANNEL MEMBERS TO BE UNIFORM HEIGHT INCLUDING CROSS MEMBERS. COORDINATE W/ STRUCTURAL ENGINEER.
35. STEEL I-BEAM SUPPORT MEMBER (BY STRUCTURAL) TO POST UP FROM EXISTING ROOFTOP TO SUPPORT NEW AHU FROM C-CHANNEL BASE FRAME. REFER TO STRUCTURAL DRAWINGS FOR POST LOCATIONS.
36. VFD ZONE (VFD BY AHU MANUFACTURER, SEE SCHEDULES)
37. EXTERNAL COIL PULL
38. DRAIN CONNECTION
39. DRAIN PAN
40. OUTSIDE AIR PLENUM DRAIN PAN INLET W/ PITCHED DRAIN PIPING TO SPILL ON ROOF (BY AHU MANUFACTURER)
41. HOT WATER BARE FINNED TUBE RADIATION W/ RECIRCULATING PUMP BELOW THE FLOOR OF THE SERVICE AISLE. LOCATE SERVICEABLE ITEMS NEAR FLOOR ACCESS PANEL. COORDINATE FTR W/ STRUCTURAL BEAMS BELOW. REFER TO HOT WATER RISER DIAGRAM AND SCHEDULES FOR DESIGN CRITERIA.
42. WATER LEAK SENSOR SHALL BE LOCATED BELOW THE SERVICE AISLE AND SEND AN ALARM TO BAS HEAD END UPON DETECTION OF WATER.
43. 24"Lx24"Wx24"H PIT BELOW SERVICE AISLE FLOOR WITH REMOVABLE GRATING (BY AHU MANUFACTURER. SEE AHU FLOOR DRAIN DETAIL 7/H-4.0.1A.
44. 18x12 BAROMETRIC RELIEF DAMPER W/ WIRE MESH SCREEN AND LOUVER

1 BL-131 AIR HANDLING COMPONENT KEY

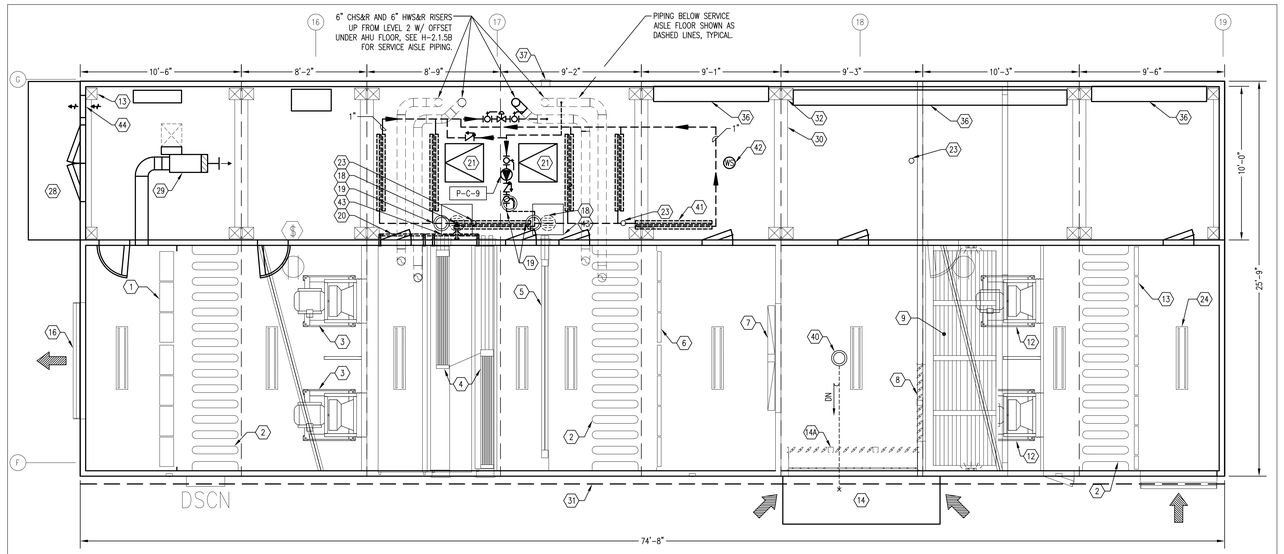
AHU COMPONENT KEY:

1. FINAL FILTERS:
   - 12" MERV 14
   - 72 SQ. FT. @ 444 FPM (4W x 4H ARRAY @ 24"x24", 4W x 1H @ 24"x12")
2. SOUND ATTENUATOR: 36" LONG, 50% FREE AREA
3. SUPPLY FANS:
   - 2H x 1W FAN ARRAY
   - 16,000 CFM (EA.), 32,000 CFM (TOTAL)
   - 30 MHP @ 6.5" WC T.S.P.
4. CHILLED WATER COOLING COILS:
   - 3H x 1W @ 95"W x 36"H (EA.)
   - 71.25 SQ. FT. (TOTAL FACE AREA)
   - 449 FPM
   - 32,000 COOLING CFM (TOTAL)
5. HOT WATER PREHEAT COILS:
   - 3H x 1W @ 95"W x 36"H (EA.)
   - 71.25 SQ. FT. (TOTAL FACE AREA)
   - 337 FPM @ 24,000 HEATING CFM
   - 449 FPM @ 32,000 COOLING CFM
6. AIR BLENDERS: 1W x 1H @ 61" DIA.
7. RETURN AIR INLET DAMPERS: 99x38 PARALLEL BLADES
8. PRE-FILTERS:
   - 4" MERV 8
   - 72 SQ. FT. @ 444 FPM (4W x 4H ARRAY @ 24"x24", 4W x 1H ARRAY @ 24"x12")
9. OUTSIDE AIR INTAKE DAMPER:
   - 100x64 PARALLEL BLADES
   - 44.4 SQ. FT. (TOTAL FACE AREA)
   - 848 FPM @ 85% FREE AREA, 32,000 CFM (ECONOMIZER)
   - 246 FPM @ 85% FREE AREA & 9,280 CFM (29% OUTDOOR AIR)
10. SUPPLY AIR DISCHARGE DAMPER: 57x65 OPPOSED BLADES
11. 1" COOLING COIL CONDENSATE PUMPED TO OPEN ENDED DRAIN. REFER TO PLUMB. DWG'S.
12. 4'-0" FLUORESCENT LIGHT W/ GLASS LENS (TYPICAL)

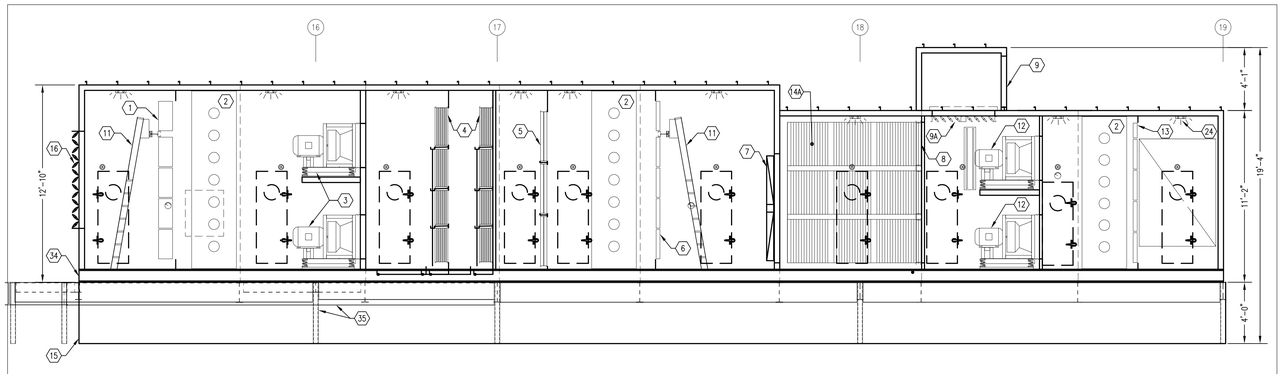
12A. FIXTURE LIGHTING

13. WALL CONSTRUCTION (4" THICK):
    - INTERIOR ALUMINUM CONSTRUCTION
    - EXTERIOR ALUMINUM CONSTRUCTION
14. CONVENIENCE OUTLETS
15. (2) 1 1/2" ATC CONDUITS W/ 8"x8"x4" J-BOX @ EACH SECTION (FOR SUPPLY & RETURN TUNNELS, TYPICAL)
16. AHU C-CHANNEL STEEL (BY AHU MANUFACTURER)
17. COIL PULL CLEARANCE ZONE
18. REMOVABLE PANEL
19. NEW CONCRETE EQUIPMENT PAD, APPROXIMATELY 454"Lx122Wx4"H (BY G.C.)
20. DRAIN CONNECTION (TYPICAL)
21. DRAIN PAN
22. RETURN FANS:
    - (2) MIXED FLOW HORIZONTAL INLINE FANS
    - 16,000 CFM (EA.), 32,000 CFM (TOTAL)
    - 20 MHP @ 4.5" WC T.S.P.

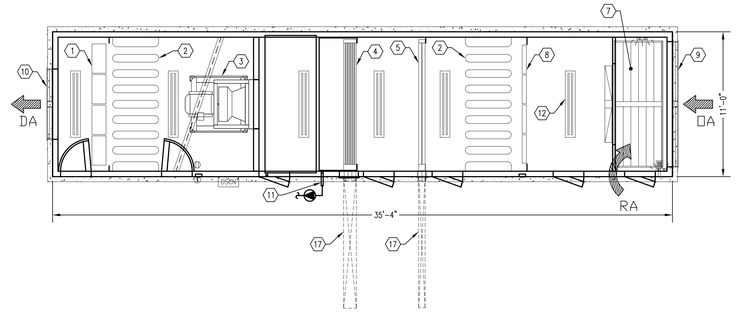
4 BL-133 AIR HANDLING COMPONENT KEY



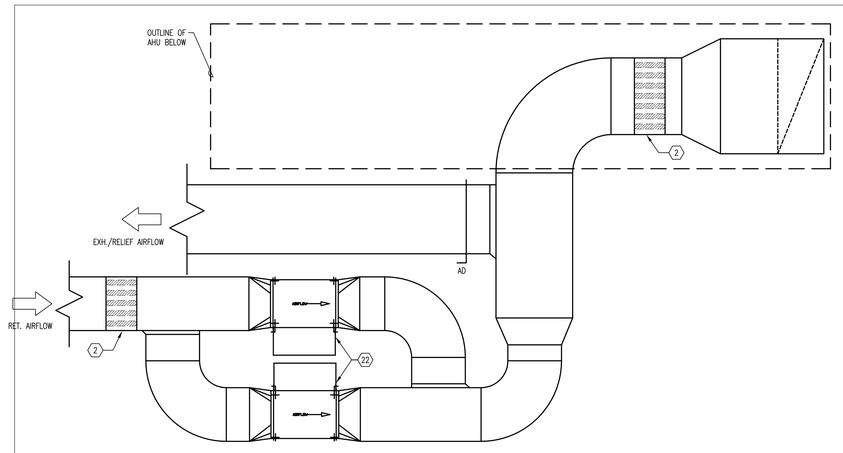
2 BL-131 (60,000 CFM) AHU DETAIL – PLAN VIEW SCALE: 1/4"=1'-0"



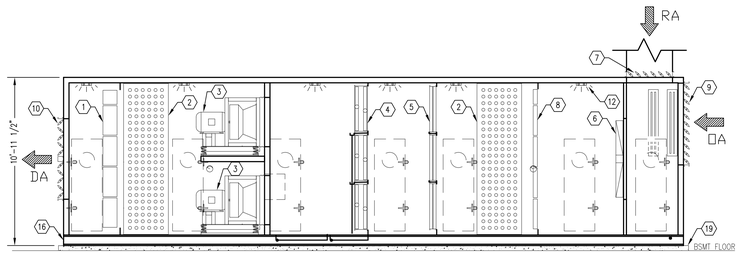
3 BL-131 (60,000 CFM) AHU DETAIL – ELEVATION VIEW SCALE: 1/4"=1'-0"



5 BL-133 (32,000 CFM) MORGUE/ANATOMIC PATHOLOGY/CLINICAL SKILLS/DIAG IMAGING AHU DETAIL – SUPPLY TUNNEL PLAN VIEW SCALE: 1/4"=1'-0"



6 BL-133 (32,000 CFM) MORGUE/ANATOMIC PATHOLOGY/CLINICAL SKILLS/DIAG IMAGING AHU DETAIL – INLINE RETURN FAN PLAN VIEW SCALE: 1/4"=1'-0"



7 BL-133 (32,000 CFM) MORGUE/ANATOMIC PATHOLOGY/CLINICAL SKILLS/DIAG IMAGING AHU DETAIL – ELEVATION VIEW SCALE: 1/4"=1'-0"

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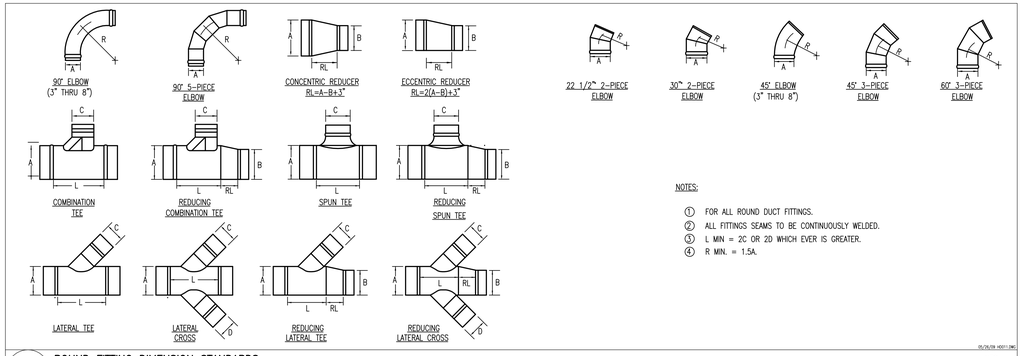
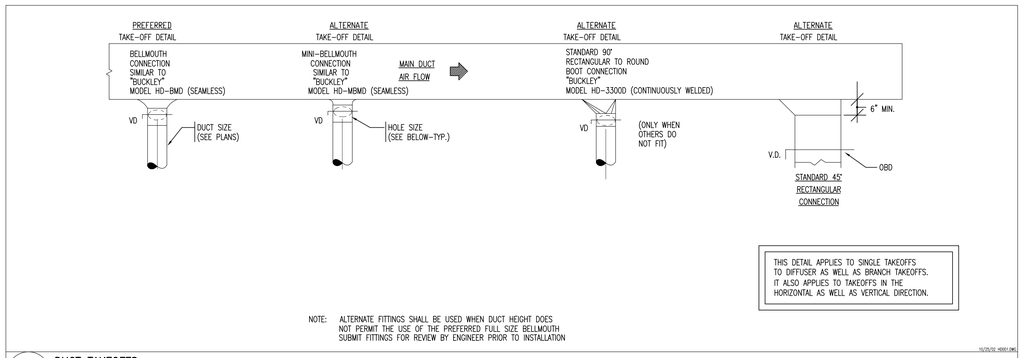


NOTES:

1. FOR ALL ROUND DUCT FITTINGS.
2. ALL FITTINGS SEAMS TO BE CONTINUOUSLY WELDED.
3. L MIN = 2C OR 2D WHICH EVER IS GREATER.
4. R MIN. = 1.5A.

05/26/09 HS011.DWG

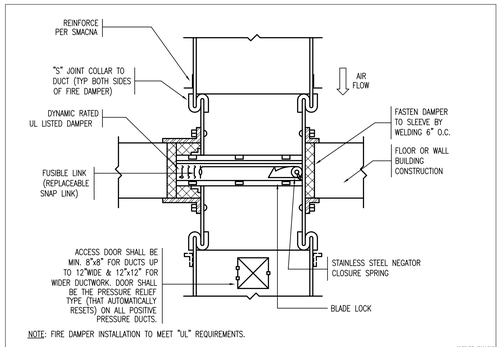
8 ROUND FITTING DIMENSION STANDARDS — NTS



NOTE: ALTERNATE FITTINGS SHALL BE USED WHEN DUCT HEIGHT DOES NOT PERMIT THE USE OF THE PREFERRED FULL SIZE BELLMOUTH SUBMIT FITTINGS FOR REVIEW BY ENGINEER PRIOR TO INSTALLATION

10/25/02 HS001.DWG

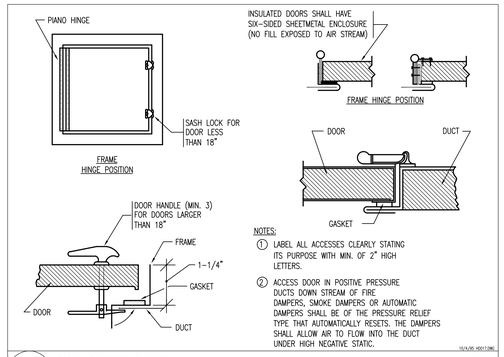
1 DUCT TAKEOFFS — NTS



NOTE: FIRE DAMPER INSTALLATION TO MEET "UL" REQUIREMENTS.

02/25/07 HS016.DWG

12 FIRE DAMPER W/BLADES OUTSIDE THE AIR STREAM — NTS

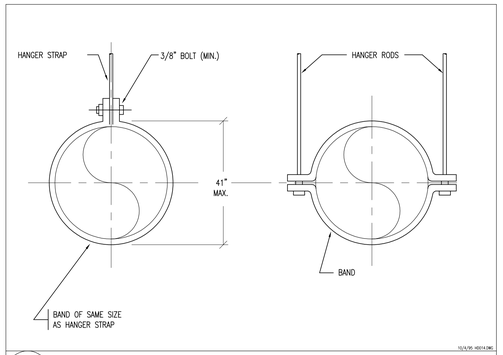


NOTES:

1. LABEL ALL ACCESSES CLEARLY STATING ITS PURPOSE WITH MIN. OF 2" HIGH LETTERS.
2. ACCESS DOOR IN POSITIVE PRESSURE DUCTS DOWN STREAM OF FIRE DAMPERS, SMOKE DAMPERS (OR AUTOMATIC DAMPERS SHALL BE OF THE PRESSURE RELIEF TYPE THAT AUTOMATICALLY RESETS. THE DAMPERS SHALL ALLOW AIR TO FLOW INTO THE DUCT UNDER HIGH NEGATIVE STATIC.

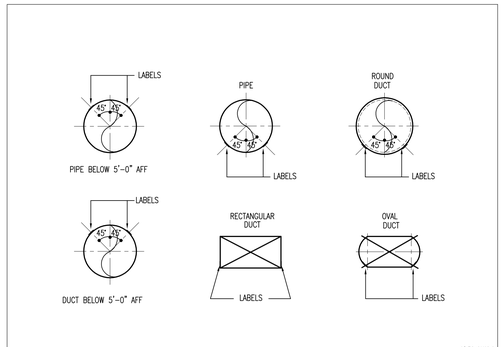
10/4/05 HS017.DWG

9 DUCT ACCESS DOORS — NTS



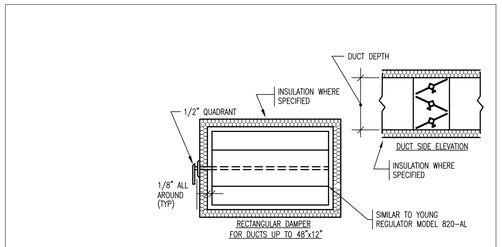
10/4/05 HS014.DWG

5 ROUND DUCT HANGERS — NTS



10/4/05 HS038.DWG

2 DUCT AND PIPE IDENTIFICATION LABELING — NTS

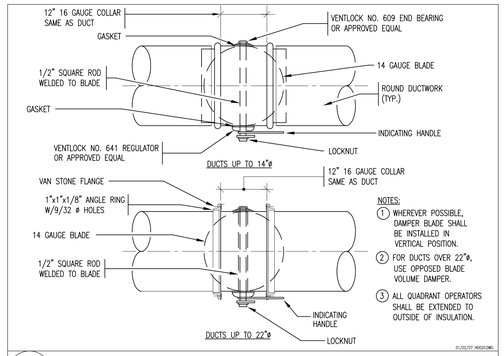


NOTES:

1. FOR RECTANGULAR DUCTS OVER 12" HIGH USE HIGH PRESSURE OBD.
2. ALL BRANCH DUCTS (SUPPLY, RETURN & EXHAUST) SHALL HAVE VOLUME DAMPERS, INCLUDING RUNOUTS TO DIFFUSERS.
3. ALL QUADRANT OPERATORS SHALL BE EXTENDED TO OUTSIDE OF INSULATION.

10/25/02 HS010.DWG

13 VOLUME DAMPER (FOR DUCT UNDER 12" IN HEIGHT NOT EXCEEDING 2" PRESSURE CLASS) — NTS

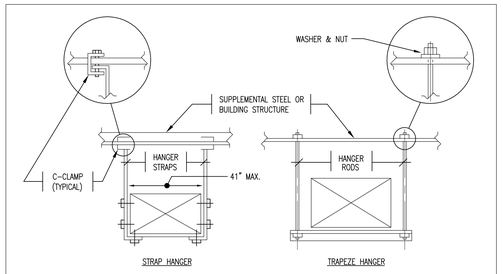


NOTES:

1. WHEREVER POSSIBLE, DAMPER BLADE SHALL BE INSTALLED IN VERTICAL POSITION.
2. FOR DUCTS OVER 22"ø, USE OPPOSED BLADE VOLUME DAMPER.
3. ALL QUADRANT OPERATORS SHALL BE EXTENDED TO OUTSIDE OF INSULATION.

01/02/07 HS005.DWG

10 ROUND VOLUME DAMPER — NTS

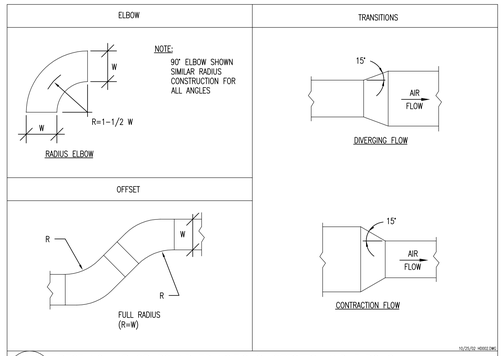


NOTES:

1. NO POP RIVETS ALLOWED, USE SELF-TAPPING SHEETMETAL SCREWS ONLY.

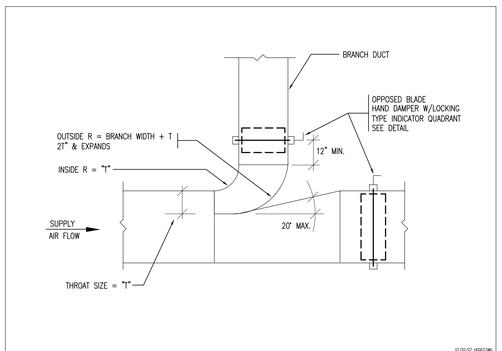
10/4/05 HS013.DWG

6 DUCT HANGER — NTS



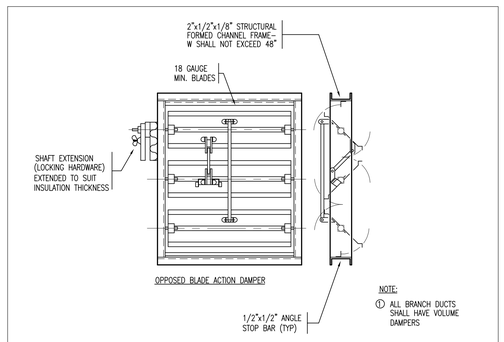
10/25/02 HS003.DWG

3 RECTANGULAR OR ROUND TRANSITIONS, OFFSETS, AND ELBOWS — NTS



01/02/07 HS003.DWG

14 RECTANGULAR DUCT BRANCH WITH THROAT & VOLUME DAMPER — NTS

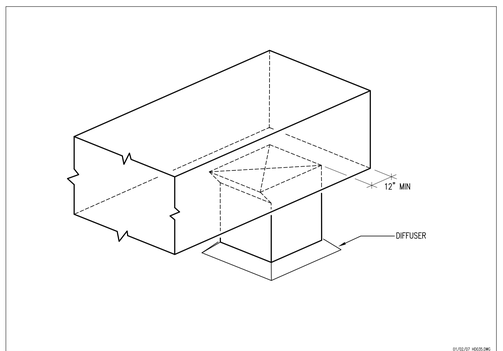


NOTE:

1. ALL BRANCH DUCTS SHALL HAVE VOLUME DAMPERS

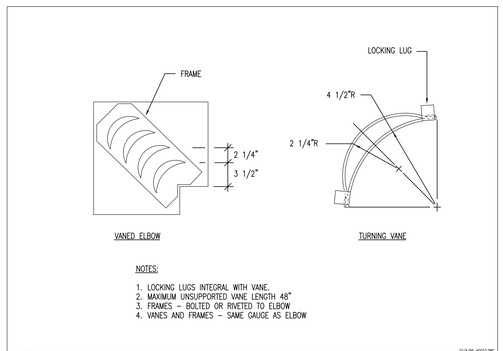
01/02/07 HS004.DWG

11 OPPOSED BLADE DAMPER (OBD) — NTS



01/02/07 HS005.DWG

7 RECTANGULAR DIFFUSER CONNECTION — NTS



NOTES:

1. LOCKING LUGS INTEGRAL WITH VANE.
2. MAXIMUM UNSUPPORTED VANE LENGTH 48"
3. FRAMES - BOLTED OR RIVETED TO ELBOW
4. VANES AND FRAMES - SAME GAUGE AS ELBOW

10/4/05 HS010.DWG

4 DOUBLE THICKNESS TURNING VANES FOR SQUARE ELBOW — NTS

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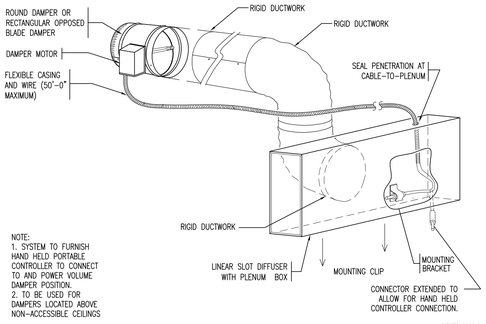
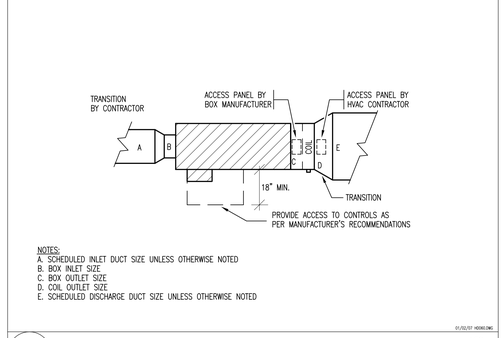
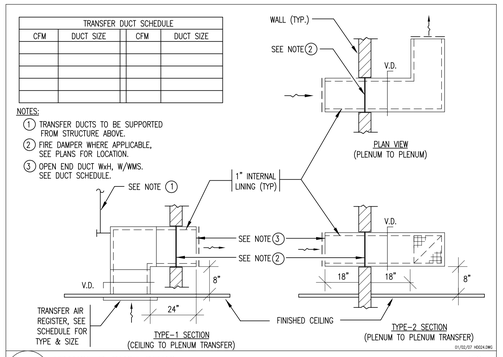


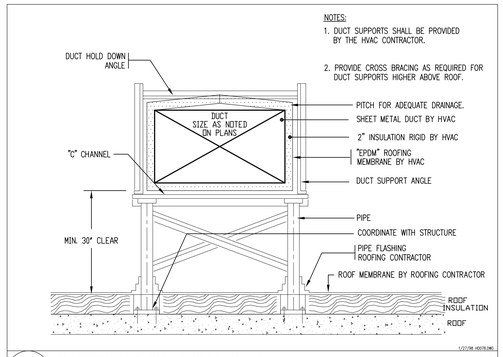
13 LINEAR DIFFUSER REMOTE-BALANCING CONTROL SYSTEM NTS



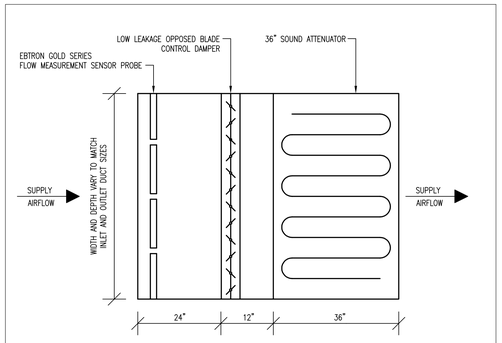
9 SUPPLY BOX WITH INTEGRAL SOUND ATTENUATOR AND COIL NTS



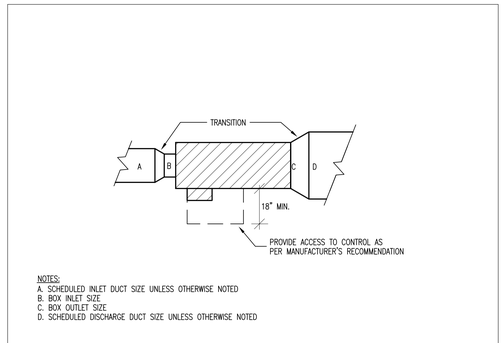
5 TRANSFER DUCT DETAIL NTS



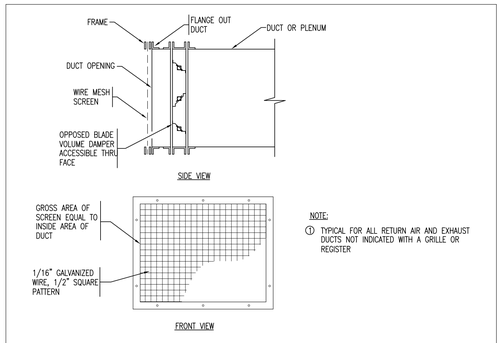
1 ROOF-MOUNTED DUCT SUPPORT DETAIL NTS



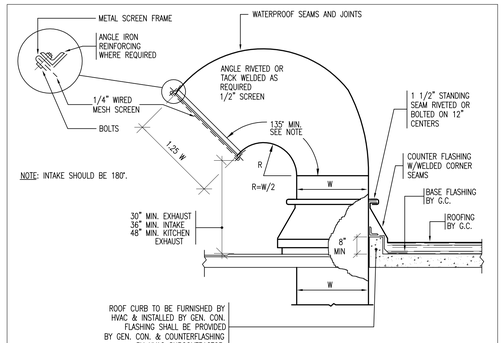
14 PERMANENT SUPPLY AIR VOLUME CONTROL & MEASURING STATION DETAIL NTS



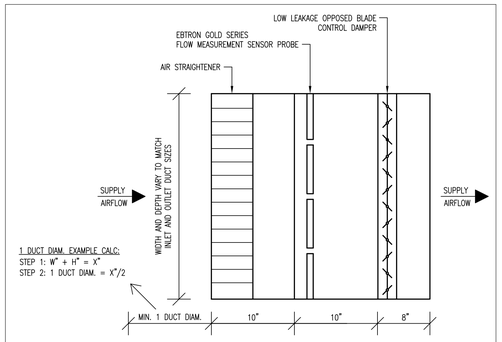
10 SUPPLY BOX WITH INTEGRAL SOUND ATTENUATOR WITHOUT COIL NTS



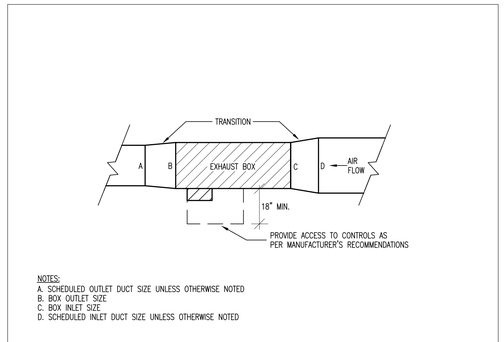
6 WIRE MESH SCREEN DETAIL NTS



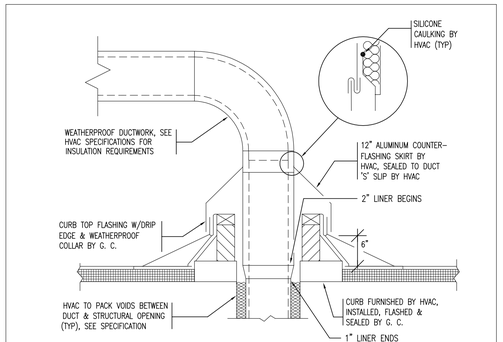
2 EXHAUST/INTAKE GOOSENECK NTS



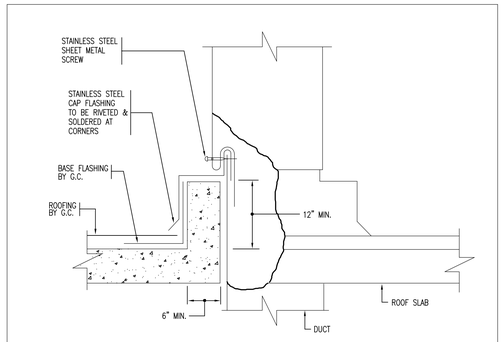
15 TEMPORARY SUPPLY AIR VOLUME CONTROL & MEASURING STATION DETAIL NTS



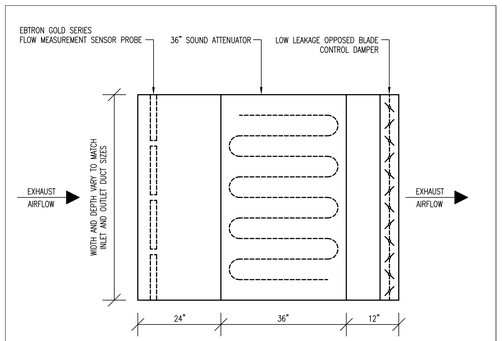
11 EXHAUST OR RETURN BOX WITH INTEGRAL SOUND ATTENUATOR NTS



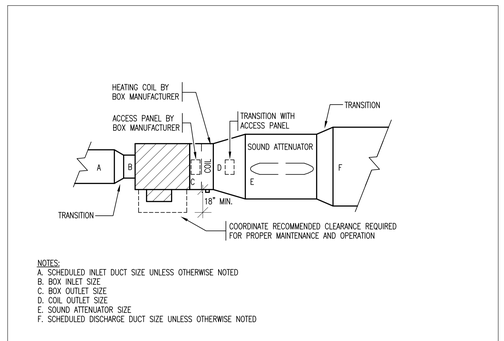
7 INSULATED DUCT ROOF PENETRATION NTS



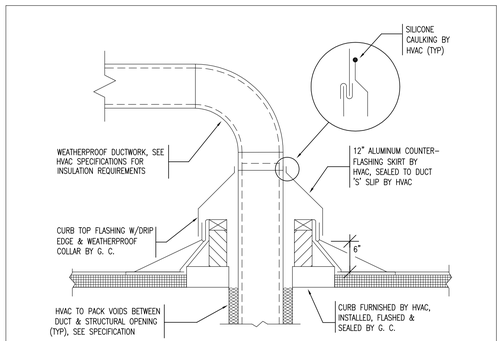
3 CAP FLASHING CONSTRUCTION NTS



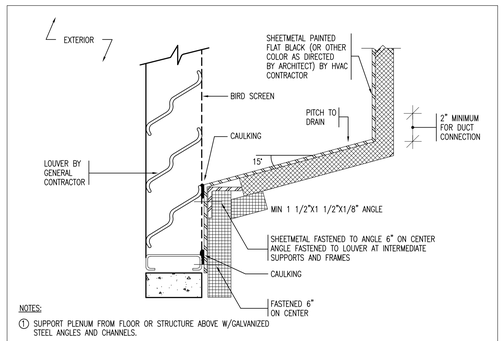
16 RETURN AIR VOLUME CONTROL & MEASURING STATION DETAIL (WITH SOUND ATTENUATOR) NTS



12 SUPPLY BOX WITH EXTERNAL SOUND ATTENUATOR AND COIL NTS



8 UNINSULATED DUCT ROOF PENETRATION NTS



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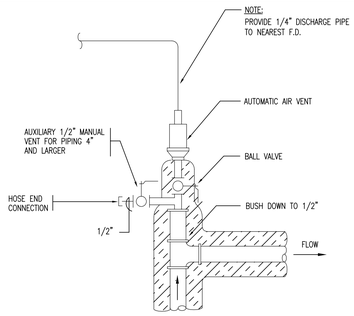
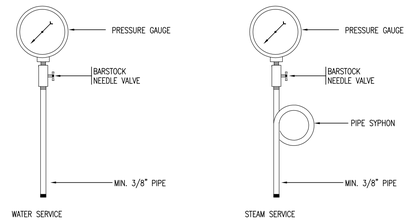
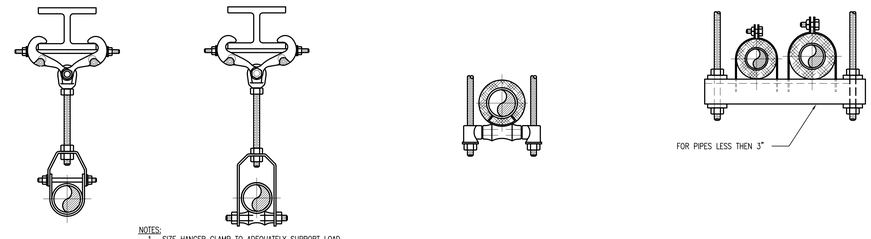


12 AUTOMATIC AIR VENT NTS

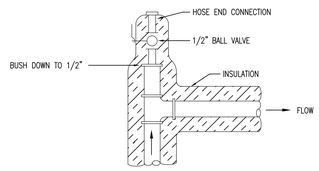


8 PRESSURE GAUGE ASSEMBLY NTS

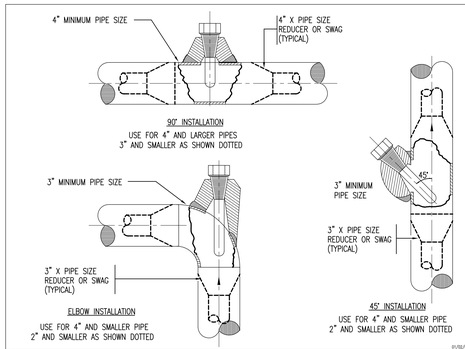


NOTES:
1. SIZE HANGER CLAMP TO ADEQUATELY SUPPORT LOAD
2. IF USED INSULATED PIPE, SIZE HANGER PROPERLY AND USED INSULATION SHIELDS FOR COLD LINES AND PROTECTION SADDLES FOR HOT LINES.

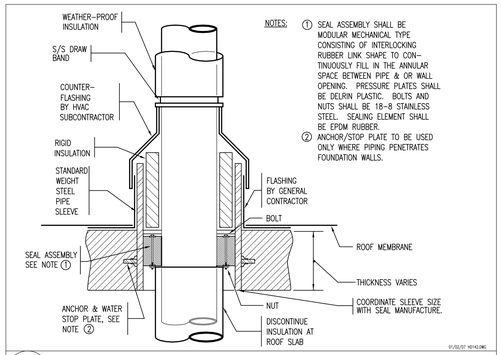
1 PIPE HANGER AND PIPE ROLLER NTS



13 MANUAL AIR VENT NTS

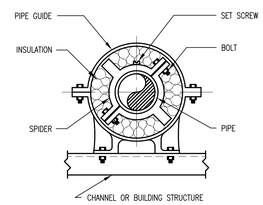


9 TYPICAL THERMOWELL INSTALLATION NTS

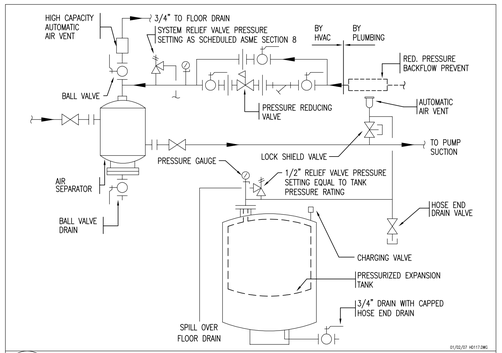


NOTES:
1. SEAL ASSEMBLY SHALL BE MODULAR MECHANICAL TYPE CONSISTING OF INTERLOCKING RUBBER LINK SHAPE TO CONTINUOUSLY FILL IN THE ANNULAR SPACE BETWEEN PIPE & OR WALL OPENING. PRESSURE PLATES SHALL BE DELRIN PLASTIC. BOLTS AND NUTS SHALL BE 18-8 STAINLESS STEEL. SEALING ELEMENT SHALL BE EPDM RUBBER.
2. ANCHOR/STOP PLATE TO BE USED ONLY WHERE PIPING PENETRATES FOUNDATION WALLS.

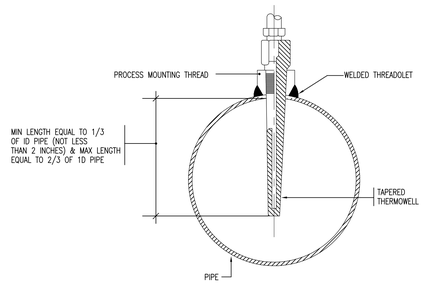
5 INSULATED PIPE THROUGH ROOF OR WALL NTS



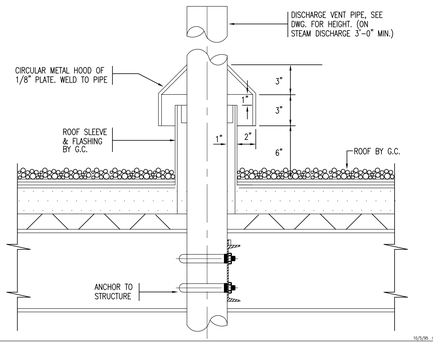
2 HORIZONTAL & VERTICAL PIPE GUIDE NTS



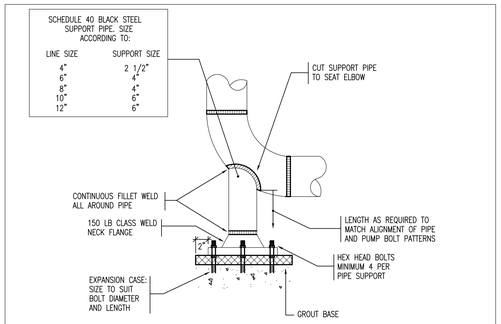
14 PRESSURIZED EXPANSION TANK WITH AIR SEPARATOR NTS



10 PIPE-MOUNTED RTD-THERMOWELL NTS

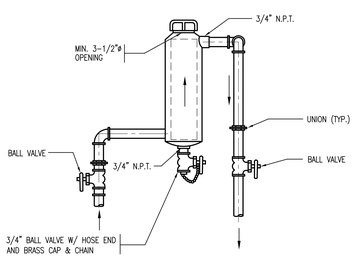


6 TYPICAL ROOF VENT NTS



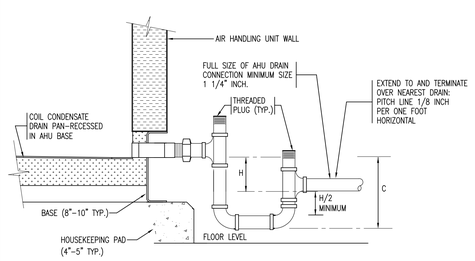
NOTE:
INSULATE PIPE SUPPORT SIMILAR TO PIPE.

3 VERTICAL PIPE SUPPORT NTS



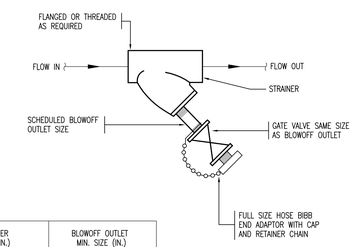
NOTES:
1. PIPING TO/FROM SHOT FEEDER SHALL BE MINIMUM OF 3/4" OR AS NOTED.

15 CHEMICAL FEEDER TANK NTS



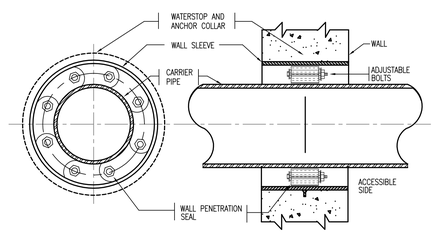
NOTE:
1. H= FAN INLET PRESSURE (IN WG) + 1 IN.
2. C= 1.5 H + PIPE DIA.

11 DRAW-THRU AIR HANDLING UNIT DRAIN PAN PIPING NTS



STRAINER SIZE (IN.)	BLOWOFF OUTLET MIN. SIZE (IN.)
3/4	1/2
1 TO 2 1/2	3/4
3 & 4	1
5 & ABOVE	2

7 STRAINER ASSEMBLY NTS



4 WATERTIGHT WALL PENETRATION FOR PIPES (WITH SINGLE SEAL) NTS

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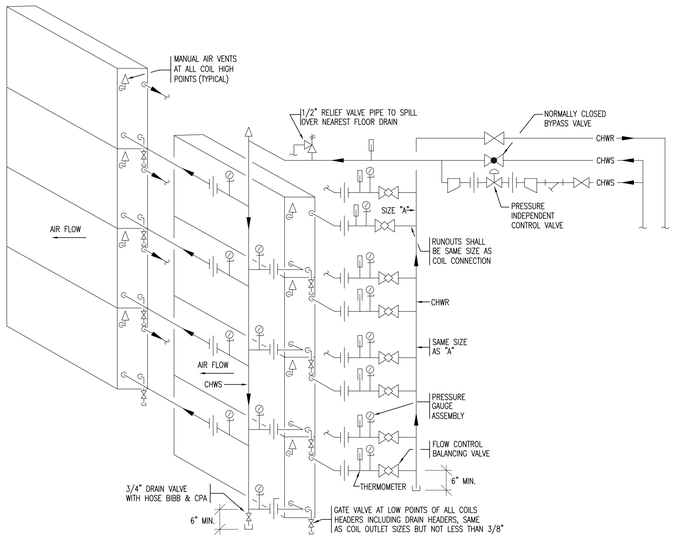
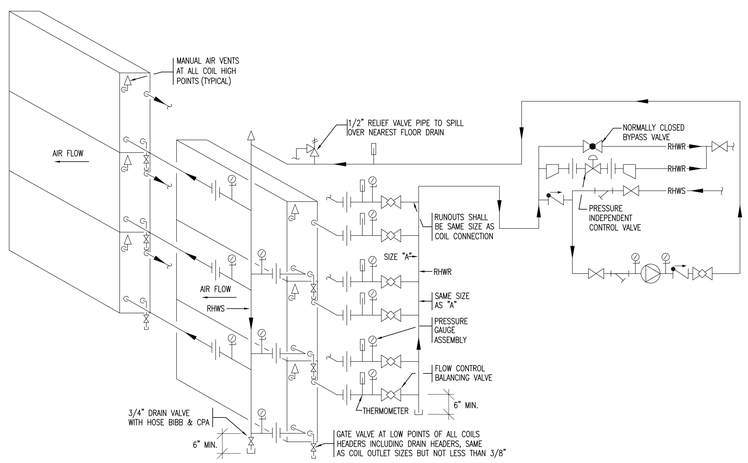


NOTES:
1. PROVIDE SIMILAR PIPING FOR 3 OR MORE COILS HIGH.
2. LOCATE PIPE UNIONS AND ARRANGE PIPING TO FACILITATE COIL REMOVAL.
3. UNIONS (OR FLANGED BODY) REQUIRED TO PERMIT REMOVAL OF CONTROL VALVE.
4. PROVIDE SIMILAR PIPING ARRANGEMENTS ON EACH SIDE FOR TWO SECTION WIDE COIL ASSEMBLY.

01/02/07 H0156.DWG

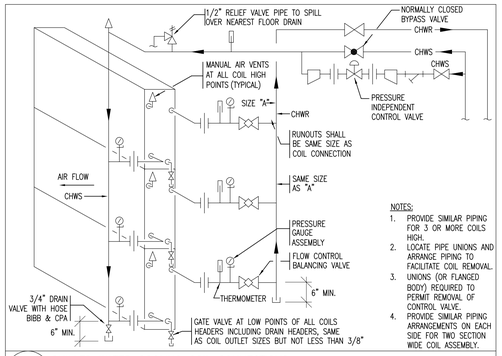
5 CHILLED WATER COOLING COIL CONNECTIONS – BL-130A&B AND BL-131 NTS



NOTES:
1. PROVIDE SIMILAR PIPING FOR 3 OR MORE COILS HIGH.
2. LOCATE PIPE UNIONS AND ARRANGE PIPING TO FACILITATE COIL REMOVAL.
3. UNIONS (OR FLANGED BODY) REQUIRED TO PERMIT REMOVAL OF CONTROL VALVE.
4. PROVIDE SIMILAR PIPING ARRANGEMENTS ON EACH SIDE FOR TWO SECTION WIDE COIL ASSEMBLY.

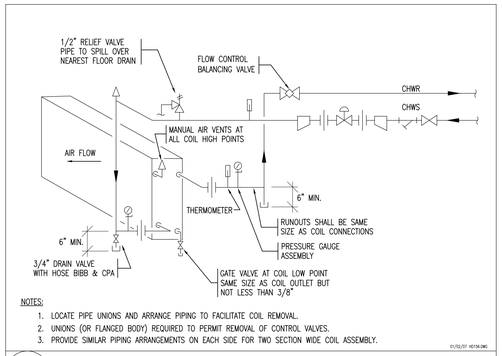
01/02/07 H0154.DWG

1 HOT WATER PREHEAT COIL CONNECTIONS (WITH PUMP)– BL-130A&B NTS



NOTES:
1. PROVIDE SIMILAR PIPING FOR 3 OR MORE COILS HIGH.
2. LOCATE PIPE UNIONS AND ARRANGE PIPING TO FACILITATE COIL REMOVAL.
3. UNIONS (OR FLANGED BODY) REQUIRED TO PERMIT REMOVAL OF CONTROL VALVE.
4. PROVIDE SIMILAR PIPING ARRANGEMENTS ON EACH SIDE FOR TWO SECTION WIDE COIL ASSEMBLY.

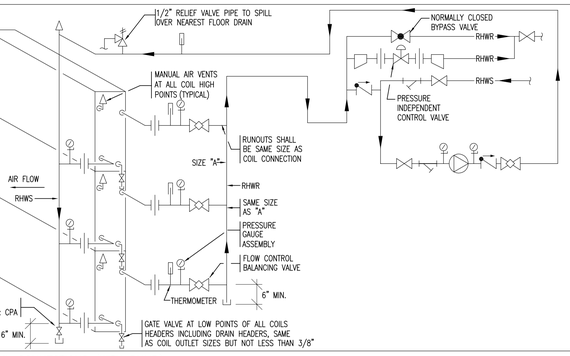
8 CHILLED WATER COOLING COIL CONNECTIONS – BL-133



NOTES:
1. LOCATE PIPE UNIONS AND ARRANGE PIPING TO FACILITATE COIL REMOVAL.
2. UNIONS (OR FLANGED BODY) REQUIRED TO PERMIT REMOVAL OF CONTROL VALVES.
3. PROVIDE SIMILAR PIPING ARRANGEMENTS ON EACH SIDE FOR TWO SECTION WIDE COIL ASSEMBLY.

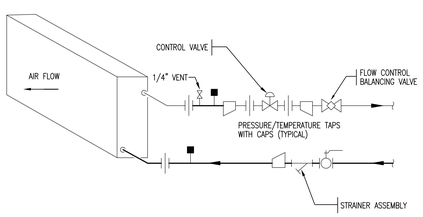
01/02/07 H0156.DWG

6 CHILLED WATER COOLING COIL CONNECTIONS – ONE HIGH NTS



NOTES:
1. PROVIDE SIMILAR PIPING FOR 3 OR MORE COILS HIGH.
2. LOCATE PIPE UNIONS AND ARRANGE PIPING TO FACILITATE COIL REMOVAL.
3. UNIONS (OR FLANGED BODY) REQUIRED TO PERMIT REMOVAL OF CONTROL VALVE.
4. PROVIDE SIMILAR PIPING ARRANGEMENTS ON EACH SIDE FOR TWO SECTION WIDE COIL ASSEMBLY.
5. ASSUME SIMILAR BRANCH PIPING, DEVICES AND VALVE ARRANGEMENT FOR ANY COIL ARRAY THAT IS MULTIPLE COILS HIGH BY ONE COIL WIDE.

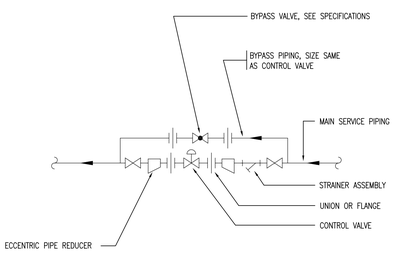
2 HOT WATER PREHEAT COIL CONNECTIONS (WITH PUMP)– BL-131 & BL-133 NTS



NOTES
1. COORDINATE LEFT OR RIGHT HAND CONNECTION AS REQUIRED
2. DRAIN THROUGH STRAINER ASSEMBLY VALVE

01/02/07 H0076.DWG

9 TERMINAL BOX REHEAT COIL NTS

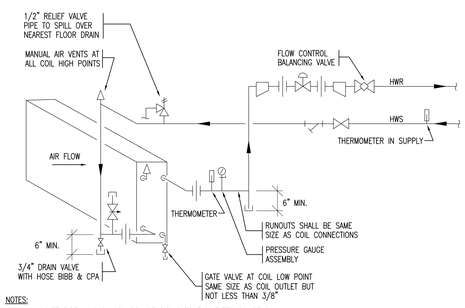


THIS DETAIL DOES NOT APPLY TO UNIT HEATERS, FINTUBE RADIATION OR TERMINAL BOX REHEAT COILS UNLESS OTHERWISE NOTED.

THIS DETAIL APPLIES TO ALL ATC CONTROL VALVES, SOLENOID VALVES, AND PRESSURE / TEMPERATURE REGULATING VALVES. UNLESS OTHERWISE NOTED.

01/02/07 H0101.DWG

7 CONTROL VALVE WITH BYPASS (WATER) NTS



NOTES:
1. LOCATE PIPE UNIONS AND ARRANGE PIPING TO FACILITATE COIL REMOVAL.
2. PROVIDE SIMILAR PIPING ARRANGEMENTS ON EACH SIDE FOR TWO SECTION WIDE COIL ASSEMBLY.
3. FOR PIPE SIZES SEE PLANS.

01/02/07 H0102.DWG

4 HOT WATER REHEAT COIL CONNECTIONS – ONE HIGH NTS

3 NOT USED

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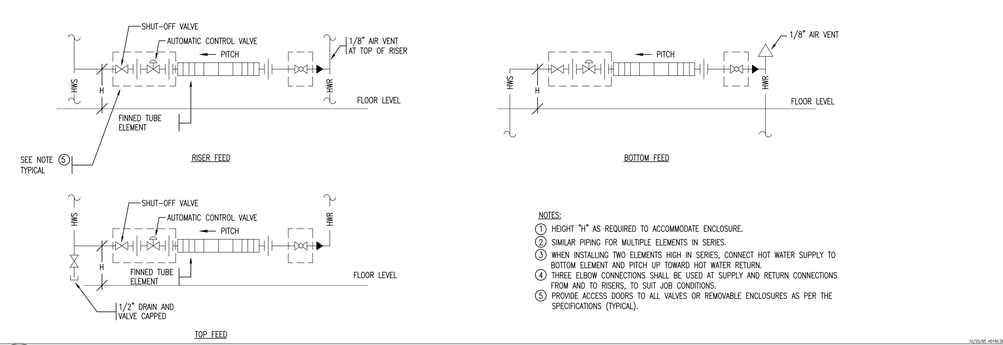
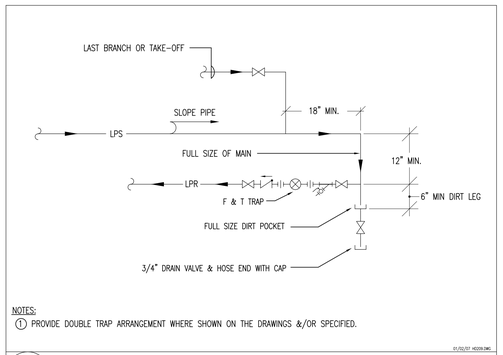


NOTES:
1. HEIGHT "H" AS REQUIRED TO ACCOMMODATE ENCLOSURE.
2. SIMILAR PIPING FOR MULTIPLE ELEMENTS IN SERIES.
3. WHEN INSTALLING TWO ELEMENTS HIGH IN SERIES, CONNECT HOT WATER SUPPLY TO BOTTOM ELEMENT AND PITCH UP TOWARD HOT WATER RETURN.
4. THREE ELBOW CONNECTIONS SHALL BE USED AT SUPPLY AND RETURN CONNECTIONS FROM AND TO RISERS, TO SUIT JOB CONDITIONS.
5. PROVIDE ACCESS DOORS TO ALL VALVES OR REMOVABLE ENCLOSURES AS PER THE SPECIFICATIONS (TYPICAL).

10/29/08, HE145.DWG

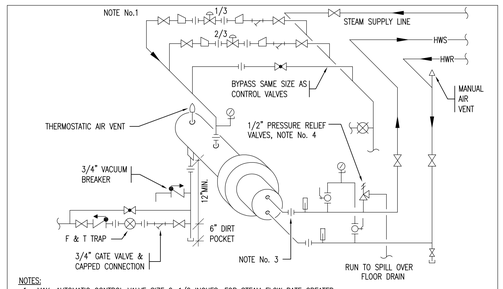
9 HOT WATER FINNED-TUBE RADIATION (WITH CONTROL VALVES) NTS



NOTES:
1. PROVIDE DOUBLE TRAP ARRANGEMENT WHERE SHOWN ON THE DRAWINGS &/OR SPECIFIED.

01/02/07, HS209.DWG

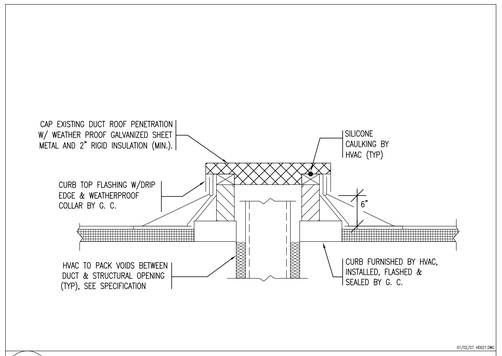
5 LOW PRESSURE END-OF-MAIN STEAM TRAP NTS



NOTES:
1. MAX. AUTOMATIC CONTROL VALVE SIZE 2-1/2 INCHES. FOR STEAM FLOW RATE GREATER THAN 2-1/2 INCHES VALVE CAPACITY, FURNISH TWO CONTROL VALVES IN PARALLEL AS INDICATED.
2. BY-PASS PIPING AROUND F & T TRAP LEG SHALL BE SAME SIZE AS TRAP.
3. PROVIDE PIPE UNIONS, FLANGES & ARRANGE WATER PIPING TO FACILITATE TUBE BUNDLE REMOVAL WITH MINIMUM DISTURBANCE TO PIPING (ALL CONNECTIONS LARGER THAN 2 1/2" SHALL BE FLANGED).
4. PRESSURE RELIEF VALVE SET AT HEAT EXCHANGER PRESSURE RATING.

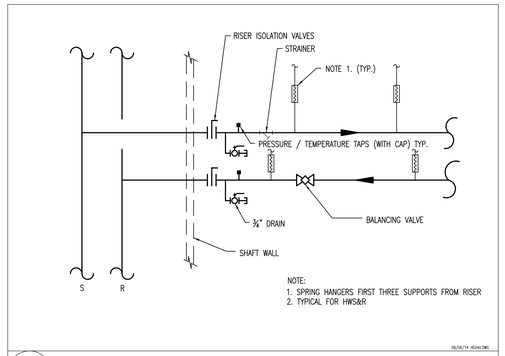
01/02/07, HS201.DWG

1 STEAM TO WATER HEAT EXCHANGER PIPING NTS



01/02/07, HS021.DWG

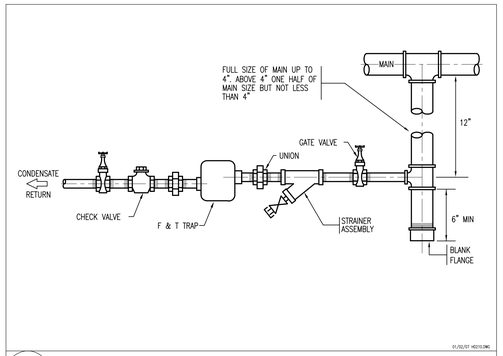
10 INSULATED DUCT ROOF PENETRATION INFILL NTS



NOTE:
1. SPRING HANGERS FIRST THREE SUPPORTS FROM RISER
2. TYPICAL FOR HWS&R

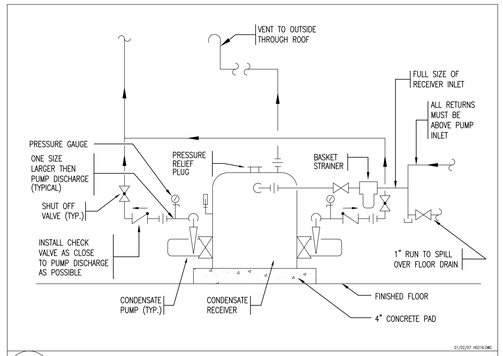
08/06/14, HE245.DWG

10 FLOOR MAIN CONNECTION TO RISER- HOT AND CHILLED WATER NTS



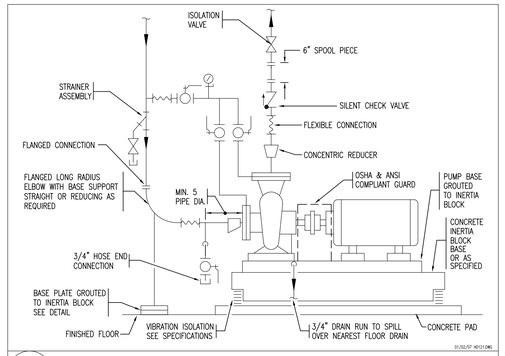
01/02/07, HS210.DWG

6 LOW PRESSURE STEAM TRAP ASSEMBLY NTS



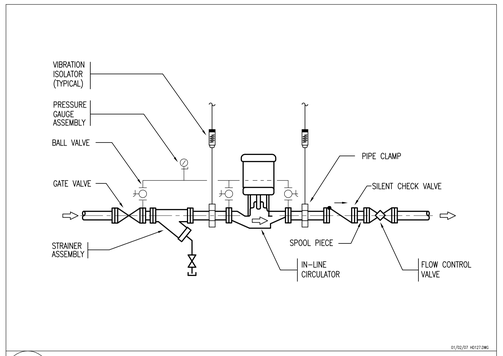
01/02/07, HS214.DWG

2 DUPLEX CONDENSATE PUMP PIPING NTS



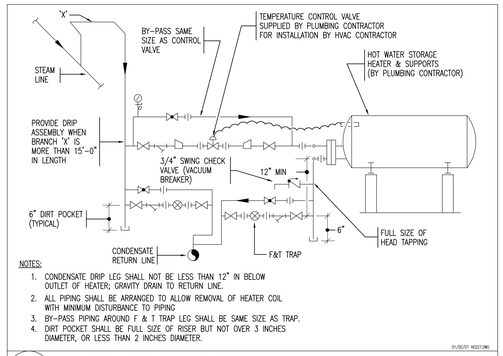
01/02/07, HS013.DWG

11 VERTICAL SPLIT CASE END SUCTION PUMP WITH FLEXIBLE CONNECTIONS – DRIVEN BY VFD NTS



01/02/07, HS122.DWG

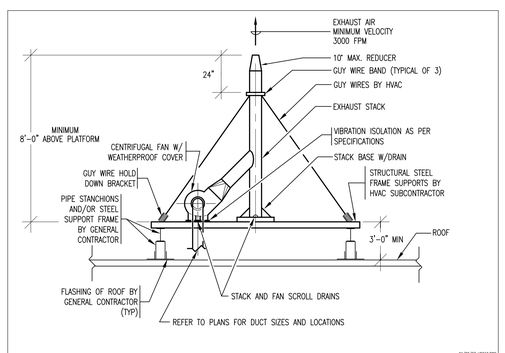
7 IN-LINE PUMP PIPING NTS



NOTES:
1. CONDENSATE DRIP LEG SHALL NOT BE LESS THAN 12" IN BELOW OUTLET OF HEATER; GRAVITY DRAIN TO RETURN LINE.
2. ALL PIPING SHALL BE ARRANGED TO ALLOW REMOVAL OF HEATER COIL WITH MINIMUM DISTURBANCE TO PIPING
3. BY-PASS PIPING AROUND F & T TRAP LEG SHALL BE SAME SIZE AS TRAP.
4. DIRT POCKET SHALL BE FULL SIZE OF RISER BUT NOT OVER 3 INCHES DIAMETER, OR LESS THAN 2 INCHES DIAMETER.

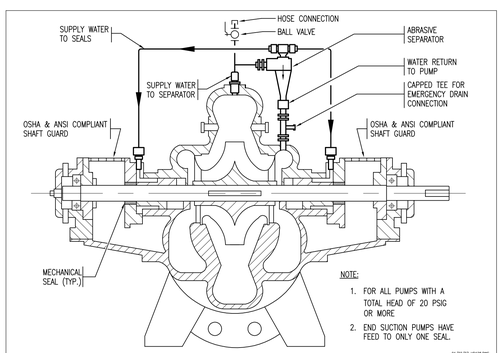
01/02/07, HS037.DWG

3 STEAM CONNECTIONS TO DOMESTIC HOT WATER HEATER WITH STORAGE TANK NTS



01/02/07, HS012.DWG

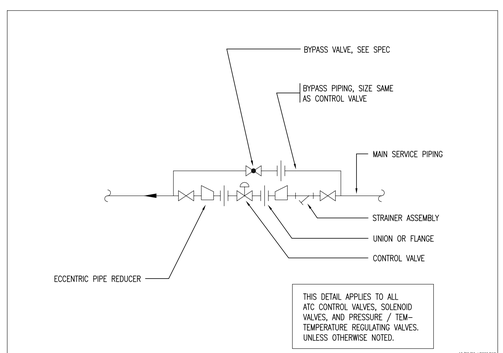
12 EXHAUST FAN & STACK NTS



NOTE:
1. FOR ALL PUMPS WITH A TOTAL HEAD OF 20 PSIG OR MORE
2. END SUCTION PUMPS HAVE FEED TO ONLY ONE SEAL.

01/02/07, HS128.DWG

8 PUMP WATER SEAL PIPING NTS



THIS DETAIL APPLIES TO ALL ATC CONTROL VALVES, SOLENOID VALVES, AND PRESSURE / TEM-TEMPERATURE REGULATING VALVES. UNLESS OTHERWISE NOTED.

10/29/08, HS108.DWG

4 CONTROL VALVE WITH BYPASS NTS

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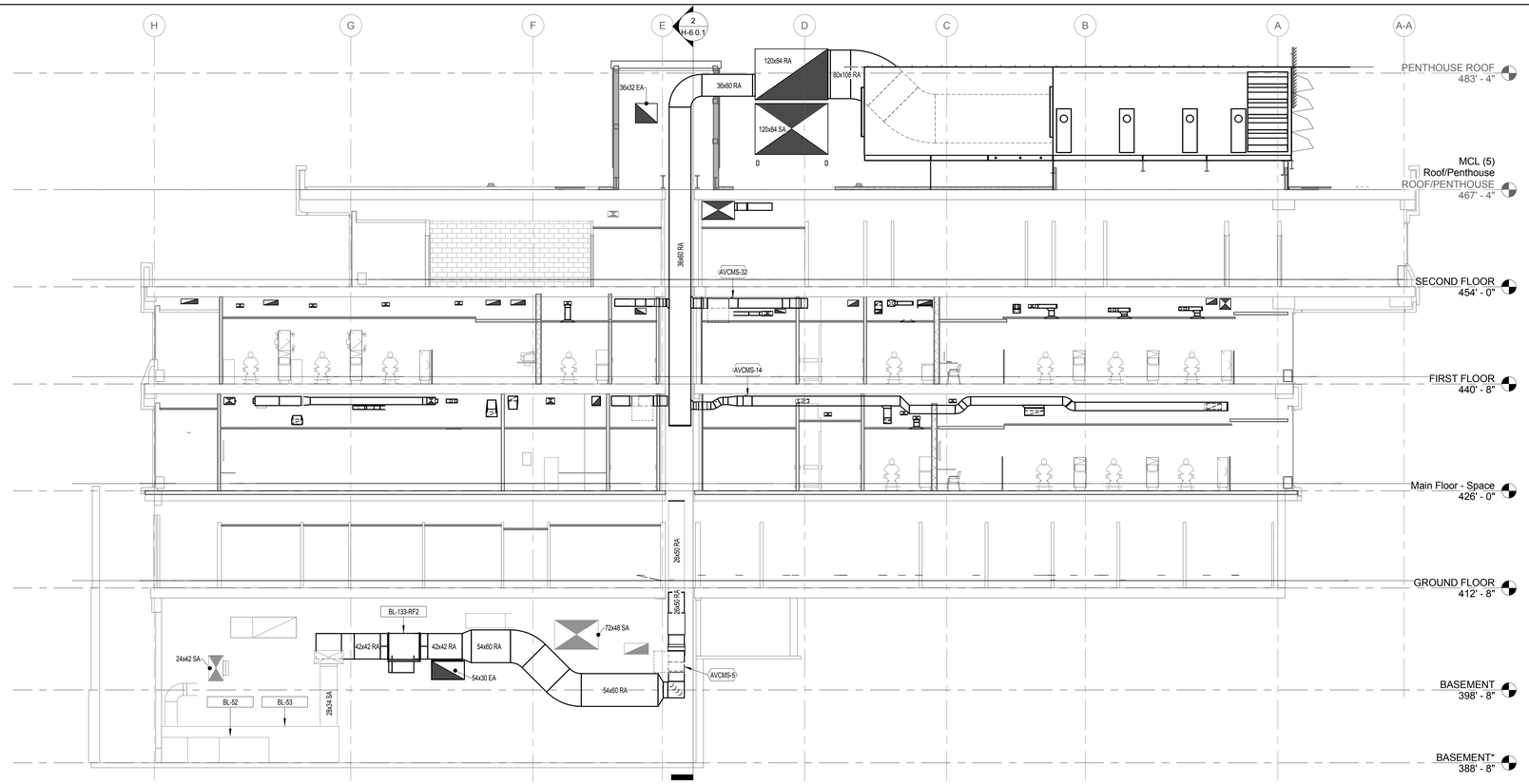
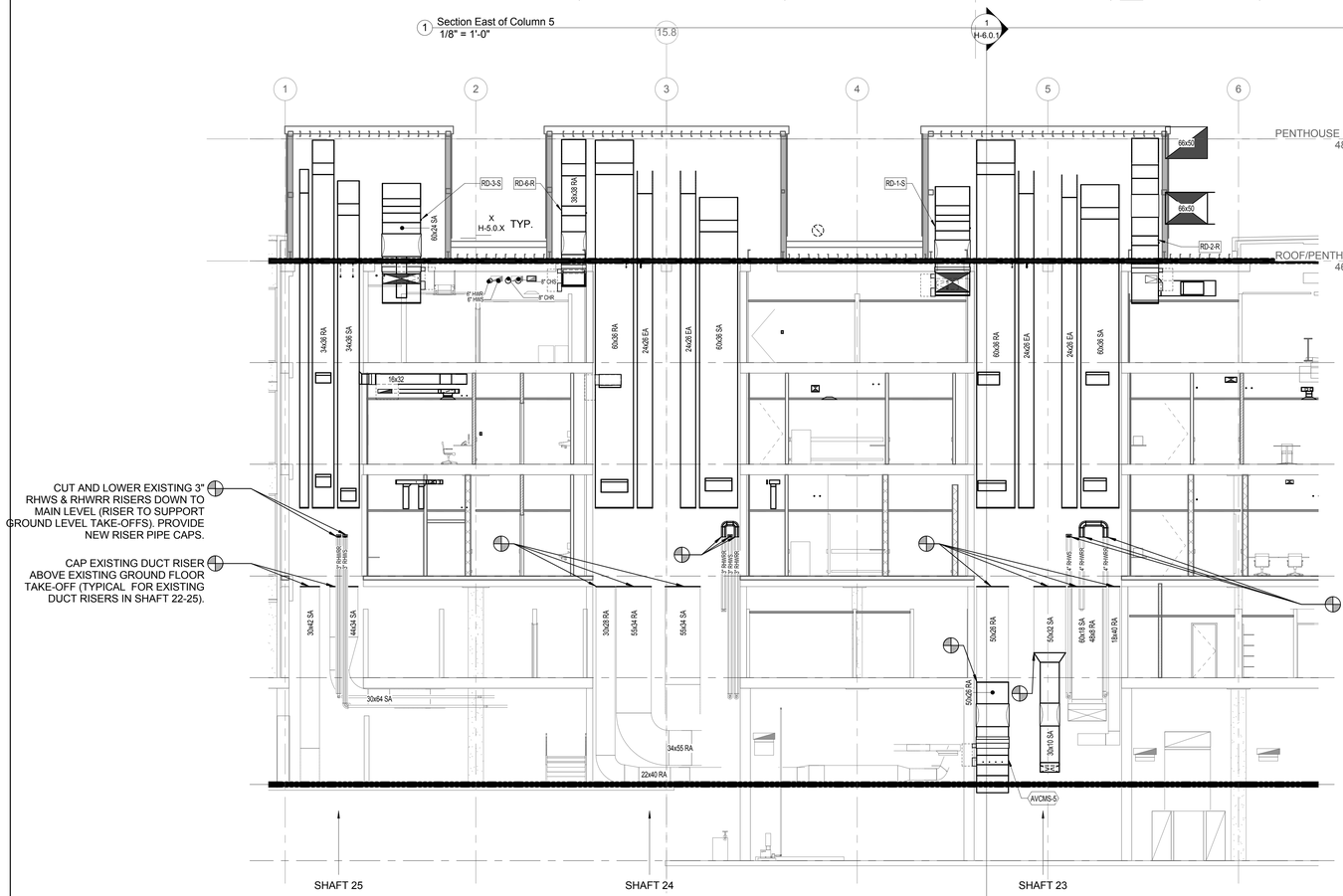
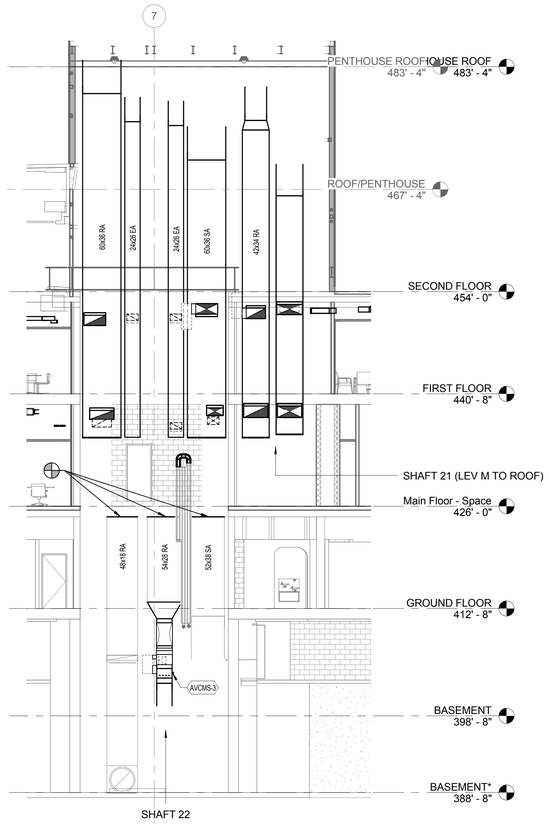


1 Section East of Column 5
1/8" = 1'-0"



2 Building C South Section - Shafts 23-25
1/8" = 1'-0"



3 Building C South Section - Shafts 21-22
1/8" = 1'-0"

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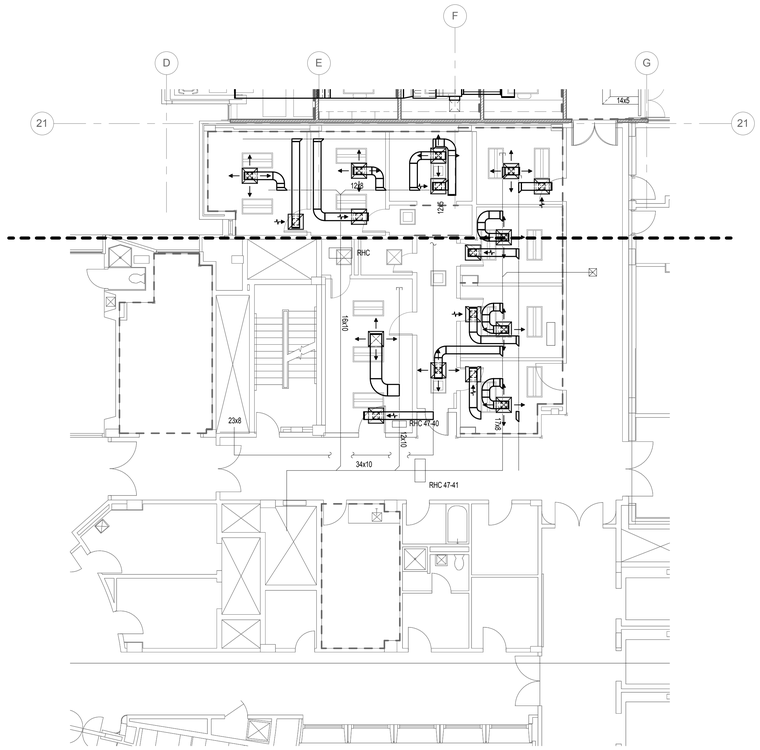

2 Second Floor - Duct - Building H
1/8" = 1'-0"

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE,
FARMINGTON CT. 06030

HVAC Sections

H-6.0.2

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
DRAWN BY:	MCL
FILE NAME:	HVAC Sections

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DEVICE LEGEND - MISCELLANEOUS

SYMBOL	DESCRIPTION	DESIGNATION	SERVICE
UPS	UNINTERRUPTIBLE POWER SOURCE	BAT-L	BATTERY LOW ALARM
⊠	MOTOR CONTROL CENTER	ST/ST	MOTOR CONTROL CENTER (NO STATUS)
⊠ MCC	MOTOR CONTROL CENTER	ST/ST & CS	MOTOR CONTROL CENTER (STATUS)
⊠ MCC- ECM	MOTOR CONTROL CENTER - ECM	SPD-C & CS	MOTOR CONTROL CENTER (STATUS -ECM)
	GENERAL RELAY	GR	GENERAL RELAY (ON/OFF)
REFER TO LAB SHEETS	CHILLER	RES ALM NET	SETPOINT RESET ALARM NETWORK CONNECTION TO ATC
REFER TO LAB SHEETS	FUME HOOD	FH-SS FH-A FH-F	FUME HOOD SASH HEIGHT SENSOR FUME HOOD ALARM FUME HOOD AIR FLOW
LS	LIGHT SENSOR	LS	ELECTRICAL LIGHT SENSOR

DEVICE LEGEND - DUCTWORK

SYMBOL	DESCRIPTION	DESIGNATION	SERVICE
AFMS	AIR FLOW MEASURING STATION	A-EA A-MOA A-OA A-RA A-RLF A-SA	EXHAUST AIR MINIMUM OUTSIDE AIR OUTSIDE AIR RETURN AIR RELIEF AIR SUPPLY AIR
M	AUTOMATIC CONTROL DAMPER WITH ELECTRIC ACTUATOR	D-AD D-BP D-BT D-DA D-EISO D-ISO D-MDOA D-MNOA D-MOA D-MXOA D-OA D-RA D-RISO D-RLF D-SISO D-UISO D-2P DSM-SA DSM-RA FSD-SA FSD-RA D-OA/RLF D-VAV	GENERAL BY-PASS / BLEED BUBBLE TIGHT DAMPER DISCHARGE AIR EXHAUST FAN ISOLATION ISOLATION MIDDLE OUTSIDE AIR DAMPER MINIMUM OUTSIDE AIR DAMPER MINIMUM OUTSIDE AIR MAXIMUM OUTSIDE AIR DAMPER OUTSIDE AIR RETURN AIR RETURN FAN ISOLATION RELIEF AIR SUPPLY FAN ISOLATION UNIT ISOLATION 2 POSITION / OPEN-CLOSED SMOKE DAMPER / SUPPLY AIR SMOKE DAMPER / RETURN AIR FIRE SMOKE DAMPER / SUPPLY AIR FIRE SMOKE DAMPER / RETURN AIR OUTSIDE AIR RELIEF DAMPER VAV DAMPER
	DAMPER END SWITCH	DES	DAMPER END SWITCH
FE	FLOW ELEMENT	FE-EA FE-HA FE-RA FE-SA	EXHAUST AIR FLOW HOOD AIR FLOW RETURN AIR FLOW SUPPLY AIR FLOW
T T	TEMPERATURE SENSOR (AVERAGING) TEMPERATURE SENSOR (DUCT)	T-CC T-DA T-DP T-EA T-EWL T-MA T-OA T-PHT T-RA T-SA	COOLING COIL LEAVING AIR DISCHARGE AIR DEW POINT EXHAUST AIR ENTHALPY WHEEL LEAVING AIR TEMPERATURE MIXED AIR TEMPERATURE OUTSIDE AIR TEMPERATURE PREHEAT COIL LEAVING AIR TEMPERATURE RETURN AIR TEMPERATURE SUPPLY AIR TEMPERATURE
T	TEMPERATURE SENSOR (AVERAGING)	T-LTD	LOW TEMPERATURE DETECTOR (FREEZE-STAT)
	LAB VALVE	LV-EA LV-HA LV-SA	LAB VALVE - EXHAUST AIR LAB VALVE - HOOD AIR LAB VALVE - SUPPLY AIR
H	HUMIDITY SENSOR	H-DA H-HL H-RA	DISCHARGE AIR HUMIDITY HUMIDITY HIGH LIMIT RETURN AIR HUMIDITY
CO2	CARBON DIOXIDE SENSOR (CO2)	CO2-OA CO2-RA	CARBON DIOXIDE - OUTSIDE AIR CARBON DIOXIDE - RETURN AIR
	SMOKE DETECTOR	SD-RA SD-SA	SMOKE DETECTOR - RETURN AIR SMOKE DETECTOR - SUPPLY AIR
P	PRESSURE SENSOR PORT	D-DAHL P-DALL P-DASP P-DP-A P-DP-D P-EASP P-EAHL P-EALL P-RAHL P-RALL P-SAHL P-SALL P-RASP P-RFSP P-SASP P-VPS	DISCHARGE AIR / HIGH LIMIT DISCHARGE AIR / LOW LIMIT DISCHARGE AIR / STATIC PRESSURE DIFFERENTIAL PRESSURE - ANALOG DIFFERENTIAL PRESSURE - DIGITAL EXHAUST AIR / STATIC PRESSURE EXHAUST AIR / HIGH LIMIT EXHAUST AIR / LOW LIMIT RETURN AIR / HIGH LIMIT RETURN AIR / LOW LIMIT SUPPLY AIR / HIGH LIMIT SUPPLY AIR / LOW LIMIT RETURN AIR / STATIC PRESSURE RELIEF AIR / STATIC PRESSURE SUPPLY AIR / STATIC PRESSURE VELOCITY PRESSURE SENSOR
	AIR FLOW SWITCH	AFS	DUCTWORK AIR FLOW SWITCH
DWP	DEW POINT SENSOR	DWP-EA DWP-OA DWP-RA DWP-SA	DEW POINT - EXHAUST AIR DEW POINT - OUTSIDE AIR DEW POINT - RETURN AIR DEW POINT- SUPPLY AIR
DPS	DIFFERENTIAL PRESSURE SWITCH	P-DPS	DIFFERENTIAL PRESSURE SWITCH

ATC LEGEND

ALM	GENERAL ALARM / FAULT
AI	ANALOG INPUT
AO	ANALOG OUTPUT
ATC	AUTOMATIC TEMPERATURE CONTROLS
BAS	BUILDING AUTOMATION SYSTEM
CM	FIRE ALARM CONTROL MODULE
CT	CURRENT TRANSDUCER
DDC	DIRECT DIGITAL CONTROL SYSTEM
DDCP	DIRECT DIGITAL CONTROL PANEL
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
EF	EXHAUST FAN
FAS	FIRE ALARM SYSTEM
G-MON	GAS MONITOR
HW	HARD WIRED CONNECTION
IND	INDUCTION LAMP
MCC	MOTOR CONTROL CENTER
MD-I	MODE SELECT INPUT
MD-O	MODE SELECT OUTPUT
MM	FIRE ALARM MONITOR MODULE
MR	MANUAL RESET
NET	NETWORK CONNECTION TO ATC SYSTEM
N.C	NORMALLY CLOSED
N.O	NORMALLY OPEN
PC	PROGRAMMABLE CONTROLLER
PHX	PHOENIX CONTROLLER
PHC	PREHEAT COIL
RES	SETPOINT RESET
RHC	REHEAT COIL
RF	RETURN FAN
SPD-C	VFD SPEAD CONTROL
ST / ST	START / STOP
STS	STATUS
SF	SUPPLY FAN
TEC	TERMINAL EQUIPMENT CONTROLLER
VD	VOLUME DAMPER

FAN

PUMP

STEAM TRAP

2-WAY ISOLATION VALVE (24V / 120V)

MAUAL/BUTTERFLY ISOLATION VALVE

FIN TUBE RADIATION (FTR)

H — HUMIDIFIER

M MD — MOTORIZED DAMPER (24V / 120V)

MD — MANUAL DAMPER

DAMPER END SWITCH

UNION

T — ROOM TEMPERATURE - 24V/120V

NAC — NETWORK APPLICATION CONTROLLER

NAN — NETWORK APPLICATION NODES

UAC — UNITARY APPLICATION CONTROLLER

VFD — VARIABLE FREQUENCY DRIVE

SW — ROOM SWITCH - HARDWIRE

T-SW — AQUASTAT

FIRE ALARM HOA:
- CM — FIRE OVERRIDE ON
- CM — FIRE OVERRIDE OFF
- MM — FAN STATUS FEEDBACK

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
FARMINGTON, CT 06030

CONTROLS LEGEND

H-7.0.0

BID DOCUMENTS

SCALE:	1/8" = 1'-0"
JOB NO:	1302
DATE:	12/10/2015
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DEVICE LEGEND - MISCELLANEOUS CONTINUED

SYMBOL	DESCRIPTION	DESIGNATION	SERVICE
CM	FIRE CONTROL MODULE	CM	CONTROL MODULE
MM	FIRE MONITOR MODULE	CM	MONITOR MODULE
R	ELECTRIC RELAY	ER	ELECTRIC RELAY
AM	ALARM MODULE	AM	ALARM MODULE

DEVICE LEGEND - PIPING

SYMBOL	DESCRIPTION	DESIGNATION	SERVICE
	2-WAY AND 3-WAY CONTROL VALVE WITH ELECTRIC ACTUATOR	V V-2P V-CHWD V-CLG V-DP V-HRC V-HUM V-HW V-PH V-RH V-RAD V-RDP V-STM	GENERAL VALVE 2 POSITION VALVE CHILLED WATER DENY CONTROL VALVE COOLING COIL VALVE DIFFERENTIAL PRESSURE CONTROL HEAT RECOVERY COIL VALVE HUMIDIFIER VALVE HOT WATER VALVE PREHEAT COIL VALVE REHEAT COIL VALVE RADIATION VALVE RADIANT PANEL VALVE STEAM VALVE
	ISOLATION VALVE	V-ISO	ISOLATION VALVE - OPEN/CLOSE
	BUTTERFLY VALVE	V-CTBP	COOLING TOWER BYPASS
T	TEMPERATURE SENSOR AND WELL	T-CHE T-CHL T-CHS T-CHR T-CTB T-CWS T-CWR T-PHE T-PHL T-PCHR T-PCHS T-SW T-HWS T-HWR T-HTWS T-HTWR	CHILLED WATER ENTERING CHILLED WATER LEAVING CHILLED WATER SUPPLY CHILLED WATER RETURN COOLING TOWER BASIN TEMPERATURE CONDENSER WATER SUPPLY CONDENSER WATER RETURN HOT WATER / GLYCOL ENTERING HOT WATER / GLYCOL LEAVING PROCESSED CHILLED WATER RETURN PROCESSED CHILLED WATER SUPPLY TEMPERATURE HIGH / LOW SWITCH HOT WATER SUPPLY HOT WATER RETURN HIGH TEMPERATURE WATER SUPPLY HIGH TEMPERATURE WATER RETURN
POS	-	POS	VALVE POSITION INDICATOR
	DIFFERENTIAL PRESSURE SENSOR	P-DP-A P-DP-D	DIFFERENTIAL PRESSURE - ANALOG DIFFERENTIAL PRESSURE - DIGITAL
	MOISTURE ALARM	MA	MOISTURE ALARM
P	SYSTEM PRESSURE	P-SP P-RP	SUPPLY PRESSURE RETURN PRESSURE
M	FLOW METER	FM-CHW FM-H FM-STM	CHILLED WATER HYDRONIC SYSTEM STEAM
	HYDRONIC FLOW SWITCH	HFS	PIPING HYDRONIC FLOW SWITCH
	CT VIBRATION SWITCH CT WATER LEVEL SENSOR	VBS WLS	VIBRATION SWITCH WATER LEVEL SENSOR

DEVICE LEGEND - ROOM / SPACE SENSORS

SYMBOL	DESCRIPTION	DESIGNATION	SERVICE
ALM	ALARM	ALM	GENERAL ALARM
CO	CARBON MONOXIDE	CO	ROOM / SPACE
CO2	CARBON DIOXIDE (CO2) ROOM / SPACE	CO2-RM	ROOM / SPACE
DWP	DEW POINT SENSOR	DWP-RM	DEW POINT - ROOM TEMPERATURE
H	HUMIDITY ROOM / SPACE	H-RM H-OA	ROOM / SPACE OUTSIDE AIR
MS	MOISTURE SENSOR	MS	ROOM / SPACE
NO2	NITROGEN DIOXIDE	NO2	ROOM / SPACE
OS	OXYGEN SENSOR	OS	ROOM / SPACE
OCC	OCCUPANCY SENSOR	OCC	ROOM / SPACE
PC	PARTICLE COUNTER	PC	ROOM / SPACE
RMP	ROOM PRESSURE MONITOR	RMP	ROOM / SPACE
RS	REFRIGERANT SENSOR	RS-M RS-W RS-ALM	REFRIGERANT SENSOR MONITOR (PPM) REFRIGERANT SENSOR - LOW WARNING REFRIGERANT SENSOR - HIGH ALARM
SMD	SMOKE DETECTOR ROOM / SPACE	SD-RM	ROOM / SPACE
T	TEMPERATURE ROOM / SPACE	T-RM T-OA	ROOM / SPACE OUTSIDE AIR
SW-RM	ROOM SWITCH	RM-SW	ROOM SWITCH - DIGITAL INPUT
SW	SWITCH	SW	SWITCH - DIGITAL INPUT

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UCONN HEALTH

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BUILDING C RENOVATION

263 FARMINGTON AVE,
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CONTROLS LEGEND

H-7.0.1

BID DOCUMENTS

SCALE:
JOB NO: 1302
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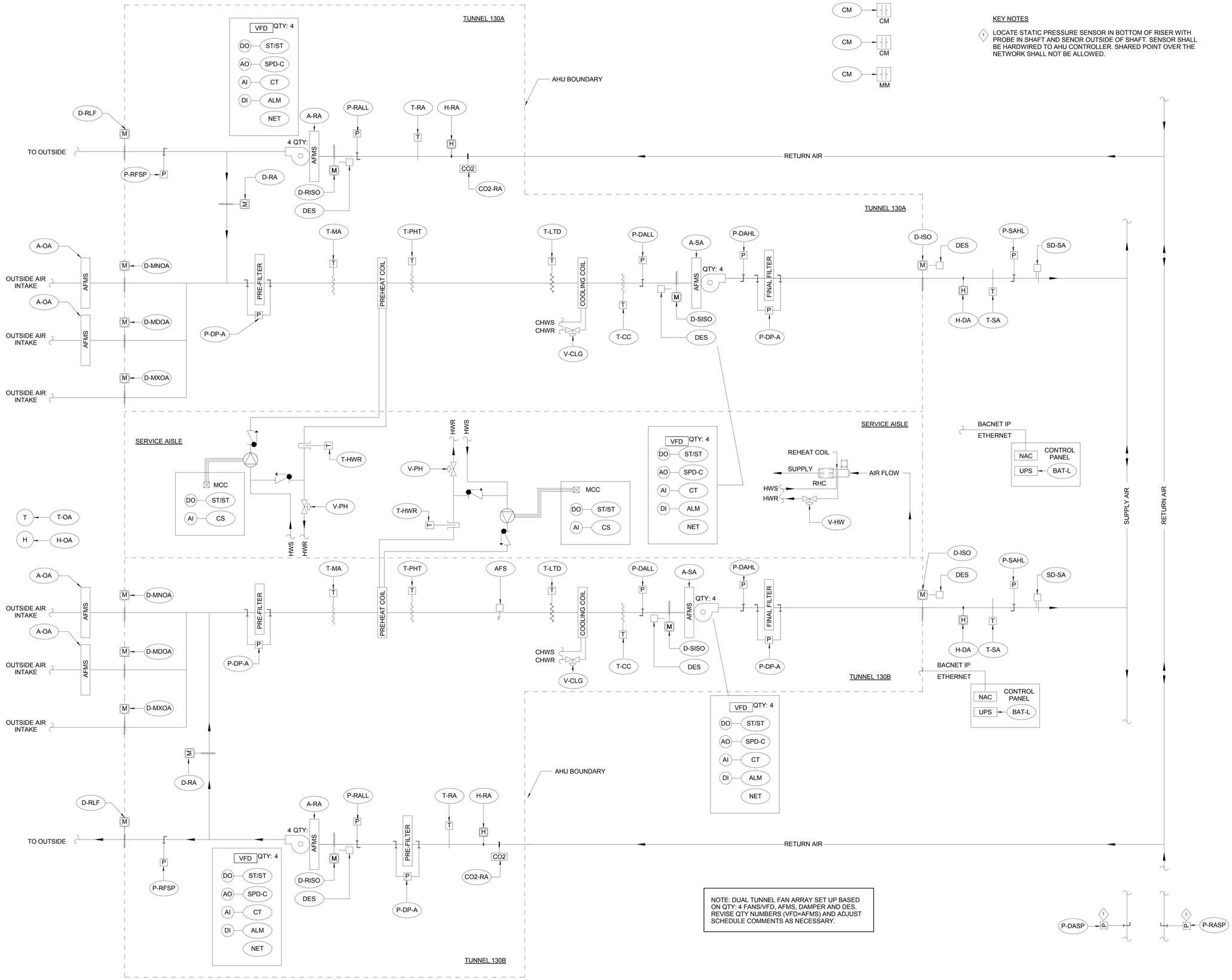

KEY NOTES

1. LOCATE STATIC PRESSURE SENSOR IN BOTTOM OF RISER WITH PROBE IN SHAFT AND SENOR OUTSIDE OF SHAFT. SENSOR SHALL BE HARDWIRED TO AHU CONTROLLER. SHARED POINT OVER THE NETWORK SHALL NOT BE ALLOWED.

NOTE: DUAL TUNNEL FAN ARRAY SET UP BASED ON QTY: 4 FANS/VFD, AFMS, DAMPER AND DES. REVISE QTY NUMBERS (VFD=AFMS) AND ADJUST SCHEDULE COMMENTS AS NECESSARY.

1 Air Handling Unit BL-130A&B - Dual Tunnel Mixed Air Fan Array w/ Hot Water Preheat and Cooling

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BUILDING C RENOVATION

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CONTROL DIAGRAMS

H-7.0.2A

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Air Handling Unit BL-130A&B - Dual Tunnel Mixed Air Fan Array w/ Hot Water Preheat and Cooling Control Points List

BAS_TYPE	BAS_SERVICE	BAS_SERVICE_TAG	ALM_LO	ALM_HI	ALM_OFF / NORMAL	COMMENTS
AI	CARBON DIOXIDE - RETURN AIR	CO2-RA				TUNNEL A
AI	CARBON DIOXIDE - RETURN AIR	CO2-RA				TUNNEL B
AI	COOLING COIL LEAVING AIR TEMPERATURE	T-CC				TUNNEL A
AI	COOLING COIL LEAVING AIR TEMPERATURE	T-CC				TUNNEL B
AI	DIFFERENTIAL PRESSURE - ANALOG	P-DP-A				
AI	DIFFERENTIAL PRESSURE - ANALOG	P-DP-A		X		TUNNEL A FINAL FILTER
AI	DIFFERENTIAL PRESSURE - ANALOG	P-DP-A		X		TUNNEL A SUPPLY AIR PRE-FILTER
AI	DIFFERENTIAL PRESSURE - ANALOG	P-DP-A		X		TUNNEL B FINAL FILETER
AI	DIFFERENTIAL PRESSURE - ANALOG	P-DP-A		X		TUNNEL B SUPPLY AIR PRE-FILTER
AI	DISCHARGE / STATIC PRESSURE	P-DASP	X	X		
AI	DISCHARGE AIR	H-DA				TUNNEL A
AI	DISCHARGE AIR	H-DA				TUNNEL B
AI	HOT WATER RETURN TEMPERATURE	T-HWR				TUNNEL A
AI	HOT WATER RETURN TEMPERATURE	T-HWR				TUNNEL B
AI	MIXED AIR TEMPERATURE	T-MA				TUNNEL A
AI	MIXED AIR TEMPERATURE	T-MA				TUNNEL B
AI	OUTSIDE AIR	H-OA				
AI	OUTSIDE AIR	T-OA				
AI	OUTSIDE AIR FLOW	A-OA				TUNNEL A MID. OUTSIDE AIR DAMPER
AI	OUTSIDE AIR FLOW	A-OA				TUNNEL A MIN. OUTSIDE AIR DAMPER
AI	OUTSIDE AIR FLOW	A-OA				TUNNEL B MID. OUTSIDE AIR DAMPER
AI	OUTSIDE AIR FLOW	A-OA				TUNNEL B MIN. OUTSIDE AIR DAMPER
AI	PREHEAT COIL LEAVING AIR	T-PHT				TUNNEL A
AI	PREHEAT COIL LEAVING AIR	T-PHT				TUNNEL B
AI	RELIEF AIR / STATIC PRESSURE	P-RFSP	X	X		TUNNEL A
AI	RELIEF AIR / STATIC PRESSURE	P-RFSP	X	X		TUNNEL B
AI	RETURN AIR	H-RA				
AI	RETURN AIR	H-RA				
AI	RETURN AIR / STATIC PRESSURE	P-RASP	X	X		
AI	RETURN AIR FLOW	A-RA				RETURN FAN A-1
AI	RETURN AIR FLOW	A-RA				RETURN FAN A-2
AI	RETURN AIR FLOW	A-RA				RETURN FAN A-3
AI	RETURN AIR FLOW	A-RA				RETURN FAN A-4
AI	RETURN AIR FLOW	A-RA				RETURN FAN B-1
AI	RETURN AIR FLOW	A-RA				RETURN FAN B-2
AI	RETURN AIR FLOW	A-RA				RETURN FAN B-3
AI	RETURN AIR FLOW	A-RA				RETURN FAN B-4
AI	RETURN AIR TEMPERATURE	T-RA				TUNNEL A
AI	RETURN AIR TEMPERATURE	T-RA				TUNNEL B
AI	STATUS INPUT	CS				TUNNEL A PHC PUMP MCC
AI	STATUS INPUT	CS				TUNNEL B PHC PUMP MCC
AI	SUPPLY AIR FLOW	A-SA				SUPPLY FAN A-1
AI	SUPPLY AIR FLOW	A-SA				SUPPLY FAN A-2
AI	SUPPLY AIR FLOW	A-SA				SUPPLY FAN A-3
AI	SUPPLY AIR FLOW	A-SA				SUPPLY FAN A-4
AI	SUPPLY AIR FLOW	A-SA				SUPPLY FAN B-1
AI	SUPPLY AIR FLOW	A-SA				SUPPLY FAN B-2
AI	SUPPLY AIR FLOW	A-SA				SUPPLY FAN B-3
AI	SUPPLY AIR FLOW	A-SA				SUPPLY FAN B-4
AI	SUPPLY AIR TEMPERATURE	T-SA				TUNNEL A
AI	SUPPLY AIR TEMPERATURE	T-SA				TUNNEL B
AI	VARIABLE FREQUENCY DRIVE	CT			X	RETURN FAN A-1 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	RETURN FAN A-2 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	RETURN FAN A-3 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	RETURN FAN A-4 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	RETURN FAN B-1 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	RETURN FAN B-2 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	RETURN FAN B-3 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	RETURN FAN B-4 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	SUPPLY FAN A-1 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	SUPPLY FAN A-2 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	SUPPLY FAN A-3 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	SUPPLY FAN A-4 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	SUPPLY FAN B-1 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	SUPPLY FAN B-2 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	SUPPLY FAN B-3 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	SUPPLY FAN B-4 - STATUS
AO	COOLING COIL VALVE	V-CLG				TUNNEL A
AO	COOLING COIL VALVE	V-CLG				TUNNEL B
AO	HOTWATER VALVE	V-HW				
AO	MAXIMUM OUTSIDE AIR DAMPER	D-MXOA				
AO	MAXIMUM OUTSIDE AIR DAMPER	D-MXOA				
AO	MID OUTSIDE AIR DAMPER	D-MDOA				TUNNEL A
AO	MID OUTSIDE AIR DAMPER	D-MDOA				TUNNEL B
AO	MINIMUM OUTSIDE AIR DAMPER	D-MNOA				TUNNEL A
AO	MINIMUM OUTSIDE AIR DAMPER	D-MNOA				TUNNEL B
AO	PREHEAT COIL VALVE	V-PH				TUNNEL A
AO	PREHEAT COIL VALVE	V-PH				TUNNEL B
AO	RELIEF AIR DAMPER	D-RLF				TUNNEL A
AO	RELIEF AIR DAMPER	D-RLF				TUNNEL B
AO	RETURN AIR DAMPER	D-RA				TUNNEL A
AO	RETURN AIR DAMPER	D-RA				TUNNEL B
AO	VARIABLE FREQUENCY DRIVE	SPD-C				RETURN FAN A-1
AO	VARIABLE FREQUENCY DRIVE	SPD-C				RETURN FAN A-2
AO	VARIABLE FREQUENCY DRIVE	SPD-C				RETURN FAN A-3
AO	VARIABLE FREQUENCY DRIVE	SPD-C				RETURN FAN A-4
AO	VARIABLE FREQUENCY DRIVE	SPD-C				RETURN FAN B-1
AO	VARIABLE FREQUENCY DRIVE	SPD-C				RETURN FAN B-2
AO	VARIABLE FREQUENCY DRIVE	SPD-C				RETURN FAN B-3
AO	VARIABLE FREQUENCY DRIVE	SPD-C				RETURN FAN B-4
AO	VARIABLE FREQUENCY DRIVE	SPD-C				SUPPLY FAN A-1
AO	VARIABLE FREQUENCY DRIVE	SPD-C				SUPPLY FAN A-2
AO	VARIABLE FREQUENCY DRIVE	SPD-C				SUPPLY FAN A-3
AO	VARIABLE FREQUENCY DRIVE	SPD-C				SUPPLY FAN A-4
AO	VARIABLE FREQUENCY DRIVE	SPD-C				SUPPLY FAN B-1
AO	VARIABLE FREQUENCY DRIVE	SPD-C				SUPPLY FAN B-2
AO	VARIABLE FREQUENCY DRIVE	SPD-C				SUPPLY FAN B-3
AO	VARIABLE FREQUENCY DRIVE	SPD-C				SUPPLY FAN B-4
DI	BATTERY LOW ALARM	BAT-L			X	TUNNEL A
DI	BATTERY LOW ALARM	BAT-L			X	TUNNEL B

Air Handling Unit BL-130A&B - Dual Tunnel Mixed Air Fan Array w/ Hot Water Preheat and Cooling Control Points List

BAS_TYPE	BAS_SERVICE	BAS_SERVICE_TAG	ALM_LO	ALM_HI	ALM_OFF / NORMAL	COMMENTS
DI	DAMPER END SWITCH	DES				RETURN FAN A-1 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				RETURN FAN A-2 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				RETURN FAN A-3 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				RETURN FAN A-4 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				RETURN FAN B-1 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				RETURN FAN B-2 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				RETURN FAN B-3 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				RETURN FAN B-4 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				SUPP.Y FAN A-1 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				SUPPLY FAN A-2 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				SUPPLY FAN A-3 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				SUPPLY FAN A-4 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				SUPPLY FAN B-1 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				SUPPLY FAN B-2 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				SUPPLY FAN B-3 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				SUPPLY FAN B-4 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				TUNNEL A ISOLATION DAMPER - TUNNEL A - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				TUNNEL B ISOLATION DAMPER - TUNNEL B - HARDWIRE INTERLOCK
DI	DISCHARGE AIR / HIGH PRESSURE LIMIT	P-DAHL		X		TUNNEL A UNIT STATIC SAFETY - HARDWIRE INTERLOCK
DI	DISCHARGE AIR / HIGH PRESSURE LIMIT	P-DAHL		X		TUNNEL B
DI	DISCHARGE AIR / LOW PRESSURE LIMIT	P-DALL	X			TUNNEL A UNIT STATIC SAFETY-HARDWIRE INTERLOCK
DI	DISCHARGE AIR / LOW PRESSURE LIMIT	P-DALL	X			TUNNEL B
DI	DUCTWORK AIR FLOW SWITCH	AFS				TUNNEL B
DI	FIRE CONTROL MODULE	CM				50% FSD OPEN FROM FA
DI	FIRE CONTROL MODULE	CM				ALL FSD OPEN FROM FA
DI	LOW TEMPERATURE	T-LTD	X			TUNNEL A HARDWIRE INTERLOCK
DI	LOW TEMPERATURE	T-LTD	X			TUNNEL B
DI	RETURN AIR / LOW LIMIT	P-RALL	X			TUNNEL A DUCTWORK STATIC SAFETY - HARDWIRE INTERLOCK
DI	RETURN AIR / LOW LIMIT	P-RALL	X			TUNNEL B DUCTWORK STATIC SAFETY - HARDWIRE INTERLOCK
DI	SUPPLY AIR	SD-SA				TUNNEL A HARDWIRE INTERLOCK
DI	SUPPLY AIR	SD-SA				TUNNEL B HARDWIRE INTERLOCK
DI	SUPPLY AIR / HIGH PRESSURE LIMIT	P-SAHL		X		TUNNEL A DUCTWORK STATIC SAFETY - HARDWIRE INTERLOCK
DI	SUPPLY AIR / HIGH PRESSURE LIMIT	P-SAHL		X		TUNNEL B DUCTWORK STATIC SAFETY - HARDWIRE INTERLOCK
DI	VARIABLE FREQUENCY DRIVE	ALM			X	RETURN FAN A-1
DI	VARIABLE FREQUENCY DRIVE	ALM			X	RETURN FAN A-2
DI	VARIABLE FREQUENCY DRIVE	ALM			X	RETURN FAN A-3
DI	VARIABLE FREQUENCY DRIVE	ALM			X	RETURN FAN A-4
DI	VARIABLE FREQUENCY DRIVE	ALM				RETURN FAN B-1
DI	VARIABLE FREQUENCY DRIVE	ALM				RETURN FAN B-2
DI	VARIABLE FREQUENCY DRIVE	ALM				RETURN FAN B-3
DI	VARIABLE FREQUENCY DRIVE	ALM				RETURN FAN B-4
DI	VARIABLE FREQUENCY DRIVE	ALM			X	SUPPLY FAN A-1
DI	VARIABLE FREQUENCY DRIVE	ALM			X	SUPPLY FAN A-2
DI	VARIABLE FREQUENCY DRIVE	ALM			X	SUPPLY FAN A-3
DI	VARIABLE FREQUENCY DRIVE	ALM			X	SUPPLY FAN A-4
DI	VARIABLE FREQUENCY DRIVE	ALM			X	SUPPLY FAN B-1
DI	VARIABLE FREQUENCY DRIVE	ALM			X	SUPPLY FAN B-2
DI	VARIABLE FREQUENCY DRIVE	ALM			X	SUPPLY FAN B-3
DI	VARIABLE FREQUENCY DRIVE	ALM			X	SUPPLY FAN B-4
DO	FIRE MONITOR MODULE	CM				UNIT FSD COMMAND TO FA
DO	ISOLATION DAMPER	D-ISO				TUNNEL A
DO	ISOLATION DAMPER	D-ISO				TUNNEL B
DO	RETURN FAN ISOLATION DAMPER	D-RISO				RETURN FAN A-1
DO	RETURN FAN ISOLATION DAMPER	D-RISO				RETURN FAN A-2
DO	RETURN FAN ISOLATION DAMPER	D-RISO				RETURN FAN A-3
DO	RETURN FAN ISOLATION DAMPER	D-RISO				RETURN FAN A-4
DO	RETURN FAN ISOLATION DAMPER	D-RISO				RETURN FAN B-1
DO	RETURN FAN ISOLATION DAMPER	D-RISO				RETURN FAN B-2
DO	RETURN FAN ISOLATION DAMPER	D-RISO				RETURN FAN B-3
DO	RETURN FAN ISOLATION DAMPER	D-RISO				RETURN FAN B-4
DO	START-STOP	ST/ST				
DO	START-STOP	ST/ST				
DO	SUPPLY FAN ISOLATION DAMPER	D-SISO				SUPPLY FAN A-1
DO	SUPPLY FAN ISOLATION DAMPER	D-SISO				SUPPLY FAN A-2
DO	SUPPLY FAN ISOLATION DAMPER	D-SISO				SUPPLY FAN A-3
DO	SUPPLY FAN ISOLATION DAMPER	D-SISO				SUPPLY FAN A-4
DO	SUPPLY FAN ISOLATION DAMPER	D-SISO				SUPPLY FAN B-1
DO	SUPPLY FAN ISOLATION DAMPER	D-SISO				SUPPLY FAN B-2
DO	SUPPLY FAN ISOLATION DAMPER	D-SISO				SUPPLY FAN B-3
DO	SUPPLY FAN ISOLATION DAMPER	D-SISO				SUPPLY FAN B-4
DO	VARIABLE FREQUENCY DRIVE	ST/ST				RETURN FAN A-1
DO	VARIABLE FREQUENCY DRIVE	ST/ST				RETURN FAN A-2
DO	VARIABLE FREQUENCY DRIVE	ST/ST				RETURN FAN A-3
DO	VARIABLE FREQUENCY DRIVE	ST/ST				RETURN FAN A-4
DO	VARIABLE FREQUENCY DRIVE	ST/ST				RETURN FAN B-1
DO	VARIABLE FREQUENCY DRIVE	ST/ST				RETURN FAN B-2
DO	VARIABLE FREQUENCY DRIVE	ST/ST				RETURN FAN B-3
DO	VARIABLE FREQUENCY DRIVE	ST/ST				RETURN FAN B-4
DO	VARIABLE FREQUENCY DRIVE	ST/ST				SUPPLY FAN A-1
DO	VARIABLE FREQUENCY DRIVE	ST/ST				SUPPLY FAN A-2
DO	VARIABLE FREQUENCY DRIVE	ST/ST				SUPPLY FAN A-3
DO	VARIABLE FREQUENCY DRIVE	ST/ST				SUPPLY FAN A-4
DO	VARIABLE FREQUENCY DRIVE	ST/ST				SUPPLY FAN B-1
DO	VARIABLE FREQUENCY DRIVE	ST/ST				SUPPLY FAN B-2
DO	VARIABLE FREQUENCY DRIVE	ST/ST				SUPPLY FAN B-3
DO	VARIABLE FREQUENCY DRIVE	ST/ST				SUPPLY FAN B-4

Grand total: 186

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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CONTROL DIAGRAMS

H-7.0.2B

BID DOCUMENTS

SCALE:
JOB NO: 1302
DATE: 12/10/2015
DRAWN BY: MCL
FILE NAME: CONTROL DIAGRAMS

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1.1 Air Handling Unit: Dual Tunnel Mixed Air Fan Array with Hot Water Preheat and Cooling

A. General

1. Programs and sequences indicated or implied herein shall be provided.
2. Provide all I/O points indicated on the control diagram and as required to accomplish the sequence of operation.
3. All wire terminals, devices, gauges and wires shall be identified within the panels.
4. Dampers and end switches shall be interlocked such that they will operate per the sequence below in either auto, hand or off on the VFD/MCC.
5. All points shall be able to integrate to all trends, totalizations, etc., as applicable.
6. All alarms as indicated on the diagrams in the sequence of operation shall be generated to the appropriate server/workstations.

B. Start/Stop

1. The unit normally operates continuously with remotely capability for start/stop/scheduling functions.
2. The H.O.A. switch shall be kept in the "auto" position. "Hand" and "Off" positions shall be utilized for maintenance purposes. The dual tunnels of the AHU have the ability to operate individually if one tunnel of the AHU is down. Each tunnel will utilize the following sequence for startup and flow control.
3. When the air handling unit is off, the outside damper, relief damper, supply fans and unit isolation dampers along with the return fans isolation dampers shall be closed with the return damper being open.
4. When the unit receives a start command, the minimum outside damper and relief damper shall open to its minimum position with return damper tracking in opposite action. The supply and return fan isolation dampers shall open along with the unit smoke damper shall open with proof provided by their respective end switches. When the end switches prove open via hardwire interlock, the supply and return fans shall start at minimum speed.
5. Upon confirmation the supply and return fans are running; the supply and return fans respectively shall modulate as indicated below for control.
6. If after a 60 second delay (adjustable) either of the fans does not provide status or any VFD provides an alarm condition, then the fans will be shutdown; the outside damper, relief damper, supply and return fan isolation dampers along with the unit smoke isolation damper will close and the return damper will open. An alarm will be generated and the unit will be locked out in software.

C. Airflow Control

1. Upon start-up of the supply fans and return fans, the BAS panel receives a static pressure signal for both fans systems. The speed of the supply fan and return fans shall increase their respective system static pressure to maintain setpoint at the duct mounted static pressure sensors.
   a. The supply air fan speed shall be controlled to maintain the desired duct static pressure of 1.5 inches of water gauge minimum (adjustable).
   b. The return air fan speed shall be controlled to maintain the desired duct static pressure of 1.5 inches of water gauge minimum (adjustable).
2. The outside air dampers and relief air damper shall modulate in unison with the return damper modulating in opposite action to provide a minimum outside air flow setpoint as indicated on AHU schedules (adjustable). The minimum, mid and maximum outside air dampers shall modulate open in a staged fashion in that order.
3. At no point shall the ductwork upstream of the relief air damper be negatively pressurized. The relief air ductwork pressure differential to atmosphere shall override the relief damper control to modulate the relief damper closed to maintain a slightly positive pressure, minimum +0.005"wc (adjustable).
4. If either the supply or return fans shutdown, both fans shall shut down.
5. Both Tunnels operating in unison.
   a. When both tunnels are required to operate in unison, the BAS contractor shall utilize a master static pressure control loop for both the supply and return static pressure control. This will allow for all fans to operate in unison.

D. Temperature Control

1. The discharge temperature sensor shall control the cooling and heating coil control valves, the outside air, return air and relief air dampers in sequence to maintain a discharge air temperature setpoint of 55 DegF (adj.). At no time shall the cooling and heating control valves be open at the same time during normal operation.
2. The outside air, return and relief air dampers will be controlled via enthalpy calculation.
3. Economizer Mode
   a. If the return air enthalpy is greater than the outside air enthalpy then the unit will be in economizer control.
   b. On a rise in discharge air temperature above setpoint the outside and relief air dampers will modulate to 100% open with the return air damper modulating in opposite action. The minimum, mid and maximum outside are dampers shall modulate open in a staged fashion in that order. On a further rise in temperature, the cooling coil control valve will be modulated open. On a drop in discharge temperature, the reverse sequence shall occur.
4. Mechanical Only Cooling
   a. If the outside air enthalpy is greater than the return air enthalpy then the economized mode will be locked out and the outside, return and relief air dampers will position for minimum outside air flow.
   b. On a rise in discharge air temperature above setpoint the cooling coil control valve will be modulated open. On a drop in discharge air temperature, the reverse sequence shall occur.
5. Heating
   a. On a drop in discharge air temperature below setpoint the preheat recirc/freeze protection pump shall start and provide status of operation via the differential pressure switch. The heating coil control valve will be modulated open to maintain setpoint. On a rise in discharge air temperature, the reverse shall occur.
   b. When the AHU is off, if the preheat coil leaving air temperature falls below 50 DegF (adj.), the preheat recirc/freeze protection pump shall start and provide status of operation via the differential pressure switch. The heating coil control valve will be modulated open to maintain the preheat coil leaving air setpoint of 50 DegF (adj.).
6. At an outside air temperature of 50 DegF (adj.) or lower, the cooling coil valve shall be shut. The cooling coil control valve shall remain closed when the chiller plant is offline.
7. A mixed air low limit control shall override the discharge control sequence if the mixed air temperature is less than 50 DegF (adj.). During cold weather startup of the air handling unit the mixed air low limit sequence shall also prevent nuisance tripping of the low limit temperature thermostats.

E. Filters

1. There shall be an analog differential pressure sensor for each individual filter bank within the AHU.
2. An alarm shall be generated when the pressure across the filter bank rises above the dirty filter setpoint as indicated on the AHU filter schedules (adjustable).

F. Safety Interlocks

1. The high discharge static pressure safety located on the discharge of the supply fan in the unit housing shall be set as scheduled for 1"w.c. above the total pressure rating of the supply fan as indicated on the AHU schedule. The high suction static pressure safety located on the suction side of the supply fan in the unit housing shall be set as scheduled for 1"w.c. above the total pressure rating of the supply fan as indicated on the AHU schedule. The high discharge static pressure safety located in the discharge ductwork outside of the unit shall be set as scheduled for duct pressure class. If any of the safeties pressure setting is exceeded the safety will trip and via hardwire interlock to the supply fans VFD's so the fans shall shutdown and the unit isolation dampers shall close. This safety shall operate in either hand or auto on the VFD's and shall be reset manually. If the supply fan is shutdown by safety the return fan shall also be shutdown.
2. The high suction static pressure safety located on the suction of the return fan shall be set for duct pressure class so when that pressure is exceeded the safety will trip and via hardwire interlock to the return fan VFD so the fan shall shutdown and the return isolation damper shall close. This safety shall operate in either hand or auto on the VFD and shall be reset manually. If the return fan is shutdown by safety the supply fan shall also be shutdown.
3. When smoke is detected by the supply or return duct smoke detectors, the supply and return fans shall shut "off", the supply smoke isolation damper shall close and an alarm shall be generated. Supply and return fans shall restart and unit isolation dampers shall open when fire alarm circuit is reset.
4. Provide a series of low temperature thermostats (freeze stats) at the downstream section of each of the preheat coils which will stop the unit if the preheat discharge temperature falls below 38 DegF (adj.) and an alarm shall be generated. The preheat recirc/freeze protection pump shall start and the preheat coil control valve shall modulate to maintain 55 DegF at the Preheat coil sensor.
5. Tunnel cross-over control.
   a. If a single supply tunnel fails, that tunnel shall shut down and close all dampers as indicted above. Once the dampers have isolated that unit the supply cross-over damper inside the unit shall open allowing a single tunnel to serve both systems. An alarm shall be generated and the tunnel shall be locked out in software until manually reset.

G. Energy Conservation Measures

1. Discharge Air Temperature Reset
   a. The discharge air temperature reset routine shall provide a maximum discharge air temperature setpoint of 59 DegF (adj.) for all AHU's during cooling mode in 0.5 DegF increments if all of the below mentioned criteria has been achieved. The calculation for change shall occur every 15 minutes (adj.). If any one of the criteria is not met then the reset routine shall decrease the discharge air temperature setpoint in the reverse fashion to and not below the discharge air temperature. Only the VAV boxes served by the individual units shall be monitored for the basis of each AHU's calculations. The highest unit discharge temperature which is able to satisfy all normally operating zones will be determined as follows:
      1) The discharge air dewpoint temperature shall not exceed 55 DegF (adj.).
      2) The discharge air temperature will be increased by all normally operating zones have been satisfied for one hour and if all VAV boxes are less than 90% open.
      3) The discharge air temperature will be decreased if any normally operating zones are almost unsatisfied. For zones with VAV boxes, the zone will be deemed almost unsatisfied if its box is more than 95% open. For zones with constant volume boxes, a zone will be deemed unsatisfied if the zone temperature is not maintained.
      4) Normally operating zones will be determined as follows: The BAS will poll the setpoints for each zone every 15 minutes and store that value until the next cycle. If the setpoint has been changed by more than 1 DegF, the zone will be labeled as not normal. The operator will also have the ability to flag zones permanently as not normal.
      5) The BAS shall accumulate a list of zones that are almost unsatisfied and produce a weekly report listing these zones and the number of instances these zones were almost unsatisfied. This will allow the staff to investigate the zone and determine if airflow is choked or unsustainable loads have been placed in the zone.
      a)If any VAV box cooling command reaches 100% for a 20 min duration a warning shall be generated and the reset routine shall reverse until all VAV box cooling commands are less than or equal to 85% (adj.). If two or more VAV boxes reach 100% for a 20 min (adj.) duration an alarm shall be generated and the reset routine shall reverse with the above mentioned temperature increments but with changes every 5 minutes (adj.) to the starting setpoint as scheduled and the reset routine shall be locked out in software. A manual reset shall be provided on the system graphic to allow the user to enable the routine again after the problem has been corrected.
2. Static Pressure Reset
   a. The supply VAV box damper position for all boxes serviced by this unit shall be monitored at 15 minute intervals (adj.) to determine the ability to automatically reset the supply static pressure setpoint for optimization. If the damper position of the furthest open box is less than 85% (adj.), the supply static pressure setpoint shall be reduced by 0.1"w.c. (adj.). If the damper position of the furthest open box is equal to or greater than 94% (adj.), the supply static pressure setpoint shall be increased by 0.1"w.c. (adj.). At no time should any boxes reach 100% open during the reset routine. If a box reaches 100% open a warning shall be generated. If two or more boxes reach 100% open an alarm shall be generated and the reset routine shall ramp the static pressure setpoint back to the starting static pressure setpoint over a 10 minute duration (adj.). The reset routine shall be disabled with a software lockout and will not resume until released by the operator.
   b. The return VAV box damper position for all boxes serviced by this unit shall be monitored at 15 minute intervals (adj.) to determine the ability to automatically reset the return static pressure setpoint for optimization. If the damper position of the furthest open box is less than 85% (adj.), the return static pressure setpoint shall be reduced by 0.1"w.c. (adj.). If the damper position of the furthest open box is greater equal to or greater than 94% (adj.), the return static pressure setpoint shall be increased by 0.1"w.c. (adj.). At no time should any boxes reach 100% open during the reset routine. If a box reaches 100% open a warning shall be generated. If two or more boxes reach 100% open an alarm shall be generated and the reset routine shall ramp the static pressure setpoint back to the starting static pressure setpoint over a 10 minute duration (adj.). The reset routine shall be disabled with a software lockout and will not resume until released by the operator.
3. CO2 Control for High Density Spaces
   a. The unit shall have two setpoints for minimum outside air as indicated on the AHU schedules which shall be a maximum design and a minimum turndown.
   b. For terminal units associated with this Air Handling Unit that require CO2 reset, a signal will be sent to the AHU from the terminal unit to increase the quantity of outside air based on high CO2 levels in the space. The active minimum outside air setpoint shall be reset up at 5 minute (adj.) intervals by 10% of the scheduled minimum outside air turndown setpoint. At no time should the reset routine exceed the scheduled maximum design outside air setpoint. As the CO2 level in the space decreases the reverse shall occur.
   c. If a space continues to require additional outside when the maximum design setpoint has been reached after a 30 minute delay, an alarm shall be generated.
   d. If the Economizer control strategy requires additional outside air, that routine will take priority.
4. Optimal Start/Stop
   a. Regardless if the unit is determined to run continuously, in the event that a schedule is implemented the unit shall be programmed to provide an Optimal Start/Stop routine which shall automatically ramp the building temperatures for the Optimal start and stop times to conserve energy while maintaining space temperature setpoints. Where applicable this strategy shall include but not be limited to incorporating terminal unit override for zones specifically associated to this AHU to help implement this routine.

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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CONTROL DIAGRAMS

H-7.0.2C

BID DOCUMENTS

SCALE:
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DRAWN BY: MCL
FILE NAME: CONTROL DIAGRAMS

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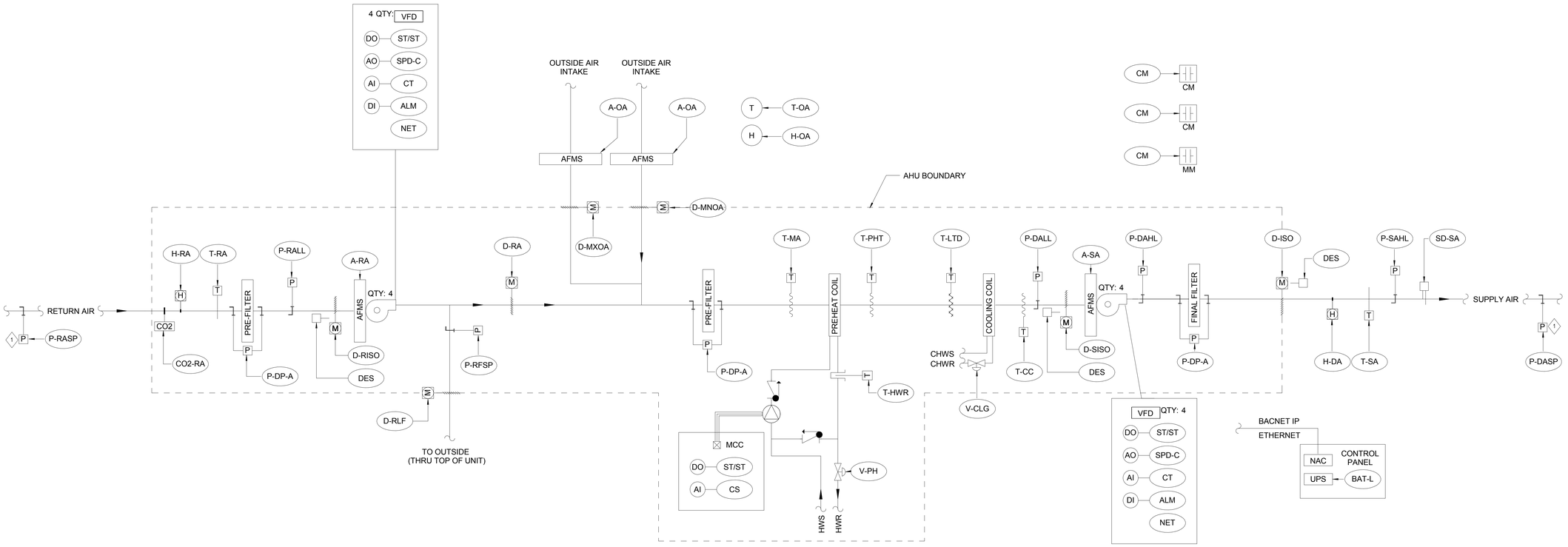
KEY NOTES

1. LOCATE STATIC PRESSURE SENSOR IN BOTTOM OF RISER WITH PROBE IN SHAFT AND SENOR OUTSIDE OF SHAFT. SENSOR SHALL BE HARDWIRED TO AHU CONTROLLER. SHARED POINT OVER THE NETWORK SHALL NOT BE ALLOWED.



1 Air Handling Unit BL-131 - Mixed Air Fan Array w/ Hot Water Preheat and Cooling

NO.	REVISION	DATE

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UCONN HEALTH

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BUILDING C RENOVATION

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CONTROL DIAGRAMS

H-7.0.3A

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JOB NO:	1302
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DRAWN BY:	MCL
FILE NAME:	CONTROL DIAGRAMS

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Air Handling Unit BL-131 - Mixed Air Fan Array w/ Hot Water Preheat and Cooling Control Points List

BAS_TYPE	BAS_SERVICE	BAS_SERVICE_TAG	ALM_LO	ALM_HI	ALM_OFF / NORMAL	COMMENTS
AI	CARBON DIOXIDE - RETURN AIR	CO2-RA				
AI	COOLING COIL LEAVING AIR TEMPERATURE	T-CC				
AI	DIFFERENTIAL PRESSURE - ANALOG	P-DP-A		X		SUPPLY AIR PRE-FILTER
AI	DIFFERENTIAL PRESSURE - ANALOG	P-DP-A		X		FINAL FILTER
AI	DIFFERENTIAL PRESSURE - ANALOG	P-DP-A				
AI	DISCHARGE / STATIC PRESSURE	P-DASP	X	X		
AI	DISCHARGE AIR	H-DA				
AI	HOT WATER RETURN TEMPERATURE	T-HWR				
AI	MIXED AIR TEMPERATURE	T-MA				
AI	OUTSIDE AIR	H-OA				
AI	OUTSIDE AIR	T-OA				
AI	OUTSIDE AIR FLOW	A-OA				MIN. OUTSIDE AIR DAMPER
AI	OUTSIDE AIR FLOW	A-OA				MID. OUTSIDE AIR DAMPER
AI	PREHEAT COIL LEAVING AIR	T-PHT				
AI	RELIEF AIR / STATIC PRESSURE	P-RFSP	X	X		
AI	RETURN AIR	H-RA				
AI	RETURN AIR / STATIC PRESSURE	P-RASP	X	X		
AI	RETURN AIR FLOW	A-RA				RETURN FAN 1
AI	RETURN AIR FLOW	A-RA				RETURN FAN 2
AI	RETURN AIR FLOW	A-RA				RETURN FAN 3
AI	RETURN AIR FLOW	A-RA				RETURN FAN 4
AI	RETURN AIR TEMPERATURE	T-RA				
AI	STATUS INPUT	CS				PHC PUMP MCC
AI	SUPPLY AIR FLOW	A-SA				SUPPLY FAN 1
AI	SUPPLY AIR FLOW	A-SA				SUPPLY FAN 2
AI	SUPPLY AIR FLOW	A-SA				SUPPLY FAN 3
AI	SUPPLY AIR FLOW	A-SA				SUPPLY FAN 4
AI	SUPPLY AIR TEMPERATURE	T-SA				
AI	VARIABLE FREQUENCY DRIVE	CT			X	SUPPLY FAN 1 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	SUPPLY FAN 2 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	SUPPLY FAN 3 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	SUPPLY FAN 4 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	RETURN FAN 1 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	RETURN FAN 2 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	RETURN FAN 3 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	RETURN FAN 4 - STATUS
AO	COOLING COIL VALVE	V-CLG				
AO	MAXIMUM OUTSIDE AIR DAMPER	D-MXOA				
AO	MINIMUM OUTSIDE AIR DAMPER	D-MNOA				
AO	PREHEAT COIL VALVE	V-PH				
AO	RELIEF AIR DAMPER	D-RLF				
AO	RETURN AIR DAMPER	D-RA				
AO	VARIABLE FREQUENCY DRIVE	SPD-C				SUPPLY FAN 1
AO	VARIABLE FREQUENCY DRIVE	SPD-C				SUPPLY FAN 2
AO	VARIABLE FREQUENCY DRIVE	SPD-C				SUPPLY FAN 3
AO	VARIABLE FREQUENCY DRIVE	SPD-C				SUPPLY FAN 4
AO	VARIABLE FREQUENCY DRIVE	SPD-C				RETURN FAN 1
AO	VARIABLE FREQUENCY DRIVE	SPD-C				RETURN FAN 2
AO	VARIABLE FREQUENCY DRIVE	SPD-C				RETURN FAN 3
AO	VARIABLE FREQUENCY DRIVE	SPD-C				RETURN FAN 4
DI	BATTERY LOW ALARM	BAT-L			X	
DI	DAMPER END SWITCH	DES				D-ISO - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				SUPPLY FAN 1- HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				SUPPLY FAN 2 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				RETURN FAN 3 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				RETURN FAN 4 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				SUPPLY FAN 3 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				SUPPLY FAN 4 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				RETURN FAN 1 - HARDWIRE INTERLOCK
DI	DAMPER END SWITCH	DES				RETURN FAN 2 - HARDWIRE INTERLOCK
DI	DISCHARGE AIR / HIGH PRESSURE LIMIT	P-DAHL		X		UNIT STATIC SAFETY - HARDWIRE INTERLOCK
DI	DISCHARGE AIR / LOW PRESSURE LIMIT	P-DALL	X			UNIT STATIC SAFETY - HARDWIRE INTERLOCK
DI	FIRE CONTROL MODULE	CM				50% FSD OPEN FROM FA
DI	FIRE CONTROL MODULE	CM				ALL FSD OPEN FROM FA
DI	LOW TEMPERATURE	T-LTD	X			HARDWIRE INTERLOCK
DI	RETURN AIR / LOW LIMIT	P-RALL	X			DUCTWORK STATIC SAFETY - HARDWIRE INTERLOCK
DI	SUPPLY AIR	SD-SA				HARDWIRE INTERLOCK
DI	SUPPLY AIR / HIGH PRESSURE LIMIT	P-SAHL		X		DUCTWORK STATIC SAFETY - HARDWIRE INTERLOCK
DI	VARIABLE FREQUENCY DRIVE	ALM			X	SUPPLY FAN 1
DI	VARIABLE FREQUENCY DRIVE	ALM			X	SUPPLY FAN 2
DI	VARIABLE FREQUENCY DRIVE	ALM			X	SUPPLY FAN 3
DI	VARIABLE FREQUENCY DRIVE	ALM			X	SUPPLY FAN 4
DI	VARIABLE FREQUENCY DRIVE	ALM			X	RETURN FAN 1
DI	VARIABLE FREQUENCY DRIVE	ALM			X	RETURN FAN 2
DI	VARIABLE FREQUENCY DRIVE	ALM			X	RETURN FAN 3
DI	VARIABLE FREQUENCY DRIVE	ALM			X	RETURN FAN 4
DO	FIRE MONITOR MODULE	CM				UNIT FSD COMMAND TO FA
DO	ISOLATION DAMPER	D-ISO				
DO	RETURN FAN ISOLATION DAMPER	D-RISO				RETURN FAN 1
DO	RETURN FAN ISOLATION DAMPER	D-RISO				RETURN FAN 2
DO	RETURN FAN ISOLATION DAMPER	D-RISO				RETURN FAN 3
DO	RETURN FAN ISOLATION DAMPER	D-RISO				RETURN FAN 4
DO	START-STOP	ST/ST				
DO	SUPPLY FAN ISOLATION DAMPER	D-SISO				SUPPLY FAN 1
DO	SUPPLY FAN ISOLATION DAMPER	D-SISO				SUPPLY FAN 2
DO	SUPPLY FAN ISOLATION DAMPER	D-SISO				SUPPLY FAN 3
DO	SUPPLY FAN ISOLATION DAMPER	D-SISO				SUPPLY FAN 4
DO	VARIABLE FREQUENCY DRIVE	ST/ST				SUPPLY FAN 1
DO	VARIABLE FREQUENCY DRIVE	ST/ST				SUPPLY FAN 2
DO	VARIABLE FREQUENCY DRIVE	ST/ST				SUPPLY FAN 3
DO	VARIABLE FREQUENCY DRIVE	ST/ST				SUPPLY FAN 4
DO	VARIABLE FREQUENCY DRIVE	ST/ST				RETURN FAN 1
DO	VARIABLE FREQUENCY DRIVE	ST/ST				RETURN FAN 2
DO	VARIABLE FREQUENCY DRIVE	ST/ST				RETURN FAN 3
DO	VARIABLE FREQUENCY DRIVE	ST/ST				RETURN FAN 4

Grand total: 95

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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CONTROL DIAGRAMS

H-7.0.3B

BID DOCUMENTS

SCALE:
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1.1 Air Handling Unit: Mixed Air Fan Array with Hot Water Preheat and Cooling

A. General

1. Programs and sequences indicated or implied herein shall be provided.
2. Provide all I/O points indicated on the control diagram and as required to accomplish the sequence of operation.
3. All wire terminals, devices, gauges and wires shall be identified within the panels.
4. Dampers and end switches shall be interlocked such that they will operate per the sequence below in either auto, hand or off on the VFD/MCC.
5. All points shall be able to integrate to all trends, totalizations, etc., as applicable.
6. All alarms as indicated on the diagrams in the sequence of operation shall be generated to the appropriate server/workstations.

B. Start/Stop

1. The unit normally operates continuously with remotely capability for start/stop/scheduling functions.
2. The H.O.A. switch shall be kept in the "auto" position. "Hand" and "Off" positions shall be utilized for maintenance purposes. When the air handling unit is off, the outside damper, relief damper, supply fans and unit isolation dampers along with the return fans isolation dampers shall be closed with the return damper being open.
3. When the unit receives a start command, the minimum outside damper and relief damper shall open to its minimum position with return damper tracking in opposite action. The supply and return fan isolation dampers shall open along with the unit smoke damper shall open with proof provided by their respective end switches. When the end switches prove open via hardwire interlock, the supply and return fans shall start at minimum speed.
4. Upon confirmation the supply and return fans are running; the supply and return fans respectively shall modulate as indicated below for control.
5. If after a 60 second delay (adjustable) either of the fans does not provide status or any VFD provides an alarm condition, then the fans will be shutdown; the outside damper, relief damper, supply and return fan isolation dampers along with the unit smoke isolation damper will close and the return damper will open. An alarm will be generated and the unit will be locked out in software.

C. Airflow Control

1. Upon start-up of the supply fans and return fans, the BAS panel receives a static pressure signal for both fans systems. The speed of the supply fan and return fans shall increase their respective system static pressure to maintain setpoint at the duct mounted static pressure sensors.
   a. The supply air fan speed shall be controlled to maintain the desired duct static pressure of 1.5 inches of water gauge minimum (adjustable).
   b. The return air fan speed shall be controlled to maintain the desired duct static pressure of 1.5 inches of water gauge minimum (adjustable).
2. The outside air dampers and relief air damper shall modulate in unison with the return damper modulating in opposite action to provide a minimum outside air flow setpoint as indicated on AHU schedules (adjustable). The minimum, mid and maximum outside air dampers shall modulate open in a staged fashion in that order.
3. At no point shall the ductwork upstream of the relief air damper be negatively pressurized. The relief air ductwork pressure differential to atmosphere shall override the relief damper control to modulate the relief damper closed to maintain a slightly positive pressure, minimum +0.005"wc (adjustable).
4. If either the supply or return fans shutdown, both fans shall shut down.

D. Temperature Control

1. The discharge temperature sensor shall control the cooling and heating coil control valves, the outside air, return air and relief air dampers in sequence to maintain a discharge air temperature setpoint of 55 DegF (adj.). At no time shall the cooling and heating control valves be open at the same time during normal operation.
2. The outside air, return and relief air dampers will be controlled via enthalpy calculation.
3. Economizer Mode
   a. If the return air enthalpy is greater than the outside air enthalpy then the unit will be in economizer control.
   b. On a rise in discharge air temperature above setpoint the outside and relief air dampers will modulate to 100% open with the return air damper modulating in opposite action. The minimum, mid and maximum outside are dampers shall modulate open in a staged fashion in that order. On a further rise in temperature, the cooling coil control valve will be modulated open. On a drop in discharge temperature, the reverse sequence shall occur.
4. Mechanical Only Cooling
   a. If the outside air enthalpy is greater than the return air enthalpy then the economized mode will be locked out and the outside, return and relief air dampers will position for minimum outside air flow.
   b. On a rise in discharge air temperature above setpoint the cooling coil control valve will be modulated open. On a drop in discharge air temperature, the reverse sequence shall occur.
5. Heating
   a. On a drop in discharge air temperature below setpoint the preheat reciro/freeze protection pump shall start and provide status of operation via the differential pressure switch. The heating coil control valve will be modulated open to maintain setpoint. On a rise in discharge air temperature, the reverse shall occur.
   b. When the AHU is off, if the preheat coil leaving air temperature falls below 50 DegF (adj.), the preheat recirc/freeze protection pump shall start and provide status of operation via the differential pressure switch. The heating coil control valve will be modulated open to maintain the preheat coil leaving air setpoint of 50 DegF (adj.).
6. At an outside air temperature of 50 DegF (adj.) or lower, the cooling coil valve shall be shut. The cooling coil control valve shall remain closed when the chiller plant is offline.
7. A mixed air low limit control shall override the discharge control sequence if the mixed air temperature is less than 50 DegF (adj.). During cold weather startup of the air handling unit the mixed air low limit sequence shall also prevent nuisance tripping of the low limit temperature thermostats.

E. Filters

1. There shall be an analog differential pressure sensor for each individual filter bank within the AHU.
2. An alarm shall be generated when the pressure across the filter bank rises above the dirty filter setpoint as indicated on the AHU filter schedules (adjustable).

F. Safety Interlocks

1. The high discharge static pressure safety located on the discharge of the supply fan in the unit housing shall be set as scheduled for 1"w.c. above the total pressure rating of the supply fan as indicated on the AHU schedule. The high suction static pressure safety located on the suction side of the supply fan in the unit housing shall be set as scheduled for 1"w.c. above the total pressure rating of the supply fan as indicated on the AHU schedule. The high discharge static pressure safety located in the discharge ductwork outside of the unit shall be set as scheduled for duct pressure class. If any of the safeties pressure setting is exceeded the safety will trip and via hardwire interlock to the supply fans VFD's so the fans shall shutdown and the unit isolation dampers shall close. This safety shall operate in either hand or auto on the VFD's and shall be reset manually. If the supply fan is shutdown by safety the return fan shall also be shutdown.
2. The high suction static pressure safety located on the suction of the return fan shall be set for duct pressure class so when that pressure is exceeded the safety will trip and via hardwire interlock to the return fan VFD so the fan shall shutdown and the return isolation damper shall close. This safety shall operate in either hand or auto on the VFD and shall be reset manually. If the return fan is shutdown by safety the supply fan shall also be shutdown.
3. When smoke is detected by the supply or return duct smoke detectors, the supply and return fans shall shut "off", the supply smoke isolation damper shall close and an alarm shall be generated. Supply and return fans shall restart and unit isolation dampers shall open when fire alarm circuit is reset.
4. Provide a series of low temperature thermostats (freeze stats) at the downstream section of each of the preheat coils which will stop the unit if the preheat discharge temperature falls below 38 DegF (adj.) and an alarm shall be generated. The preheat recirc/freeze protection pump shall start and the preheat coil control valve shall modulate to maintain 55 DegF at the Preheat coil sensor.

G. Fan Failure and Restart Mode

1. Upon failure of an individual supply or return fan, that fan shall be shut down and its isolation shall close, an alarm shall be generated and it will be locked out in software.
2. Upon a software restart command which shall clear the software lockout, the failed fan shall start against its closed isolation damper at minimum speed. Once fan status has been proven the fan isolation damper shall open.
3. Once the fan isolation damper end switch proves open the fan shall be placed in a ramp start routine for a 10 minute (adj.) duration. The operating fans shall modulate to maintain the static pressure setpoint while the failed fans ramps up in speed. The failed fan shall ramp up until the speed control matches the operating fans. At this point all fans shall control in unison and the ramp routine shall terminate.
4. Additional time shall be provided to fine tune this ramp routine for all fans during startup and checkout.

H. Energy Conservation Measures

1. Discharge Air Temperature Reset
   a. The discharge air temperature reset routine shall provide a maximum discharge air temperature setpoint of 59 DegF (adj.) for all AHU's during cooling mode in 0.5 DegF increments if all of the below mentioned criteria has been achieved. The calculation for change shall occur every 15 minutes (adj.). If any one of the criteria is not met then the reset routine shall decrease the discharge air temperature setpoint in the reverse fashion to and not below the discharge air temperature. Only the VAV boxes served by the individual units shall be monitored for the basis of each AHU's calculations. The highest unit discharge temperature which is able to satisfy all normally operating zones will be determined as follows:
      1) The discharge air dewpoint temperature shall not exceed 55 DegF (adj.).
      2) The discharge air temperature will be increased by all normally operating zones have been satisfied for one hour and if all VAV boxes are less than 90% open.
      3) The discharge air temperature will be decreased if any normally operating zones are almost unsatisfied. For zones with VAV boxes, the zone will be deemed almost unsatisfied if its box is more than 95% open. For zones with constant volume boxes, a zone will be deemed unsatisfied if the zone temperature is not maintained.
      4) Normally operating zones will be determined as follows: The BAS will poll the setpoints for each zone every 15 minutes and store that value until the next cycle. If the setpoint has been changed by more than 1 DegF, the zone will be labeled as not normal. The operator will also have the ability to flag zones permanently as not normal.
      5) The BAS shall accumulate a list of zones that are almost unsatisfied and produce a weekly report listing these zones and the number of instances these zones were almost unsatisfied. This will allow the staff to investigate the zone and determine if airflow is choked or unsustainable loads have been placed in the zone.

      a)If any VAV box cooling command reaches 100% for a 20 min duration a warning shall be generated and the reset routine shall reverse until all VAV box cooling commands are less than or equal to 85% (adj.). If two or more VAV boxes reach 100% for a 20 min (adj.) duration an alarm shall be generated and the reset routine shall reverse with the above mentioned temperature increments but with changes every 5 minutes (adj.) to the starting setpoint as scheduled and the reset routine shall be locked out in software. A manual reset shall be provided on the system graphic to allow the user to enable the routine again after the problem has been corrected.
2. Static Pressure Reset
   a. The supply VAV box damper position for all boxes serviced by this unit shall be monitored at 15 minute intervals (adj.) to determine the ability to automatically reset the supply static pressure setpoint for optimization. If the damper position of the furthest open box is less than 85% (adj.), the supply static pressure setpoint shall be reduced by 0.1"w.c. (adj.). If the damper position of the furthest open box is greater equal to or greater than 94% (adj.), the supply static pressure setpoint shall be increased by 0.1"w.c. (adj.). At no time should any boxes reach 100% open during the reset routine. If a box reaches 100% open a warning shall be generated. If two or more boxes reach 100% open an alarm shall be generated and the reset routine shall ramp the static pressure setpoint back to the starting static pressure setpoint over a 10 minute duration (adj.). The reset routine shall be disabled with a software lockout and will not resume until released by the operator.
   b. The return VAV box damper position for all boxes serviced by this unit shall be monitored at 15 minute intervals (adj.) to determine the ability to automatically reset the return static pressure setpoint for optimization. If the damper position of the furthest open box is less than 85% (adj.), the return static pressure setpoint shall be reduced by 0.1"w.c. (adj.). If the damper position of the furthest open box is greater equal to or greater than 94% (adj.), the return static pressure setpoint shall be increased by 0.1"w.c. (adj.). At no time should any boxes reach 100% open during the reset routine. If a box reaches 100% open a warning shall be generated. If two or more boxes reach 100% open an alarm shall be generated and the reset routine shall ramp the static pressure setpoint back to the starting static pressure setpoint over a 10 minute duration (adj.). The reset routine shall be disabled with a software lockout and will not resume until released by the operator.
3. CO2 Control for High Density Spaces
   a. The unit shall have two setpoints for minimum outside air as indicated on the AHU schedules which shall be a maximum design and a minimum turndown.
   b. For terminal units associated with this Air Handling Unit that require CO2 reset, a signal will be sent to the AHU from the terminal unit to increase the quantity of outside air based on high CO2 levels in the space. The active minimum outside air setpoint shall be reset up at 5 minute (adj.) intervals by 10% of the scheduled minimum outside air turndown setpoint. At no time should the reset routine exceed the scheduled maximum design outside air setpoint. As the CO2 level in the space decreases the reverse shall occur.
   c. If a space continues to require additional outside when the maximum design setpoint has been reached after a 30 minute delay, an alarm shall be generated.
   d. If the Economizer control strategy requires additional outside air, that routine will take priority.
4. Optimal Start/Stop
   a. Regardless if the unit is determined to run continuously, in the event that a schedule is implemented the unit shall be programmed to provide an Optimal Start/Stop routine which shall automatically ramp the building temperatures for the Optimal start and stop times to conserve energy while maintaining space temperature setpoints. Where applicable this strategy shall include but not be limited to incorporating terminal unit override for zones specifically associated to this AHU to help implement this routine.

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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CONTROL DIAGRAMS

H-7.0.3C

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SCALE:
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FILE NAME: CONTROL DIAGRAMS

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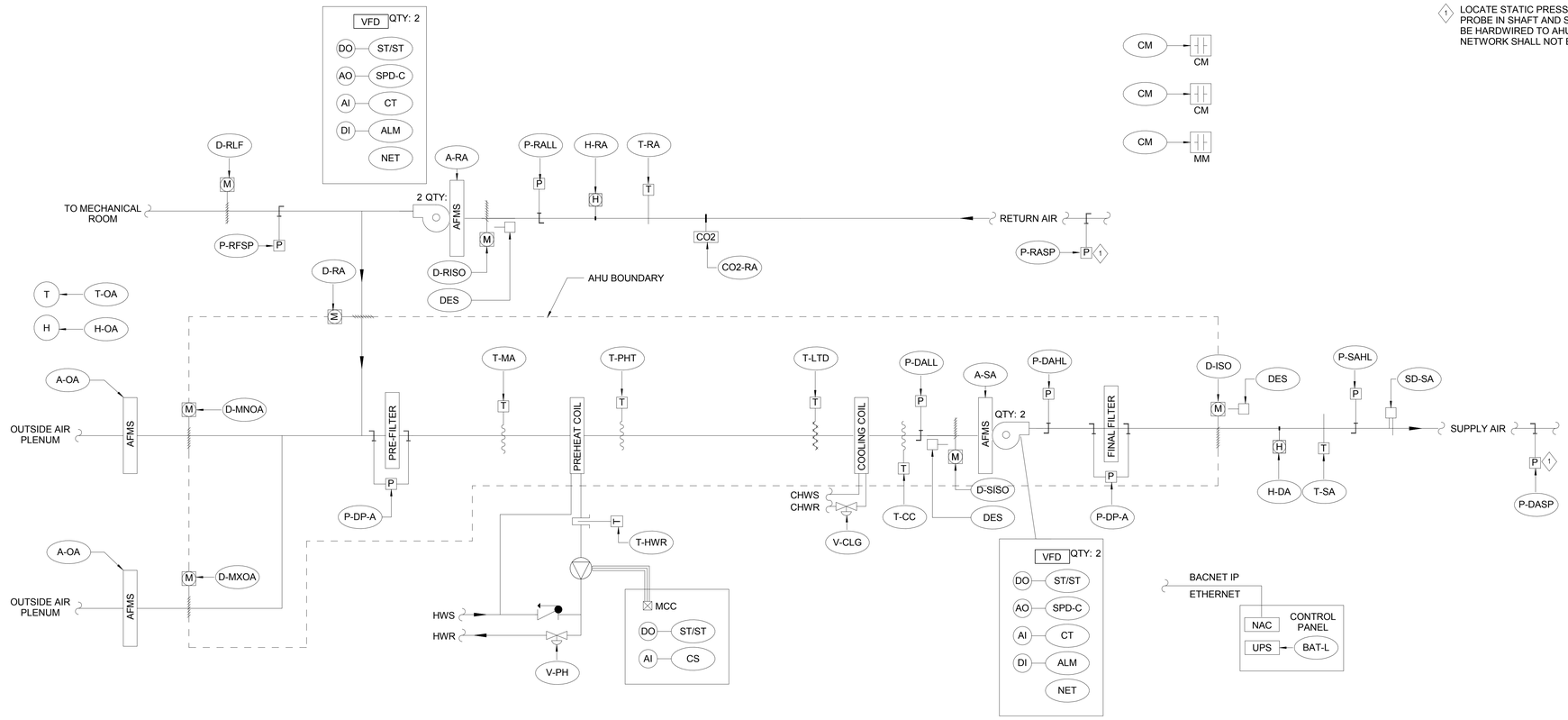
KEY NOTES

1. LOCATE STATIC PRESSURE SENSOR IN BOTTOM OF RISER WITH PROBE IN SHAFT AND SENOR OUTSIDE OF SHAFT. SENSOR SHALL BE HARDWIRED TO AHU CONTROLLER. SHARED POINT OVER THE NETWORK SHALL NOT BE ALLOWED.



1 Air Handling Unit BL-133 Mixed Air Fan Array w/ Hot Water Preheat and Cooling

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UCONN HEALTH

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CONTROL DIAGRAMS

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Air Handling Unit BL-133 - Mixed Air Fan Array w/ Hot Water Preheat Coil and Cooling Control Points List

BAS_TYPE	BAS_SERVICE	BAS_SERVICE_TAG	ALM_LO	ALM_HI	ALM_OFF / NORMAL	COMMENTS
AI	CARBON DIOXIDE - RETURN AIR	CO2-RA				
AI	COOLING COIL LEAVING AIR TEMPERATURE	T-CC				
AI	DIFFERENTIAL PRESSURE - ANALOG	P-DP-A		X		SUPPLY AIR PRE-FILTER
AI	DIFFERENTIAL PRESSURE - ANALOG	P-DP-A		X		FINAL FILTER
AI	DISCHARGE / STATIC PRESSURE	P-DASP	X	X		
AI	DISCHARGE AIR	H-DA				
AI	HOT WATER RETURN TEMPERATURE	T-HWR				
AI	MIXED AIR TEMPERATURE	T-MA				
AI	OUTSIDE AIR	H-OA				
AI	OUTSIDE AIR	T-OA				
AI	OUTSIDE AIR FLOW	A-OA				MIN. OUTSIDE AIR DAMPER
AI	OUTSIDE AIR FLOW	A-OA				MAX. OUTSIDE AIR DAMPER
AI	PREHEAT COIL LEAVING AIR	T-PHT				
AI	RELIEF AIR / STATIC PRESSURE	P-RFSP	X	X		
AI	RETURN AIR	H-RA				
AI	RETURN AIR / STATIC PRESSURE	P-RASP	X	X		
AI	RETURN AIR FLOW	A-RA				RETURN FAN 1
AI	RETURN AIR FLOW	A-RA				RETURN FAN 2
AI	RETURN AIR TEMPERATURE	T-RA				
AI	STATUS INPUT	CS				PHC PUMP MCC
AI	SUPPLY AIR FLOW	A-SA				SUPPLY FAN 1
AI	SUPPLY AIR FLOW	A-SA				SUPPLY FAN 2
AI	SUPPLY AIR TEMPERATURE	T-SA				
AI	VARIABLE FREQUENCY DRIVE	CT			X	SUPPLY FAN 1 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	SUPPLY FAN 2 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	RETURN FAN 1 - STATUS
AI	VARIABLE FREQUENCY DRIVE	CT			X	RETURN FAN 2 - STATUS
AO	COOLING COIL VALVE	V-CLG				
AO	MAXIMUM OUTSIDE AIR DAMPER	D-MXOA				
AO	MINIMUM OUTSIDE AIR DAMPER	D-MNOA				
AO	PREHEAT COIL VALVE	V-PH				
AO	RELIEF AIR DAMPER	D-RLF				
AO	RETURN AIR DAMPER	D-RA				
AO	VARIABLE FREQUENCY DRIVE	SPD-C				SUPPLY FAN 1
AO	VARIABLE FREQUENCY DRIVE	SPD-C				SUPPLY FAN 2
AO	VARIABLE FREQUENCY DRIVE	SPD-C				RETURN FAN 1
AO	VARIABLE FREQUENCY DRIVE	SPD-C				RETURN FAN 2
BI	DAMPER END SWITCH	DES				D-ISO - HARDWIRE INTERLOCK
BI	DAMPER END SWITCH	DES				SUPPLY FAN 1- HARDWIRE INTERLOCK
BI	DAMPER END SWITCH	DES				SUPPLY FAN 2 - HARDWIRE INTERLOCK
BI	DAMPER END SWITCH	DES				SUPPLY FAN 3 - HARDWIRE INTERLOCK
BI	DAMPER END SWITCH	DES				SUPPLY FAN 4 - HARDWIRE INTERLOCK
BO	ISOLATION DAMPER	D-ISO				
BO	RETURN FAN ISOLATION DAMPER	D-RISO				RETURN FAN 1
BO	RETURN FAN ISOLATION DAMPER	D-RISO				RETURN FAN 2
BO	SUPPLY FAN ISOLATION DAMPER	D-SISO				SUPPLY FAN 1
BO	SUPPLY FAN ISOLATION DAMPER	D-SISO				SUPPLY FAN 2
DI	BATTERY LOW ALARM	BAT-L			X	
DI	DISCHARGE AIR / HIGH PRESSURE LIMIT	P-DAHL		X		UNIT STATIC SAFETY - HARDWIRE INTERLOCK
DI	DISCHARGE AIR / LOW PRESSURE LIMIT	P-DALL	X			UNIT STATIC SAFETY - HARDWIRE INTERLOCK
DI	FIRE CONTROL MODULE	CM				50% FSD OPEN FROM FA
DI	FIRE CONTROL MODULE	CM				ALL FSD OPEN FROM FA
DI	LOW TEMPERATURE	T-LTD	X			HARDWIRE INTERLOCK
DI	RETURN AIR / LOW LIMIT	P-RALL	X			DUCTWORK STATIC SAFETY - HARDWIRE INTERLOCK
DI	SUPPLY AIR	SD-SA				HARDWIRE INTERLOCK
DI	SUPPLY AIR / HIGH PRESSURE LIMIT	P-SAHL		X		DUCTWORK STATIC SAFETY - HARDWIRE INTERLOCK
DI	VARIABLE FREQUENCY DRIVE	ALM			X	SUPPLY FAN 1
DI	VARIABLE FREQUENCY DRIVE	ALM			X	SUPPLY FAN 2
DI	VARIABLE FREQUENCY DRIVE	ALM			X	RETURN FAN 1
DI	VARIABLE FREQUENCY DRIVE	ALM			X	RETURN FAN 2
DO	FIRE MONITOR MODULE	CM				UNIT FSD COMMAND TO FA
DO	START-STOP	ST/ST				
DO	VARIABLE FREQUENCY DRIVE	ST/ST				SUPPLY FAN 1
DO	VARIABLE FREQUENCY DRIVE	ST/ST				SUPPLY FAN 2
DO	VARIABLE FREQUENCY DRIVE	ST/ST				RETURN FAN 1
DO	VARIABLE FREQUENCY DRIVE	ST/ST				RETURN FAN 2

Grand total: 66

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1.1 Air Handling Unit: Mixed Air Fan Array with Hot Water Preheat and Cooling

A. General

1. Programs and sequences indicated or implied herein shall be provided.
2. Provide all I/O points indicated on the control diagram and as required to accomplish the sequence of operation.
3. All wire terminals, devices, gauges and wires shall be identified within the panels.
4. Dampers and end switches shall be interlocked such that they will operate per the sequence below in either auto, hand or off on the VFD/MCC.
5. All points shall be able to integrate to all trends, totalizations, etc., as applicable.
6. All alarms as indicated on the diagrams in the sequence of operation shall be generated to the appropriate server/workstations.

B. Start/Stop

1. The unit normally operates continuously with remotely capability for start/stop/scheduling functions.
2. The H.O.A. switch shall be kept in the "auto" position. "Hand" and "Off" positions shall be utilized for maintenance purposes. When the air handling unit is off, the outside damper, relief damper, supply fans and unit isolation dampers along with the return fans isolation dampers shall be closed with the return damper being open.
3. When the unit receives a start command, the minimum outside damper and relief damper shall open to its minimum position with return damper tracking in opposite action. The supply and return fan isolation dampers shall open along with the unit smoke damper shall open with proof provided by their respective end switches. When the end switches prove open via hardwire interlock, the supply and return fans shall start at minimum speed.
4. Upon confirmation the supply and return fans are running; the supply and return fans respectively shall modulate as indicated below for control.
5. If after a 60 second delay (adjustable) either of the fans does not provide status or any VFD provides an alarm condition, then the fans will be shutdown; the outside damper, relief damper, supply and return fan isolation dampers along with the unit smoke isolation damper will close and the return damper will open. An alarm will be generated and the unit will be locked out in software.

C. Airflow Control

1. Upon start-up of the supply fans and return fans, the BAS panel receives a static pressure signal for both fans systems. The speed of the supply fan and return fans shall increase their respective system static pressure to maintain setpoint at the duct mounted static pressure sensors.
   a. The supply air fan speed shall be controlled to maintain the desired duct static pressure of 1.5 inches of water gauge minimum (adjustable).
   b. The return air fan speed shall be controlled to maintain the desired duct static pressure of 1.5 inches of water gauge minimum (adjustable).
2. The outside air dampers and relief air damper shall modulate in unison with the return damper modulating in opposite action to provide a minimum outside air flow setpoint as indicated on AHU schedules (adjustable). The minimum, mid and maximum outside air dampers shall modulate open in a staged fashion in that order.
3. At no point shall the ductwork upstream of the relief air damper be negatively pressurized. The relief air ductwork pressure differential to atmosphere shall override the relief damper control to modulate the relief damper closed to maintain a slightly positive pressure, minimum +0.005"wc (adjustable).
4. If either the supply or return fans shutdown, both fans shall shut down.

D. Temperature Control

1. The discharge temperature sensor shall control the cooling and heating coil control valves, the outside air, return air and relief air dampers in sequence to maintain a discharge air temperature setpoint of 55 DegF (adj.). At no time shall the cooling and heating control valves be open at the same time during normal operation.
2. The outside air, return and relief air dampers will be controlled via enthalpy calculation.
3. Economizer Mode
   a. If the return air enthalpy is greater than the outside air enthalpy then the unit will be in economizer control.
   b. On a rise in discharge air temperature above setpoint the outside and relief air dampers will modulate to 100% open with the return air damper modulating in opposite action. The minimum, mid and maximum outside are dampers shall modulate open in a staged fashion in that order. On a further rise in temperature, the cooling coil control valve will be modulated open. On a drop in discharge temperature, the reverse sequence shall occur.
4. Mechanical Only Cooling
   a. If the outside air enthalpy is greater than the return air enthalpy then the economized mode will be locked out and the outside, return and relief air dampers will position for minimum outside air flow.
   b. On a rise in discharge air temperature above setpoint the cooling coil control valve will be modulated open. On a drop in discharge air temperature, the reverse sequence shall occur.
5. Heating
   a. On a drop in discharge air temperature below setpoint the preheat recirc/freeze protection pump shall start and provide status of operation via the differential pressure switch. The heating coil control valve will be modulated open to maintain setpoint. On a rise in discharge air temperature, the reverse shall occur.
   b. When the AHU is off, if the preheat coil leaving air temperature falls below 50 DegF (adj.), the preheat recirc/freeze protection pump shall start and provide status of operation via the differential pressure switch. The heating coil control valve will be modulated open to maintain the preheat coil leaving air setpoint of 50 DegF (adj.).
6. At an outside air temperature of 50 DegF (adj.) or lower, the cooling coil valve shall be shut. The cooling coil control valve shall remain closed when the chiller plant is offline.
7. A mixed air low limit control shall override the discharge control sequence if the mixed air temperature is less than 50 DegF (adj.). During cold weather startup of the air handling unit the mixed air low limit sequence shall also prevent nuisance tripping of the low limit temperature thermostats.

E. Filters

1. There shall be an analog differential pressure sensor for each individual filter bank within the AHU.
2. An alarm shall be generated when the pressure across the filter bank rises above the dirty filter setpoint as indicated on the AHU filter schedules (adjustable).

F. Safety Interlocks

1. The high discharge static pressure safety located on the discharge of the supply fan in the unit housing shall be set as scheduled for 1"w.c. above the total pressure rating of the supply fan as indicated on the AHU schedule. The high suction static pressure safety located on the suction side of the supply fan in the unit housing shall be set as scheduled for 1"w.c. above the total pressure rating of the supply fan as indicated on the AHU schedule. The high discharge static pressure safety located in the discharge ductwork outside of the unit shall be set as scheduled for duct pressure class. If any of the safeties pressure setting is exceeded the safety will trip and via hardwire interlock to the supply fans VFD's so the fans shall shutdown and the unit isolation dampers shall close. This safety shall operate in either hand or auto on the VFD's and shall be reset manually. If the supply fan is shutdown by safety the return fan shall also be shutdown.
2. The high suction static pressure safety located on the suction of the return fan shall be set for duct pressure class so when that pressure is exceeded the safety will trip and via hardwire interlock to the return fan VFD so the fan shall shutdown and the return isolation damper shall close. This safety shall operate in either hand or auto on the VFD and shall be reset manually. If the return fan is shutdown by safety the supply fan shall also be shutdown.
3. When smoke is detected by the supply or return duct smoke detectors, the supply and return fans shall shut "off", the supply smoke isolation damper shall close and an alarm shall be generated. Supply and return fans shall restart and unit isolation dampers shall open when fire alarm circuit is reset.
4. Provide a series of low temperature thermostats (freeze stats) at the downstream section of each of the preheat coils which will stop the unit if the preheat discharge temperature falls below 38 DegF (adj.) and an alarm shall be generated. The preheat recirc/freeze protection pump shall start and the preheat coil control valve shall modulate to maintain 55 DegF at the Preheat coil sensor.

G. Fan Failure and Restart Mode

1. Upon failure of an individual supply or return fan, that fan shall be shut down and its isolation shall close, an alarm shall be generated and it will be locked out in software.
2. Upon a software restart command which shall clear the software lockout, the failed fan shall start against its closed isolation damper at minimum speed. Once fan status has been proven the fan isolation damper shall open.
3. Once the fan isolation damper end switch proves open the fan shall be placed in a ramp start routine for a 10 minute (adj.) duration. The operating fans shall modulate to maintain the static pressure setpoint while the failed fans ramps up in speed. The failed fan shall ramp up until the speed control matches the operating fans. At this point all fans shall control in unison and the ramp routine shall terminate.
4. Additional time shall be provided to fine tune this ramp routine for all fans during startup and checkout.

H. Energy Conservation Measures

1. Discharge Air Temperature Reset
   a. The discharge air temperature reset routine shall provide a maximum discharge air temperature setpoint of 59 DegF (adj.) for all AHU's during cooling mode in 0.5 DegF increments if all of the below mentioned criteria has been achieved. The calculation for change shall occur every 15 minutes (adj.). If any one of the criteria is not met then the reset routine shall decrease the discharge air temperature setpoint in the reverse fashion to and not below the discharge air temperature. Only the VAV boxes served by the individual units shall be monitored for the basis of each AHU's calculations. The highest unit discharge temperature which is able to satisfy all normally operating zones will be determined as follows:
      1) The discharge air dewpoint temperature shall not exceed 55 DegF (adj.).
      2) The discharge air temperature will be increased by all normally operating zones have been satisfied for one hour and if all VAV boxes are less than 90% open.
      3) The discharge air temperature will be decreased if any normally operating zones are almost unsatisfied. For zones with VAV boxes, the zone will be deemed almost unsatisfied if its box is more than 95% open. For zones with constant volume boxes, a zone will be deemed unsatisfied if the zone temperature is not maintained.
      4) Normally operating zones will be determined as follows: The BAS will poll the setpoints for each zone every 15 minutes and store that value until the next cycle. If the setpoint has been changed by more than 1 DegF, the zone will be labeled as not normal. The operator will also have the ability to flag zones permanently as not normal.
      5) The BAS shall accumulate a list of zones that are almost unsatisfied and produce a weekly report listing these zones and the number of instances these zones were almost unsatisfied. This will allow the staff to investigate the zone and determine if airflow is choked or unsustainable loads have been placed in the zone.

      a)If any VAV box cooling command reaches 100% for a 20 min duration a warning shall be generated and the reset routine shall reverse until all VAV box cooling commands are less than or equal to 85% (adj.). If two or more VAV boxes reach 100% for a 20 min (adj.) duration an alarm shall be generated and the reset routine shall reverse with the above mentioned temperature increments but with changes every 5 minutes (adj.) to the starting setpoint as scheduled and the reset routine shall be locked out in software. A manual reset shall be provided on the system graphic to allow the user to enable the routine again after the problem has been corrected.
2. Static Pressure Reset
   a. The supply VAV box damper position for all boxes serviced by this unit shall be monitored at 15 minute intervals (adj.) to determine the ability to automatically reset the supply static pressure setpoint for optimization. If the damper position of the furthest open box is less than 85% (adj.), the supply static pressure setpoint shall be reduced by 0.1"w.c. (adj.). If the damper position of the furthest open box is greater equal to or greater than 94% (adj.), the supply static pressure setpoint shall be increased by 0.1"w.c. (adj.). At no time should any boxes reach 100% open during the reset routine. If a box reaches 100% open a warning shall be generated. If two or more boxes reach 100% open an alarm shall be generated and the reset routine shall ramp the static pressure setpoint back to the starting static pressure setpoint over a 10 minute duration (adj.). The reset routine shall be disabled with a software lockout and will not resume until released by the operator.
   b. The return VAV box damper position for all boxes serviced by this unit shall be monitored at 15 minute intervals (adj.) to determine the ability to automatically reset the return static pressure setpoint for optimization. If the damper position of the furthest open box is less than 85% (adj.), the return static pressure setpoint shall be reduced by 0.1"w.c. (adj.). If the damper position of the furthest open box is greater equal to or greater than 94% (adj.), the return static pressure setpoint shall be increased by 0.1"w.c. (adj.). At no time should any boxes reach 100% open during the reset routine. If a box reaches 100% open a warning shall be generated. If two or more boxes reach 100% open an alarm shall be generated and the reset routine shall ramp the static pressure setpoint back to the starting static pressure setpoint over a 10 minute duration (adj.). The reset routine shall be disabled with a software lockout and will not resume until released by the operator.
3. CO2 Control for High Density Spaces
   a. The unit shall have two setpoints for minimum outside air as indicated on the AHU schedules which shall be a maximum design and a minimum turndown.
   b. For terminal units associated with this Air Handling Unit that require CO2 reset, a signal will be sent to the AHU from the terminal unit to increase the quantity of outside air based on high CO2 levels in the space. The active minimum outside air setpoint shall be reset up at 5 minute (adj.) intervals by 10% of the scheduled minimum outside air turndown setpoint. At no time should the reset routine exceed the scheduled maximum design outside air setpoint. As the CO2 level in the space decreases the reverse shall occur.
   c. If a space continues to require additional outside when the maximum design setpoint has been reached after a 30 minute delay, an alarm shall be generated.
   d. If the Economizer control strategy requires additional outside air, that routine will take priority.
4. Optimal Start/Stop
   a. Regardless if the unit is determined to run continuously, in the event that a schedule is implemented the unit shall be programmed to provide an Optimal Start/Stop routine which shall automatically ramp the building temperatures for the Optimal start and stop times to conserve energy while maintaining space temperature setpoints. Where applicable this strategy shall include but not be limited to incorporating terminal unit override for zones specifically associated to this AHU to help implement this routine.

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KEY NOTES

1. LOCATE STATIC PRESSURE SENSOR IN BOTTOM OF RISER WITH PROBE IN SHAFT AND SENOR OUTSIDE OF SHAFT. SENSOR SHALL BE HARDWIRED TO AHU CONTROLLER. SHARED POINT OVER THE NETWORK SHALL NOT BE ALLOWED.

1.1 Variable Volume Exhaust Fan

A. General

1. Programs and sequences indicated or implied herein shall be provided.
2. Provide all I/O points indicated on the control diagram and as required to accomplish the sequence of operation.
3. All wire terminals, devices, gauges and wires shall be identified within the panels.
4. Dampers and end switches shall be interlocked such that they will operate per the sequence below in either auto, hand or off on the VFD/MCC.
5. All points shall be able to integrate to all trends, totalizations, etc., as applicable.
6. All alarms as indicated on the diagrams in the sequence of operation shall be generated to the appropriate server/workstations.

B. Start/Stop

1. The unit normally operates continuously with remotely capability for start/stop/scheduling functions. The H.O.A. switch shall be kept in the "auto" position. "Hand" and "Off" positions shall be utilized for maintenance purposes. When the exhaust fans are off, the intake and discharge isolation dampers shall be closed.
2. When the fan receives a start command, the intake and discharge isolation dampers shall open. When the end switch proves open via hardwire interlock, the exhaust fan shall start at minimum speed.
3. Upon confirmation the exhaust fan is running; the exhaust fan shall modulate as indicated below for control.
4. If at any point the exhaust fan fails by indication of current or VFD alarm, the fan shall be deactivated, its isolation damper shall be closed, an alarm will be generated and the unit will be locked out in software. Current shall be given a minimum of a 60 second delay (adj.) at startup.

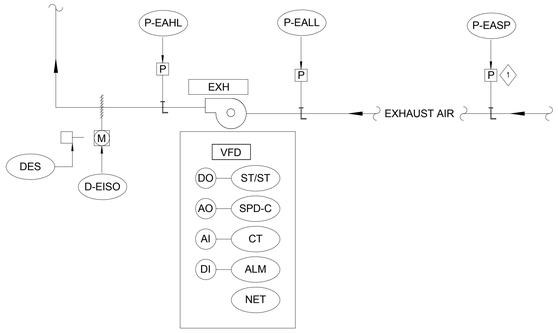
C. Airflow Control

1. Upon start-up of the exhaust fan, the BAS panel receives a static pressure signal. The speed of the exhaust fan shall increase the static pressure to maintain setpoint at the duct mounted static pressure sensor.

D. Safety Interlocks

1. The high discharge static pressure safety located on the discharge of the exhaust fan shall be set as scheduled for duct pressure class. The high suction static pressure safety located on the suction side of the exhaust fan in the unit housing shall be set as scheduled for duct pressure class. If any of the safeties pressure setting is exceeded the safety will trip and via hardwire interlock to the supply fans VFD's so the fan shall shutdown and the isolation dampers shall close. This safety shall operate in either hand or auto on the VFD's and shall be reset manually.
2. Fireman's Override Control
   a. Fire Alarm Control and Monitor modules will be mounted at the VFD's. The BAS contractor shall provide the interlock wiring to the start/stop circuits of the VFD's.
   b. For Fire Override On the damper end switches and static safeties shall remain in the safety circuit.
   c. For Fire Override Off the exhaust fan shall stop with dampers closing as indicated above for shutdown.
   d. The BAS Contractor shall provide a differential pressure switch across both the exhaust fan. The pressure sensing tips shall be piped in copper and the BAS Contractor shall wire the pressure switches back to the Fire Alarm Monitor module for positive proof of fan operation.

2 Variable Volume Exhaust Fan Sequence of Operation



Variable Volume Exhaust Fan Control Points List

BAS_TYPE	BAS_SERVICE	BAS_SERVICE_TAG	ALM_LO	ALM_HI	ALM_OFF / NORMAL	COMMENTS
AI	EXHAUST AIR / STATIC PRESSURE	P-EASP				
AI	VARIABLE FREQUENCY DRIVE	CT			X	EXHAUST FAN - STATUS
AO	VARIABLE FREQUENCY DRIVE	SPD-C				EXHAUST FAN
DI	DAMPER END SWITCH	DES				D-EISO - HARDWIRE INTERLOCK
DI	EXHAUST AIR / HIGH PRESSURE LIMIT	P-EAHL		X		DUCTWORK STATIC SAFETY - HARDWIRE INTERLOCK
DI	EXHAUST AIR / LOW PRESSURE LIMIT	P-EALL	X			DUCTWORK STATIC SAFETY - HARDWIRE INTERLOCK
DI	VARIABLE FREQUENCY DRIVE	ALM			X	EXHAUST FAN
DO	EXHAUST FAN ISOLATION DAMPER	D-EISO				
DO	VARIABLE FREQUENCY DRIVE	ST/ST				EXHAUST FAN

Grand total: 9

1 Variable Volume Exhaust Fan

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Steam to Hot Water HEX Control Points List						
BAS_TYPE	BAS_SERVICE	BAS_SERVICE_TAG	ALM_LO	ALM_HI	ALM_OFF / NORMAL	COMMENTS
AI	HOT WATER RETURN TEMPERATURE	T-HWR				COMMON RETURN
AI	HOT WATER RETURN TEMPERATURE	T-HWR				HEX-C-11 HWR
AI	HOT WATER SUPPLY TEMPERATURE	T-HWS	X	X		COMMON SUPPLY
AI	HOT WATER SUPPLY TEMPERATURE	T-HWS	X	X		HEX-C-11 SUPPLY
AI	VARIABLE FREQUENCY DRIVE	CT			X	PUMP - C-4 STATUS
AO	STEAM VALVE	V-STM				HEX 1/3
AO	STEAM VALVE	V-STM				HEX 2/3
AO	VARIABLE FREQUENCY DRIVE	SPD-C				PUMP - C-4
DI	PIPING HYDRONIC FLOW SWITCH	HFS				CLOSED (HEX-C-11)
DI	PIPING HYDRONIC FLOW SWITCH	HFS				OPEN (HEX-C-11)
DI	PIPING HYDRONIC FLOW SWITCH	HFS				OPEN (HEX-C-11)
DI	PIPING HYDRONIC FLOW SWITCH	HFS				CLOSED (HEX-C-11)
DI	PIPING HYDRONIC FLOW SWITCH	HFS				CLOSED (HEX-C-8)
DI	PIPING HYDRONIC FLOW SWITCH	HFS				OPEN (HEX-C-8)
DI	PIPING HYDRONIC FLOW SWITCH	HFS				CLOSED (HEX-C-8)
DI	PIPING HYDRONIC FLOW SWITCH	HFS				OPEN (HEX-C-8)
DI	VARIABLE FREQUENCY DRIVE	ALM			X	PUMP - C-4
DO	ISOLATION VALVE - OPEN / CLOSE	V-ISO				NORMALLY CLOSED
DO	ISOLATION VALVE - OPEN / CLOSE	V-ISO				NORMALLY CLOSED
DO	ISOLATION VALVE - OPEN / CLOSE	V-ISO				NORMALLY CLOSED
DO	ISOLATION VALVE - OPEN / CLOSE	V-ISO				NORMALLY CLOSED
DO	VARIABLE FREQUENCY DRIVE	ST/ST				PUMP - C-4

Grand total: 22

1.1 Steam to Hot Water HEX

A. General

1. Programs and sequences indicated or implied herein shall be provided.
2. Provide all I/O points indicated on the control diagram and as required to accomplish the sequence of operation.
3. All wire terminals, devices, gauges and wires shall be identified within the panels.
4. All points shall be able to integrate to all trends, totalizations, etc., as applicable.
5. All alarms as indicated on the diagrams in the sequence of operation shall be generated to the appropriate server/workstations.

B. Start/Stop

1. The Hot Water System shall operate year round. The heat exchangers shall be selected on the graphic screen for Primary/Standby for steam supply and water side service. When a heat exchanger is selected as a new primary, the water side isolation valves shall open with proof by their end switches. When both the supply and return isolation valves prove open, the associated steam control valves for that heat exchanger will be enabled for control and the standby steam valves shall be closed. When the steam valves for the standby exchanger close the hot water supply and return isolation valves shall close with proof by their end switches.
2. If the lead pump fails to start within 30 seconds (adj.), the lag pump shall be started and an alarm shall be generated.
3. The runtime for each pump shall be totalized by the BAS system. The lead pump shall be selected as the pump with the least amount of runtime. The lead pump shall also be alternated monthly if required to maintain equal runtime.
4. Upon failure of the D.P. sensor feedback to the DDC panel, the bypass valve and/or pump(s) speed shall remain in the last known state. An alarm shall be generated at the BMS.

C. Pressure Control

1. Upon confirmation of pump status, the lead pump shall ramp to maintain system differential pressure.
2. The initial system differential setpoint. The BAS Contractor shall allot sufficient time to work with the Testing and Balancing Contractor for determining the optimal final system differential pressure setpoint during balancing.
3. The VFD shall modulate the speed of the pump to maintain the differential pressure setpoint. If the lead pump speed is greater than 95% (adj.) for more than 15 minutes (adj.) and the differential pressure setpoint cannot be maintained, the lag pump shall start and both pumps speed shall equalize to match speed and maintain the differential pressure setpoint. On a continued drop the same shall occur for the next lag pump.
4. On a rise in system pressure above setpoint, the pump speed shall decrease. When the pumps speed is below 45% (adj) for more than 15 minutes (adj.), the lag pump with the most runtime shall be shut down. On a continued drop in pressure the same shall occur to shut down the remaining lag pump.
5. If the VFD is at minimum speed and the pressure continues to rise the differential pressure control valve shall modulate open.

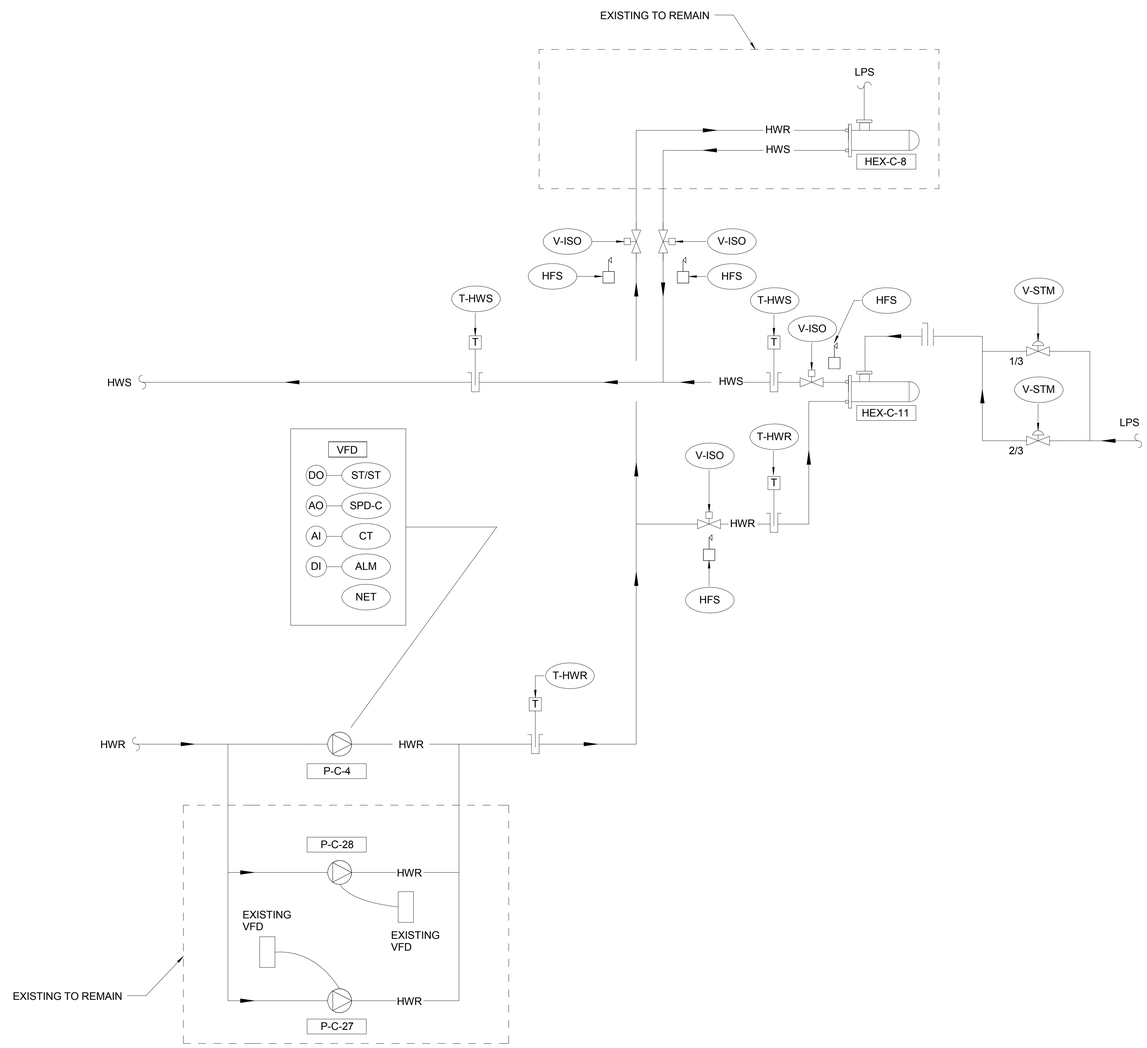
D. Temperature Control

1. On a drop in hot water supply temperature below setpoint the 1/3 2/3 steam heat exchanger valves shall modulate in a staged fashion to maintain the hot water supply temperature setpoint of 180 DegF (adj.). On a rise in temperature the reverse shall occur.

E. Energy Conservation

1. Supply Hot Water Temperature Reset
   a. When the outside air temperature is below 40 DegF (adj.) there shall be no reset of the hot water supply temperature. The setpoint shall ramp at 2 DegF in 10 minutes intervals back to the above mentioned setpoint.
   b. When the outside air temperature is above 45 DegF (adj.) the supply hot water temperature setpoint shall be automatically reset up or down in 2 DegF increments. The reset mode shall make adjustments on 10 minutes intervals.
   c. The system shall only include controllers in the reset strategy that are actively in heating mode. If the furthest open valve is below 75% (adj.) the supply setpoint reset shall start.
   d. If the furthest open valve is above 95% (adj.) open the reset routine shall stop. If any valve reaches 100% (adj.) open the reset routine shall reverse.
   e. If two or more valves reach 100% open for more than 20 minutes (adj.) the reset routine shall ramp the supply setpoint back to the starting setpoint in 5 minutes. An alarm shall be generated and the reset routine shall be locked out in software.

2 Steam to Hot Water HEX Sequence of Operation



1 Steam to Hot Water HEX

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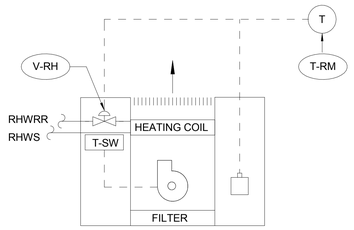


Terminal Unit - Cabinet Unit Heater with Electronic Controls - Control Points List						
BAS_TYPE	BAS_SERVICE	BAS_SERVICE_TAG	ALM_LO	ALM_HI	ALM_OFF / NORMAL	COMMENTS
AI	ROOM / SPACE	T-RM	X			
AO	REHEAT COIL VALVE	V-RH				

Grand total: 2

1.1 Terminal Unit: Cabinet Unit Heater with Electronic Controls

A. General

1. Programs and sequences indicated or implied herein shall be provided.
2. Provide all I/O points indicated on the control diagram and as required to accomplish the sequence of operation.
3. All wire terminals, devices, gauges and wires shall be identified within the panels.
4. All points shall be able to integrate to all trends, totalizations, etc., as applicable.
5. All alarms as indicated on the diagrams in the sequence of operation shall be generated to the appropriate server/workstations.

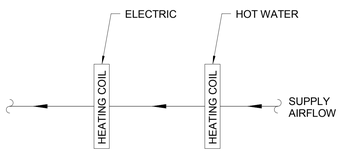
B. Start/Stop

1. The unit shall be enabled by manual command or time of day schedule. For equipment rooms initial time of day program shall provide for continuous operation of the system. For public spaces the BAS Contractor shall coordinate with the Owner the hours for occupancy with initial default being 7am to 7pm.

C. Temperature Control

1. Setpoints: The BAS Contractor shall coordinate the Room Temperature Setpoints with the Owner. The default setpoints shall be as follows.
   a. Occupied: Heating = 70 DegF (adj.)
   b. Unoccupied: Heating = 62 DegF (adj.)
2. Occupied Mode:
   a. Heating: If the room temperature falls below the room temperature setpoint the heating coil valve shall modulate open to maintain the room temperature. When the aqua-stat on the hot water supply pipe makes through hard wire interlock the unit heater fan shall turn on. On a rise in room temperature the reverse shall occur.
3. Unoccupied Mode:
   a. Heating: If the room temperature falls below the Unoccupied room temperature setpoint the heating coil valve shall modulate open to maintain the room temperature. When the aqua-stat on the hot water supply pipe makes through hard wire interlock the unit heater fan shall turn on. On a rise in room temperature the reverse shall occur.

2 Terminal Unit - Cabinet Unit Heater with Electronic Controls



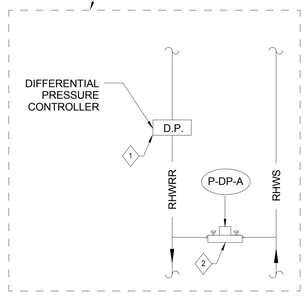
ROOMS SUPPORTED BY ELECTRIC REHEAT COILS (LEV. 2 CARDIOLOGY):
1. PREP/RECOVERY C2147
2. NURSE C2153
3. MEDS C2152
4. TOILET C2151
5. CLEAN C2150
6. SOILED C2149
7. ISOLATION C2148

6 Electric Reheat Coil

KEY NOTES:

1. MECHANICAL DIFFERENTIAL PRESSURE DEVICE TO MAINTAIN A CONSTANT PRESSURE SETPOINT AS DETERMINED BY THE T.A.B. CONTRACTOR.
2. FOR DIFFERENTIAL PRESSURE MONITORING ONLY.

NOTE:
MULTIPLE INSTALLATION INSTANCES OCCUR TO TIE THE EXISTING HOT WATER REVERSE RETURN SYSTEM INTO THE NEW HOT WATER DIRECT RETURN SYSTEM. REFER TO THE NEW HOT WATER RISER DIAGRAM FOR QUANTITY, LOCATIONS, AND D.P. CONTROLLER DESCRIPTION.



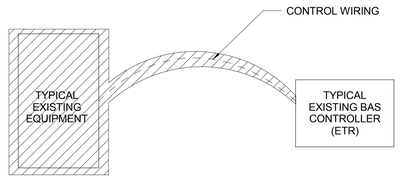
Differential Pressure Controller - Control Points List						
BAS_TYPE	BAS_SERVICE	BAS_SERVICE_TAG	ALM_LO	ALM_HI	ALM_OFF / NORMAL	COMMENTS
AI	DIFFERENTIAL PRESSURE - ANALOG	P-DP-A				

Grand total: 1

1 Differential Pressure Controller

NOTES:
1. BAS CONTRACTOR SHALL MAINTAIN THE EXISTING CONTROLS FOR THE NEW MOTOR AND VFD (I.E. START/STOP, FAN STATUS, ETC).
2. VFD SHALL BE USED FOR BALANCING ONLY. MODULATING FAN SPEED CONTROL IS NOT REQUIRED.

4 Motor Replacement w/ New VFD



NOTES:
1. BAS CONTRACTOR SHALL DEMO EXISTING BAS CONTROLS/WIRING FROM EXISTING EQUIPMENT BEING REMOVED BACK TO THE EXISTING CONTROLLER AND MAKE SAFE (TYPICAL).
2. REFER TO SCHEDULES AND FLOW DIAGRAMS FOR EXISTING EQUIPMENT BEING DEMOLISHED.

5 BAS Demolition Scope of Existing Equipment

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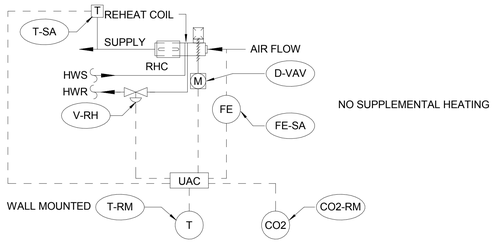


NO SUPPLEMENTAL HEATING

PROVIDE CO2 SENSORS FOR THE FOLLOWING ROOMS:
1. (3) DENTAL WAITING (CM049)
2. (1) RESIDENT STUDY (C1288)
3. (1) RESIDENT STUDY (C1296)
4. (3) DENTAL WAITING ROOM (C1057)
5. (1) ENDODONTICS RESIDENT STUDY (C1026)
6. (1) AGED RESIDENT STUDY (C1028)
7. (1) STAFF BREAK ROOM (C2142)
8. (1) WAITING AREA (C2096)
9. (1) CONFERENCE (C2087)

(NOTE: SEE PIPING DRAWINGS TO VERIFY CO2 LOCATIONS)

Terminal Unit - VAV/CV with Reheat & CO2 Control Points List						
BAS_TYPE	BAS_SERVICE	BAS_SERVICE_TAG	ALM_LO	ALM_HI	ALM_OFF / NORMAL	COMMENTS
AI	ROOM / SPACE	T-RM	X	X		
AI	ROOM / SPACE	CO2-RM		X		
AI	SUPPLY AIR FLOW ELEMENT	FE-SA				
AI	SUPPLY AIR TEMPERATURE	T-SA				
AO	REHEAT COIL VALVE	V-RH				
AO	VAV DAMPER	D-VAV				SUPPLY AIR TERMINAL UNIT DAMPER

Grand total: 6

1.1 Terminal Unit: Supply VAV/CV with Reheat & CO2

A. General

1. Programs and sequences indicated or implied herein shall be provided.
2. Provide all I/O points indicated on the control diagram and as required to accomplish the sequence of operation.
3. All wire terminals, devices, gauges and wires shall be identified within the panels.
4. All points shall be able to integrate to all trends, totalizations, etc., as applicable.
5. All alarms as indicated on the diagrams in the sequence of operation shall be generated to the appropriate server/workstations.

B. Temperature Control

1. The unit shall be enabled by manual command or time of day schedule. For public spaces the BAS Contractor shall coordinate with the Owner the hours for occupancy with initial default being 7am to 7pm.
2. Setpoints: The BAS Contractor shall coordinate the Room Temperature Setpoints with the Owner. The default setpoints shall be as follows.
   a. Occupied: Cooling = 75 DegF (adj.); Heating = 70 DegF (adj.)
   b. Unoccupied: Cooling = 82 DegF (adj.); Heating = 62 DegF (adj.)
   c. Maximum Heating Discharge Air Temperature Setpoint = Active Room Heating Setpoint + 20 DegF Heating Differential Setpoint
3. Occupied Mode:
   a. Cooling: If the room temperature rises above the room temperature setpoint the supply VAV box damper shall modulate open from its minimum CFM setpoint to its maximum CFM setpoint as scheduled to maintain the room temperature. On a drop in room temperature the reverse shall occur. While in deadband the supply VAV box shall be at minimum CFM setpoint. For CV boxes no CFM setpoint change shall occur.
   b. Heating: If the room temperature falls below the room temperature setpoint the reheat coil valve shall modulate open to maintain the room temperature without exceeding the Maximum Discharge Air Temperature Setpoint. On a rise in room temperature the reverse shall occur. While in deadband the reheat coil valve shall be closed.
4. Unoccupied Mode:
   a. Cooling: If the room temperature rises above the Unoccupied room temperature setpoint the supply VAV box damper shall modulate open from its minimum CFM setpoint to its maximum CFM setpoint as scheduled to maintain the room temperature. On a drop in room temperature the reverse shall occur. While in deadband the supply VAV box shall be at minimum CFM setpoint. For CV boxes no CFM setpoint change shall occur.
   b. Heating: If the room temperature falls below the Unoccupied room temperature setpoint the reheat coil valve shall modulate open to maintain the room temperature without exceeding the Maximum Discharge Air Temperature Setpoint. On a rise in room temperature the reverse shall occur. While in deadband the reheat coil valve shall be closed.

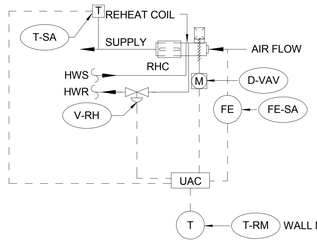
C. Safety Interlocks

1. If any VAV box damper is 100% open and is 10% (adj.) below CFM setpoint for 10 min (adj.) an alarm shall be generated at Facilities.

D. Energy Conservation Measure

1. CO2 Control: Provide for high occupant density areas
   a. As the CO2 level rises above the setpoint of 1100 ppm reset the local VAV box minimum airflow to increase the flow of primary air to the room. On a continued increase in room CO2 above setpoint, and after the supply VAV box primary air flow is at maximum setpoint, gradually, slowly, increase the air handling unit outside air damper signal to provide more outside air to the air handling unit serving the space. Allow deadband time of 15 minutes (adj.) before resetting outside air volumes at the related AHU. As the room CO2 levels drop below setpoint, gradually decrease the outside air damper signal to bring the outside air damper back to its normal position (as dictated by the AHU sequence). Upon a further decrease in room CO2 levels below the setpoint, allow the supply VAV box to resume normal box control. The ppm setpoint valves shall be fully adjustable. Provide software alarm limits.

2 Terminal Unit - VAV/CV with Reheat & CO2



NO SUPPLEMENTAL HEATING

Terminal Unit - VAV/CV with Reheat Control Points List						
BAS_TYPE	BAS_SERVICE	BAS_SERVICE_TAG	ALM_LO	ALM_HI	ALM_OFF / NORMAL	COMMENTS
AI	ROOM / SPACE	T-RM	X	X		
AI	SUPPLY AIR FLOW ELEMENT	FE-SA				
AI	SUPPLY AIR TEMPERATURE	T-SA				
AO	REHEAT COIL VALVE	V-RH				
AO	VAV DAMPER	D-VAV				SUPPLY AIR TERMINAL UNIT DAMPER

Grand total: 5

1.1 Terminal Unit: Supply VAV/CV with Reheat

A. General

1. Programs and sequences indicated or implied herein shall be provided.
2. Provide all I/O points indicated on the control diagram and as required to accomplish the sequence of operation.
3. All wire terminals, devices, gauges and wires shall be identified within the panels.
4. All points shall be able to integrate to all trends, totalizations, etc., as applicable.
5. All alarms as indicated on the diagrams in the sequence of operation shall be generated to the appropriate server/workstations.

B. Temperature Control

1. The unit shall be enabled by manual command or time of day schedule. For public spaces the BAS Contractor shall coordinate with the Owner the hours for occupancy with initial default being 7am to 7pm.
2. Setpoints: The BAS Contractor shall coordinate the Room Temperature Setpoints with the Owner. The default setpoints shall be as follows.
   a. Occupied: Cooling = 75 DegF (adj.); Heating = 70 DegF (adj.)
   b. Unoccupied: Cooling = 82 DegF (adj.); Heating = 62 DegF (adj.)
   c. Maximum Heating Discharge Air Temperature Setpoint = Active Room Heating Setpoint + 20 DegF Heating Differential Setpoint
3. Occupied Mode:
   a. Cooling: If the room temperature rises above the room temperature setpoint the supply VAV box damper shall modulate open from its minimum CFM setpoint to its maximum CFM setpoint as scheduled to maintain the room temperature. On a drop in room temperature the reverse shall occur. While in deadband the supply VAV box shall be at minimum CFM setpoint. For CV boxes no CFM setpoint change shall occur.
   b. Heating: If the room temperature falls below the room temperature setpoint the reheat coil valve shall modulate open to maintain the room temperature without exceeding the Maximum Discharge Air Temperature Setpoint. On a rise in room temperature the reverse shall occur. While in deadband the reheat coil valve shall be closed.
4. Unoccupied Mode:
   a. Cooling: If the room temperature rises above the Unoccupied room temperature setpoint the supply VAV box damper shall modulate open from its minimum CFM setpoint to its maximum CFM setpoint as scheduled to maintain the room temperature. On a drop in room temperature the reverse shall occur. While in deadband the supply VAV box shall be at minimum CFM setpoint. For CV boxes no CFM setpoint change shall occur.
   b. Heating: If the room temperature falls below the Unoccupied room temperature setpoint the reheat coil valve shall modulate open to maintain the room temperature without exceeding the Maximum Discharge Air Temperature Setpoint. On a rise in room temperature the reverse shall occur. While in deadband the reheat coil valve shall be closed.

C. Safety Interlocks

1. If any VAV box damper is 100% open and is 10% (adj.) below CFM setpoint for 10 min (adj.) an alarm shall be generated at Facilities.

1 Terminal Unit - VAV/CV with Reheat

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(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE.
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CONTROL DIAGRAMS

H-7.0.8

BID DOCUMENTS

SCALE:
JOB NO: 1302
DATE: 12/10/2015
DRAWN BY: MCL
FILE NAME: CONTROL DIAGRAMS

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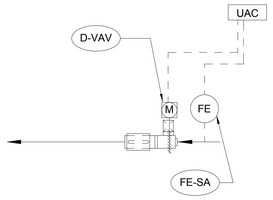


NOTE:
CUSTOM SUPPLY AIR VOLUME CONTROL & MEASURING STATIONS (AVCMS) WITHOUT REHEAT ARE UTILIZED IN UNRENOVATED SPACES SUPPORTED BY A NEW AIR HANDLING UNIT. REFER TO DRAWINGS FOR LOCATIONS.

Terminal Unit - Supply VAV/CV with No Reheat Control Points List

BAS_TYPE	BAS_SERVICE	BAS_SERVICE_TAG	ALM_LO	ALM_HI	ALM_OFF / NORMAL	COMMENTS
AI	SUPPLY AIR FLOW ELEMENT	FE-SA				CUSTOM SUPPLY AIR FLOW MEASURING STATION
AO	VAV DAMPER	D-VAV				CUSTOM SUPPLY AIR FLOW CONTROL DAMPER

Grand total: 2

1.1 Terminal Unit: Supply VAV/CV with No Reheat

A. General

1. Programs and sequences indicated or implied herein shall be provided.
2. Provide all I/O points indicated on the control diagram and as required to accomplish the sequence of operation.
3. All wire terminals, devices, gauges and wires shall be identified within the panels.
4. All points shall be able to integrate to all trends, totalizations, etc., as applicable.
5. All alarms as indicated on the diagrams in the sequence of operation shall be generated to the appropriate server/workstations.

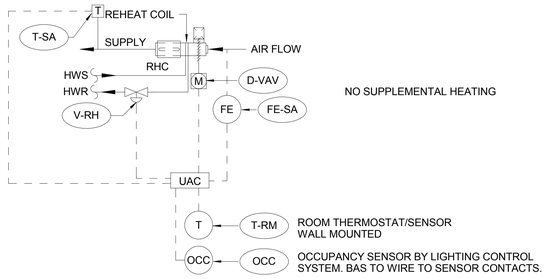
B. Airflow Control

1. The supply box shall modulate to maintain the CFM setpoint as shown on the drawings. Based on the location the setpoint may change for specific phases. The BAS contractor shall update setpoints and confirm calibration of the flow control station per phase.

C. Safety Interlocks

1. If any VAV box damper is 100% open and is 10% (adj.) below CFM setpoint for 10 min (adj.) an alarm shall be generated at Facilities.

3 Terminal Unit - Supply VAV/CV with No Reheat



NO SUPPLEMENTAL HEATING

Terminal Unit - Supply VAV/CV with Reheat & Occupancy Sensor Control Points List

BAS_TYPE	BAS_SERVICE	BAS_SERVICE_TAG	ALM_LO	ALM_HI	ALM_OFF / NORMAL	COMMENTS
AI	ROOM / SPACE	T-RM	X	X		
AI	SUPPLY AIR FLOW ELEMENT	FE-SA				
AI	SUPPLY AIR TEMPERATURE	T-SA				
AO	REHEAT COIL VALVE	V-RH				
AO	VAV DAMPER	D-VAV				SUPPLY AIR TERMINAL UNIT DAMPER
DI	OCCUPANCY SENSOR	OCC				

Grand total: 6

1.1 Terminal Unit: Supply VAV/CV with Reheat and Occupancy Sensor

A. General

1. Programs and sequences indicated or implied herein shall be provided.
2. Provide all I/O points indicated on the control diagram and as required to accomplish the sequence of operation.
3. All wire terminals, devices, gauges and wires shall be identified within the panels.
4. All points shall be able to integrate to all trends, totalizations, etc., as applicable.
5. All alarms as indicated on the diagrams in the sequence of operation shall be generated to the appropriate server/workstations.
6. Where shown on Electrical Lighting plans the lighting control occupancy sensor shall be hard wired to by the BAS contractor.
7. Provide Alternate pricing at bid time to provide a networked interface for each hardwired occupancy sensor shown on the Electrical drawings.

B. Temperature Control

1. The unit shall be enabled by manual command or time of day schedule. For public spaces the BAS Contractor shall coordinate with the Owner the hours for occupancy with initial default being 7am to 7pm.
2. Setpoints: The BAS Contractor shall coordinate the Room Temperature Setpoints with the Owner. The default setpoints shall be as follows.
   a. Occupied: Cooling = 75 DegF (adj.); Heating = 70 DegF (adj.)
   b. Unoccupied: Cooling = 82 DegF (adj.); Heating = 62 DegF (adj.)
   c. Maximum Heating Discharge Air Temperature Setpoint = Active Room Heating Setpoint + 20 DegF Heating Differential Setpoint
3. Occupied Mode:
   a. Cooling: If the room temperature rises above the room temperature setpoint the supply VAV box damper shall modulate open from its minimum CFM setpoint to its maximum CFM setpoint as scheduled to maintain the room temperature. On a drop in room temperature the reverse shall occur. While in deadband the supply VAV box shall be at minimum CFM setpoint. For CV boxes no CFM setpoint change shall occur.
   b. Heating: If the room temperature falls below the room temperature setpoint the reheat coil valve shall modulate open to maintain the room temperature without exceeding the Maximum Discharge Air Temperature Setpoint. On a rise in room temperature the reverse shall occur. While in deadband the reheat coil valve shall be closed.
4. Unoccupied Mode:
   a. Cooling: If the room temperature rises above the Unoccupied room temperature setpoint the supply VAV box damper shall modulate open from its minimum CFM setpoint to its maximum CFM setpoint as scheduled to maintain the room temperature. On a drop in room temperature the reverse shall occur. While in deadband the supply VAV box shall be at minimum CFM setpoint. For CV boxes no CFM setpoint change shall occur.
   b. Heating: If the room temperature falls below the Unoccupied room temperature setpoint the reheat coil valve shall modulate open to maintain the room temperature without exceeding the Maximum Discharge Air Temperature Setpoint. On a rise in room temperature the reverse shall occur. While in deadband the reheat coil valve shall be closed.

C. Safety Interlocks

1. If any VAV box damper is 100% open and is 10% (adj.) below CFM setpoint for 10 min (adj.) an alarm shall be generated at Facilities.

D. Energy Conservation Measure

1. Occupancy Sensor Standby Control :
   a. During normal occupancy hours as indicated above the terminal unit controller shall monitor the occupancy sensor input. When no presence is detected as determined by the occupancy sensor the airflow setpoints for heating and cooling shall change to the standby mode (as indicated on the contract drawings) to reduce the air change rate after a 5 minute countdown timer delay (adj.). If at any time during the 5 minute countdown timer the occupancy sensor detects a presence the timer shall be reset. When in standby mode and the occupancy sensor detects presence the airflow setpoints shall be indexed back to occupied mode.

1 Terminal Unit - Supply VAV/CV with Reheat & Occupancy Sensor

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

263 FARMINGTON AVE,
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CONTROL DIAGRAMS

H-7.0.9

BID DOCUMENTS

SCALE:
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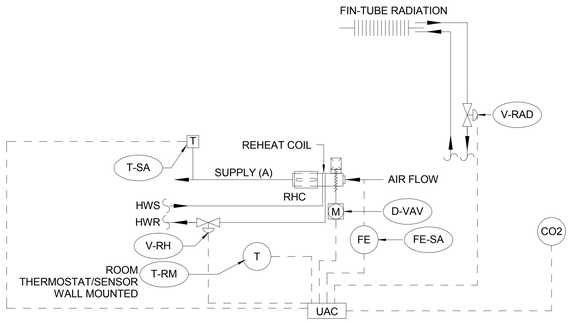


Terminal Unit - Supply VAV/CV with Reheat, CO2, & Fintube Radiation Control Points List						
BAS_TYPE	BAS_SERVICE	BAS_SERVICE_TAG	ALM_LO	ALM_HI	ALM_OFF / NORMAL	COMMENTS
AI	ROOM / SPACE	T-RM	X	X		
AI	ROOM / SPACE	CO2-RM				
AI	SUPPLY AIR FLOW ELEMENT	FE-SA				
AI	SUPPLY AIR TEMPERATURE	T-SA				
AO	RADIATION VALVE	V-RAD				
AO	REHEAT COIL VALVE	V-RH				
AO	VAV DAMPER	D-VAV				

Grand total: 7

1.1 Terminal Unit: Supply VAV/CV with Reheat, Fintube Radiation and CO2

A. General

1. Programs and sequences indicated or implied herein shall be provided.
2. Provide all I/O points indicated on the control diagram and as required to accomplish the sequence of operation.
3. All wire terminals, devices, gauges and wires shall be identified within the panels.
4. All points shall be able to integrate to all trends, totalizations, etc., as applicable.
5. All alarms as indicated on the diagrams in the sequence of operation shall be generated to the appropriate server/workstations.

B. Flow Control

1. The supply VAV box shall operate as indicated below for Room Temperature Control.

C. Temperature Control

1. The unit shall be enabled by manual command or time of day schedule. For public spaces the BAS Contractor shall coordinate with the Owner the hours for occupancy with initial default being 7am to 7pm.
2. Fintube Radiation: When the outside air temperature drops below 42 DegF (adj.), the fintube valve shall be enabled for heating control as indicated below. When the outside air temperature rises above 45 DegF (adj.) the fintube valve shall disabled from the heating control sequence.
3. Setpoints: The BAS Contractor shall coordinate the Room Temperature Setpoints with the Owner. The default setpoints shall be as follows.
   a. Occupied: Cooling = 75 DegF (adj.); Heating = 70 DegF (adj.)
   b. Unoccupied: Cooling = 82 DegF (adj.); Heating = 62 DegF (adj.)
   c. Maximum Heating Discharge Air Temperature Setpoint = Active Room Heating Setpoint + 20 DegF Heating Differential Setpoint
4. Occupied Mode:
   a. Cooling: If the room temperature rises above the room temperature setpoint the supply VAV box damper shall modulate open from its minimum CFM setpoint to its maximum CFM setpoint as scheduled to maintain the room temperature. On a drop in room temperature the reverse shall occur. While in deadband the supply VAV box shall be at minimum CFM setpoint. For CV boxes no CFM setpoint change shall occur.
   b. Heating: If the room temperature falls below the room temperature setpoint the radiation valve shall modulate open. On a continued drop in room temperature the reheat coil valve shall modulate open to maintain the room temperature without exceeding the Maximum Discharge Air Temperature Setpoint. On a rise in room temperature the reverse shall occur. While in deadband the reheat coil and radiation valve shall be closed.
5. Unoccupied Mode:
   a. Cooling: If the room temperature rises above the Unoccupied room temperature setpoint the supply VAV box damper shall modulate open from its minimum CFM setpoint to its maximum CFM setpoint as scheduled to maintain the room temperature. On a drop in room temperature the reverse shall occur. While in deadband the supply VAV box shall be at minimum CFM setpoint. For CV boxes no CFM setpoint change shall occur.
   b. Heating: If the room temperature falls below the Unoccupied room temperature setpoint the radiation valve shall modulate open. On a continued drop in room temperature the reheat coil valve shall modulate open to maintain the room temperature without exceeding the Maximum Discharge Air Temperature Setpoint. On a rise in room temperature the reverse shall occur. While in deadband the reheat coil valve shall be closed.

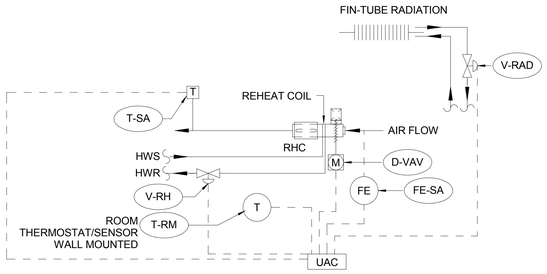
D. Safety Interlocks

1. If any VAV box damper is 100% open and is 10% (adj.) below CFM setpoint for 10 min (adj.) an alarm shall be generated at Facilities.

E. Energy Conservation Measure

1. CO2 Control: Provide for high occupant density areas.
   a. As the CO2 level rises above the setpoint of 1100 ppm reset the local VAV box minimum airflow to increase the flow of primary air to the room. On a continued increase in room CO2 above setpoint, and after the supply VAV box primary air flow is at maximum setpoint, gradually, slowly, increase the air handling unit outside air damper signal to provide more outside air to the air handling unit serving the space. Allow deadband time of 15 minutes (adj.) before resetting outside air volumes at the related AHU. As the room CO2 levels drop below setpoint, gradually decrease the outside air damper signal to bring the outside air damper back to its normal position (as dictated by the AHU sequence). Upon a further decrease in room CO2 levels below the setpoint, allow the supply VAV box to resume normal box control. The ppm setpoint valves shall be fully adjustable. Provide software alarm limits.

2 Terminal Unit - Supply VAV/CV with Reheat, CO2, & Fintube Radiation



NO SUPPLEMENTAL HEATING

TYPICAL 6 CONTROL POINTS PER SUPPLY TERMINAL BOX SYSTEM

Terminal Unit - Supply VAV/CV with Reheat & Fintube Radiation Control Points List						
BAS_TYPE	BAS_SERVICE	BAS_SERVICE_TAG	ALM_LO	ALM_HI	ALM_OFF / NORMAL	COMMENTS
AI	ROOM / SPACE	T-RM	X	X		
AI	SUPPLY AIR FLOW ELEMENT	FE-SA				
AI	SUPPLY AIR TEMPERATURE	T-SA				
AO	RADIATION VALVE	V-RAD				
AO	REHEAT COIL VALVE	V-RH				
AO	VAV DAMPER	D-VAV				

Grand total: 6

1.1 Terminal Unit: Multiple Supply VAV/CV with Reheat, Fintube Radiation & Single Large Volume Exhaust/Return

A. General

1. Programs and sequences indicated or implied herein shall be provided.
2. Provide all I/O points indicated on the control diagram and as required to accomplish the sequence of operation.
3. All wire terminals, devices, gauges and wires shall be identified within the panels.
4. All points shall be able to integrate to all trends, totalizations, etc., as applicable.
5. All alarms as indicated on the diagrams in the sequence of operation shall be generated to the appropriate server/workstations.

B. Flow Control

1. The multiple supply VAV boxes shall operate independently as indicated below for Room Temperature Control. The large volume return flow control station shall modulate between its minimum and maximum setpoint as scheduled on the Contract Drawings while tracking the multiple supply VAV box.

C. Temperature Control

1. Each supply VAV shall be independently enabled by manual command or time of day schedule. For public spaces the BAS Contractor shall coordinate with the Owner the hours for occupancy with initial default being 7am to 7pm.
2. Fintube Radiation: When the outside air temperature drops below 42 DegF (adj.), the fintube valve shall be enabled for heating control as indicated below. When the outside air temperature rises above 45 DegF (adj.) the fintube valve shall disabled from the heating control sequence.
3. Setpoints: The BAS Contractor shall coordinate the Room Temperature Setpoints with the Owner. The default setpoints shall be as follows.
   a. Occupied: Cooling = 75 DegF (adj.); Heating = 70 DegF (adj.)
   b. Unoccupied: Cooling = 82 DegF (adj.); Heating = 62 DegF (adj.)
   c. Maximum Heating Discharge Air Temperature Setpoint = Active Room Heating Setpoint + 20 DegF Heating Differential Setpoint
4. Occupied Mode:
   a. Cooling: If the room temperature rises above the room temperature setpoint the supply VAV box damper shall modulate open from its minimum CFM setpoint to its maximum CFM setpoint as scheduled to maintain the room temperature. On a drop in room temperature the reverse shall occur. While in deadband the supply VAV box shall be at minimum CFM setpoint. For CV boxes no CFM setpoint change shall occur.
   b. Heating: If the room temperature falls below the room temperature setpoint the reheat coil valve shall modulate open to a maximum of 50% (adj.) without exceeding the Maximum Discharge Air Temperature Setpoint. On a further drop the radiation valve shall modulate to full open. On a continued drop in room temperature the reheat valve shall modulate open to 100% to maintain the room temperature without exceeding the Maximum Discharge Air Temperature Setpoint. On a rise in room temperature the reverse shall occur. While in deadband the reheat coil and radiation valve shall be closed.
5. Unoccupied Mode:
   a. Cooling: If the room temperature rises above the Unoccupied room temperature setpoint the supply VAV box damper shall modulate open from its minimum CFM setpoint to its maximum CFM setpoint as scheduled to maintain the room temperature. On a drop in room temperature the reverse shall occur. While in deadband the supply VAV box shall be at minimum CFM setpoint. For CV boxes no CFM setpoint change shall occur.
   b. Heating: If the room temperature falls below the Unoccupied room temperature setpoint the reheat coil valve shall modulate open to a maximum of 50% (adj.) without exceeding the Maximum Discharge Air Temperature Setpoint. On a further drop the radiation valve shall modulate to full open. On a continued drop in room temperature the reheat valve shall modulate open to 100% to maintain the room temperature without exceeding the Maximum Discharge Air Temperature Setpoint. On a rise in room temperature the reverse shall occur. While in deadband the reheat coil and radiation valve shall be closed.

D. Safety Interlocks

1. If any VAV box damper is 100% open and is 10% (adj.) below CFM setpoint for 10 min (adj.) an alarm shall be generated at Facilities.

1 Terminal Unit - Supply VAV/CV with Reheat & Fintube Radiation

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CONTROL DIAGRAMS

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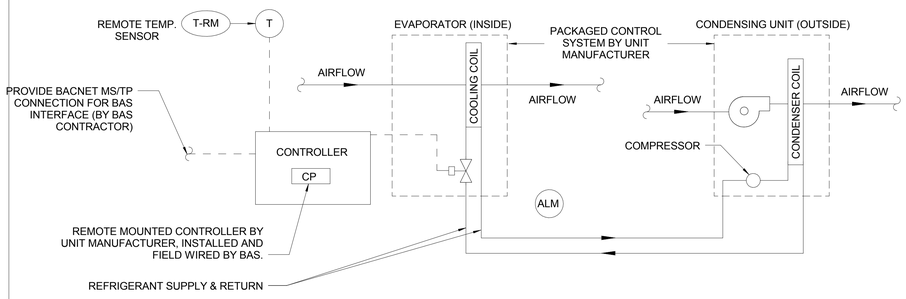
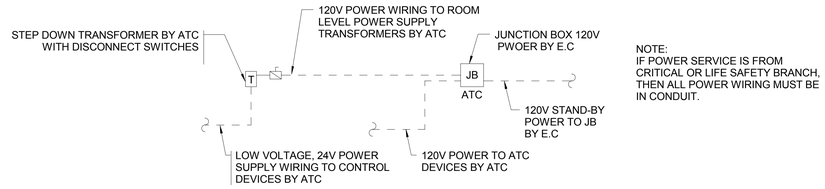


Splilt AC Unit Monitor Alarm Control Points List						
BAS_TYPE	BAS_SERVICE	BAS_SERVICE_TAG	ALM_LO	ALM_HI	ALM_OFF / NORMAL	COMMENTS
AI	ROOM / SPACE	T-RM				
DI	ALARM	ALM			X	ABOVE 80 DEG F (ADJ)

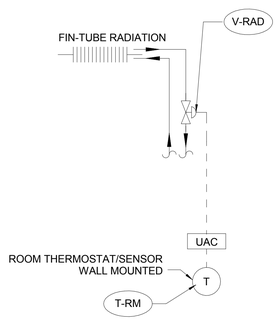
Grand total: 2

2 Splilt AC Unit Monitor Alarm



NOTE:
IF POWER SERVICE IS FROM CRITICAL OR LIFE SAFETY BRANCH, THEN ALL POWER WIRING MUST BE IN CONDUIT.

4 BAS Control Power Detail



Finned Tube Radiation with T-stat Control Points List						
BAS_TYPE	BAS_SERVICE	BAS_SERVICE_TAG	ALM_LO	ALM_HI	ALM_OFF / NORMAL	COMMENTS
AI	ROOM / SPACE	T-RM	X	X		
AO	RADIATION VALVE	V-RAD				FIN TUBE RADIATION

Grand total: 2

1.1 Fintube Radiation with Tstat

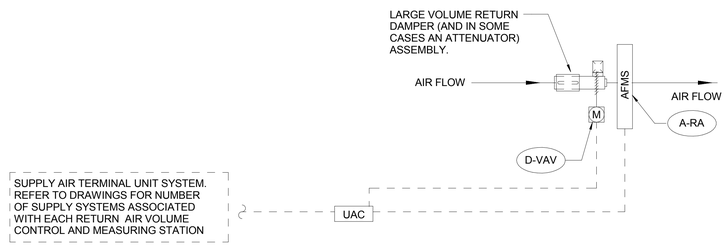
A. General

1. Programs and sequences indicated or implied herein shall be provided.
2. Provide all I/O points indicated on the control diagram and as required to accomplish the sequence of operation.
3. All wire terminals, devices, gauges and wires shall be identified within the panels.
4. All points shall be able to integrate to all trends, totalizations, etc., as applicable.
5. All alarms as indicated on the diagrams in the sequence of operation shall be generated to the appropriate server/workstations.

B. Temperature Control

1. Fintube Radiation: When the outside air temperature drops below 42 DegF (adj.), the fintube valve shall be enabled for heating control as indicated below. When the outside air temperature rises above 45 DegF (adj.) the fintube valve shall disabled from the heating control sequence.
2. Setpoints: The BAS Contractor shall coordinate the Room Temperature Setpoints with the Owner. The default setpoints shall be as follows.
   a. Occupied Spaces
      1) Occupied: Heating = 70 DegF (adj.)
      2) Unoccupied: Heating = 62 DegF (adj.)
   b. Mechanical Spaces:
      1) Heating = 60 DegF (adj.)
      2) If the space temperature drops below 50 DegF (adj.), an alarm shall be generated.

3 Finned Tube Radiation with T-stat



Terminal Unit - Single Tracking Return & Large Return Airflow Control Station Control Points List						
BAS_TYPE	BAS_SERVICE	BAS_SERVICE_TAG	ALM_LO	ALM_HI	ALM_OFF / NORMAL	COMMENTS
AI	RETURN AIR FLOW	A-RA				
AO	VAV DAMPER	D-VAV				RETURN AIR TERMINAL UNIT DAMPER 1

Grand total: 2

1.1 Terminal Unit - Single Tracking Return or Large Return/Air Flow Control Station

A. General

1. Programs and sequences indicated or implied herein shall be provided.
2. Provide all I/O points indicated on the control diagram and as required to accomplish the sequence of operation.
3. All wire terminals, devices, gauges and wires shall be identified within the panels.
4. All points shall be able to integrate to all trends, totalizations, etc., as applicable.
5. All alarms as indicated on the diagrams in the sequence of operation shall be generated to the appropriate server/workstations.
6. The BAS contractor shall review the contract drawings for the specific application of VAV box or an Air Flow Control Station as scheduled and provide the applicable controller and field devices.

B. Flow Control

1. This control strategy shall apply for a single return VAV box tracking a single supply VAV box or multiple supply VAV boxes.
2. Single Supply VAV box
   a. The Return box shall modulate between its minimum and maximum setpoint as scheduled on the Contract Drawings while tracking the supply VAV box to provide the proper CFM offset.
3. Multiple Supply VAV boxes
   a. The Return VAV box/Air Flow Control Station controller shall poll all the associated supply VAV box controllers and total their individual supply cfm values. The total supply cfm value plus an offset setpoint shall be used to provide a calculated exhaust/return cfm setpoint. Upon a drop in the exhaust/return air flow is below the return cfm setpoint the return air damper shall modulate open. On a rise in return air flow the reverse shall occur.
   b. For areas with phased construction, the BAS contractor shall own reprogramming the return flow tracking as individual supply VAV boxes are added to the return tracking box.

C. Safety Interlocks

1. If any VAV box damper is 100% open and is 10% (adj.) below CFM setpoint for 10 min (adj.) an alarm shall be generated at Facilities.

1 Terminal Unit - Single Tracking Return & Large Return Airflow Control Station

NO.	REVISION	DATE

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UCONN HEALTH

(UCONN PROJECT # 901737)

BUILDING C RENOVATION

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CONTROL DIAGRAMS

H-7.0.11

BID DOCUMENTS

SCALE:
JOB NO: 1302
DATE: 12/10/2015
DRAWN BY: MCL
FILE NAME: CONTROL DIAGRAMS

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