

ADDENDUM NO. 4

March 8, 2019

This Addendum contains changes to the requirements of the Contract Documents and Specifications. Such changes are to be incorporated into the Construction Documents and shall apply to the work with the same meaning and force as if they had been included in the original document. Wherever this Addendum modifies a portion of a paragraph of the specifications or a portion of any Drawing, the remainder of the Paragraph or Drawing shall remain in force.

NOTE: Provisions of all Contract Documents apply.

Item 1. Instruction to Bidders, Item 3.b.

DELETE "...above not later than 2:00PM on March 14, 2019."

REPLACE with "...above not later than 2:00PM on **March 18, 2019.**"

DRAWINGS

Item 2. Drawing H802

DELETE in its entirety.

REPLACE with revised H802, attached.

Note: Replacement drawing attachment missing from Addendum 2.

Item 3. Drawing H803

DELETE in its entirety.

REPLACE with revised H803, attached.

Note: Replacement drawing attachment missing from Addendum 2

Item 4. Drawing H901

DELETE in its entirety.

REPLACE with revised H901, attached.

Note: Replacement drawing attachment missing from Addendum 2

Item 5. Drawing H809, 2 LIGHTING CONTROL MATRIX

DELETE Note:

LIGHTING CONTROL MATRIX
REFER TO ELECTRICAL DRAWING E090 FOR LIGHTING CONTROL
MATRIX

REPLACE with:

LIGHTING CONTROL MATRIX
REFER TO ELECTRICAL DRAWING E700 FOR LIGHTING CONTROL
MATRIX

RFI LOG

Item 6. RFI Log. Addendum No. 3, Item No. 21, Design Team Response

DELETE in its entirety.

REPLACE with

Drawing H809 includes a paragraph labeled “LIGHTING CONTROL” which describes the requirement of the lighting controls to be provided by the controls contractor with the exception of Restrooms and Mechanical Rooms. This paragraph also includes language indicating the Electrical Contractor’s responsibility to provide light fixtures and power wiring. In addition, the Electrical Contractor is responsible to provide the lighting control devices and wiring for the Restrooms and Mechanical Rooms in the renovated areas. Drawing H809 also references the “LIGHTING CONTROL MATRIX” and incorrectly points to drawing E090 instead of E700. See Addendum 4, item 5. The LIGHTING CONTROL MATRIX on drawing E700 is provided to identify the operation sequence for each room which is to be used by the controls contractor for programming of the light controls.

Attachments

Drawings

H802 – HVAC CONTROLS
H803 – HVAC CONTROLS
H901 – HVAC ZONE CONTROL PLAN

****END OF ADDENDUM****



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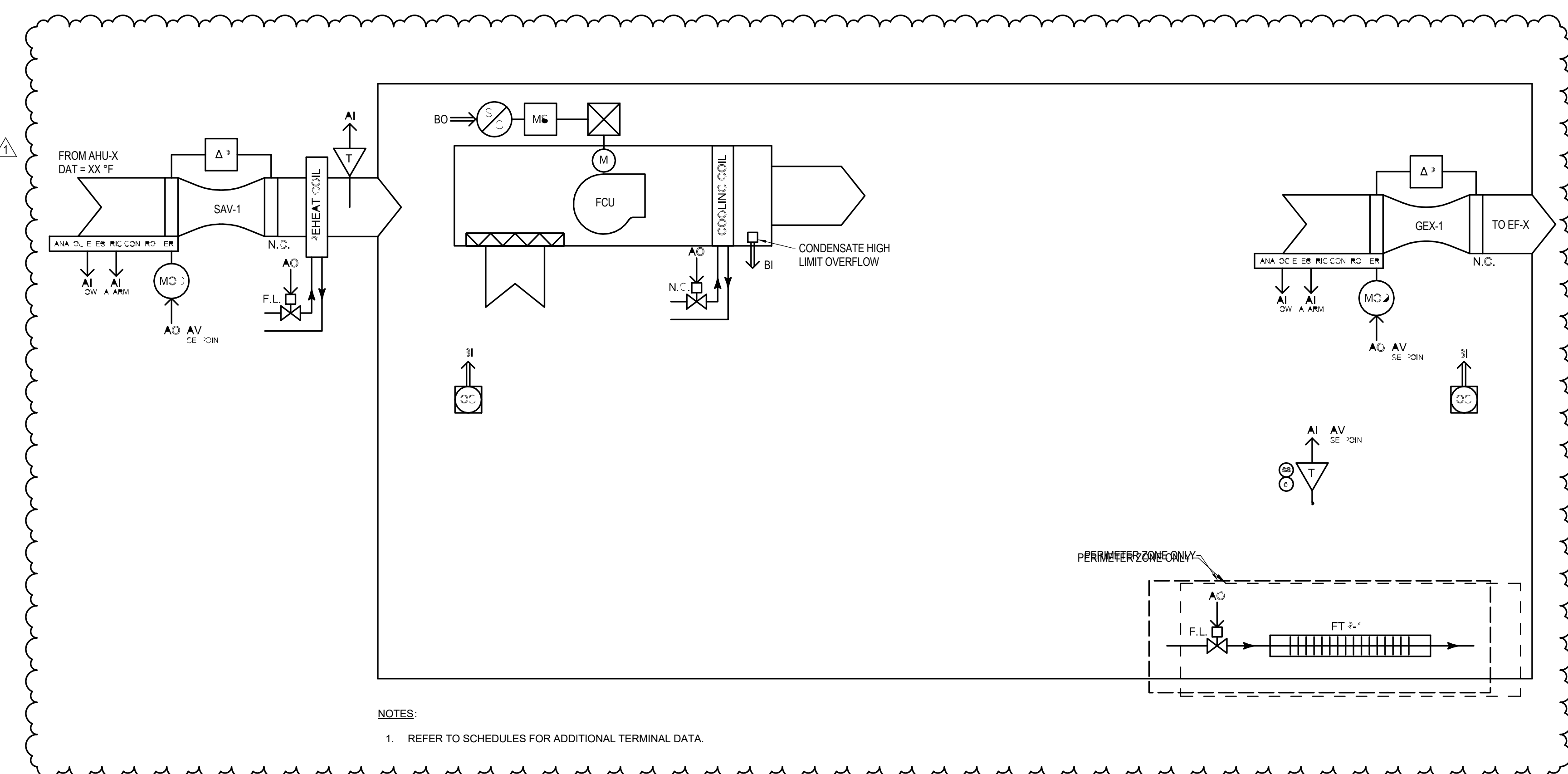
#	Description	Date
1	Addendum 2	2019-02-25

Construction Documents
Schurman Hall Level 1 Renovations
 Cornell University
 602 Tower Road, Ithaca NY 14853

DATE:	24 January 2019
PROJECT:	218011307
OTHER:	
DRAWN BY:	Author

HVAC CONTROLS

H802



NOTES:
1. REFER TO SCHEDULES FOR ADDITIONAL TERMINAL DATA.

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION
 SUPPLY AIR VALVE
 GENERAL EXHAUST AIR VALVE DUCT MOUNTED
 RE-HEAT COIL
 SUPPLEMENTAL COOLING FAN COIL UNIT BASEBOARD RADIATION
 HEATING

GENERAL
 SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE.
 THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

LABORATORY AIR CHANGE RATES ARE BASED ON TOTAL EXHAUST AIR FLOW FROM THE SPACE.

THE SPACE SHALL BE CONTROLLED TO AN AIR CHANGE RATE. THE BACS SHALL CALCULATE THE REQUIRED CFM USING THE ROOM GROSS VOLUME (AREA x CEILING HEIGHT).

DESIGN INTENT: THIS SEQUENCE IS FOR LABORATORIES IN WHICH THE DRIVING FACTOR IS THE ROOM MINIMUM AIR CHANGE RATE. IF THE REQUIRED COOLING LOAD EXCEEDS THAT PROVIDED BY THE MINIMUM AIR CHANGE RATE, IT IS PREFERRED THAT SUPPLEMENTAL CHILLED WATER COOLING BE USED IN LIEU OF USING PRIMARY AIR FROM THE CENTRAL SYSTEM.

SETPOINTS
 SPACE COOLING TEMPERATURE SETPOINTS:

OCCUPIED: 75 °F +/- 1.5 °F OCCUPIED
 SETBACK: 75 °F + 3 °F UNOCCUPIED: 75 °F + 6 °F

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED: 70 °F +/- 1.5 °F OCCUPIED
 SETBACK: 70 °F - 3 °F UNOCCUPIED: 70 °F - 6 °F

TOTAL EXHAUST AIR CHANGE RATE (ACPH): TYPICALLY = 6
 ACPH OCC / 3 ACPH UNOCC
 ACPH = TOTAL EXHAUST CFM x 60 / ROOM VOLUME

TOTAL EXHAUST AIRFLOW RATE: (CFM): REFER TO AIRFLOW SCHEDULE

SUPPLY AIRFLOW RATE (CFM): REFER TO AIRFLOW SCHEDULE
 TYPICALLY = TOTAL EXHAUST AIRFLOW RATE + OFFSET

GENERAL EXHAUST AIRFLOW RATE (CFM): REFER TO AIRFLOW SCHEDULE
 TOTAL EXHAUST CFM - FUME HOOD EXHAUST CFM

SPACE AIR DIFFERENTIAL OFFSET (CFM): REFER TO AIRFLOW SCHEDULE
 MINIMUM LABORATORY OCCUPANCY INDEX TIME: 30 MINUTES ZONE
 OCCUPANCY SCHEDULE: 6 AM TO 8 PM, MON-FRI

LABORATORY AIRFLOW CONTROL
 AIR VALVE POSITIONS SHALL BE BASED ON MODE. UNDER NORMAL CONTROL, ROOM OCCUPANCY SHALL BE DETERMINED VIA ROOM OCCUPANCY SENSORS (MINIMUM 2 PER LAB). IF THE LABORATORY IS VACANT, THE ROOM SHALL BE PLACED IN VACANT MODE BY THE BACS.

ZONE TEMPERATURE CONTROL
 TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULE AND SPACE OCCUPANCY SENSORS.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE BASEBOARD RADIATION CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. IF THE SPACE TEMPERATURE IS NOT AT SETPOINT WITH THE BASEBOARD RADIATION CONTROL VALVE FULLY OPEN, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. WHEN THE SPACE TEMPERATURE IS AT SETPOINT, THE BASEBOARD RADIATION AND REHEAT COIL CONTROL VALVES SHALL BE CLOSED.

OCCUPIED COOLING: THE SPACE SHALL HAVE A FAN COIL UNIT TO PROVIDE SUPPLEMENTAL SPACE COOLING. IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE FAN COIL UNIT FAN SHALL START, AND THE COOLING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN SETPOINT. WHEN THE SPACE TEMPERATURE IS AT SETPOINT, THE FAN COIL UNIT SHALL SHUT OFF AND THE CHILLED WATER CONTROL VALVE SHALL CLOSE.

OCCUPIED SETBACK: IF THE SPACE BECOMES UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINTS.

UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE BASEBOARD RADIATION CONTROL VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN SETPOINT.

UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE ZONE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE FAN COIL UNIT SHALL START, AND THE FAN COIL UNIT COOLING CONTROL VALVE SHALL MODULATE TO MAINTAIN SETPOINT.

IF THE SPACE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE SPACE SHALL INDEX TO OCCUPIED MODE FOR THE DURATION OF OCCUPANCY. WHEN THE SPACE BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE SPACE SHALL INDEX BACK TO UNOCCUPIED MODE.

VACANT MODE: THE ABOVE UNOCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY. THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED TEMPERATURE SETPOINTS.

THE COOLING COIL CONTROL VALVE SHALL BE CLOSED WHENEVER THE HEATING COIL CONTROL VALVE IS OPEN TO PREVENT SIMULTANEOUS HEATING AND COOLING. THE COOLING CONTROL VALVE SHALL BE CLOSED WHEN THE FAN COIL UNIT FAN IS OFF.

	HARDWARE POINTS							SOFTWARE POINTS										SHOW ON GRAPHIC	NOTES			
	BI	BO	AI	AO	AV	BV	SCH	TREND	BACS		EMCS		ALARM									
LOW HOOD DENSITY LABORATORY (AIRFLOWS DRIVEN BY AIR CHANGES)																						
STEAM LOAD SHED																						BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED																						BINARY NETWORK INPUTS FROM EMCS
TOTAL EXHAUST AIRFLOW (CFM)																						
TOTAL EXHAUST AIR SETPOINT (CFM)																						
LABORATORY AIR CHANGE RATE (ACPH)																						
FLOW OFFSET SETPOINT (CFM)																						
FLOW OFFSET ACTUAL (CFM)																						
SUPPLY AIR VALVE FLOW FEEDBACK (CFM)																						
SUPPLY AIR VALVE STATUS																						
SUPPLY AIR VALVE POSITION COMMAND (CFM)																						
SUPPLY AIR VALVE MINIMUM AIRFLOW SETPOINT (CFM)																						
SUPPLY AIR VALVE MAXIMUM AIRFLOW SETPOINT (CFM)																						
RE-HEAT COIL LEAVING AIR TEMPERATURE																						
RE-HEAT COIL VALVE POSITION COMMAND (%)																						
SPACE TEMPERATURE SETPOINT, HEATING																						
SPACE TEMPERATURE SETPOINT, COOLING																						
SPACE TEMPERATURE																						
SPACE SETPOINT ADJUSTMENT																						
SPACE OCCUPANCY																						
SPACE OCCUPANCY, MINIMUM OCCUPANCY SETPOINT																						
GENERAL EXHAUST AIR VALVE POSITION COMMAND (CFM)																						
GENERAL EXHAUST AIR VALVE MINIMUM AIRFLOW SETPOINT (CFM)																						
GENERAL EXHAUST AIR VALVE MAXIMUM AIRFLOW SETPOINT (CFM)																						
GENERAL EXHAUST AIR VALVE FLOW FEEDBACK (CFM)																						
GENERAL EXHAUST AIR VALVE STATUS																						
BASEBOARD RADIATION CONTROL VALVE POSITION COMMAND (%)																						
COOLING COIL CONTROL VALVE POSITION COMMAND (%)																						
FAN COIL UNIT FAN MOTOR SPEED CONTROL																						
FCU DISCHARGE TEMPERATURE SUPPLY																						
FAN COIL UNIT MOTOR START/STOP																						
FCU DISCHARGE AIR TEMPERATURE SETPOINT																						
CONDENSATE HIGH LIMIT OVERFLOW																						

BUILDING AUTOMATION AND CONTROL SYSTEM LABORATORY ZONE CONTROL
 Not to Scale

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION VAV

BLOWER COIL
FRESH AIR VARIABLE AIR VOLUME BOX
BASEBOARD RADIATION HEATING

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

DESIGN INTENT: THIS SEQUENCE IS ONLY SUITABLE FOR SYSTEMS WITH A TOTAL DESIGN SUPPLY AIR CAPACITY LESS THAN 10,000 CFM, AND COOLING CAPACITY THAT DOES NOT REQUIRE THE INCLUSION OF AN ECONOMIZER CONTROL CYCLE (IN OUR CLIMATE, THE THRESHOLD IS $\leq 4,000$ BTUH OF COOLING CAPACITY (4.5 TONS). FRESH AIR TO THE SPACE IS TO BE PROVIDED VIA A DEDICATED OUTSIDE AIR HANDLING SYSTEM (DOAS). IT IS INTENDED THAT THE FRESH AIR TO THE SPACE IS CONDITIONED AND OF SUFFICIENT QUANTITY TO OFFSET THE EXPECTED SPACE LATENT LOAD, AND THE SUPPLEMENTAL COOLING COIL IS INTENDED TO OFFSET THE SPACE SENSIBLE LOADS (DECOUPLING OF SPACE LATENT AND SENSIBLE COOLING LOADS).

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINTS:

OCCUPIED: 75 ° F +/- 1.5 ° F
OCCUPIED SETBACK: 75 ° F +/- 3 ° F
UNOCCUPIED: 75 ° F +/- 6 ° F

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED: 70 ° F +/- 1.5 ° F
OCCUPIED SETBACK: 70 ° F +/- 3 ° F
UNOCCUPIED: 70 ° F +/- 6 ° F

SPACE AIRFLOW OFFSET: POSITIVE

SPACE CARBON DIOXIDE: 900 PPM

ZONE OCCUPANCY SCHEDULE: 6 AM TO 8 PM, MON-FRI

SPACE OCCUPANCY

ZONE OCCUPANCY SHALL BE DETERMINED BASED ON A COMBINATION OF A TIME OF DAY SCHEDULE AND A SPACE OCCUPANCY SENSOR.

DURING THE SCHEDULED OCCUPANCY PERIOD, THE ZONE SHALL BE INITIALLY INDEXED TO OCCUPIED MODE AND OPERATE FOR A MINIMUM OF 30 MINUTES, AT WHICH TIME THE SPACE OCCUPANCY SENSOR SHALL INDEX THE SPACE BETWEEN OCCUPIED AND OCCUPIED SETBACK MODE.

DURING THE SCHEDULED UNOCCUPIED PERIOD, THE SPACE OCCUPANCY SENSOR SHALL INDEX THE ZONE TO OCCUPIED MODE FOR THE DURATION OF OCCUPANCY. WHEN THE SPACE BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE SPACE SHALL INDEX BACK TO UNOCCUPIED MODE. THE COOLING COIL CONTROL VALVE SHALL BE CLOSED WHENEVER THE HEATING COIL AND BASEBOARD CONTROL VALVES ARE OPEN TO PREVENT SIMULTANEOUS HEATING AND COOLING. THE COOLING CONTROL VALVE SHALL BE CLOSED WHEN THE FAN COIL UNIT FAN IS OFF.

OCCUPANCY ZONES MAY INCLUDE UP TO (3) SEPARATE ROOMS. IF ANY OF THE (3) ROOMS IS INDEXED TO OCCUPIED THE TERMINAL UNIT SHALL OPEN PROVIDING VENTILATION TO ALL SPACES.

START/STOP

THE FAN COIL UNIT SHALL OPERATE WHENEVER THE SPACE IS IN OCCUPIED OR OCCUPIED SETBACK MODE.

THE FAN COIL UNIT SHALL ALSO START AND OPERATE DURING UNOCCUPIED MODE WHEN IT IS NEEDED TO MAINTAIN THE UNOCCUPIED HEATING AND COOLING TEMPERATURE SETPOINTS.

SPACE VENTILATION CONTROL

WHEN THE SPACE IS UNOCCUPIED, THE SUPPLY VARIABLE AIR VOLUME BOXES SHALL BE CLOSED.

WHEN THE SPACE IS OCCUPIED, THE SUPPLY AIR VAV BOX SHALL MODULATE OPEN.

ZONE TEMPERATURE CONTROL

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULE AND A SPACE OCCU »Nc SENSOR.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE ZONE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE FAN COIL UNIT FAN SHALL INDEX TO MINIMUM POSITION, AND THE BASEBOARD RADIATION CONTROL VALVE SHALL MODULATE TO MAINTAIN SETPOINT. IF THE SPACE IS NOT AT SETPOINT, AND THE BASEBOARD RADIATION CONTROL VALVE IS FULLY OPEN, THE FAN COIL UNIT HEATING COIL CONTROL VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN SETPOINT.

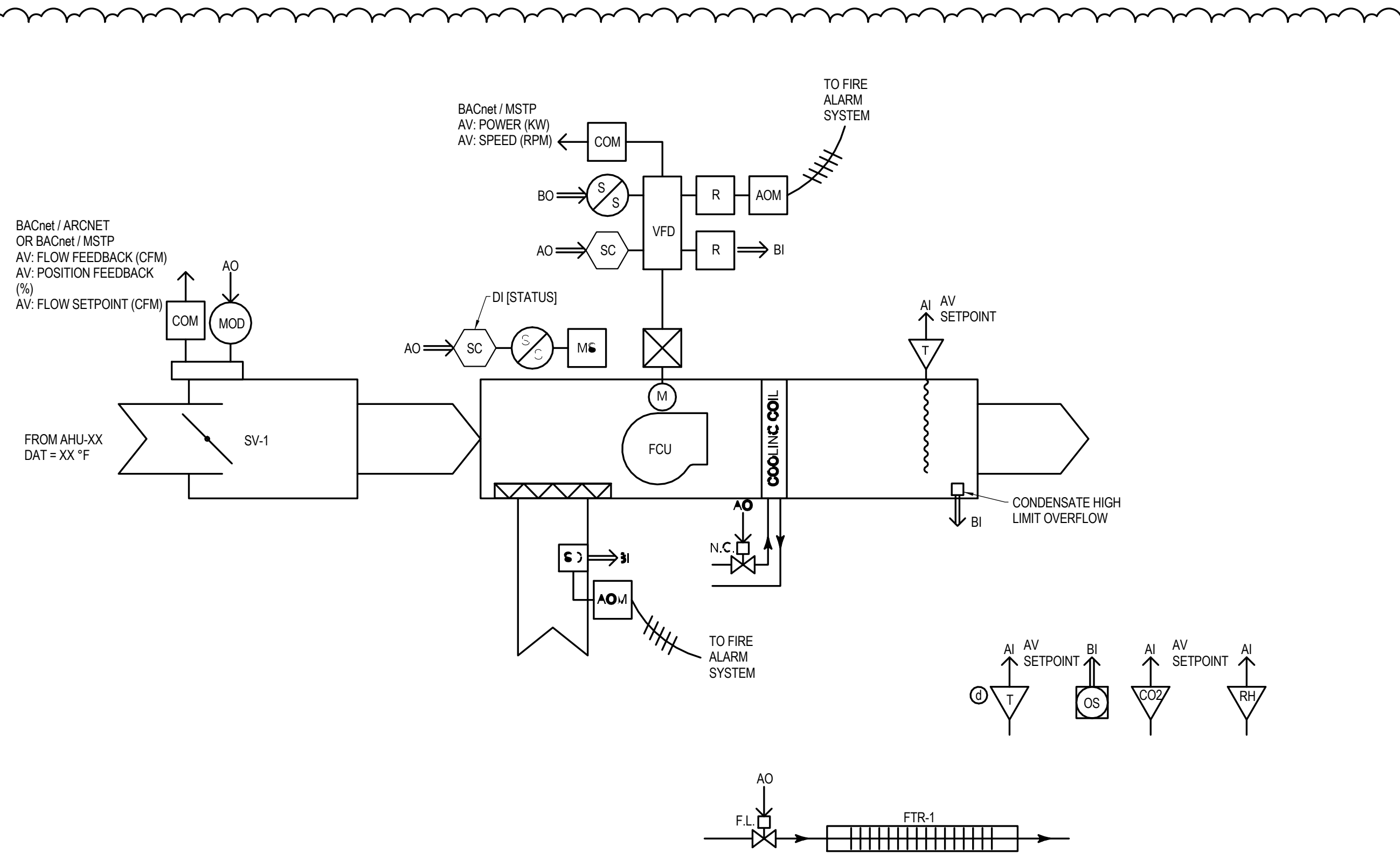
OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE ZONE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE CHILLED WATER COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE AT 55 ° F. THE FAN COIL UNIT FAN SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE AT SETPOINT.

OCCUPIED SETBACK: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY. THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINTS.

UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE ZONE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE BASEBOARD RADIATION CONTROL VALVE SHALL MODULATE TO MAINTAIN THE UNOCCUPIED HEATING SETPOINT. IF THE SPACE IS NOT AT SETPOINT AND THE BASEBOARD RADIATION CONTROL VALVE IS FULLY OPEN, THE FAN COIL UNIT SHALL START. FAN SPEED SHALL INDEX TO MINIMUM POSITION, AND THE FAN COIL UNIT HEATING COIL CONTROL VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN SETPOINT.

UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE ZONE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE CHILLED WATER COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE AT 55 ° F. THE FAN COIL UNIT FAN SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE AT THE UNOCCUPIED COOLING SETPOINT.

IF THE SPACE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE SPACE SHALL INDEX TO OCCUPIED MODE FOR THE DURATION OF OCCUPANCY. WHEN THE SPACE BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE SPACE SHALL INDEX BACK TO UNOCCUPIED MODE. THE COOLING COIL CONTROL VALVE SHALL BE CLOSED WHENEVER THE HEATING COIL AND BASEBOARD CONTROL VALVES ARE OPEN TO PREVENT SIMULTANEOUS HEATING AND COOLING. THE COOLING CONTROL VALVE SHALL BE CLOSED WHEN THE FAN COIL UNIT FAN IS OFF.



NOTES:

1. FRESH AIR VAV BOX MAY SERVE MORE THAN ONE ROOM. REFER TO PLANS FOR ADDITIONAL INFORMATION.

	HARDWARE POINTS							SOFTWARE POINTS				SHOW	NOTES	
	BI	BO	AI	AO	AV	BV	SCH	TREND	BACS	EMCS	ALARM			DESCRIPTION
CONFERENCE/MEETING/AUDITORIUM WITHOUT ECONOMIZER														
STEAM LOAD SHED						X (6)								BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)								BINARY NETWORK INPUTS FROM EMCS
HEATING COIL CONTROL VALVE POSITION COMMAND				X				X					X	FAIL LAST
COOLING COIL CONTROL VALVE POSITION COMMAND				X				X					X	NORMALLY CLOSED
BASEBOARD RADIATION CONTROL VALVE POSITION COMMAND				X				X					X	FAIL LAST
SPACE TEMPERATURE SETPOINT					X	X							X	
SPACE TEMPERATURE					X			X					X	
SPACE RELATIVE HUMIDITY					X			X					X	MONITORING POINT ONLY
SPACE OCCUPANCY	X							X					X	
SPACE CARBON DIOXIDE				X				X					X	
SPACE CARBON DIOXIDE SETPOINT					X	X							X	
FCU FAN MOTOR START/STOP		X						X	X				X	
FCU FAN MOTOR SPEED CONTROL		X		X									X	
FCU SUPPLY DISCHARGE AIR TEMPERATURE				X				X	X				X	+/- 4 ° F FROM SETPOINT
FCU SUPPLY DISCHARGE AIR TEMPERATURE SETPOINT					X			X					X	
SUPPLY VAV BOX DAMPER POSITION COMMAND				X				X					X	
SUPPLY VAV BOX AIRFLOW FEEDBACK (CFM)					X			X	X				X	BACnet MSTP NETWORK POINT
SUPPLY VAV BOX AIRFLOW SETPOINT (CFM)					X			X					X	BACnet MSTP NETWORK POINT
SUPPLY VAV BOX POSITION FEEDBACK (%)					X			X	X				X	BACnet MSTP NETWORK POINT
EXHAUST VAV BOX DAMPER POSITION COMMAND				X				X					X	
EXHAUST VAV BOX AIRFLOW FEEDBACK (CFM)					X			X	X				X	BACnet MSTP NETWORK POINT
EXHAUST VAV BOX AIRFLOW SETPOINT (CFM)					X			X					X	BACnet MSTP NETWORK POINT
EXHAUST VAV BOX POSITION FEEDBACK (%)					X			X	X				X	BACnet MSTP NETWORK POINT
DUCT SMOKE DETECTOR STATUS	X												X	
CONDENSATE HIGH LIMIT OVERFLOW	X									X	X			

BUILDING AUTOMATION AND CONTROL SYSTEM CONFERENCE/MEETING/OFFICE ZONE CONTROL

803 Not to Scale

Chiang O'Brien ARCHITECTS



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#	Description	Date
1	Addendum 2	2019-02-25

Construction Documents
Schurman Hall Level 1 Renovations
 Cornell University
 602 Tower Road, Ithaca NY 14853

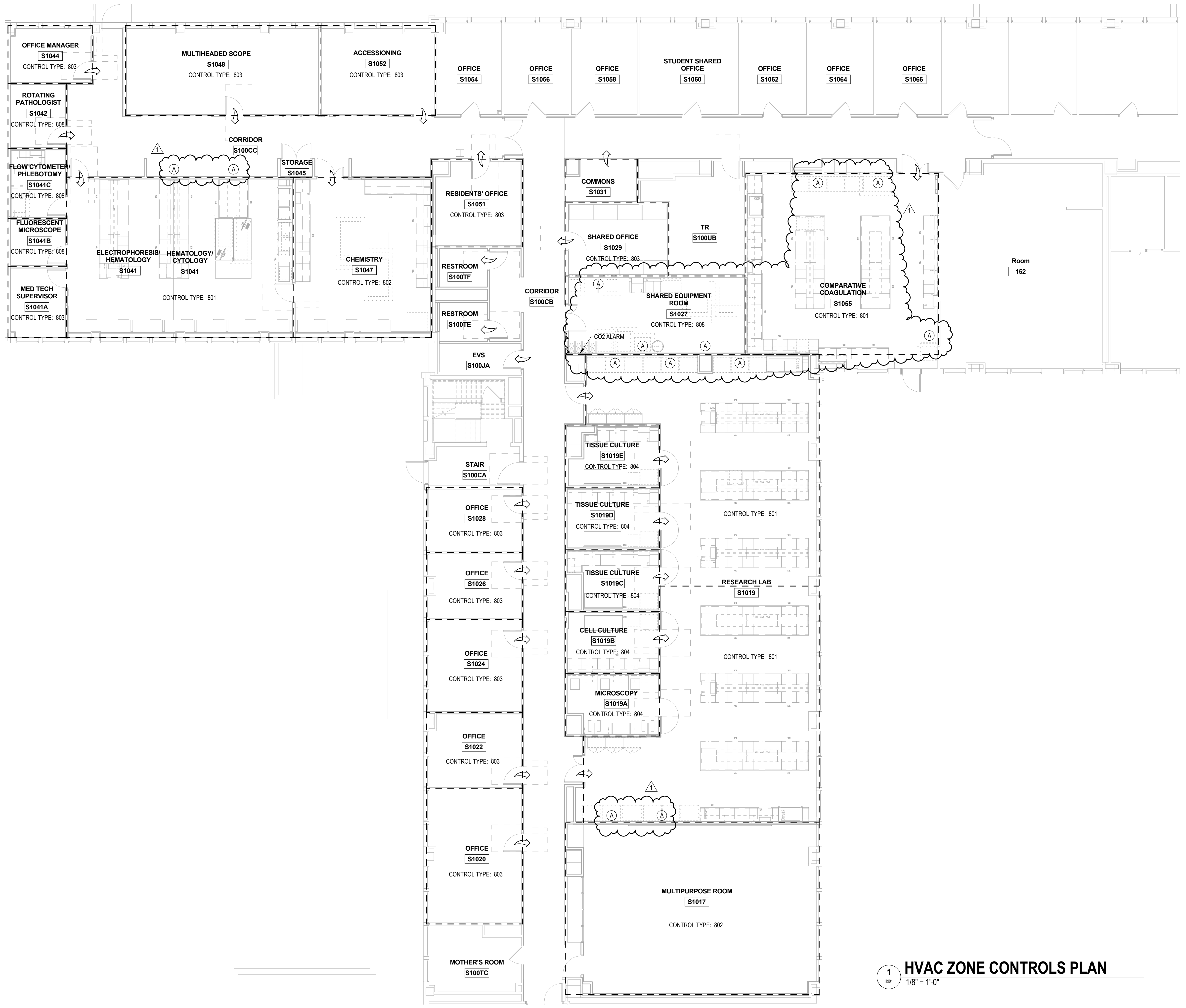
DATE:	24 January 2019
PROJECT:	218011307
OTHER:	
DRAWN BY:	Author

HVAC CONTROLS

H803

1 2 3 4 5 6 7 8 9 10

G
F
E
D
C
B
A



(A) BINARY ALARM TO LAB EQUIPMENT

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#	Description	Date
1	Addendum 2	2019-02-25

Construction Documents
Schurman Hall Level 1 Renovations
 Cornell University
 602 Tower Road, Ithaca NY 14853

DATE:	24 January 2019
PROJECT:	218011307
OTHER:	
DRAWN BY:	Author

HVAC ZONE CONTROL PLAN

H901

1
H901
HVAC ZONE CONTROLS PLAN
1/8" = 1'-0"

1 2 3 4 5 6 7 8 9 10