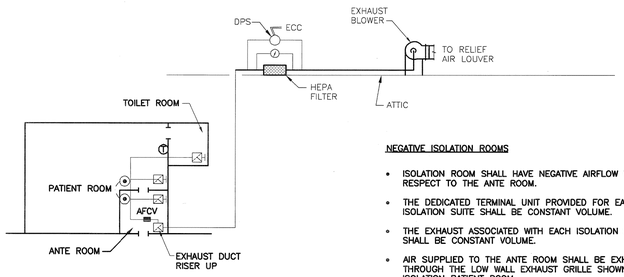



LEGEND

- (T) ROOM THERMOSTAT TO CONTROL COOLING AND HEATING.
- AFCV — AIR FLOW CONTROL VALVE. SEE C5/M-402 OR E5/M-402 FOR CFM SETTING.
- (•) ROOM PRESSURE SENSOR TO BE FULLY COMPATIBLE WITH EXISTING NIAGRA-TRIDIUM SYSTEM.

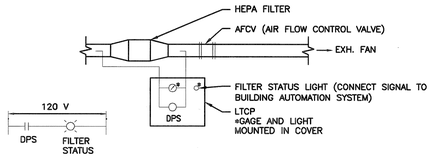
NEGATIVE ISOLATION ROOMS

- ISOLATION ROOM SHALL HAVE NEGATIVE AIRFLOW WITH RESPECT TO THE ANTE ROOM.
- THE DEDICATED TERMINAL UNIT PROVIDED FOR EACH ISOLATION SUITE SHALL BE CONSTANT VOLUME.
- THE EXHAUST ASSOCIATED WITH EACH ISOLATION SUITE SHALL BE CONSTANT VOLUME.
- AIR SUPPLIED TO THE ANTE ROOM SHALL BE EXHAUSTED THROUGH THE LOW WALL EXHAUST GRILLE SHOWN IN THE ISOLATION PATIENT ROOM.

## B3 AIR SYSTEM FOR NEGATIVE ISOLATION ROOM

SCALE: NONE

**BUILDING AUTOMATION SYSTEM SHALL BE AN EXTENSION OF EXISTING NIAGRA-TRIDIUM SYSTEM.**




SEQUENCE OF OPERATION:

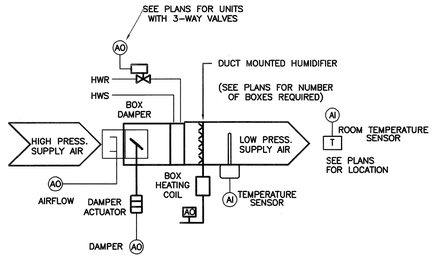
1. WHEN FILTER PRESSURE DROP RISES TO 2" [51mm] OF WATER COLUMN, FILTER STATUS LIGHT (RED) SHALL BE ENERGIZED.

## D4 HEPA FILTER CONTROLS FOR ISOLATION ROOM EXHAUST SYSTEMS

SCALE: NONE

POINT LIST
TERMINAL UNITS – VAV SINGLE DUCT WITH HOT WATER REHEAT

| DESCRIPTION | DESCRIPTION | DIGITAL IN | DIGITAL OUT | ANALOG IN | ANALOG OUT | INSTRUCTIONS |
|---|---|---|---|---|---|---|
| TU – VAV WITH HOT WATER REHEAT | | | | | | |
| AIR FLOW | AIR FLOW | | | ADPS | | |
| AIR DAMPER | AIR DAMPER | | | | DA | |
| ZONE | | | | | | |
| SPACE TEMP | SPACE TEMP | | | RTS | | INSTALL TO MEASURE TEMP IN ROOM. LOCATE AS SHOWN ON MECHANICAL DRAWING. |
| SUPPLY AIR TEMP | SUPPLY TEMP | | | DTS | | INSTALL TO MEASURE DISCHARGE TEMP. |
| HOT WATER HEAT VALVE | HEAT VALVE | | | | VA | PROVIDE VALVE AND ACTUATOR TO MECHANICAL CONTRACTOR FOR INSTALLATION. CONNECT ACTUATOR TO CONTROL VALVE. |




VAV AIR TERMINAL UNITS WITH RE-HEAT

OCCUPIED MODE

1. ACH VARIABLE AIR VOLUME (VAV) TERMINAL UNIT SHALL BE MODULATED TO MAINTAIN ITS RESPECTIVE SPACE TEMPERATURE SET POINT. THE SPACE TEMPERATURE SENSOR SHALL SIGNAL THE TERMINAL'S AIR FLOW CONTROLLER IN RESPONSE TO THE ROOM'S REQUIREMENTS. THE MAXIMUM AND MINIMUM AIR FLOW LIMITS SHALL BE ADJUSTABLE. WHEN THE SPACE FALLS BELOW THE ROOM'S SET POINT, THE CONTROLLER SHALL MODULATE THE AIR FLOW TO THE SELECTED MINIMUM POSITION.
2. UPON A FURTHER DROP IN ROOM TEMPERATURE, THE BAS SHALL ACT TO MODULATE THE HOT WATER HEATING COIL CONTROL VALVE TOWARDS ITS FULL OPEN POSITION. (THE DAMPERS IN THE VAV TERMINAL UNITS SHALL HAVE BEEN MODULATED TO THEIR MINIMUM POSITION BEFORE THE HEATING VALVE IS OPENED.)
3. EACH CONSTANT AIR VOLUME (CAV) TERMINAL UNIT SHALL BE SIMILAR TO THE VAV UNITS, EXCEPT THAT, UPON A FALL IN ROOM TEMPERATURE, THE AIRFLOW SHALL REMAIN CONSTANT AND THE HOT WATER CONTROL VALVE SHALL BE MODULATED TOWARD ITS FULL OPEN POSITION.

UNOCCUPIED MODE

1. NIGHT LOW LIMIT MODE: ON A DROP IN SPACE TEMPERATURE ABOVE THE NIGHT LOW LIMIT SETPOINT (50°F–ADJUSTABLE) AND NIGHT LOW LIMIT REQUEST WILL BE SENT TO THE ASSOCIATED AIR HANDLING UNIT. WHEN PRIMARY AIRFLOW IS DETECTED, SPACE TEMPERATURE HEATING CONTROL WILL BE ENABLED. WHEN SPACE TEMPERATURE INCREASES ABOVE THE NIGHT LOW LIMIT SETPOINT AND THE NIGHT HIGH/LOW LIMIT MINIMUM RUNTIME (30 MINUTES–ADJUSTABLE) HAS EXPIRED OR OCCUPIED SCHEDULE BECOMES ACTIVE NIGHT LOW LIMIT MODE WILL BE DISABLED.
2. NIGHT HIGH LIMIT MODE: ON A DROP IN SPACE TEMPERATURE ABOVE THE NIGHT HIGH LIMIT SETPOINT (85°F–ADJUSTABLE) AND NIGHT HIGH LIMIT REQUEST WILL BE SENT TO THE ASSOCIATED AIR HANDLING UNIT. WHEN PRIMARY AIRFLOW IS DETECTED, SPACE TEMPERATURE COOLING CONTROL WILL BE ENABLED. WHEN SPACE TEMPERATURE INCREASES ABOVE THE NIGHT HIGH LIMIT SETPOINT AND THE NIGHT HIGH/LOW LIMIT MINIMUM RUNTIME (30 MINUTES–ADJUSTABLE) HAS EXPIRED OR OCCUPIED SCHEDULE BECOMES ACTIVE NIGHT HIGH LIMIT MODE WILL BE DISABLED.

## D7 VAV AND CONSTANT VOLUME AIR TERMINAL UNIT WITH REHEAT CONTROL DIAGRAM

SCALE: NONE

JOB: RENOVATE 13A FOR ENDOSCOPY SUITE
BUILDING: 13
SYSTEM: MISCELLANEOUS

| SYSTEM COMPONENT: | POINT ID | ABBREVIATION | POINT LEGEND: PROJECT/DOCA REFERENCE NO. | SYSTEM OUTPUTS BINARY: DIGITAL CONTROL | SYSTEM OUTPUTS BINARY: DIGITAL CLOSE | SYSTEM OUTPUTS BINARY: DIGITAL OPEN | SYSTEM OUTPUTS BINARY: DIGITAL ON/OFF | SYSTEM OUTPUTS ANALOG: ANALOG CONTROL | SYSTEM INPUTS BINARY: DIGITAL STATUS | SYSTEM INPUTS BINARY: DIGITAL ALARM | SYSTEM INPUTS BINARY: PRESSURE SWITCH | SYSTEM INPUTS BINARY: FLOW SWITCH | SYSTEM INPUTS ANALOG: TEMPERATURE (DT) | SYSTEM INPUTS ANALOG: PRESSURE | SYSTEM INPUTS ANALOG: FLOW | SYSTEM INPUTS ANALOG: ENERGY | SYSTEM INPUTS ANALOG: PRESSURE SENSOR | SYSTEM INPUTS ANALOG: HUMIDITY SENSOR | SYSTEM INPUTS ANALOG: Field Alarm Point | SYSTEM INPUTS ANALOG: Field Alarm Point | SYSTEM INPUTS ANALOG: Field Alarm Point | SYSTEM SOFTWARE/CONTROL ALARM PROCESSING: CONSTANT START/STOP | SYSTEM SOFTWARE/CONTROL ALARM PROCESSING: SCHEDULE | SYSTEM SOFTWARE/CONTROL ALARM PROCESSING: CHANGE OF VALUE | SYSTEM SOFTWARE/CONTROL ALARM PROCESSING: ENTHALPY CALCULATION | SYSTEM SOFTWARE/CONTROL ALARM PROCESSING: DATA TRENDING | SYSTEM SOFTWARE/CONTROL ALARM PROCESSING: DATA PROCESSING | SYSTEM SOFTWARE/CONTROL ALARM PROCESSING: EMERGENCY POWER | SYSTEM SOFTWARE/CONTROL APPLICATION/FUNCTION: PID CONTROL | SYSTEM SOFTWARE/CONTROL APPLICATION/FUNCTION: SEQUENCE OF OPERATION | SYSTEM SOFTWARE/CONTROL APPLICATION/FUNCTION: COMMUNICATION | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NEW AIR COMPRESSOR | AI-15 | N-AC | | | | ● | | | | | | ● | | | | | | | ● | ● | | | | | | | | | | | | | ● | | |
| EXISTING VACUUM PUMP | AI-16 | EX-VP | | | | ● | | | | | | | | | | | ● | | ● | ● | | | | | | | | | | | | | ● | | |
| HEPA FILTER EF-13A-4 | AI-17 | FF-13A-4 | | | | | ● | | | | | | | ● | | | | | ● | | | | | | | | | | | | | | ● | | |
| HEPA FILTER EF-13A-5 | AI-18 | FF-13A-5 | | | | | ● | | | | | | | ● | | | | | ● | | | | | | | | | | | | | | ● | | |

100% SUBMITTAL

| REVISION NO. | REVISION DESCRIPTION | By | Date |
|---|---|---|---|
| | | | |

Revisions

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Recommended Approvals:

| | |
|---|---|
| 1. MEDICAL DIRECTOR | 6. OPERATIONS SERVICE LINE MANAGER |
| 2. ASSOCIATE DIRECTOR | 7. INFECTION CONTROL SAFETY MANAGER |
| 3. CHIEF OF STAFF | 8. SAFETY MANAGER |
| 4. ASSOC. DIRECTOR | 9. GENERAL ENGINEER |
| 5. SERVICE LINE MGRS. | 10. COTR |

Drawing Title: MECHANICAL CONTROL SCHEMATICS

FULLY SPRINKLERED

Project Title: RENOVATE 13A FOR ENDOSCOPY SUITE

Drawn: AGT
Checked: LEH/HLH
Building Number:
Reviewed:
AutoCAD File Name:
Const. Contract No.:

Date: June 10, 2011
Project Number: 557-10-108
DRAWING No. M-603

Veterans Affairs