

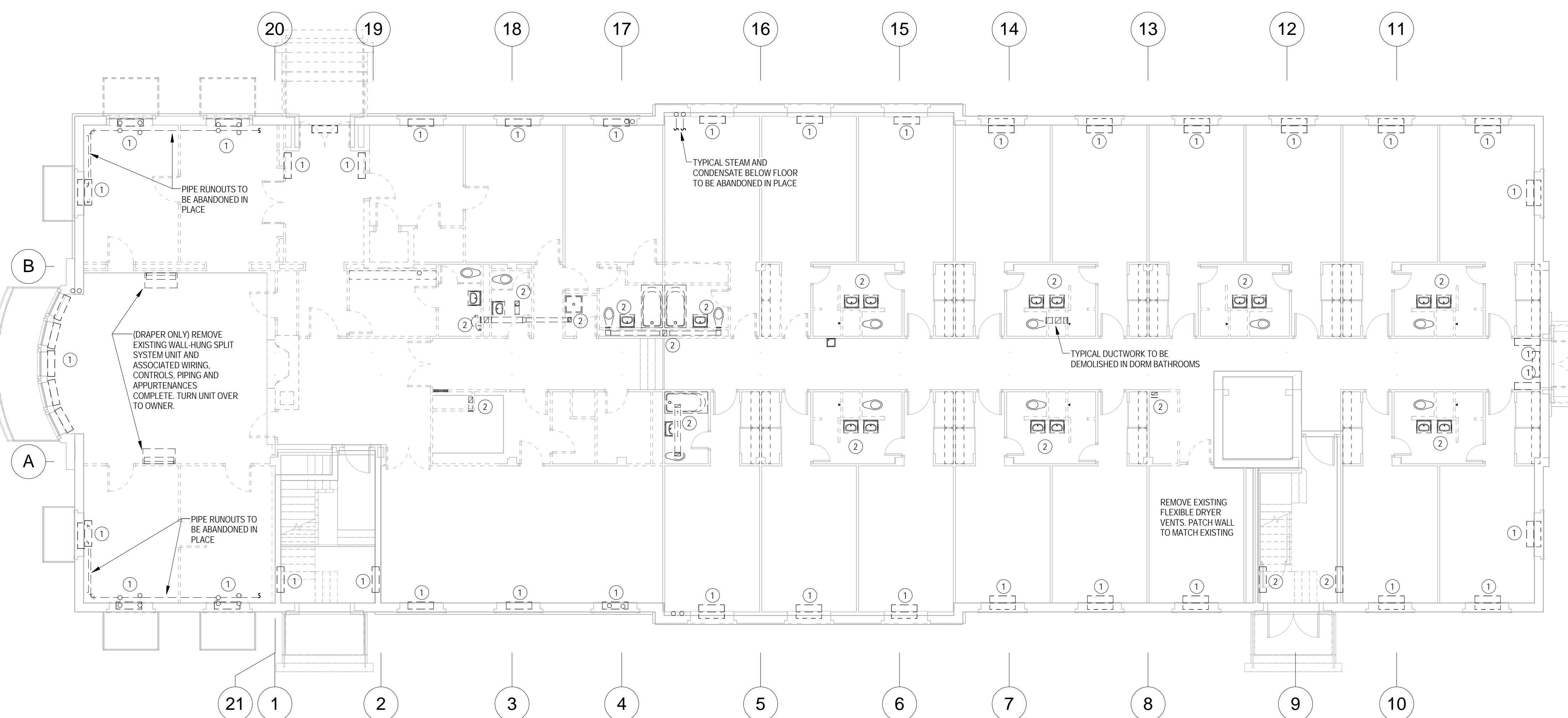


RENOVATION OF THREE
RESIDENCE HALLS
POCAHONTAS, BOLLING, &
DRAPER HALLS
RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code
VMDO Project Number
217-17565
1115



Checked By
RCH
Drawn By
PLH



FIRST FLOOR PLAN - HVAC DEMOLITION

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

FIRST FLOOR DEMOLITION NOTES:

- (NOT ALL NOTES MAY APPLY TO THIS SHEET)
1. REMOVE EXISTING STEAM CONVECTOR AND ASSOCIATED CONTROLS AND APPURTENANCES COMPLETE, WHERE CONVECTORS ARE RECESSED INTO THE WALL, PART OF THE CONVECTOR OR OTHER EQUIPMENT, WHERE VERTICAL PIPE RUNOUTS TO REMAIN IN PLACE, OTHERWISE, REMOVE PIPE RUNOUTS. VERTICAL PIPES IN WALLS TO REMAIN SHALL BE ABANDONED IN PLACE. PIPES IN WALLS TO BE DEMOLISHED SHALL BE REMOVED.
 2. REMOVE ALL VERTICAL AND HORIZONTAL DUCTWORK AND ASSOCIATED GRILLES, REGISTERS, DAMPERS, SUPPORTS AND APPURTENANCES COMPLETE. PATCH WALLS WALLS AND FLOORS TO MATCH EXISTING.

Note: Asbestos-containing materials shall not be used on the project.

Asbestos Disclosure Statement
An asbestos inspection report is included as an appendix to the project specifications. Asbestos-containing building material shall not be disturbed in this work except where specifically indicated and required. Where such actions are required, the contractor shall have the ACM removed by a licensed asbestos contractor using approved procedures. All asbestos removal shall be performed by a licensed asbestos abatement contractor. The asbestos abatement contractor shall mark up the record drawings resulting from its work to include areas where asbestos was abated, areas where asbestos was encapsulated, and areas where ACM was left in place as marked on the record drawings and will provide the drawings to the architect.

Lead Materials Disclosure
An inspection to identify lead-containing or lead-coated building components has been conducted and documented on the project specifications. This report is provided for the contractor's information and may not be all inclusive. It is the contractor's responsibility to comply with all Virginia Occupational Safety and Health (VOSH) regulations as they pertain to employee exposures to lead. All lead and lead-coated building components shall be recycled to the extent possible.

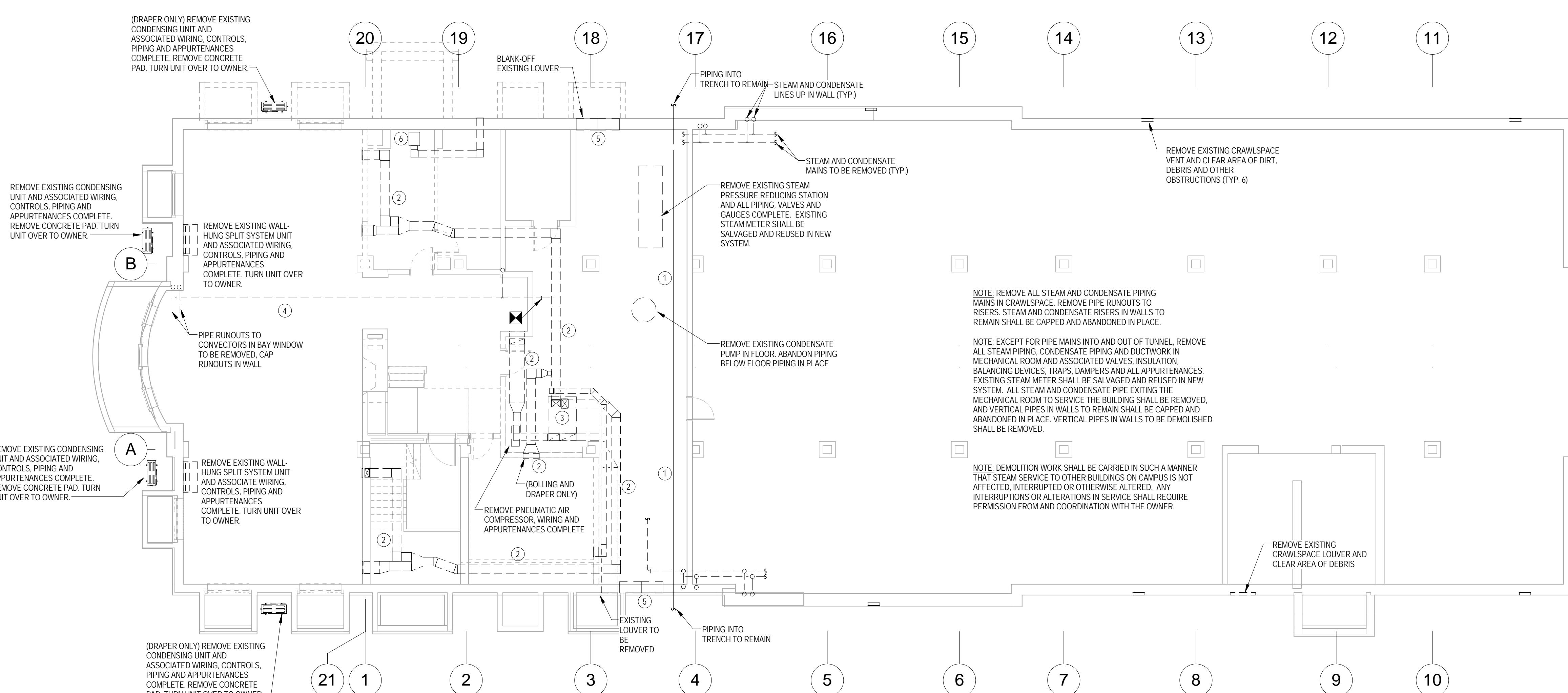
Lead Materials Disclosure

BASEMENT FLOOR DEMOLITION NOTES:

- (NOT ALL NOTES MAY APPLY TO THIS SHEET)
1. EXISTING 6' STEAM AND 4' STEAM CONDENSATE LINES REMAIN. REINSULATE STEAM AND CONDENSATE LINES.
 2. REMOVE DUCTWORK AND ASSOCIATED GRILLES, REGISTERS, DAMPERS, SUPPORTS AND ALL APPURTENANCES COMPLETE. PATCH WALL PENETRATIONS TO MATCH NEW OR EXISTING TO REMAIN WALL FINISHES.
 3. REMOVE EXISTING HEATING AND VENTILATING UNIT AND ASSOCIATED DUCTWORK, PIPING, CONTROLS, SUPPORTS AND APPURTENANCES COMPLETE.
 4. STEAM AND CONDENSATE PIPING IN TRENCH TO BE REMOVED TO POINT INDICATED IN MECHANICAL ROOM. VERTICAL PIPES IN WALLS TO REMAIN SHALL BE ABANDONED IN PLACE. VERTICAL PIPES IN WALLS TO BE DEMOLISHED SHALL BE REMOVED, AND RUNOUTS SHALL BE CAPPED BENEATH THE FLOOR.
 5. REMOVE WALL-MOUNTED PROPELLER FANS AND ASSOCIATED WIRING, CONTROLS AND APPURTENANCES COMPLETE.
 6. REMOVE EXISTING EXHAUST FAN AND ASSOCIATE DUCTWORK, WIRING, CONTROLS AND APPURTENANCES COMPLETE. REMOVE EXTERIOR WALL CAP AND PATCH WALL TO MATCH NEW OR EXISTING TO REMAIN FINISH.

ISSUES AND REVISIONS
NO. SUBMITTAL
5 BID DOCUMENTS

DATE
05.19.14



BASEMENT FLOOR PLAN - HVAC DEMOLITION

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

NOTE: ALL FLOOR PLANS ARE FOR POCAHONTAS HALL, BOLLING HALL SIMILAR, DRAPER HALL SIMILAR EXCEPT OPPOSITE HAND (EXCEPT WHERE INDICATED OTHERWISE).

GRAPHIC SCALE

0 4' 8' 12'

MD101

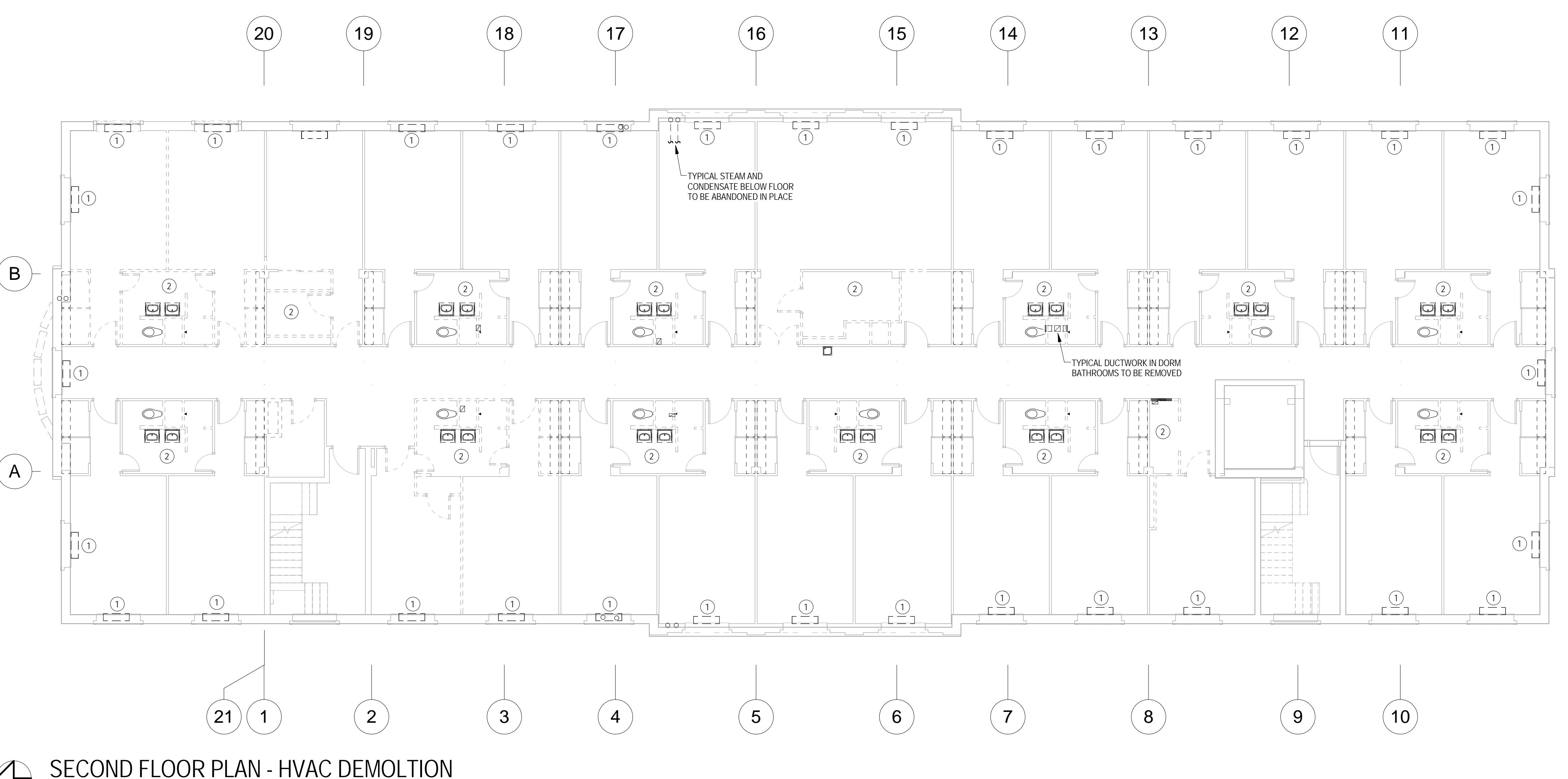
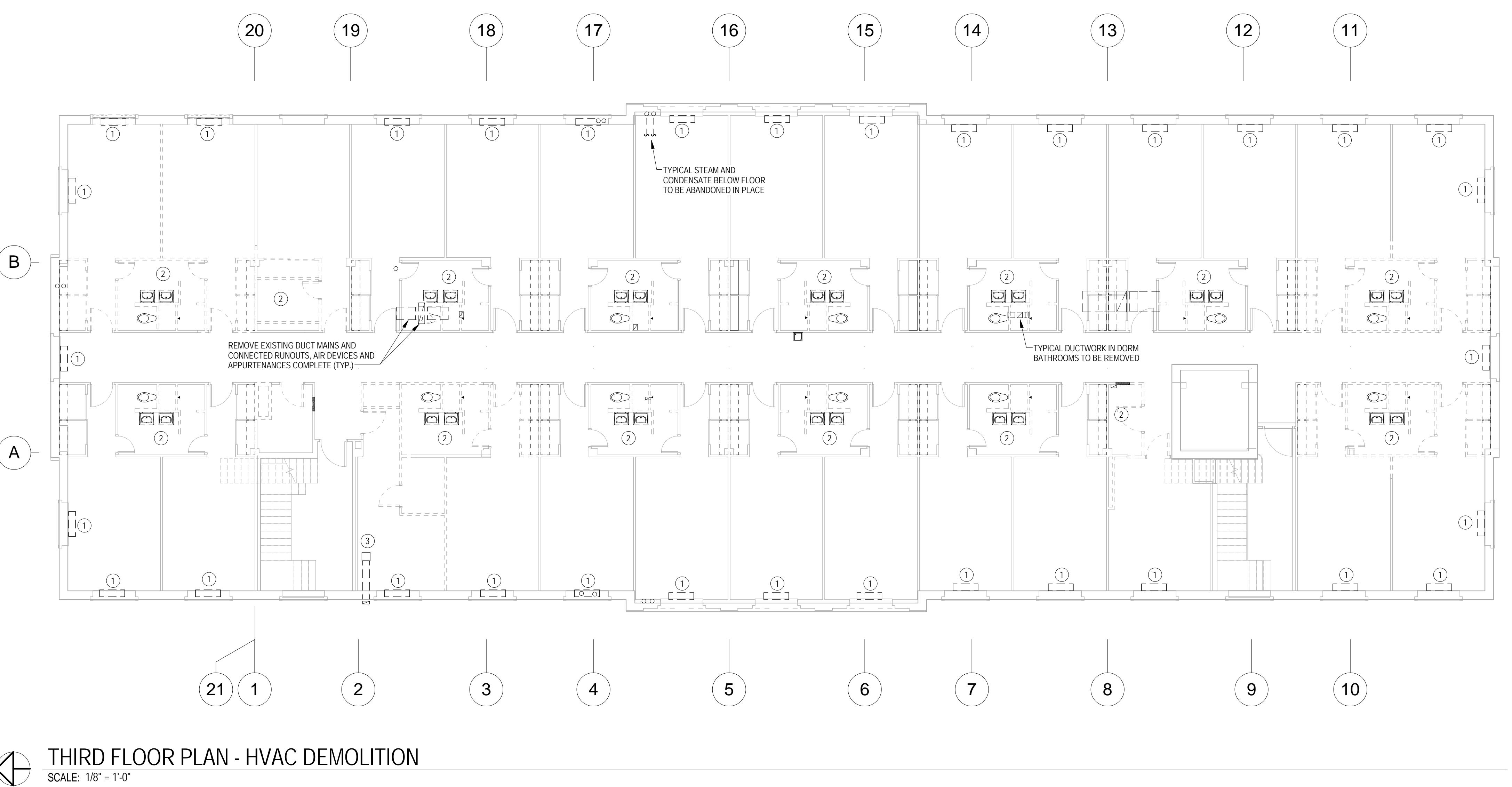


RENOVATION OF THREE
RESIDENCE HALLS
POCAHONTAS, BOLLING, &
DRAPER HALLS
RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code
VMDO Project Number
217-17565
1115



Checked By RCH
Drawn By PLH



NOTE: ALL FLOOR PLANS ARE FOR POCAHONTAS HALL, BOLLING HALL SIMILAR, DRAPER HALL SIMILAR EXCEPT OPPOSITE HAND.

THIRD FLOOR DEMOLITION NOTES:

(NOT ALL NOTES MAY APPLY TO THIS SHEET)

1. REMOVE EXISTING STEAM CONVECTOR AND ASSOCIATE CONTROLS AND APPURTENANCES COMPLETE. WHERE CONVECTORS ARE RECESSED INTO THE WALL, PATCH WALL TO MATCH NEW OR EXISTING TO REMAIN FINISH WHERE CEILING IS TO REMAIN. PIPE RUNOUTS TO CONVECTORS SHALL BE ABANDONED IN PLACE. OTHERWISE, REMOVE PIPE RUNOUTS. VERTICAL PIPES IN WALLS TO REMAIN SHALL BE ABANDONED IN PLACE. PIPES IN WALLS TO BE DEMOLISHED SHALL BE REMOVED.
2. REMOVE ALL VERTICAL AND HORIZONTAL DUCTWORK AND ASSOCIATED GRILLES, REGISTERS, DAMPERS, SUPPORTS AND APPURTENANCES COMPLETE.
3. REMOVE EXISTING CEILING EXHAUST FAN. DUCTWORK SHALL BE CAPPED ABOVE CEILING AND ABANDONED IN PLACE. PATCH CEILING TO MATCH EXISTING.

Note: Asbestos containing materials shall not be used on the project.

Asbestos Disclosure Statement

An asbestos inspection report and ACM is included as an exhibit to the specifications. The asbestos inspection report is included as an exhibit to the project specific drawings. Asbestos-containing building material shall not be disturbed in this work except where specifically indicated and required. Where such actions are required, the contractor shall have the ACM removed by a licensed asbestos contractor using appropriate procedures. A special ACM is to remain and the new non-asbestos-containing material shall be taken accordingly. The General Contractor shall mark up the record drawings resulting from its work to include areas where asbestos was abated, areas where asbestos was encapsulated, and areas where ACM was left in place. The General Contractor shall review and certify the location where ACM was abated, areas where ACM was encapsulated and areas where ACM was left in place as marked on the record drawings and will provide the drawings to the Architect.

Lead Materials Disclosure

An inspection to identify lead containing or coated building components has been conducted and can be found in the project specific drawings. This report is included for the contractor's information and may be of interest. It is the contractor's responsibility to comply with all Virginia Occupational Safety and Health (VOSH) regulations as they pertain to employee exposures to lead. All lead and lead-coated building components shall be recycled to the extent possible.

SECOND FLOOR DEMOLITION NOTES:

(NOT ALL NOTES MAY APPLY TO THIS SHEET)

1. REMOVE EXISTING STEAM CONVECTOR AND ASSOCIATE CONTROLS AND APPURTENANCES COMPLETE. WHERE CONVECTORS ARE RECESSED INTO THE WALL, PATCH WALL TO MATCH NEW OR EXISTING TO REMAIN FINISH WHERE CEILING IS TO REMAIN. PIPE RUNOUTS TO CONVECTORS SHALL BE ABANDONED IN PLACE. OTHERWISE, REMOVE PIPE RUNOUTS. VERTICAL PIPES IN WALLS TO REMAIN SHALL BE ABANDONED IN PLACE. PIPES IN WALLS TO BE DEMOLISHED SHALL BE REMOVED.
2. REMOVE ALL VERTICAL AND HORIZONTAL DUCTWORK AND ASSOCIATED GRILLES, REGISTERS, DAMPERS, SUPPORTS AND APPURTENANCES COMPLETE.

ISSUES AND REVISIONS
NO. SUBMITTAL
5 BID DOCUMENTS
DATE
05.19.14

SECOND AND THIRD
FLOOR- MECHANICAL
DEMOLITION

GRAPHIC SCALE

0 4' 8' 12'

MD102

RENOVATION OF THREE RESIDENCE HALLS POCAHONTAS, BOLLING, & DRAPER HALLS

RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code 217-17565
VMDO Project Number 1115



 ATTIC FLOOR PLAN - MECHANICAL - DEMOLITION
SCALE: 1/8" = 1' 0"

SCALE: 1/8" = 1'

REMOVE EXISTING FANS AND CONNECTED DUCTWORK, DAMPERS, AND APPURTENANCES IN ATTIC COMPLETE UNLESS INDICATED TO REMAIN. REMOVE CONCRETE BASES AND CORK PADS. PATCH ALL FLOOR OPENINGS TO MATCH EXISTING UNLESS REUSED FOR NEW DUCTWORK OR PIPING. REMOVE EXISTING STEAM VENTS THRU ROOF AND PATCH ROOF TO MATCH EXISTING.

The diagram shows a vertical wall section. A horizontal dashed line extends from the left side, passing through a rectangular opening, across the wall, and ending at a vertical line on the right. This dashed line is labeled "EXISTING 22' TO REMAIN".

- 7
- 8
- 9

NOTE: ALL FLOOR PLANS ARE FOR POCOHONTAS HALL. BOLLING HALL SIMILAR; DRAPER HALL SIMILAR EXCEPT OPPOSITE HAND.

Note: Asbestos containing materials shall not be used on the project.

Asbestos Disclosure Statement

An Asbestos inspection was performed and ACM is suspected as noted in the specifications. The asbestos inspection report is included as an appendix to the project specifications. Asbestos-containing building material shall not be disturbed in this work except where specifically indicated and required. Where such actions are required, the contractor shall have the ACM removed by a licensed asbestos contractor using approved procedures as specified. The ACM that is to remain and the new non asbestos-containing material shall be labeled accordingly. The asbestos abatement contractor shall mark up the record drawings resulting from its work to include areas where asbestos was abated, areas where asbestos was encapsulated, and areas where ACM exist but were left in place. The General Contractor shall review and certify the locations where ACM was abated, areas where ACM was encapsulated and areas where ACM was left in place as marked on the record drawings and will provide the drawings to

Lead Materials Disclosure
An inspection to identify lead containing or coated building components has been conducted and can be found in the project specifications. This report is provided for the contractor's use and may not be all inclusive. It is the contractor's responsibility to comply with all Virginia Occupational Safety and Health (VOSH) regulations as they pertain to employee exposures to lead. All lead and lead-coated building components shall be recycled to the extent possible.

Checked By

RCH
DH

ISSUES AND REVISIONS

NO. SUBMITTAL

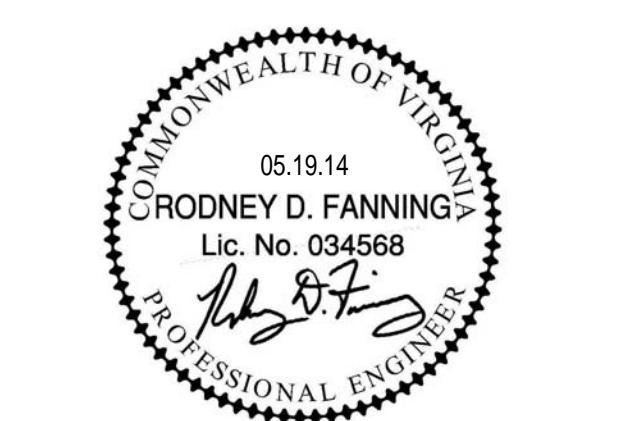
5 BID DOCUMENTS

DATE
05.19.14

ATTIC FLOOR PLAN - MECHANICAL - DEMOLITION

GRAPHIC SCALE

MD103

RENOVATION OF THREE
RESIDENCE HALLS
POCAHONTAS, BOLLING, &
DRAPER HALLS
RADFORD UNIVERSITY
RADFORD, VIRGINIA217-17565
1115Checked By RCH
Drawn By PLH

| HVAC LEGEND | |
|-------------|--------------------------------------|
| ABU | ABOVE FINISHED FLOOR |
| AFT | AIR HANDLING UNIT |
| AHU | AIR SEPARATOR |
| AS | ANCHOR |
| | BALANCING VALVE |
| | BEL |
| | BET |
| | BG |
| | BR |
| | BUCKET TRAP |
| | CABINET HEAT EXCHANGER |
| | CAPACITY |
| | CLG |
| | CD |
| | CG |
| | CR |
| | CHECK VALVE |
| | CHILLED WATER PUMP |
| | CHILLED WATER RETURN PIPE |
| | CHILLED WATER SUPPLY PIPE |
| | CIRCUIT SETTER |
| | CLEANOUT |
| | CO2 |
| | CO2 SENSOR |
| | COMMON |
| | COD |
| | COLD AIR TUBE |
| | COOLING COIL CONDENSATE DRAIN PIPE |
| | Cubic FEET PER MINUTE |
| | Degrees FAHRENHEIT |
| | DIA |
| | DIRECTION OF FLOW |
| | DIRECTION OF SLOPE DOWN |
| | DOMESTIC COLD WATER PIPE |
| | DOWN |
| | DRAIN PIPE |
| | DRIP STATION |
| | DS |
| | DRY BULB |
| | DUCT SLOPE DOWN |
| | DUCT SLOPE UP |
| | EACH |
| | ENTERING AIR TEMPERATURE |
| | EXPANSION TANK |
| | FEET |
| | FEET PER MINUTE |
| | FIRE DAMPER |
| | FIRE/SMOKE DAMPER |
| | FIRESTAT |
| | FL |
| | FLEXIBLE DUCT CONNECTION |
| | FLEXIBLE PIPE CONNECTION |
| | FLOAT & THERMOSTATIC TRAP |
| | FLOOR |
| | FROM |
| | GALLONS |
| | GALLONS PER MINUTE |
| | GLOBE VALVE |
| | HEATING WATER PUMP |
| | HEATING WATER RETURN PIPE |
| | HEATING WATER SUPPLY PIPE |
| | HIGH PRESSURE CONDENSATE RETURN PIPE |
| | HIGH PRESSURE STEAM SUPPLY PIPE |
| | HIGH SIDEWALL GRILLE |
| | HIGH SIDEWALL REGISTER |
| | HORIZONTAL FAN-COIL UNIT |
| | HORIZONTAL UNIT HEATER |
| | HORSEPOWER |
| | HOUR |
| | HUMIDISTAT |
| | INCH |
| | INLINE EXHAUST FAN |
| | KILOWATT |
| | LEAVING AIR TEMPERATURE |
| | LEAVING WATER TEMPERATURE |
| | LOW PRESSURE CONDENSATE PIPE |
| | LOW PRESSURE STEAM SUPPLY PIPE |
| | Louver |
| | MAKE-UP AIR ENERGY RECOVERY UNIT |
| | MANUAL AIR VENT |
| | MANUAL DAMPER |
| | MD |
| | MOTOR OPERATED DAMPER |
| | NORMALLY CLOSED |
| | NORMALLY OPEN |
| | OUTDOOR AIR |
| | PING CONNECTION WITH RESPECT |
| | TO FLOW |
| | BOTTOM TAKEOFF |
| | SIDE CONNECTION |
| | TOP TAKEOFF |
| | TURBINE OR FROM BELOW |
| | TURBINE UP OR DOWN |
| | TURN UP OR FROM ABOVE |
| | TURN UP OR DOWN |
| | LBS |
| | PSIG |
| | PD |
| | PRESSURE GAUGE |
| | PRESSURE REDUCING VALVE |
| | PRESSURE RELIEF VALVE |
| | PUMPED CONDENSATE RETURN PIPE |
| | REFRIGERANT PIPING |
| | REMOVE FROM THIS POINT |
| | RETURN AIR |
| | REVOLVING PER MINUTE |
| | SEWER VALVE |
| | SMOKE DAMPER |
| | STATIC PRESSURE |
| | STRAINER |
| | SUPPLY AIR |
| | THERMOMETER |
| | THERMOSTAT OR TEMPERATURE SENSOR |
| | THOUSAND BTU PER HOUR |
| | THREE-SPEED FAN SWITCH |
| | (S) |
| | THREE-WAY CONTROL VALVE |
| | TOP CRILLE |
| | TOP REGISTER |
| | TG |
| | TR |
| | TWO-WAY CONTROL VALVE |
| | UNION |
| | VENT PIPE |
| | VERTICAL FAN-COIL UNIT |
| | WET BULB |
| V | VFC |
| WB | WB |

BUILDING LOAD SUMMARY

| | |
|--|------------|
| COOLING | |
| SENSIBLE LOAD | = 58 TONS |
| LATENT LOAD | = 22 TONS |
| TOTAL LOAD | = 80 TONS |
| VENTILATION LOAD | = 19 TONS |
| INSTALLED COOLING CAPACITY (INCLUDES SPLIT SYSTEMS AND SUM OF CHILLED WATER COIL CAPACITIES) | = 102 TONS |

| | |
|--|------------|
| BUILDING (TRANSMISSION + INFILTRATION) | = 564 MBH |
| VENTILATION | = 312 MBH |
| DOMESTIC HOT WATER | = 2135 MBH |
| TOTAL | = 3011 MBH |
| INSTALLED STEAM SYSTEM CAPACITY (5100 LBSHR) | = 485 MBH |

NOTE: BUILDING TRANSMISSION LOAD THROUGH WALLS FOR HEATING
CALCULATED USING U-VALUE OF WALL AND 70 DEG. F DELTA T
(0 F TO 70 F). VENTILATION HEATING LOAD WAS CALCULATED WITH
NO ENERGY RECOVERY AND A 70 DEG. DELTA T.

HVAC LEGEND AND
NOTES

M001

HVAC DEMOLITION NOTES:

- THE CONTRACTOR SHALL REMOVE OR ALTER AS NECESSARY ALL EXISTING PIPING, EQUIPMENT, EQUIPMENT FOUNDATION, DUCTWORK AND APPURTENANCES THAT ARE NOT REQUIRED FOR THE NEW SYSTEMS. CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE SCOPE OF THIS WORK AND VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING BIDS. REPORT ANY DISCREPANCIES BETWEEN PLANS AND ACTUAL FIELD CONDITIONS TO THE OWNER AND ENGINEER PRIOR TO THE COMMENCEMENT OF DEMOLITION WORK.
- THE PURPOSE OF THE DEMOLITION DRAWINGS IS TO GENERALLY SHOW THE EXISTING SYSTEMS AND EQUIPMENT TO BE REMOVED. CONSEQUENTLY, NOT ALL PIPING, EQUIPMENT, DUCTWORK, SUPPORTS AND APPURTENANCES TO BE REMOVED HAVE BEEN SHOWN ON THE DRAWINGS.
- EXISTING EQUIPMENT SHALL BE TURNED OVER TO THE OWNER, UNLESS DIRECTED OTHERWISE AND LOCATED AS DIRECTED BY THE OWNER. ALL OTHER ITEMS TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE PREMISES.
- INSULATION ON EXISTING PIPING THAT IS DAMAGED OR REMOVED DUE TO THE DEMOLITION WORK SHALL BE REPLACED AND SEALED AS REQUIRED.
- EXISTING STEAM AND STEAM CONDENSATE MAINS IN MECHANICAL ROOMS FROM THE STEAM TUNNELS SHALL REMAIN AND BE REINSULATED.
- CONTRACTOR SHALL TAKE PRECAUTIONS DURING DEMOLITION WORK TO ENSURE THAT THE MODIFICATION OF ANY EXISTING STEAM OR CONDENSATE PIPING DOES NOT INTERRUPT OR IN ANY WAY AFFECT STEAM SERVICE TO OTHER PORTIONS OF CAMPUS WITHOUT PRIOR COORDINATION WITH OTHER TRADES THAT SERVE OTHER BUILDINGS ON CAMPUS SHALL NOT BE REMOVED OR MODIFIED.
- WHERE EXISTING PIPING, DUCT OR WIRING PENETRATING WALLS AND/OR FLOORS IS REMOVED, WALL AND/OR FLOOR SHALL BE REPAVED AND INFILLED TO MATCH ADJACENT AREAS.

COORDINATION NOTES:

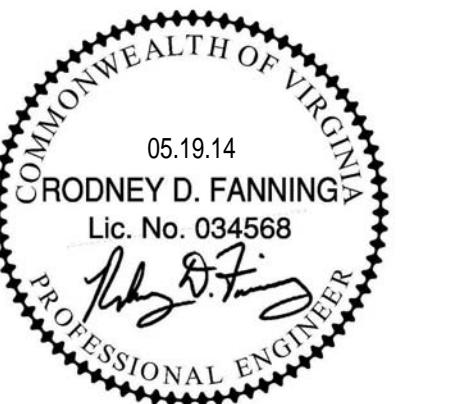
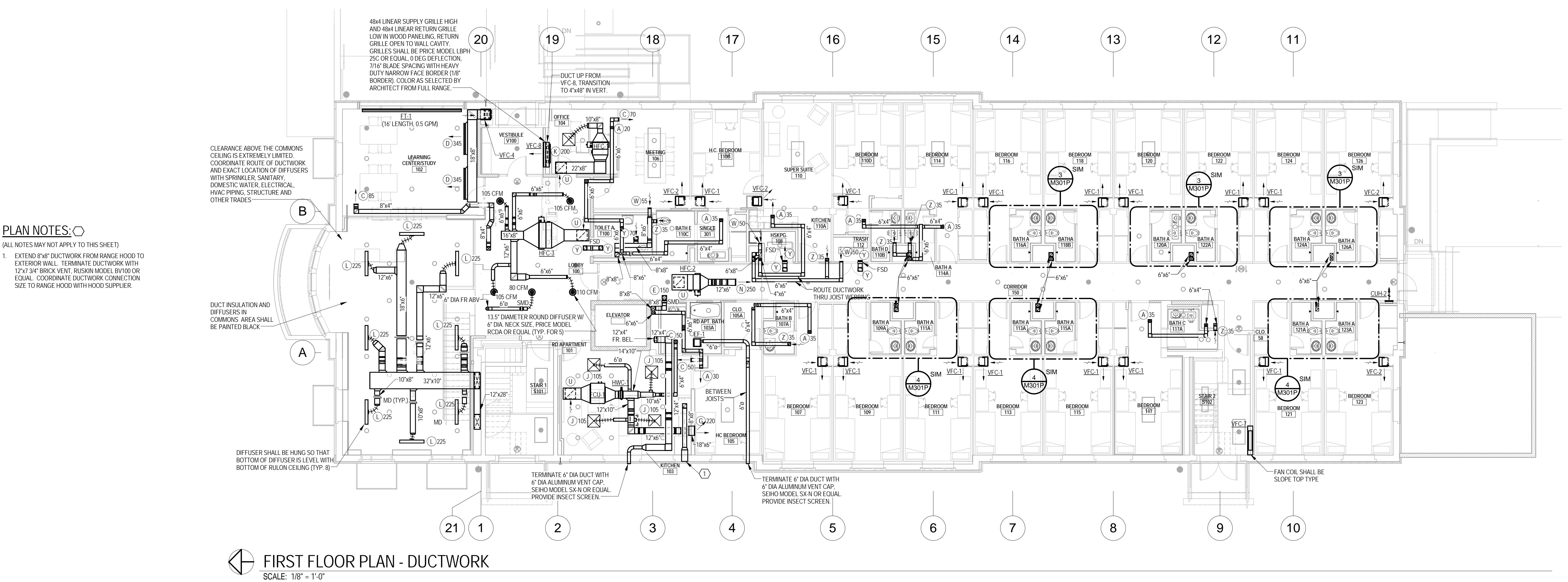
- CAREFULLY COORDINATE ALL DUCTWORK, PIPING AND APPURTENANCES IN CHASES WITH NEW AND EXISTING PLUMBING, PIPING, SPRINKLER PIPING, ELECTRICAL, STRUCTURE AND OTHER TRADES.
- CLEARANCE ABOVE CEILINGS IN MANY AREAS IS LIMITED, PARTICULARLY IN AREAS WITH THE 1 HOUR FIRE RATED ASSEMBLY ABOVE THE CEILING. CAREFULLY COORDINATE LOCATIONS OF MECHANICAL EQUIPMENT, DUCTWORK, PIPES, GRILLES AND DIFFUSERS WITH PLUMBING, STRUCTURAL, ELECTRICAL AND OTHER TRADES.
- THE MECHANICAL CONTRACTOR IS HEREBY ADVISED THAT THE FIRST FLOOR LEARNING AREA (ROOM 102) EXTERIOR WALL DEMOLITION WILL PRESENT A LIMITED TIME FRAME TO MOVE LARGE MECHANICAL EQUIPMENT INTO THE BUILDING. TRY TO MOVE TO THE BASEMENT LEVEL. THE LENGTH OF TIME MAY BE ONE MONTH. MOVE STAIR OR ELEVATOR INCLUDE, BUT ARE NOT LIMITED TO, CONVERTER AIR HANDLERS, PUMPS, EXPANSION TANKS, AND FANS. THE CONTRACTOR SHALL INCLUDE A CONTINGENCY FACTOR FOR ALL ITEMS TO BE MOVED AND LOCATED PROPERLY. CONTRACTOR SHALL COORDINATE WITH ALL DISCIPLINES FOR DELIVERY, MOVING AND STORING ALL EQUIPMENT AND SUPPLIES.
- HEIGHT AND OVERALL SPACE IN MECHANICAL ROOMS IS LIMITED. COORDINATE CLEARANCES WITH PLUMBING, SPRINKLER, SANITARY, ELECTRICAL AND ALL OTHER TRADES TO MAINTAIN REQUIRED HEAD SPACE AND EQUIPMENT CLEARANCES.

SEISMIC NOTE:

- ALL MECHANICAL SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF IBC AND ASCE-7 SEISMIC DESIGN CATEGORY B.



RENOVATION OF THREE RESIDENCE HALLS POCAHONTAS, BOLLING, & DRAPER HALLS

RADFORD UNIVERSITY
RADFORD, VIRGINIA217-17565
1115RCH
PLH**GENERAL NOTE:**

CLEARANCE IN CHASES IS LIMITED. CONTRACTOR SHALL OFFSET CHASE DUCTWORK IN VERTICAL AS REQUIRED TO COORDINATE WITH PLUMBING, STRUCTURAL AND ALL OTHER TRADES.

PLAN NOTES:

(ALL NOTES MAY NOT APPLY TO THIS SHEET)

- INSTALL NEW BRICK VENT IN OPEN OR RELOCATED VENT. APPROXIMATE SIZE OF VENT IN FIELD. VENT SHALL BE RUSKIN MODEL BV100 OR EQUAL. VENT SHALL BE CONSTRUCTED OF EXTRUDED ALUMINUM AND HAVE A MINIMUM OF 39% FREE AREA. EXTEND DUCT INTO CRAWLSPACE FULL SIZE OF VENT. COVER DUCT OPENING WITH 1/2" WIDE VESSEL.
- IF FIELD CONDITIONS ARE SUCH THAT THE CRAWLSPACE VENTS FARTHEST FROM THE MECHANICAL ROOM ARE NOT ACCESSIBLE TO BE CLEARED OF DIRT, DEBRIS AND OTHER OBSTRUCTIONS, CONTRACTOR SHALL NEW 16"x8" BRICK VENT IN THIS LOCATION. RUSKIN MODEL BV100 OR EQUAL EXTRUDED ALUMINUM, MINIMUM 39% FREE AREA.

BASMENT FLOOR PLAN - DUCTWORK
SCALE: 1/8" = 1'-0"

BASEMENT AND FIRST FLOOR DUCTWORK

ISSUES AND REVISIONS

NO. SUBMITTAL 5 BID DOCUMENTS

DATE 05.19.14

NOTE: ALL FLOOR PLANS ARE FOR POCAHONTAS HALL, BOLLING HALL SIMILAR, DRAPER HALL SIMILAR EXCEPT OPPOSITE HAND.

GRAPHIC SCALE

0 4' 8' 12'

M101



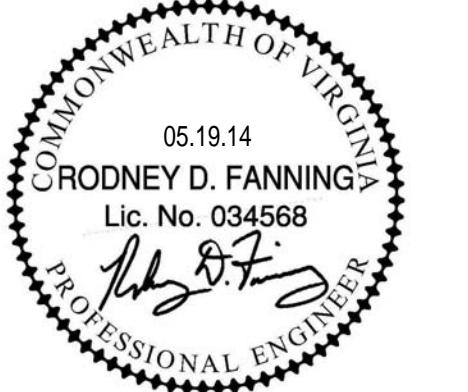
LAWRENCE PERRY & ASSOCIATES
Consulting Engineers

15 E Salem Avenue SE, Suite 101
Roanoke, Virginia 24011
Ph: (540) 342-1816
Fax: (540) 344-3410
Com No.: 13111
©Lawrence Perry and Associates, Inc.

RADFORD UNIVERSITY

RENOVATION OF THREE
RESIDENCE HALLS
POCAHONTAS, BOLLING, &
DRAPER HALLS
RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code
VMDO Project Number
217-17565
1115



Checked By
RCH
Drawn By
PLH

ISSUES AND REVISIONS
NO. SUBMITTAL
5 BID DOCUMENTS
DATE
05.19.14

SECOND AND THIRD
FLOOR DUCTWORK
PLANS

PLAN NOTES: (NOT ALL NOTES MAY APPLY TO THIS SHEET)

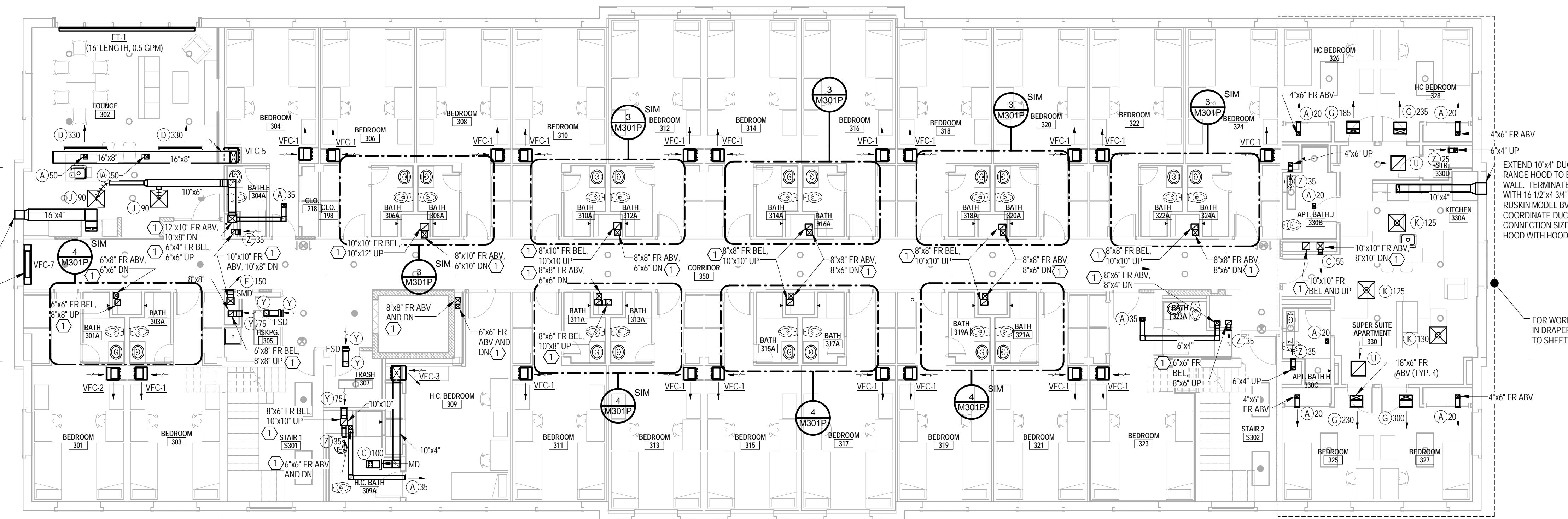
1. PROVIDE FIRE DAMPER AT FLOOR PENETRATION.

EXTEND 16"x4" DUCTWORK FROM RANGE HOOD TO EXTERIOR WALL TERMINATE DUCTWORK WITH 12x7 3/4" BRICK VENT, RUSKIN MODEL BV100 OR EQUAL. COORDINATE DUCTWORK CONNECTION SIZE TO RANGE HOOD WITH HOOD SUPPLIER.

FAN COIL SHALL BE SLOPE TOP TYPE.

THIRD FLOOR PLAN - DUCTWORK

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



PLAN NOTES: (NOT ALL NOTES MAY APPLY TO THIS SHEET)

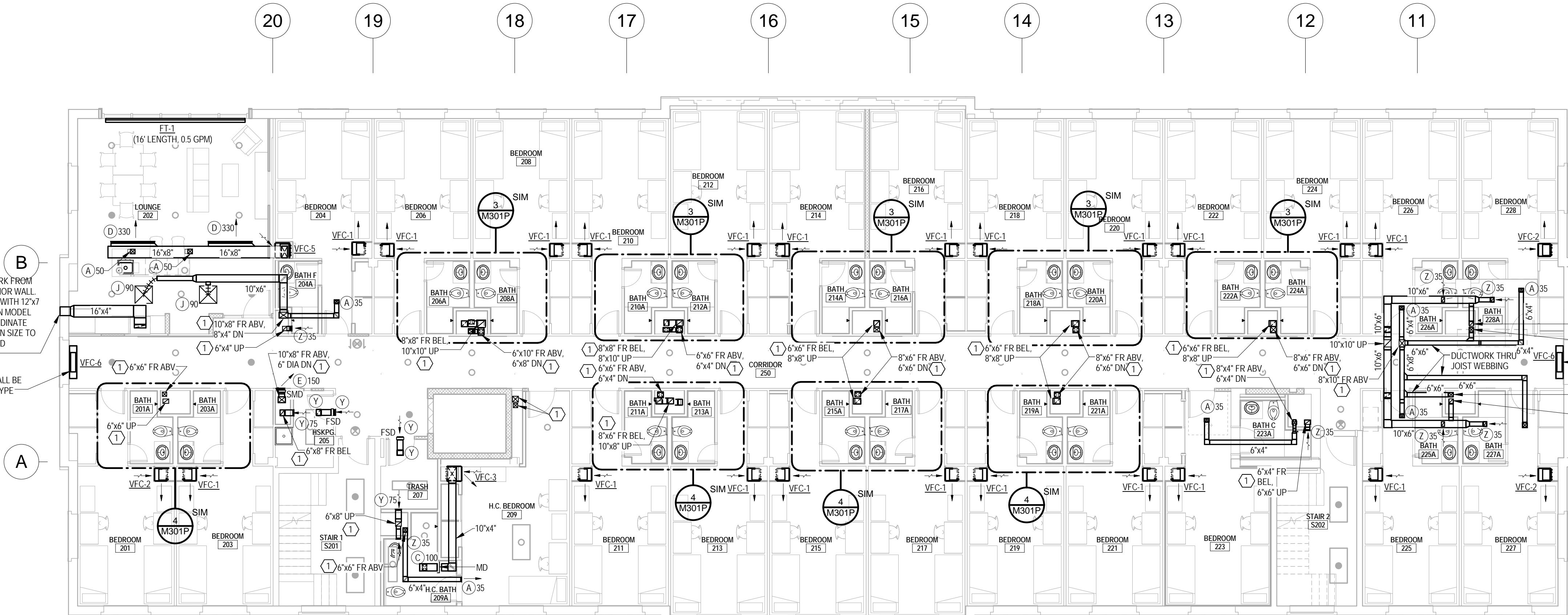
1. PROVIDE FIRE DAMPER AT FLOOR PENETRATION.

EXTEND 16"x4" DUCTWORK FROM RANGE HOOD TO EXTERIOR WALL TERMINATE DUCTWORK WITH 12x7 3/4" BRICK VENT, RUSKIN MODEL BV100 OR EQUAL. COORDINATE DUCTWORK CONNECTION SIZE TO RANGE HOOD WITH HOOD SUPPLIER.

FAN COIL SHALL BE SLOPE TOP TYPE.

SECOND FLOOR PLAN - DUCTWORK

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



NOTE: ALL FLOOR PLANS ARE FOR POCAHONTAS HALL, BOLLING HALL SIMILAR, DRAPER HALL SIMILAR EXCEPT OPPOSITE HAND (EXCEPT WHERE INDICATED OTHERWISE).

GRAPHIC SCALE

0 4' 8' 12'
1/8" = 1'-0"

M102

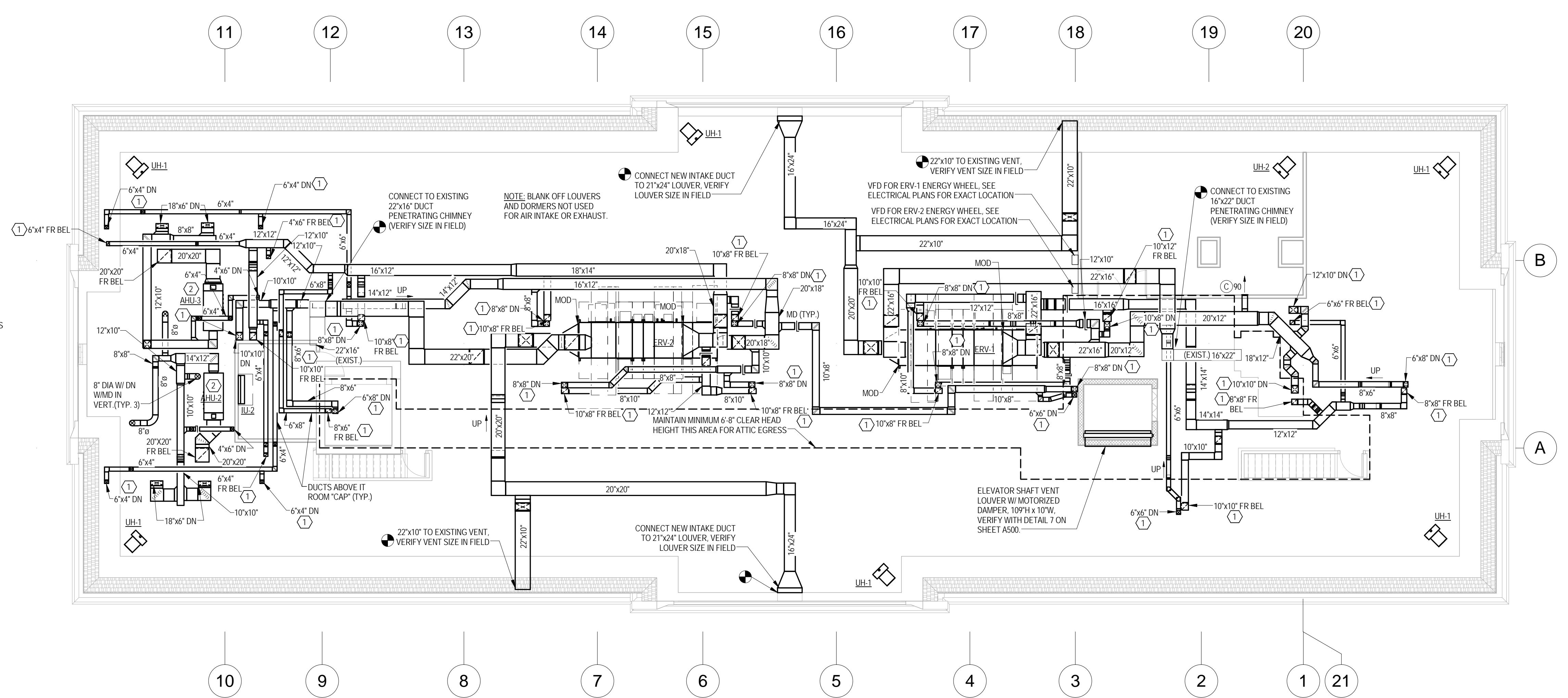


RENOVATION OF THREE
RESIDENCE HALLS
POCAHONTAS, BOLLING, &
DRAPER HALLS
RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code 217-16565
VMDO Project Number 1115



Checked By RCH
Drawn By PLH



ISSUES AND REVISIONS
NO. SUBMITTAL
5 BID DOCUMENTS
DATE
05.09.14

ATTIC FLOOR PLANS -
DUCTWORK - DRAPER

GRAPHIC SCALE
1/8"=1'-0" 0 4' 8' 12'

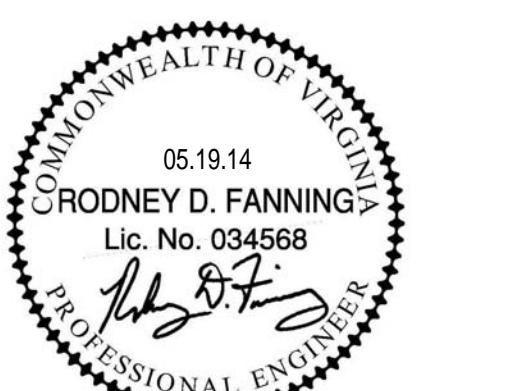
M103D



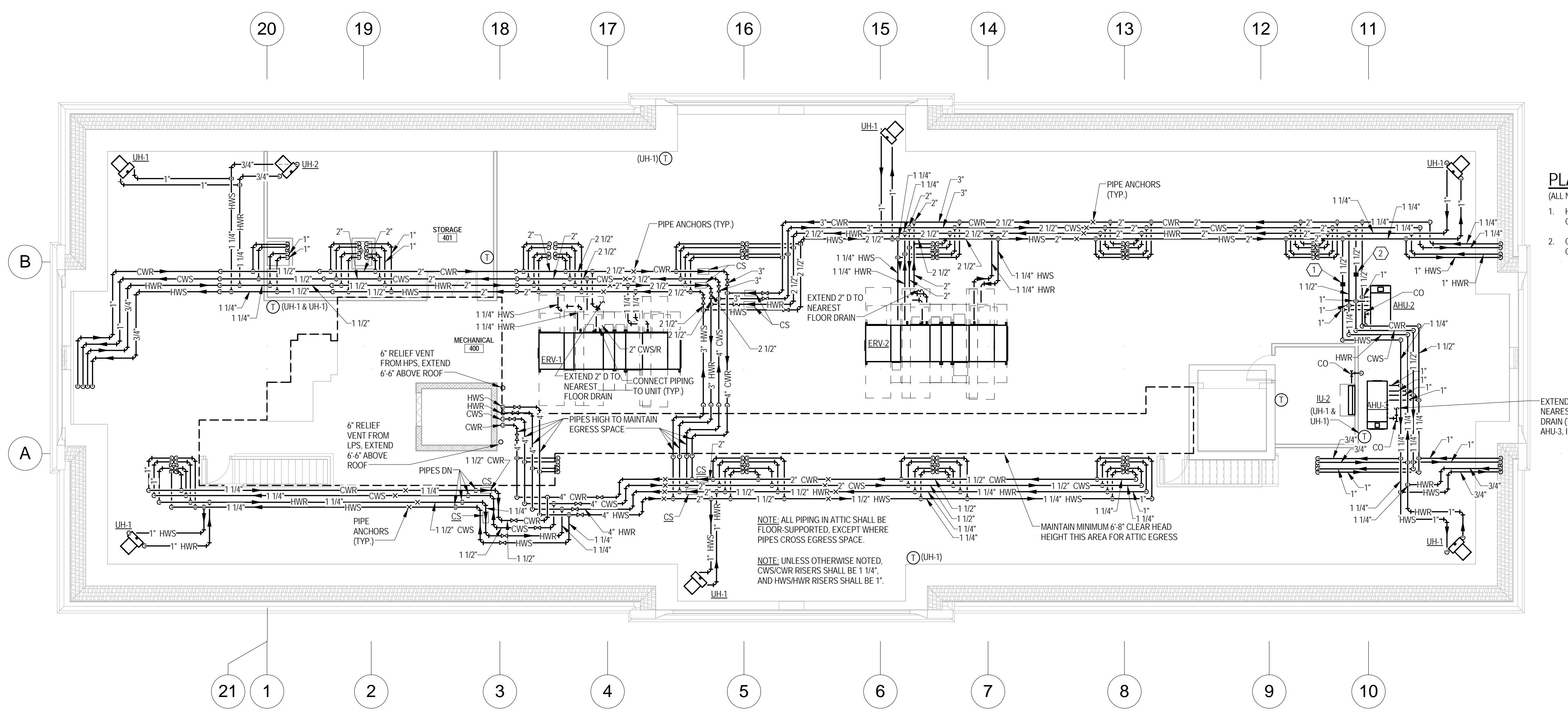
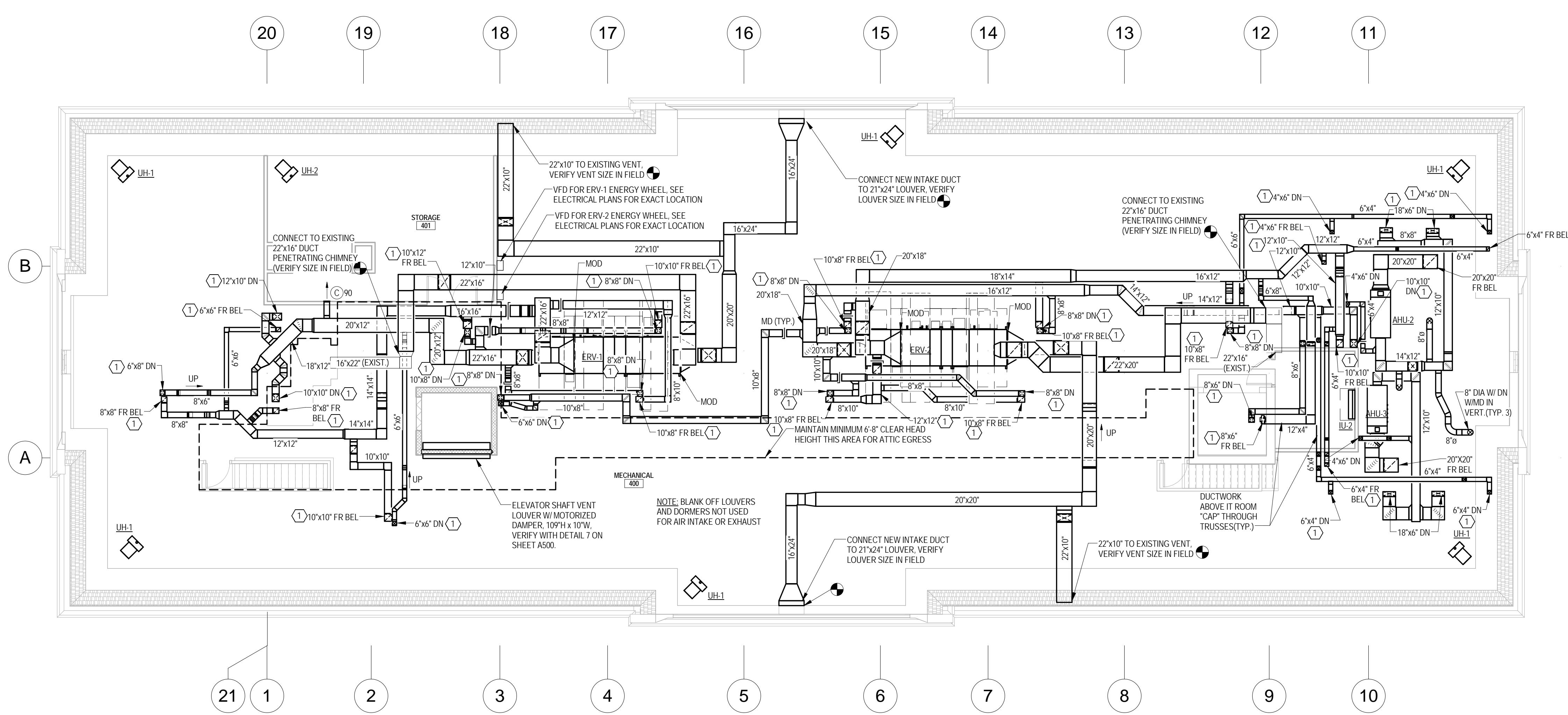
RADFORD UNIVERSITY

RENOVATION OF THREE RESIDENCE HALLS
POCAHONTAS, BOLLING, & DRAPER HALLS
RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code
VMDO Project Number
217-17565
1115



Checked By
RCH
Drawn By
PLH

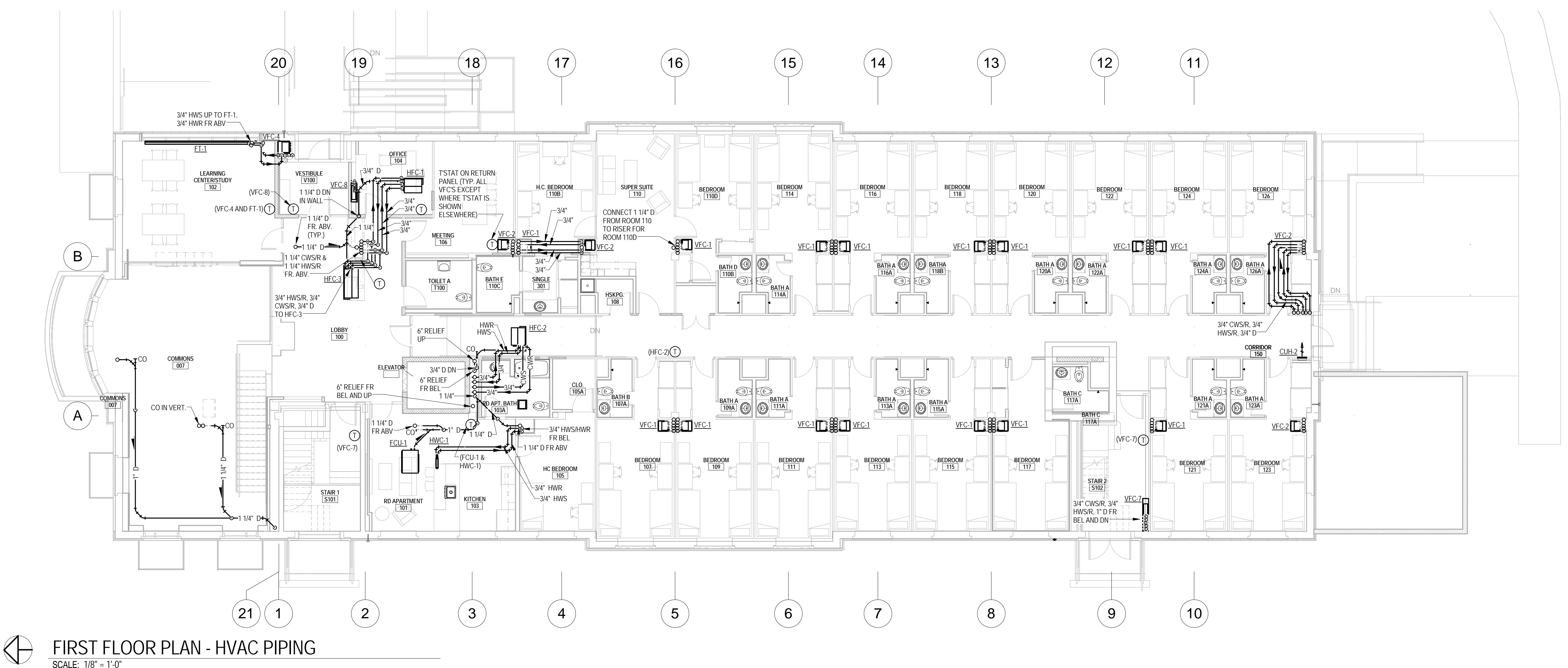
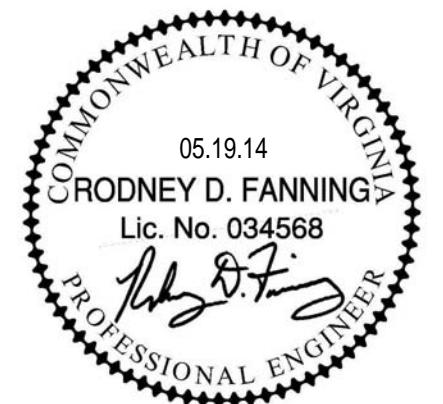


GRAPHIC SCALE
0 4' 8' 12'
1/8"-1'-0"

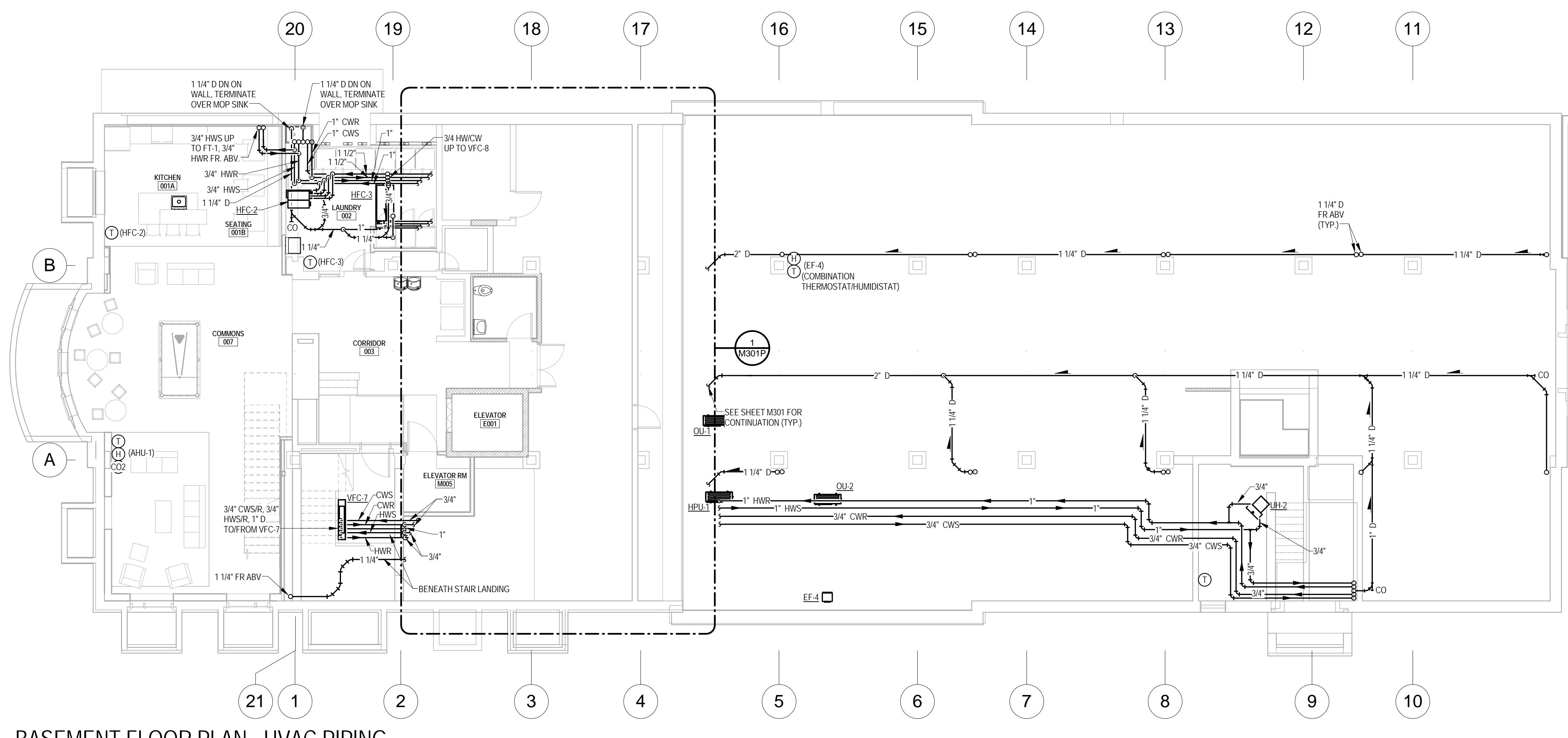
M103P

**RENOVATION OF THREE RESIDENCE HALLS
POCAHONTAS, BOLLING, &
DRAPER HALLS**
RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code 217-17565
VMDO Project Number 1115



Checked By RCH
Drawn By PLH



ISSUES AND REVISIONS
NO. SUBMITTAL 5 BID DOCUMENTS
DATE 05.19.14

**BASEMENT AND FIRST
FLOOR PLANS - HVAC
PIPEING**

NOTE: ALL FLOOR PLANS ARE FOR POCAHONTAS HALL, BOLLING HALL SIMILAR, DRAPER HALL SIMILAR EXCEPT OPPOSITE HAND.

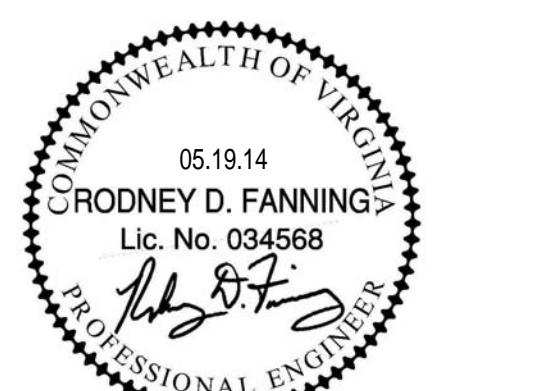
GRAPHIC SCALE
0 4' 8' 12'
1/8"=1'-0"

M201



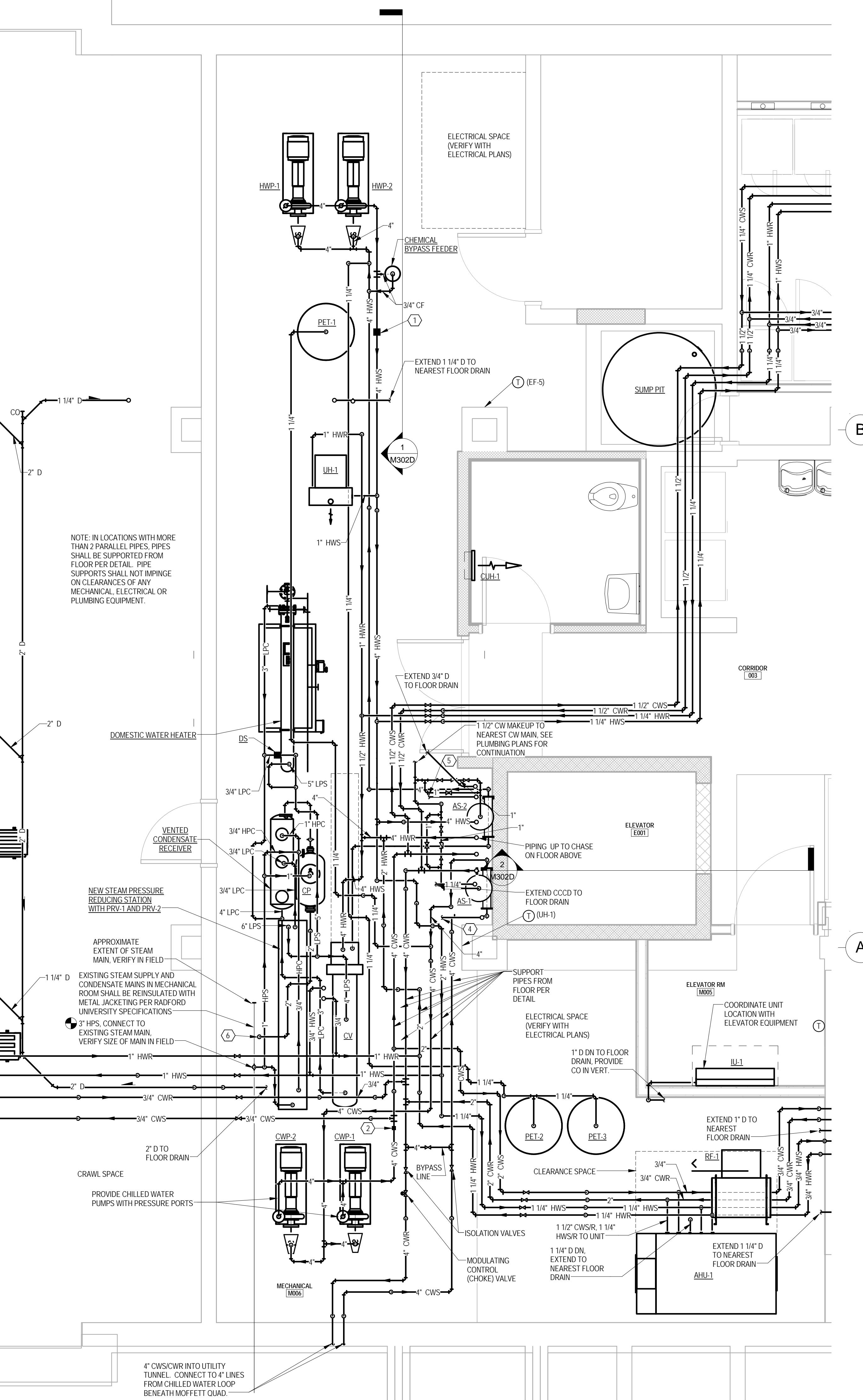
RENOVATION OF THREE
RESIDENCE HALLS
POCAHONTAS, BOLLING, &
DRAPER HALLS
RADFORD UNIVERSITY
RADFORD, VIRGINIA

217-16565
1115



Checked By
Drawn By
RCH
PLH

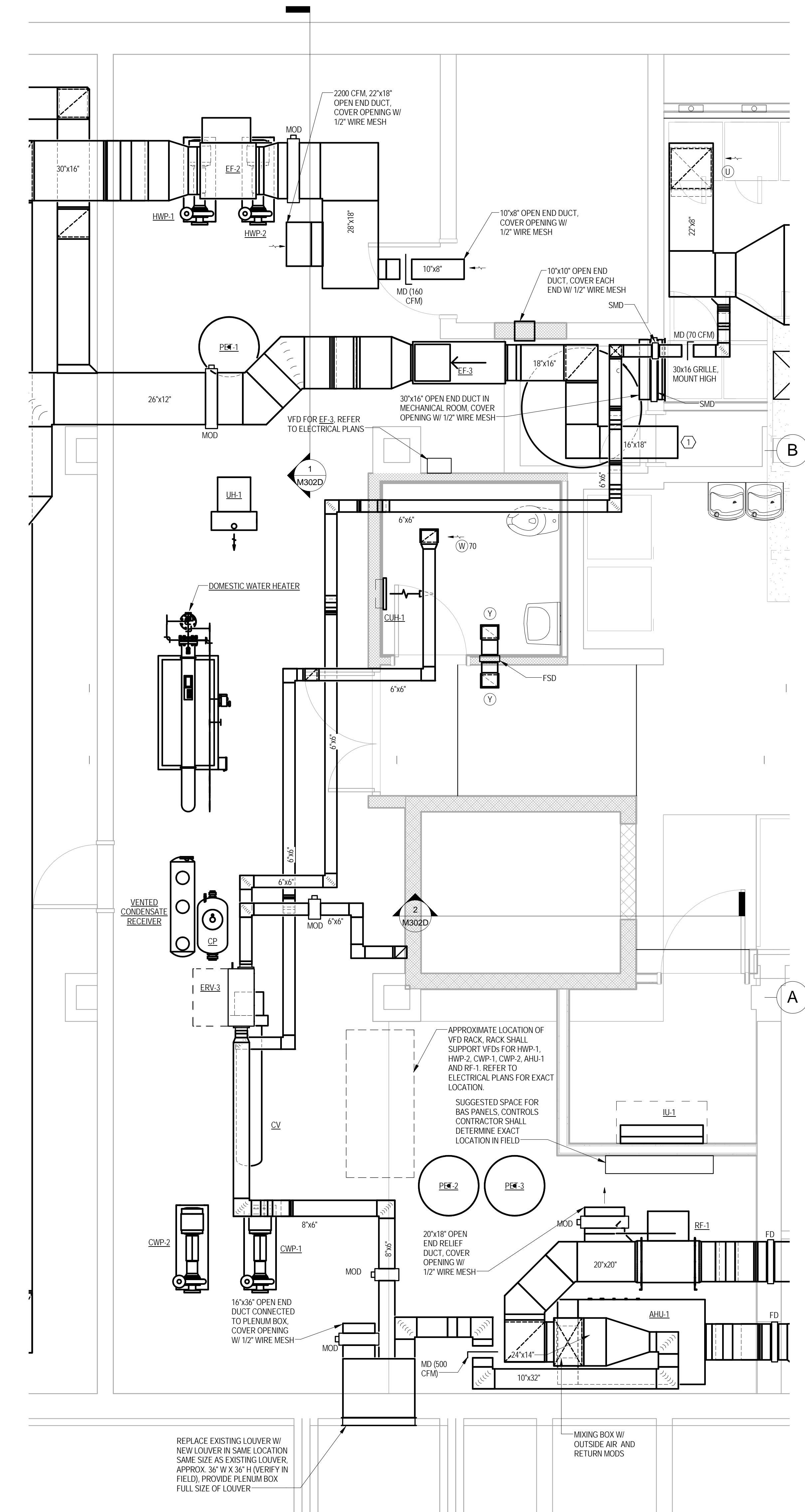
ISSUES AND REVISIONS
NO. SUBMITTAL
5 BID DOCUMENTS
DATE
05.01.14



PLAN NOTES:

- (ALL NOTES MAY NOT APPLY TO THIS SHEET)
1. HEATING WATER PRESSURE SENSOR LOCATION FOR FLOW CONTROL OF HWP-1 AND HWP-2.
 2. CHILLED WATER PRESSURE SENSOR LOCATION FOR FLOW CONTROL OF CWP-1 AND CWP-2.
 3. 16"x18" DUCT INTO CHASE BEHIND DRYERS. CONNECT 4" dia ROUND ALUMINUM DUCT FROM EACH DRYER TO 16"x18".
 4. 6" RELIEF VENT TO LOW PRESSURE STEAM RELIEF.
 5. 6" RELIEF VENT TO HIGH PRESSURE STEAM RELIEF.
 6. CONNECT 2" PCR TO EXISTING STEAM CONDENSATE MAIN BEHIND MECHANICAL ROOM FLOOR. REUSE EXISTING PENETRATION LOCATION. VERIFY SIZE OF MAIN IN FIELD.

MECHANICAL ROOM M006 PARTIAL FLOOR PLAN - HVAC PIPING
1 3/8" = 1'-0"



MECHANICAL ROOM M006 PARTIAL FLOOR PLAN - DUCTWORK
2 3/8" = 1'-0"

PLAN NOTES:

- (ALL NOTES MAY NOT APPLY TO THIS SHEET)
1. 16"x18" DUCT INTO CHASE BEHIND DRYERS. CONNECT 4" dia ROUND ALUMINUM DUCT FROM EACH DRYER TO 16"x18".

GRAPHIC SCALE

0 4' 8' 12'

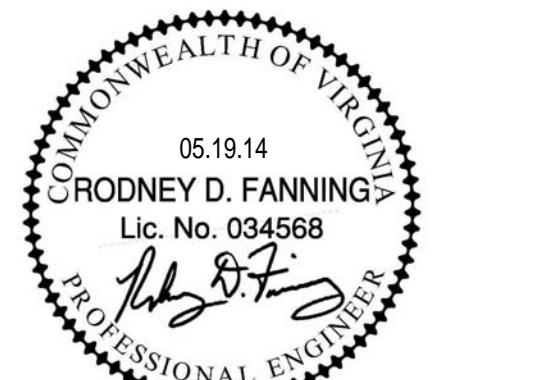
1/8" = 1'-0"

PARTIAL FLOOR PLANS -
HVAC - DRAPER

M301D



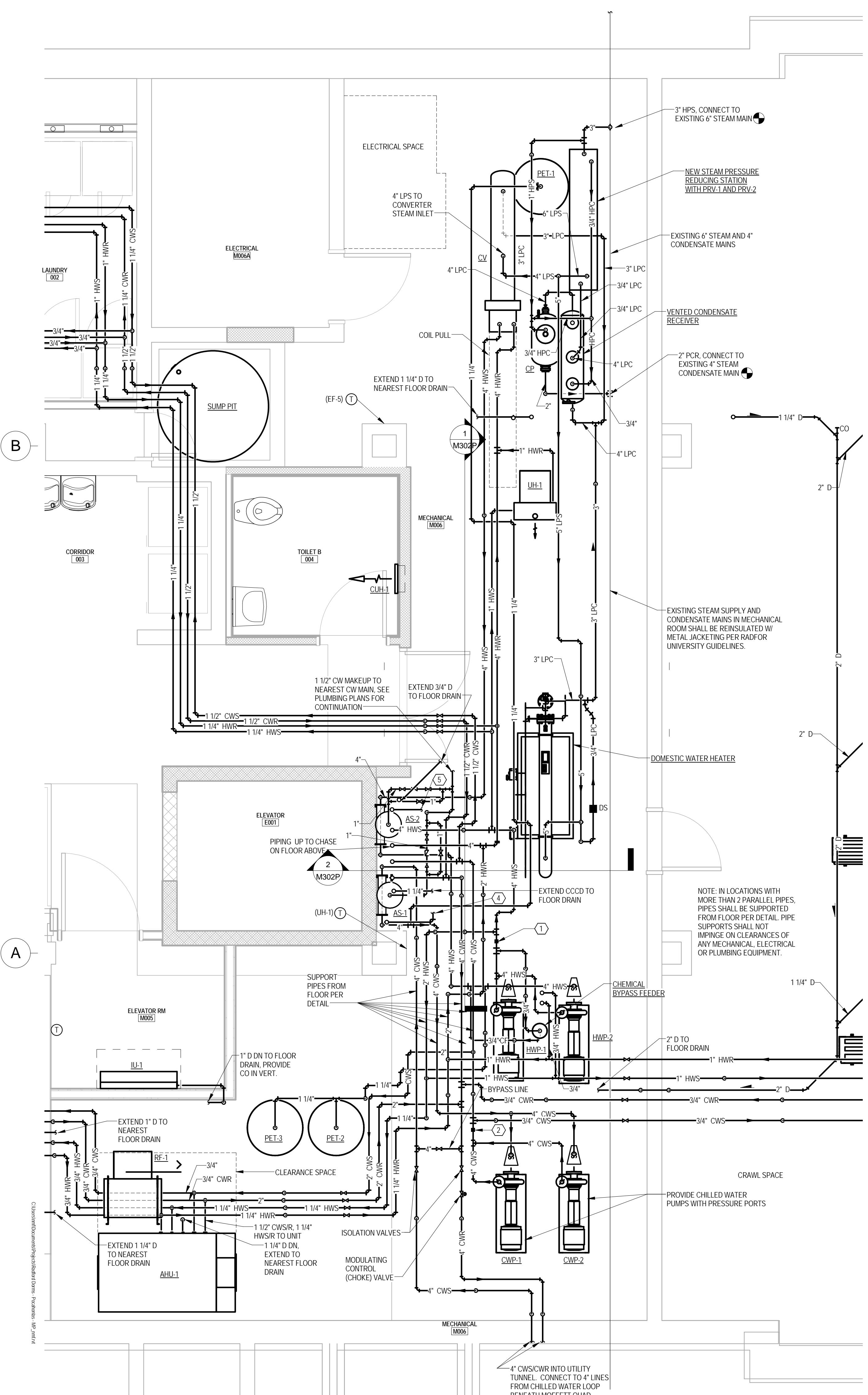
RENOVATION OF THREE
RESIDENCE HALLS
POCAHONTAS, BOLLING, &
DRAPER HALLS
RADFORD UNIVERSITY
RADFORD, VIRGINIA

217-17565
1115

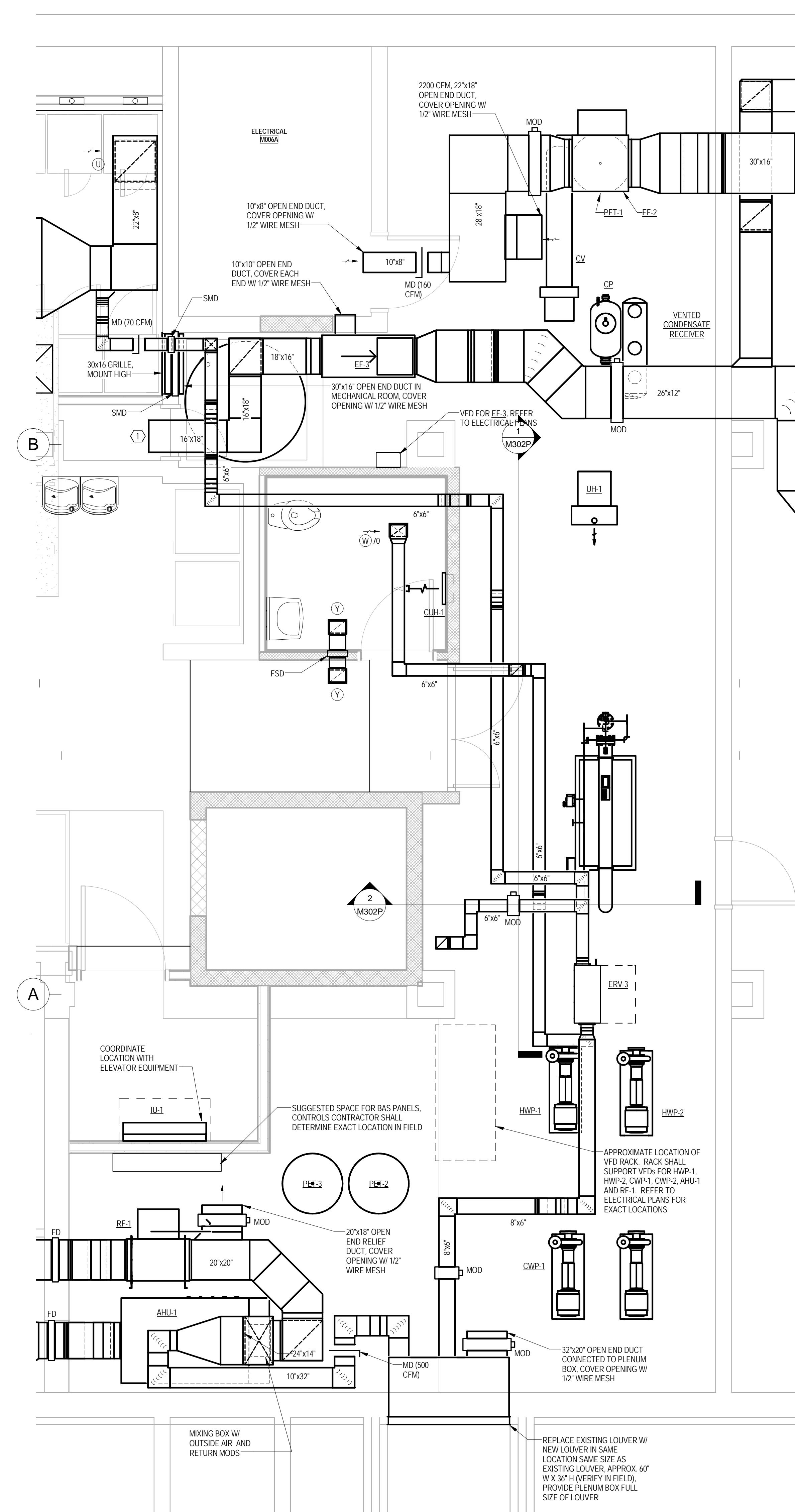
Checked By _____
Drawn By _____

RCH PLH

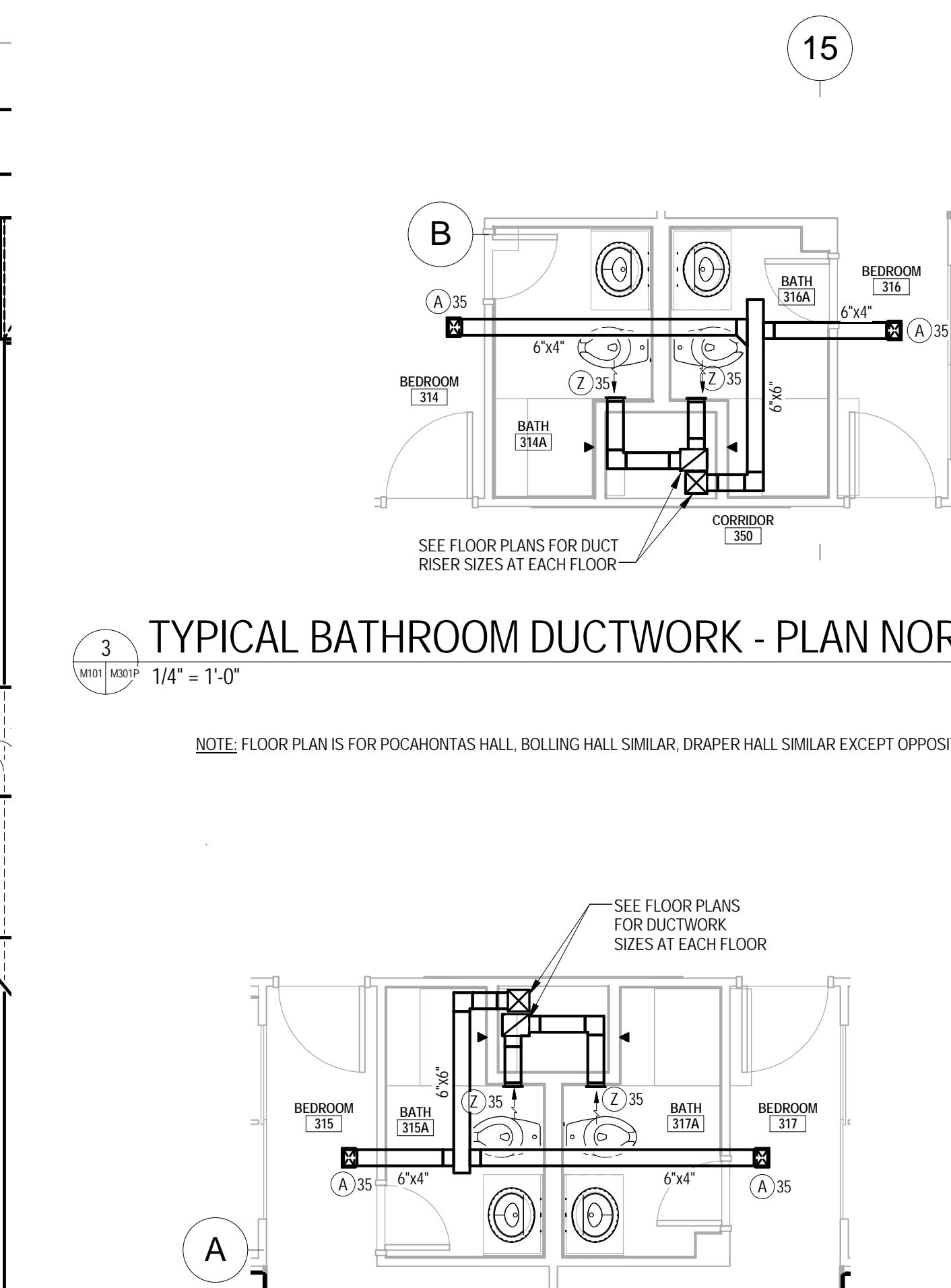
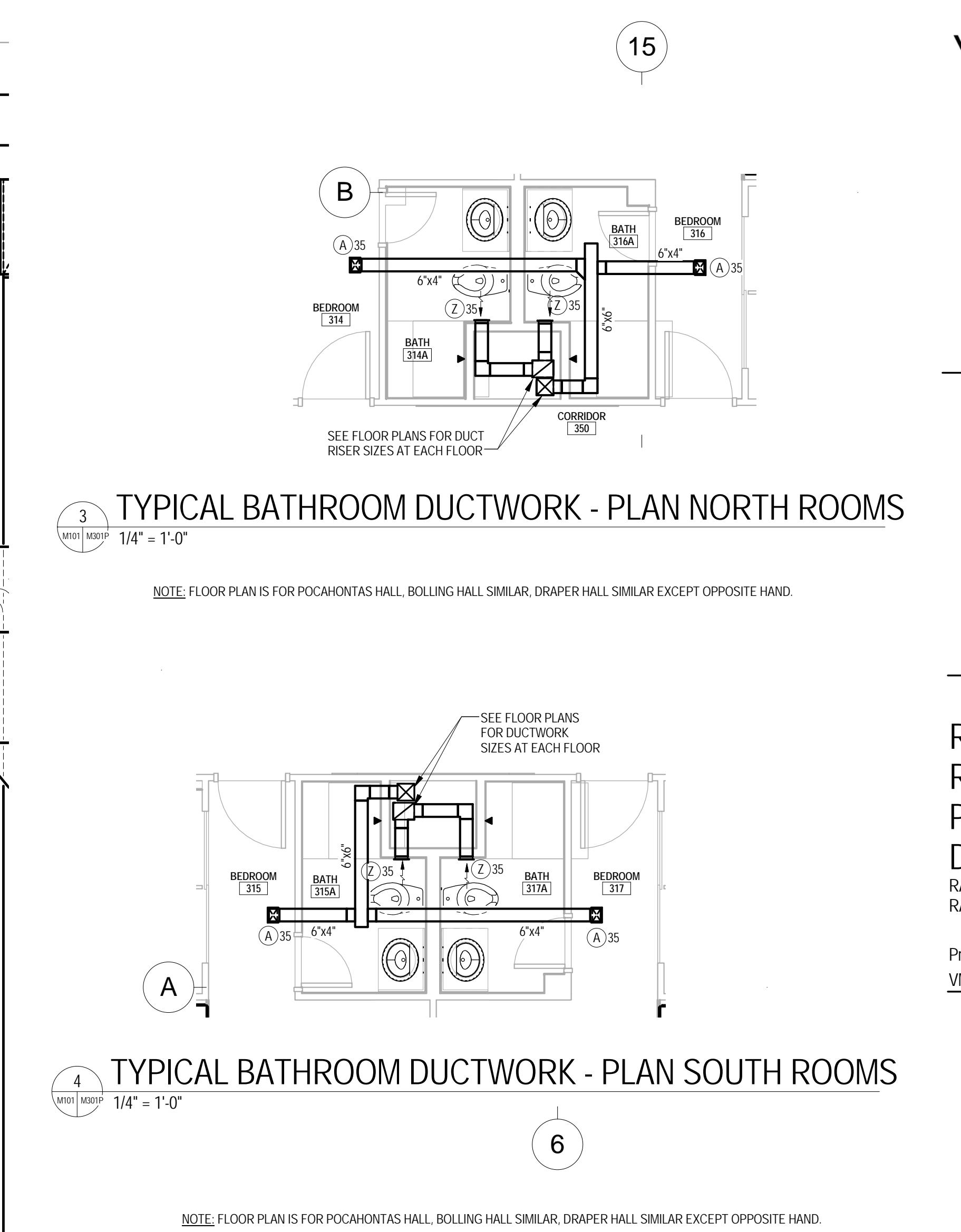
ISSUES AND REVISIONS
NO. SUBMITTAL
5 BID DOCUMENTS
DATE
05.19.14



MECHANICAL ROOM M006 PARTIAL FLOOR PLAN - HVAC PIPING
1 3/8" = 1'-0"



MECHANICAL ROOM M006 PARTIAL FLOOR PLAN - DUCTWORK
2 3/8" = 1'-0"



PARTIAL FLOOR PLANS -
HVAC - POCAHONTAS

GRAPHIC SCALE

0 1' 2' 3' 4'

GRAPHIC SCALE

0 1' 2' 3' 4'

M301P



LAWRENCE PERRY & ASSOCIATES
Consulting Engineers

15 E Salem Avenue SE, Suite 101
Roanoke, Virginia 24011
Ph: (540) 342-1816
Fax: (540) 344-3410

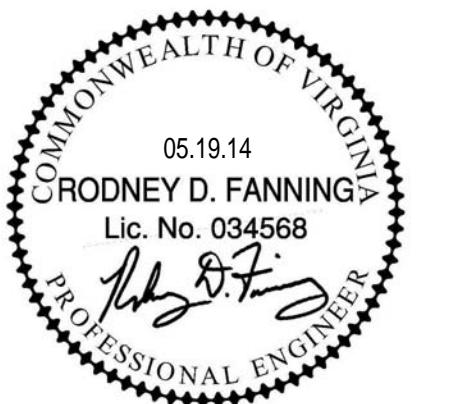
Com No.: 13111

©Lawrence Perry and Associates, Inc.

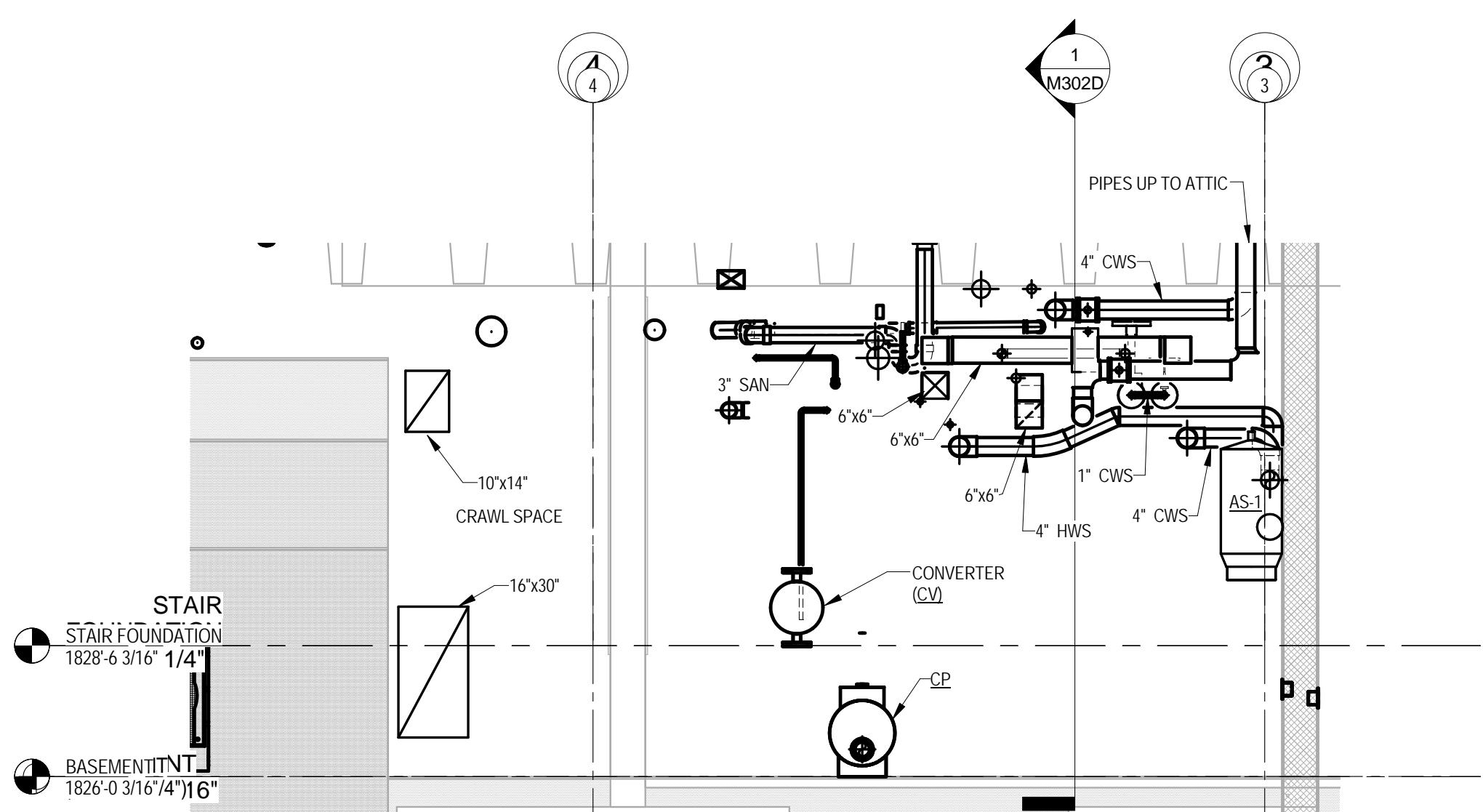
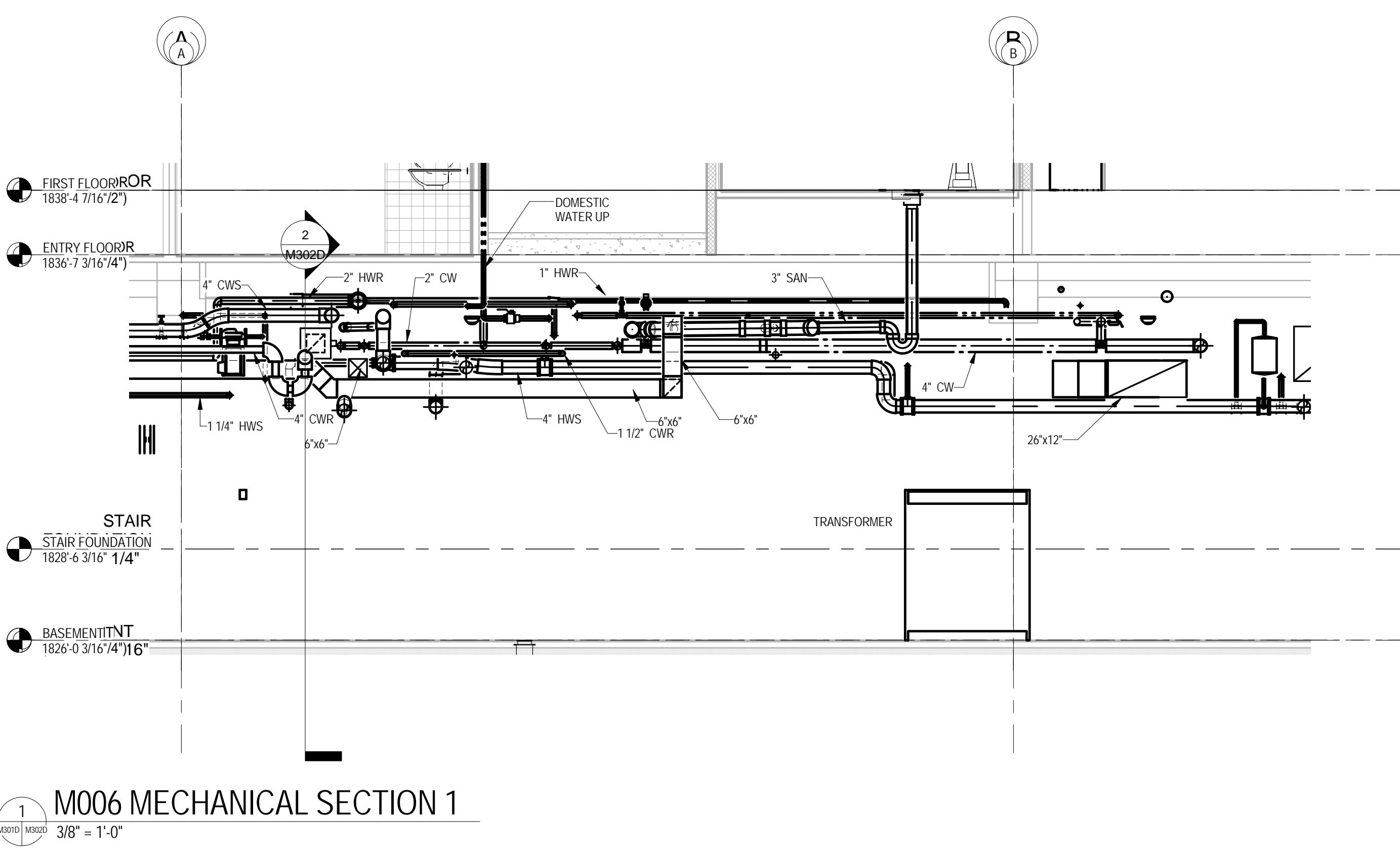


RENOVATION OF THREE
RESIDENCE HALLS
POCAHONTAS, BOLLING, &
DRAPER HALLS
RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code 217-16565
VMDO Project Number 1115



Checked By RCH
Drawn By PLH



ISSUES AND REVISIONS
NO. SUBMITTAL
5 BID DOCUMENTS
DATE
05.01.14

HVAC SECTION VIEWS -
DRAPER

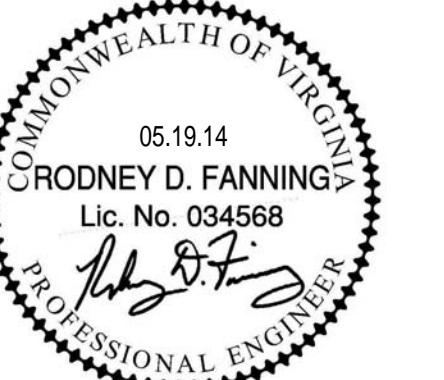
GRAPHIC SCALE
0 1' 2' 3' 4'
3/8"=1'-0"

M302D

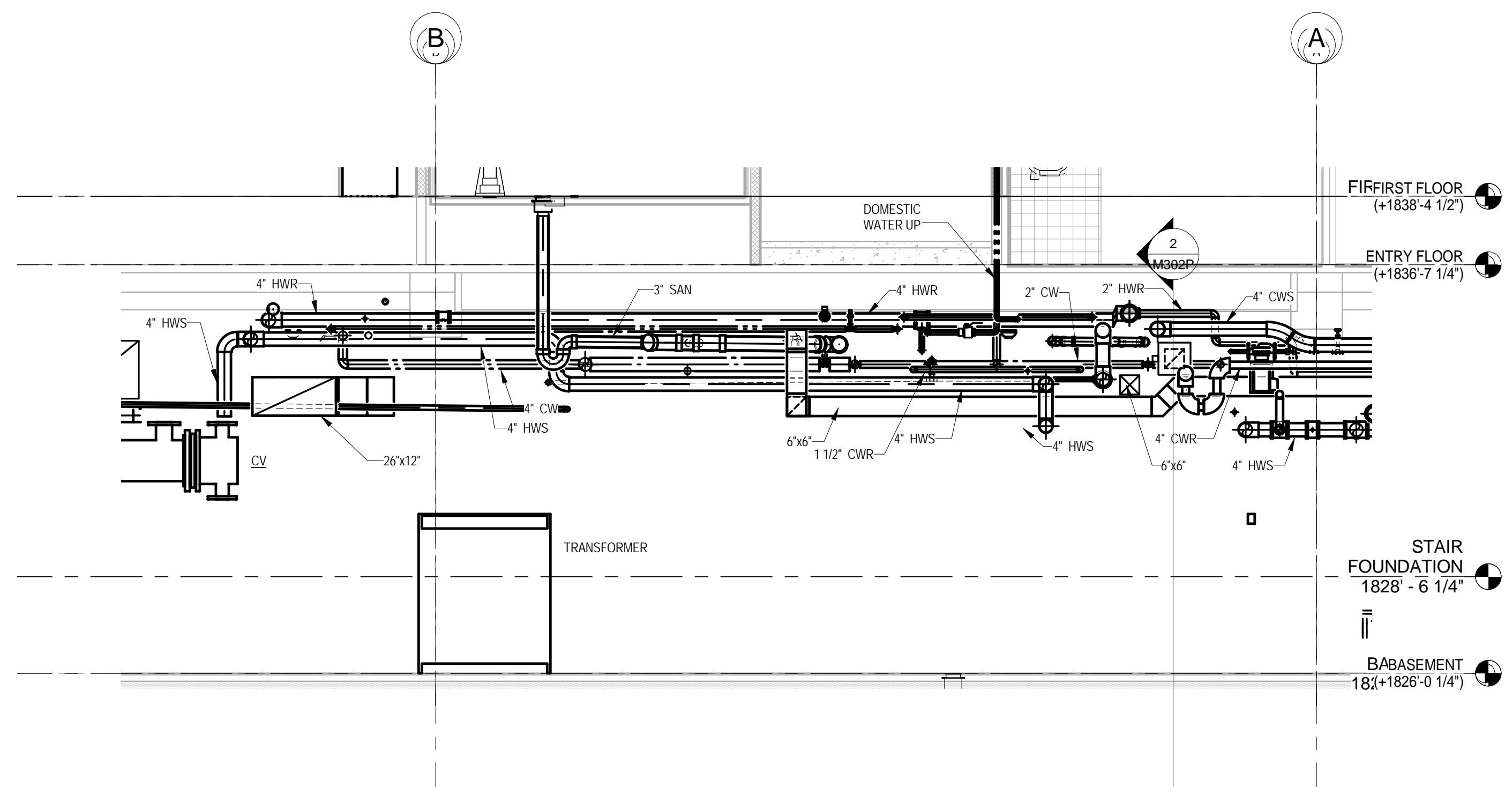


RENOVATION OF THREE
RESIDENCE HALLS
POCAHONTAS, BOLLING, &
DRAPER HALLS
RADFORD UNIVERSITY
RADFORD, VIRGINIA

217-17565
VMDO Project Number
1115

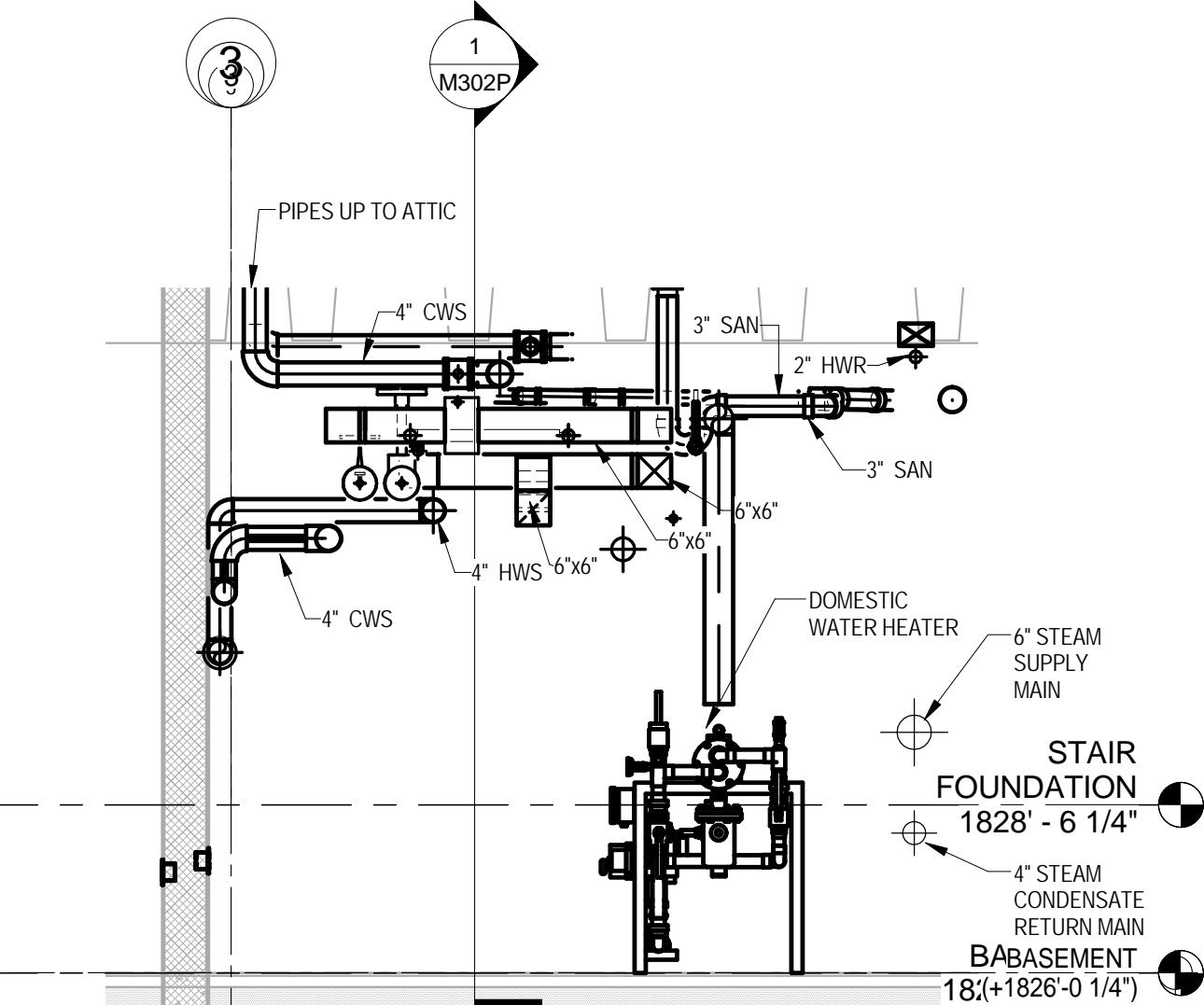


Checked By RCH
Drawn By PLH



M006 MECHANICAL SECTION 1

1 M006P M006P 3/8" = 1'-0"



M006 MECHANICAL SECTION 2

2 M006P M006P 3/8" = 1'-0"

ISSUES AND REVISIONS
NO. SUBMITTAL
5 BID DOCUMENTS

DATE
05.19.14

HVAC SECTION VIEWS -
POCAHONTAS

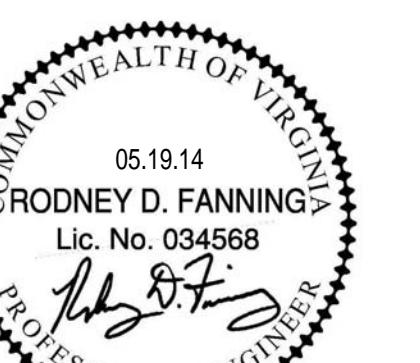
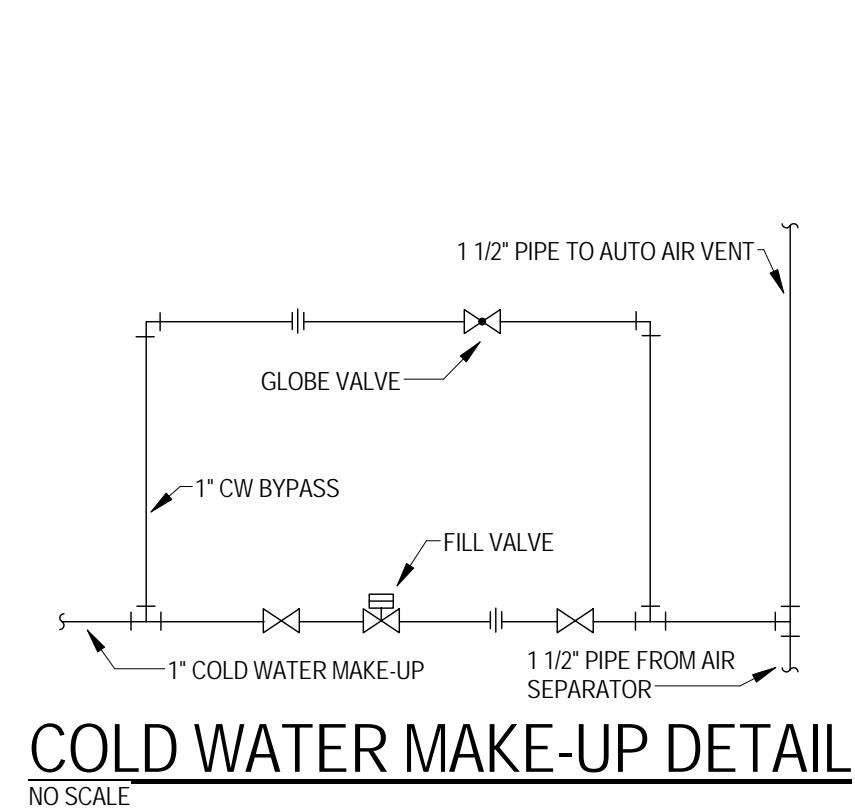
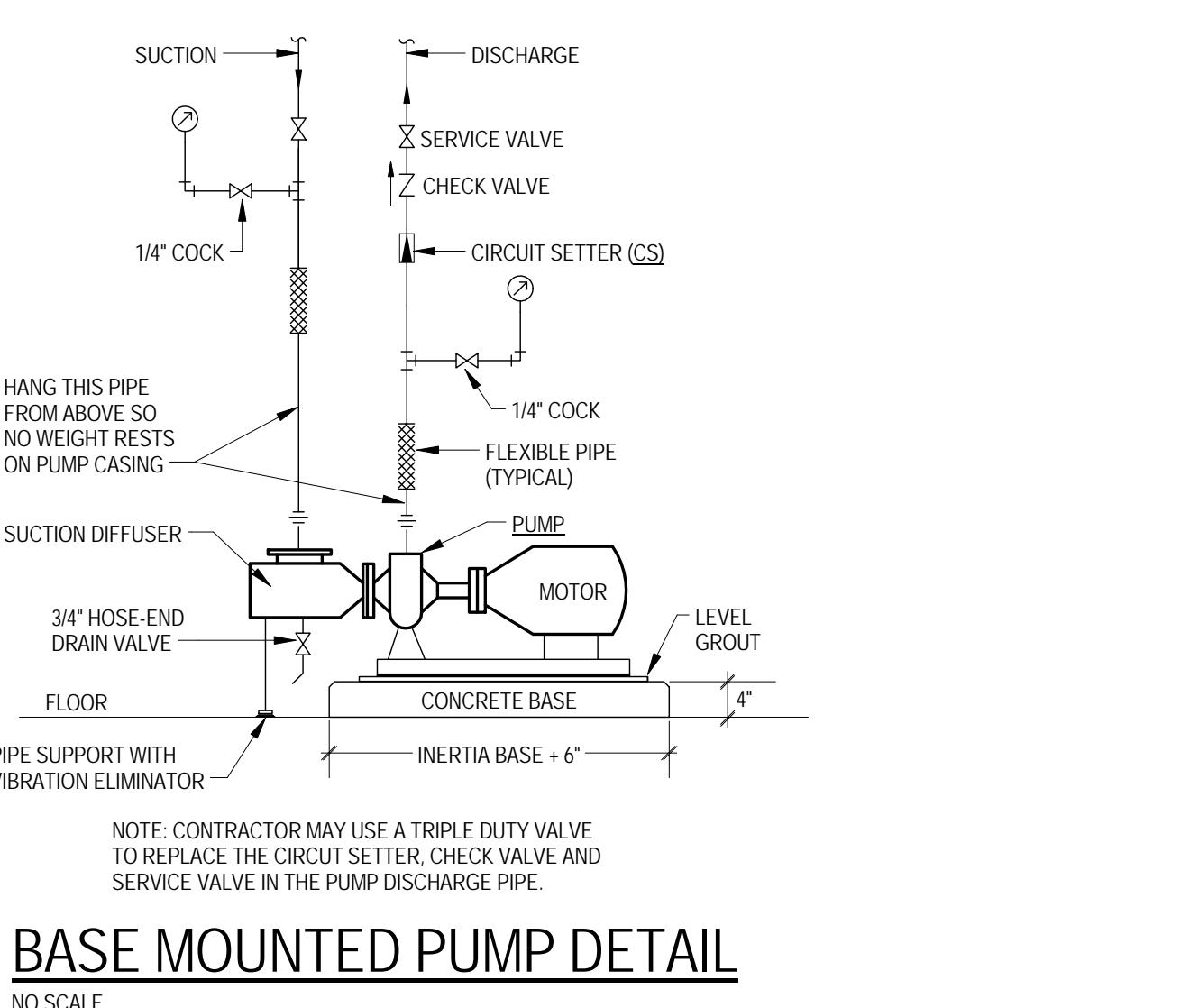
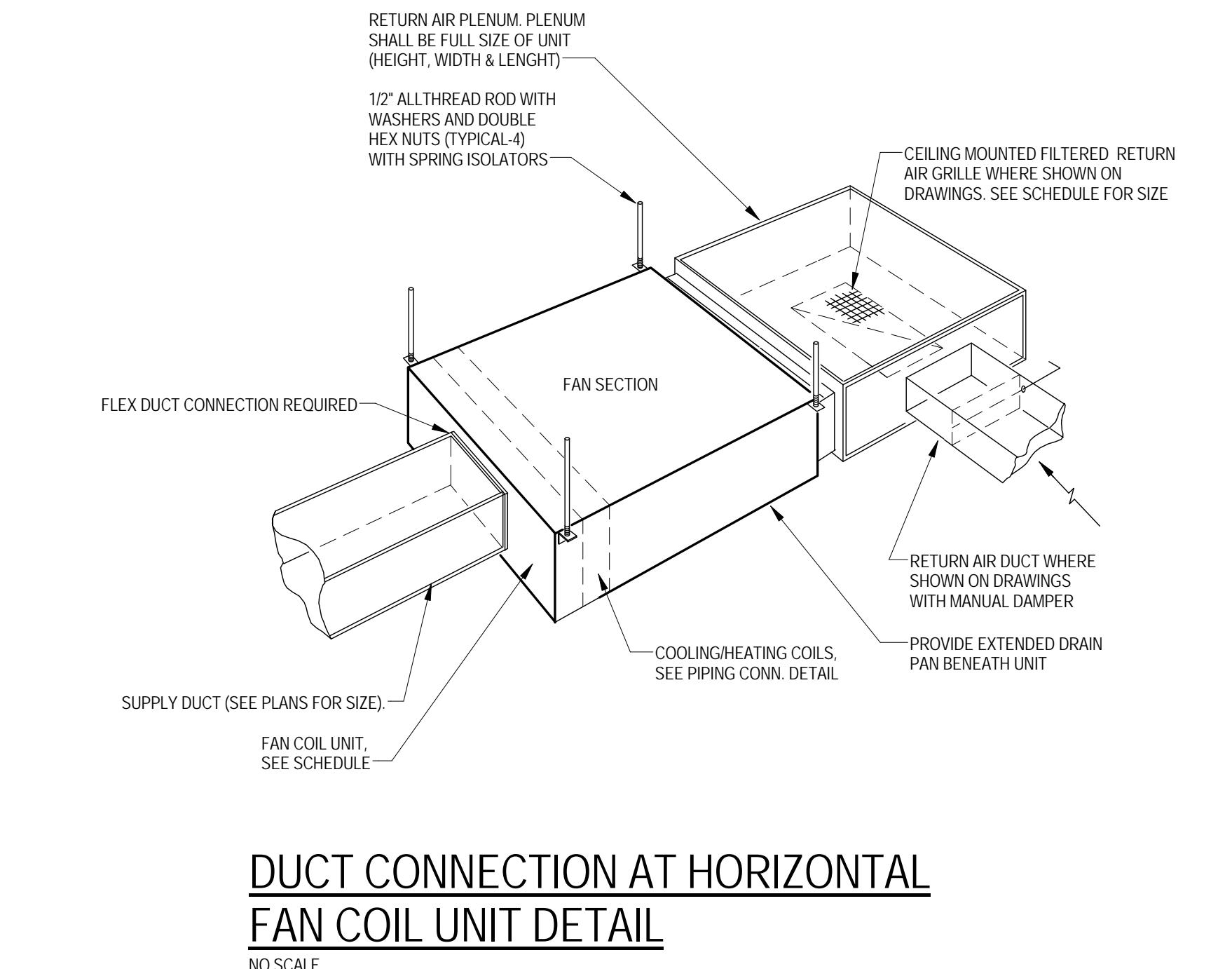
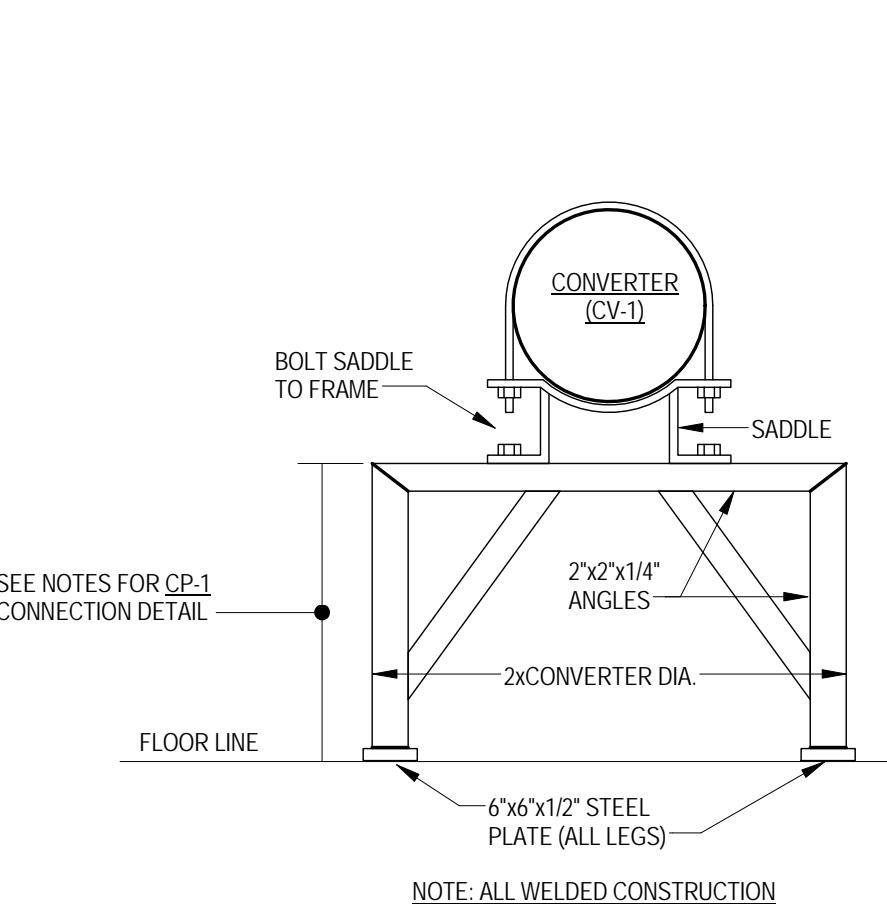
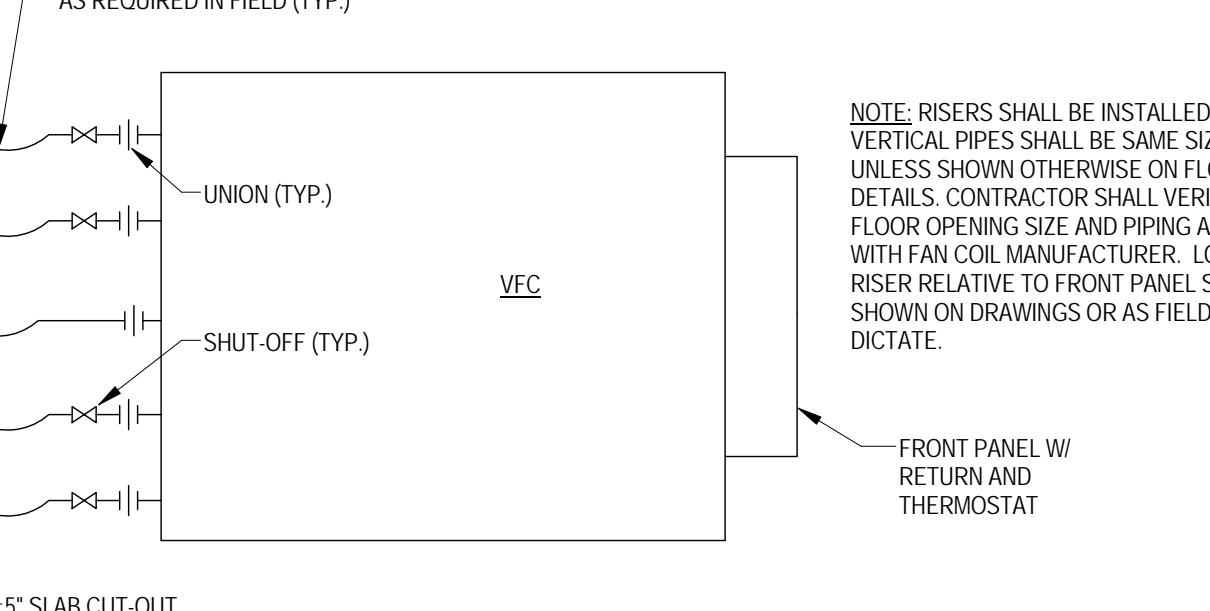
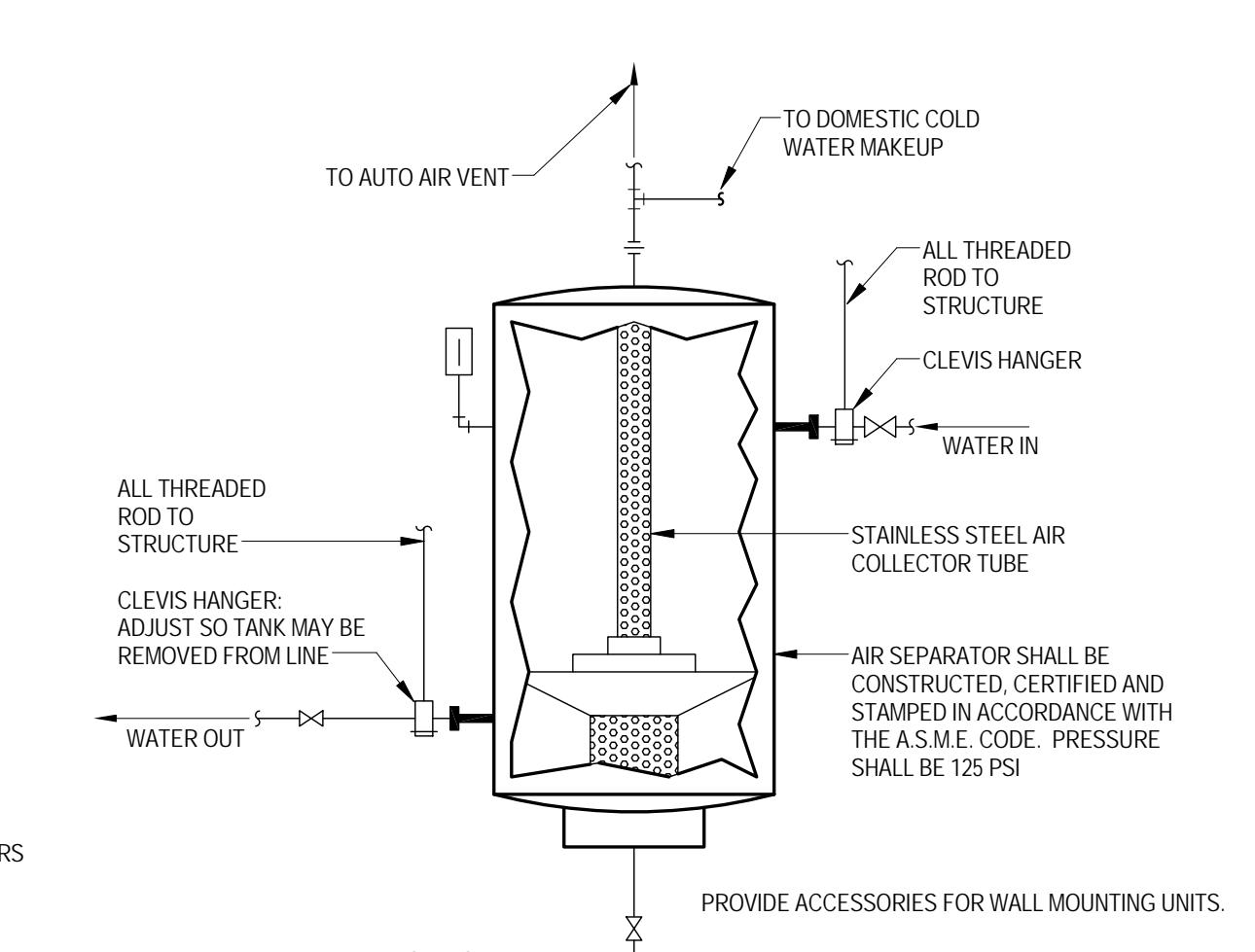
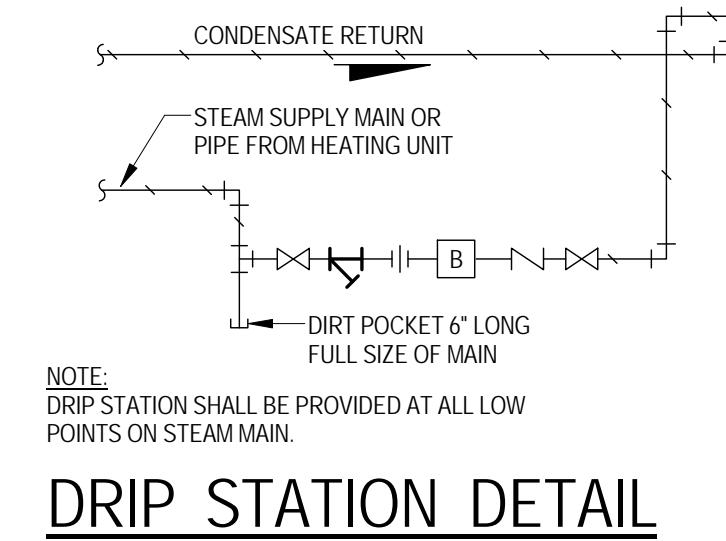
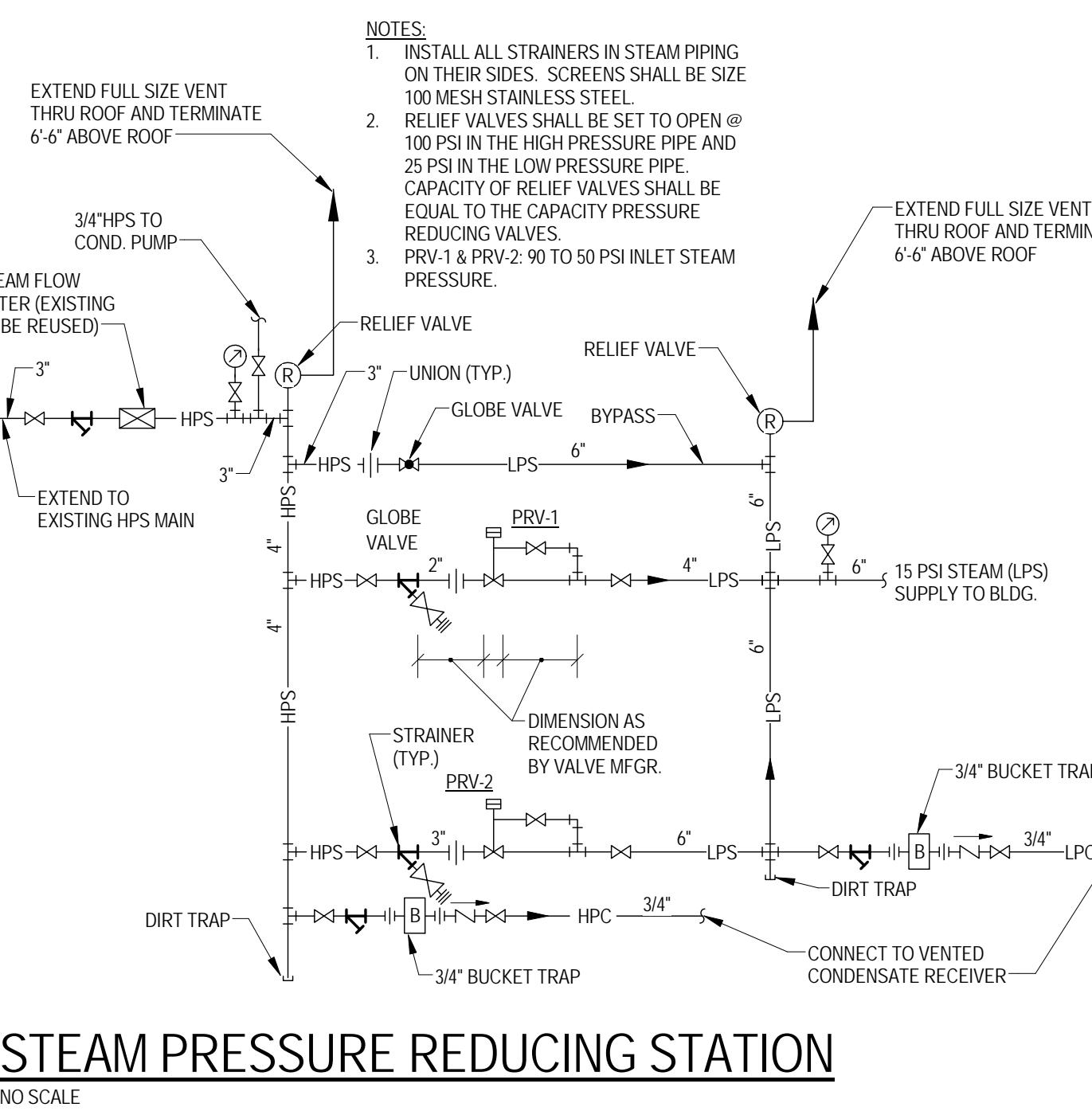
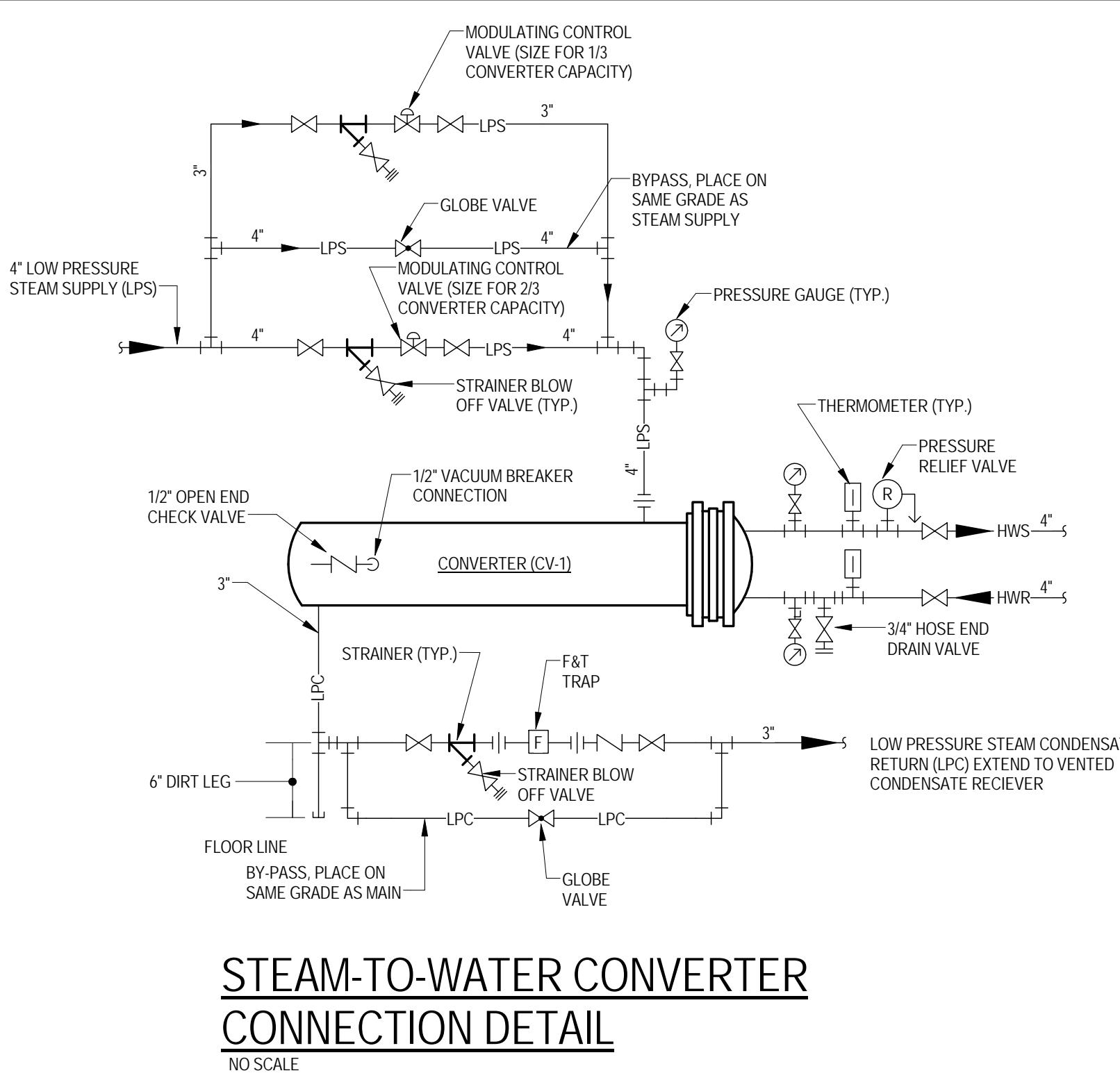
GRAPHIC SCALE
0 1 2 3 4
3/8"-1'-0"

M302P



RADFORD UNIVERSITY

RENOVATION OF THREE RESIDENCE HALLS POCAHONTAS, BOLLING, & DRAPER HALLS

RADFORD UNIVERSITY
RADFORD, VIRGINIAProject Code
VMDO Project Number
217-17565
1115Checked By
RCH
Drawn By
PLH

NOTE: CONTRACTOR MAY USE A TRIPLE DUTY VALVE TO REPLACE THE CIRCUIT SETTER, CHECK VALVE AND SERVICE VALVE IN THE PUMP DISCHARGE PIPE.

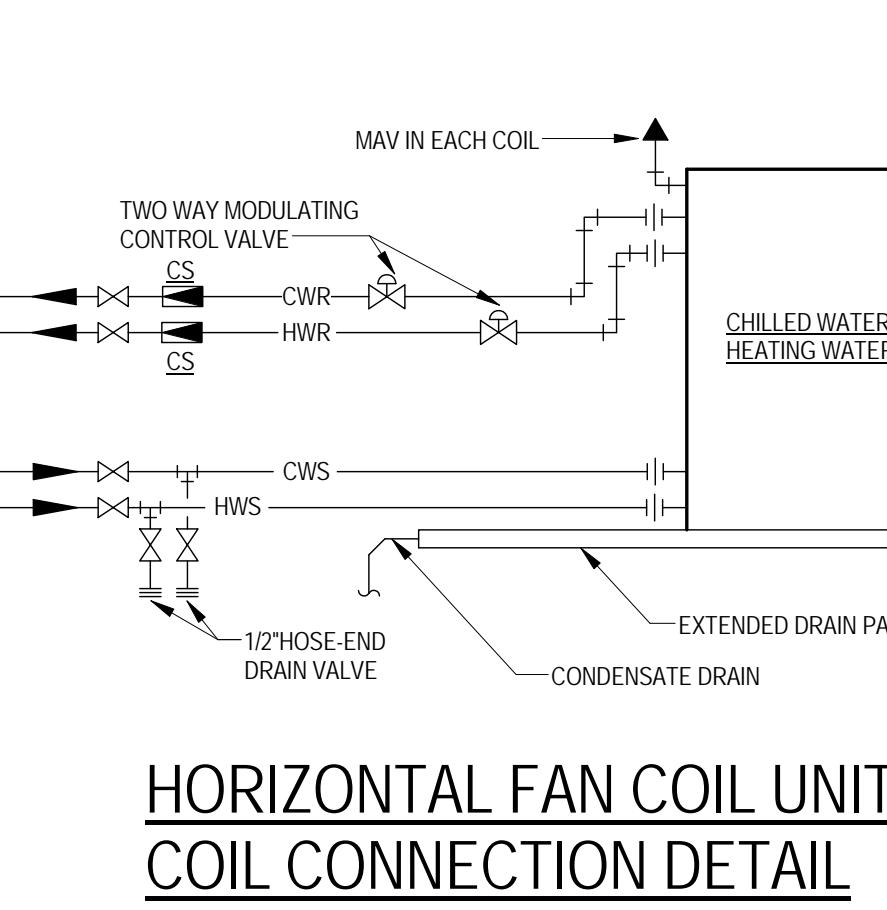
VERTICAL CONSOLE AND VERTICAL CONCEALED FAN COIL UNIT COIL CONNECTION DETAIL

SCHEMATIC

NOTE: ALL VALVES, STRAINERS AND ACCESSORIES SHALL BE PART OF THE PIPING PACKAGE.

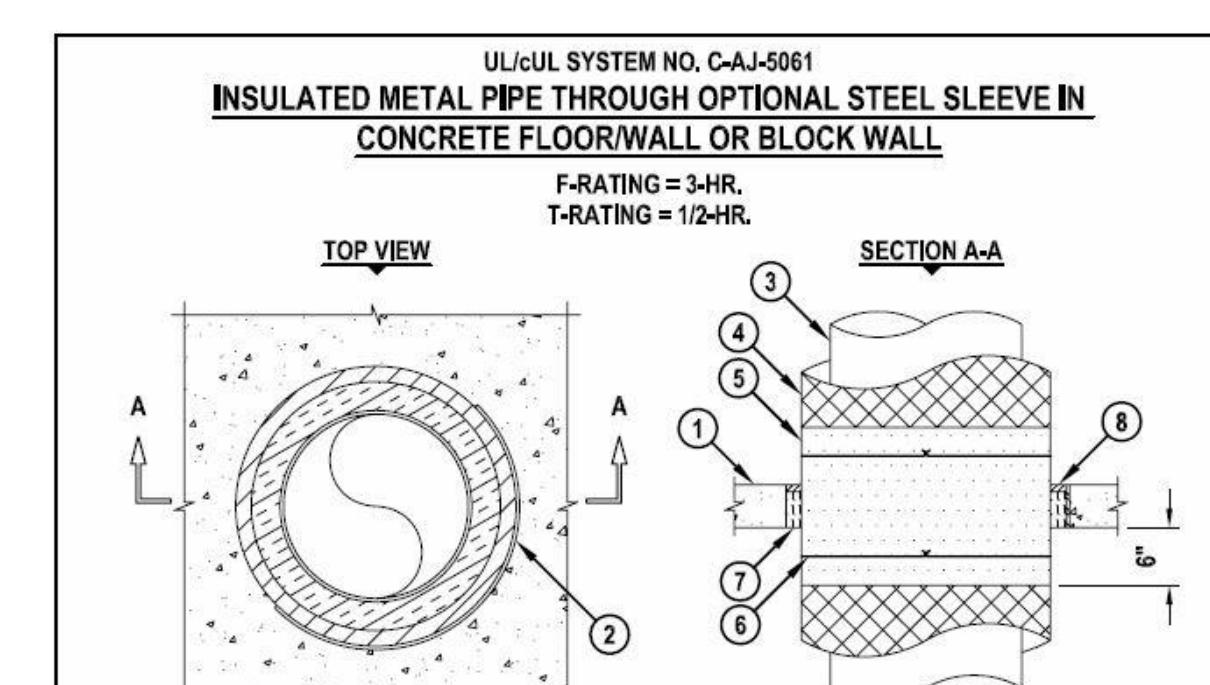
VERTICAL HI-RISE STACK FAN COIL UNIT COIL CONNECTION DETAIL

SCHEMATIC



PIPE SUPPORT ATTACHMENT DETAIL

NO SCALE



1. CONCRETE FLOOR OR WALL ASSEMBLY (3-HR FIRE-RATING):
A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MINIMUM 4-1/2" THICK).
B. ANY ULCL CLASSIFIED CONCRETE BLOCK WALL.
2. [OPTIONAL] MAXIMUM 3" NOMINAL DIAMETER STEEL SLEEVE (SCHEDULE 10 OR HEAVIER).
3. PERMANENT TIE TO BEVELLED FLOOR OR WALL.
A. MAXIMUM 20" DIAMETER CONCRETE SLAB PIPE (SCHEDULE 10 OR HEAVIER).
B. MAXIMUM 6" DIAMETER CAST OR DUCTILE IRON PIPE.
C. MAXIMUM 6" DIAMETER COPPER PIPE OR TUBING.
4. MAXIMUM 3" THICK GLASS-FIBER PIPE INSULATION.
5. MAXIMUM 1/2" THICK INSULATION (MINIMUM 1/2" MIN. 3 POF DENSITY) (SEE NOTE NO. 4 BELOW).
6. MINIMUM 1/2" ANGUS STEEL TIE WIRE LOCATED 3" BEYOND THE SURFACE OF FLOOR OR WALL.
7. MINIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTIPS ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNUAL SPACE (WITH SLEEVE) = MINIMUM 1/4", MAXIMUM 2-1/2".
3. ANNUAL SPACE (WITHOUT SLEEVE) = MINIMUM 1", MAXIMUM 2-1/2".
4. UL CLASSED INSULATION MUST BE 3" POF DENSITY.
5. INSULATION MUST BE SECURED TO THE FLOOR OR WALL.
6. METAL FASTENERS MUST BE SECURED TO THE FLOOR OR WALL.
7. MAXIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTIPS ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNUAL SPACE (WITH SLEEVE) = MINIMUM 1/4", MAXIMUM 2-1/2".
3. ANNUAL SPACE (WITHOUT SLEEVE) = MINIMUM 1", MAXIMUM 2-1/2".
4. UL CLASSED INSULATION MUST BE 3" POF DENSITY.
5. INSULATION MUST BE SECURED TO THE FLOOR OR WALL.
6. METAL FASTENERS MUST BE SECURED TO THE FLOOR OR WALL.
7. MAXIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTIPS ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNUAL SPACE (WITH SLEEVE) = MINIMUM 1/4", MAXIMUM 2-1/2".
3. ANNUAL SPACE (WITHOUT SLEEVE) = MINIMUM 1", MAXIMUM 2-1/2".
4. UL CLASSED INSULATION MUST BE 3" POF DENSITY.
5. INSULATION MUST BE SECURED TO THE FLOOR OR WALL.
6. METAL FASTENERS MUST BE SECURED TO THE FLOOR OR WALL.
7. MAXIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTIPS ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNUAL SPACE (WITH SLEEVE) = MINIMUM 1/4", MAXIMUM 2-1/2".
3. ANNUAL SPACE (WITHOUT SLEEVE) = MINIMUM 1", MAXIMUM 2-1/2".
4. UL CLASSED INSULATION MUST BE 3" POF DENSITY.
5. INSULATION MUST BE SECURED TO THE FLOOR OR WALL.
6. METAL FASTENERS MUST BE SECURED TO THE FLOOR OR WALL.
7. MAXIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTIPS ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNUAL SPACE (WITH SLEEVE) = MINIMUM 1/4", MAXIMUM 2-1/2".
3. ANNUAL SPACE (WITHOUT SLEEVE) = MINIMUM 1", MAXIMUM 2-1/2".
4. UL CLASSED INSULATION MUST BE 3" POF DENSITY.
5. INSULATION MUST BE SECURED TO THE FLOOR OR WALL.
6. METAL FASTENERS MUST BE SECURED TO THE FLOOR OR WALL.
7. MAXIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTIPS ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNUAL SPACE (WITH SLEEVE) = MINIMUM 1/4", MAXIMUM 2-1/2".
3. ANNUAL SPACE (WITHOUT SLEEVE) = MINIMUM 1", MAXIMUM 2-1/2".
4. UL CLASSED INSULATION MUST BE 3" POF DENSITY.
5. INSULATION MUST BE SECURED TO THE FLOOR OR WALL.
6. METAL FASTENERS MUST BE SECURED TO THE FLOOR OR WALL.
7. MAXIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTIPS ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNUAL SPACE (WITH SLEEVE) = MINIMUM 1/4", MAXIMUM 2-1/2".
3. ANNUAL SPACE (WITHOUT SLEEVE) = MINIMUM 1", MAXIMUM 2-1/2".
4. UL CLASSED INSULATION MUST BE 3" POF DENSITY.
5. INSULATION MUST BE SECURED TO THE FLOOR OR WALL.
6. METAL FASTENERS MUST BE SECURED TO THE FLOOR OR WALL.
7. MAXIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTIPS ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNUAL SPACE (WITH SLEEVE) = MINIMUM 1/4", MAXIMUM 2-1/2".
3. ANNUAL SPACE (WITHOUT SLEEVE) = MINIMUM 1", MAXIMUM 2-1/2".
4. UL CLASSED INSULATION MUST BE 3" POF DENSITY.
5. INSULATION MUST BE SECURED TO THE FLOOR OR WALL.
6. METAL FASTENERS MUST BE SECURED TO THE FLOOR OR WALL.
7. MAXIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTIPS ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNUAL SPACE (WITH SLEEVE) = MINIMUM 1/4", MAXIMUM 2-1/2".
3. ANNUAL SPACE (WITHOUT SLEEVE) = MINIMUM 1", MAXIMUM 2-1/2".
4. UL CLASSED INSULATION MUST BE 3" POF DENSITY.
5. INSULATION MUST BE SECURED TO THE FLOOR OR WALL.
6. METAL FASTENERS MUST BE SECURED TO THE FLOOR OR WALL.
7. MAXIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTIPS ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNUAL SPACE (WITH SLEEVE) = MINIMUM 1/4", MAXIMUM 2-1/2".
3. ANNUAL SPACE (WITHOUT SLEEVE) = MINIMUM 1", MAXIMUM 2-1/2".
4. UL CLASSED INSULATION MUST BE 3" POF DENSITY.
5. INSULATION MUST BE SECURED TO THE FLOOR OR WALL.
6. METAL FASTENERS MUST BE SECURED TO THE FLOOR OR WALL.
7. MAXIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTIPS ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNUAL SPACE (WITH SLEEVE) = MINIMUM 1/4", MAXIMUM 2-1/2".
3. ANNUAL SPACE (WITHOUT SLEEVE) = MINIMUM 1", MAXIMUM 2-1/2".
4. UL CLASSED INSULATION MUST BE 3" POF DENSITY.
5. INSULATION MUST BE SECURED TO THE FLOOR OR WALL.
6. METAL FASTENERS MUST BE SECURED TO THE FLOOR OR WALL.
7. MAXIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTIPS ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNUAL SPACE (WITH SLEEVE) = MINIMUM 1/4", MAXIMUM 2-1/2".
3. ANNUAL SPACE (WITHOUT SLEEVE) = MINIMUM 1", MAXIMUM 2-1/2".
4. UL CLASSED INSULATION MUST BE 3" POF DENSITY.
5. INSULATION MUST BE SECURED TO THE FLOOR OR WALL.
6. METAL FASTENERS MUST BE SECURED TO THE FLOOR OR WALL.
7. MAXIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTIPS ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNUAL SPACE (WITH SLEEVE) = MINIMUM 1/4", MAXIMUM 2-1/2".
3. ANNUAL SPACE (WITHOUT SLEEVE) = MINIMUM 1", MAXIMUM 2-1/2".
4. UL CLASSED INSULATION MUST BE 3" POF DENSITY.
5. INSULATION MUST BE SECURED TO THE FLOOR OR WALL.
6. METAL FASTENERS MUST BE SECURED TO THE FLOOR OR WALL.
7. MAXIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTIPS ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNUAL SPACE (WITH SLEEVE) = MINIMUM 1/4", MAXIMUM 2-1/2".
3. ANNUAL SPACE (WITHOUT SLEEVE) = MINIMUM 1", MAXIMUM 2-1/2".
4. UL CLASSED INSULATION MUST BE 3" POF DENSITY.
5. INSULATION MUST BE SECURED TO THE FLOOR OR WALL.
6. METAL FASTENERS MUST BE SECURED TO THE FLOOR OR WALL.
7. MAXIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTIPS ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNUAL SPACE (WITH SLEEVE) = MINIMUM 1/4", MAXIMUM 2-1/2".
3. ANNUAL SPACE (WITHOUT SLEEVE) = MINIMUM 1", MAXIMUM 2-1/2".
4. UL CLASSED INSULATION MUST BE 3" POF DENSITY.
5. INSULATION MUST BE SECURED TO THE FLOOR OR WALL.
6. METAL FASTENERS MUST BE SECURED TO THE FLOOR OR WALL.
7. MAXIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTIPS ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNUAL SPACE (WITH SLEEVE) = MINIMUM 1/4", MAXIMUM 2-1/2".
3. ANNUAL SPACE (WITHOUT SLEEVE) = MINIMUM 1", MAXIMUM 2-1/2".
4. UL CLASSED INSULATION MUST BE 3" POF DENSITY.
5. INSULATION MUST BE SECURED TO THE FLOOR OR WALL.
6. METAL FASTENERS MUST BE SECURED TO THE FLOOR OR WALL.
7. MAXIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTIPS ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNUAL SPACE (WITH SLEEVE) = MINIMUM 1/4", MAXIMUM 2-1/2".
3. ANNUAL SPACE (WITHOUT SLEEVE) = MINIMUM 1", MAXIMUM 2-1/2".
4. UL CLASSED INSULATION MUST BE 3" POF DENSITY.
5. INSULATION MUST BE SECURED TO THE FLOOR OR WALL.
6. METAL FASTENERS MUST BE SECURED TO THE FLOOR OR WALL.
7. MAXIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTIPS ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNUAL SPACE (WITH SLEEVE) = MINIMUM 1/4", MAXIMUM 2-1/2".
3. ANNUAL SPACE (WITHOUT SLEEVE) = MINIMUM 1", MAXIMUM 2-1/2".
4. UL CLASSED INSULATION MUST BE 3" POF DENSITY.
5. INSULATION MUST BE SECURED TO THE FLOOR OR WALL.
6. METAL FASTENERS MUST BE SECURED TO THE FLOOR OR WALL.
7. MAXIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTIPS ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

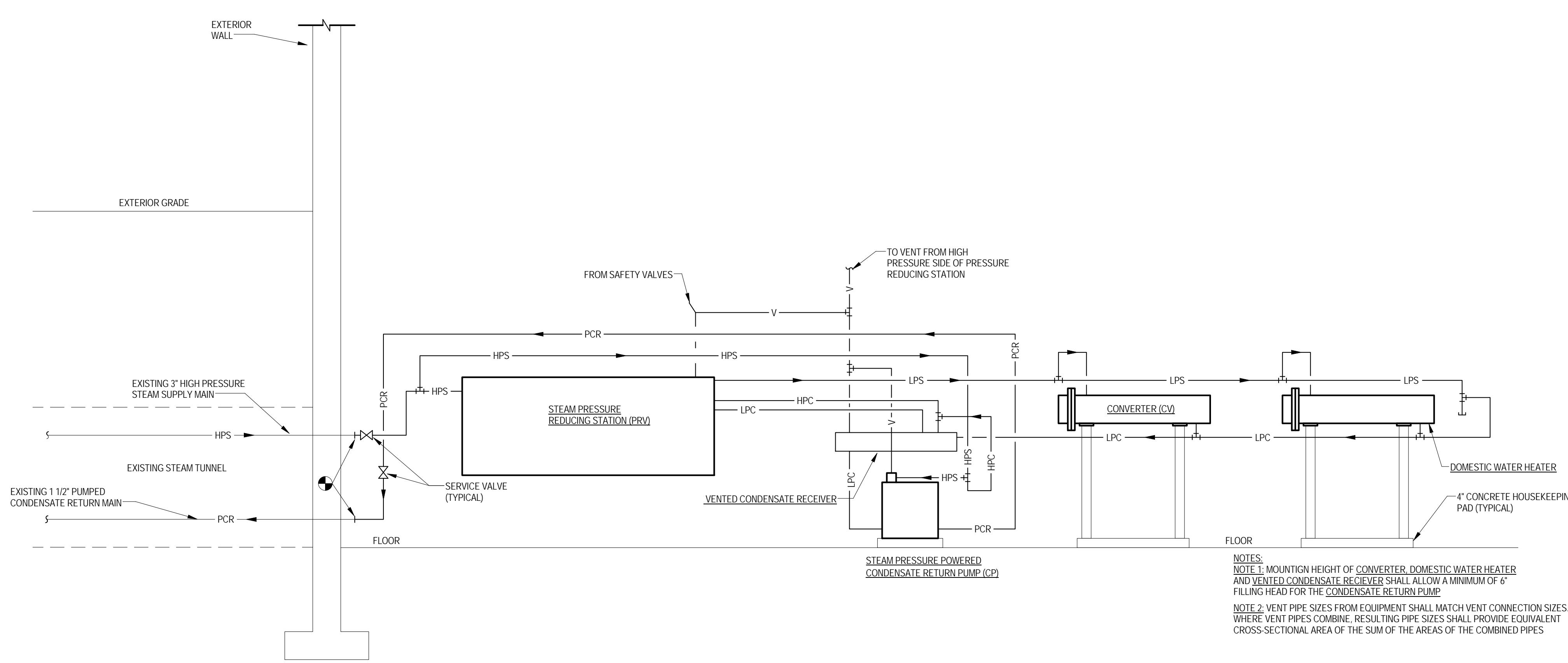
NOTES: 1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNUAL SPACE (WITH SLEEVE) = MINIMUM 1/4", MAXIMUM 2-1/2".
3. ANNUAL SPACE (WITHOUT SLEEVE) = MINIMUM 1", MAXIMUM 2-1/2".
4. UL CLASSED INSULATION MUST BE 3" POF DENSITY.
5. INSULATION MUST BE SECURED TO THE FLOOR OR WALL.
6. METAL FASTENERS MUST BE SECURED TO THE FLOOR OR WALL.
7. MAXIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTIPS ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNUAL SPACE (WITH SLEEVE) = MINIMUM 1/4", MAXIMUM 2-1/2".
3. ANNUAL SPACE (WITHOUT SLEEVE) = MINIMUM 1", MAXIMUM 2-1/2".
4. UL CLASSED INSULATION MUST BE 3" POF DENSITY.
5. INSULATION MUST BE SECURED TO THE FLOOR OR WALL.
6. METAL FASTENERS MUST BE SECURED TO THE FLOOR OR WALL.
7. MAXIMUM 3" THICK MINERAL WOOL (MIN. 3 POF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3



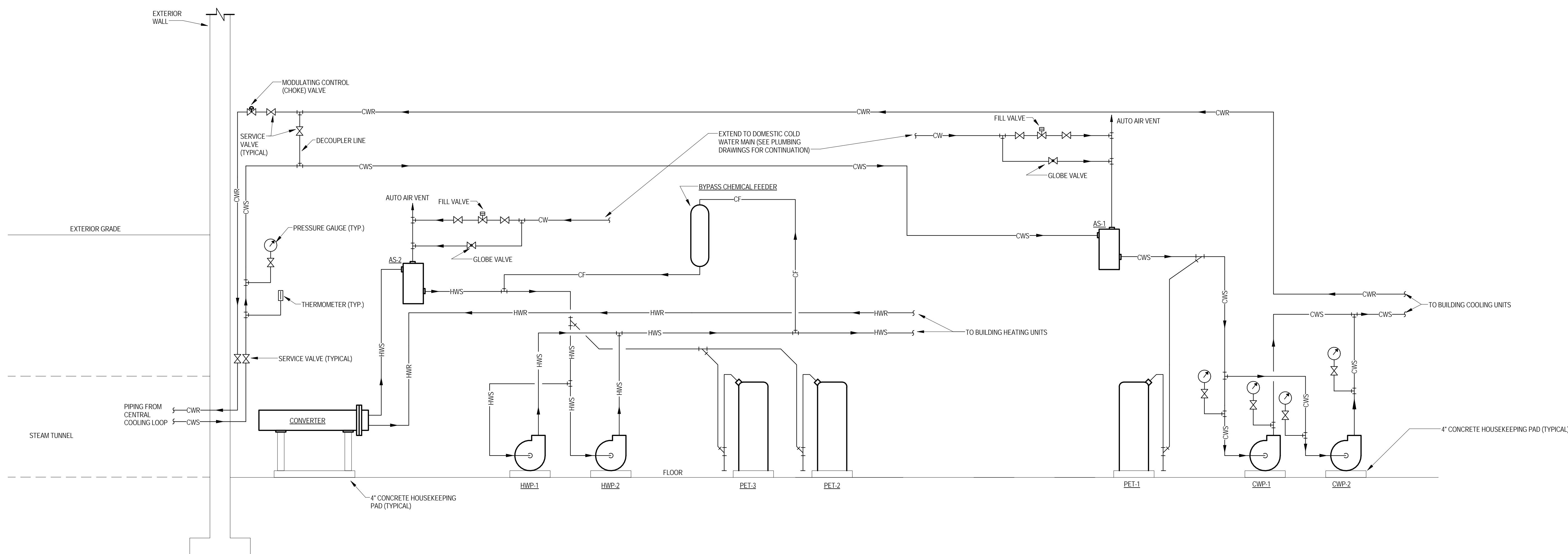
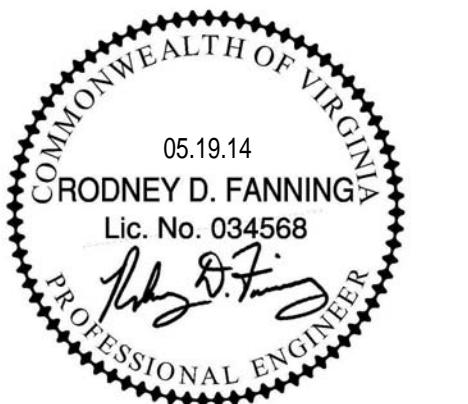
RENOVATION OF THREE
RESIDENCE HALLS
POCAHONTAS, BOLLING, &
DRAPER HALLS
RADFORD UNIVERSITY
RADFORD, VIRGINIA

217-17565
1115



STEAM SUPPLY AND STEAM CONDENSATE RETURN SCHEMATIC FLOW DIAGRAM

(PROVIDE ALL VALVES AND PIPING SPECIALTIES SHOWN ON THIS DIAGRAM. SEE DETAIL SHEETS FOR ADDITIONAL VALVES AND PIPING SPECIALTIES REQUIRED.)



CHILLED WATER AND HEATING WATER SCHEMATIC FLOW DIAGRAM

(PROVIDE ALL VALVES AND PIPING SPECIALTIES SHOWN ON THIS DIAGRAM. SEE DETAIL SHEETS FOR ADDITIONAL VALVES AND PIPING SPECIALTIES REQUIRED.)

Checked By RCH
Drawn By PLH

ISSUES AND REVISIONS
NO. SUBMITTAL
5 BID DOCUMENTS
DATE
05.19.14

HVAC PIPING SCHEMATIC
FLOW DIAGRAMS

M501

