

FCA-REPLACE MIXING BOXES, BLDG. 15

PROJECT NUMBER
539-09-109

DEPARTMENT OF VETERANS AFFAIRS MEDICAL CENTER CINCINNATI, OHIO

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BID DOCUMENTS

BID SET Revisions:	7-20-12	CONSULTANTS:		ENGINEER: STAN Engineers	Drawing Title TITLE SHEET	Project Title FCA-Replace Mixing Boxes, Bldg. 15	Project Number 539-09-109	Office of Construction and Facilities Management
	Date			SA JOB #574 7887 Washington Village Drive Dayton, Ohio 45459 phone: 937 438-0177 fax: 937 438-0183 copyright 2009 All rights reserved	Approved: Project Director	Location Cincinnati, Ohio	Building Number Bldg. 15	

ASBESTOS ABATEMENT NOTES:



INDICATES APPROXIMATE LOCATIONS OF ASBESTOS-CONTAINING FIRE PROOFING TO BE REMOVED (ON STRUCTURAL BEAMS INCLUDING, BUT NOT LIMITED TO, OVERSPRAY ON CEILING DECKS, HVAC COMPONENTS, ELECTRICAL COMPONENTS, ETC., CEILING TILES, FIBERGLASS DUCT INSULATION, FIBERGLASS PIPE INSULATION AND FIBERGLASS FLEX DUCT).

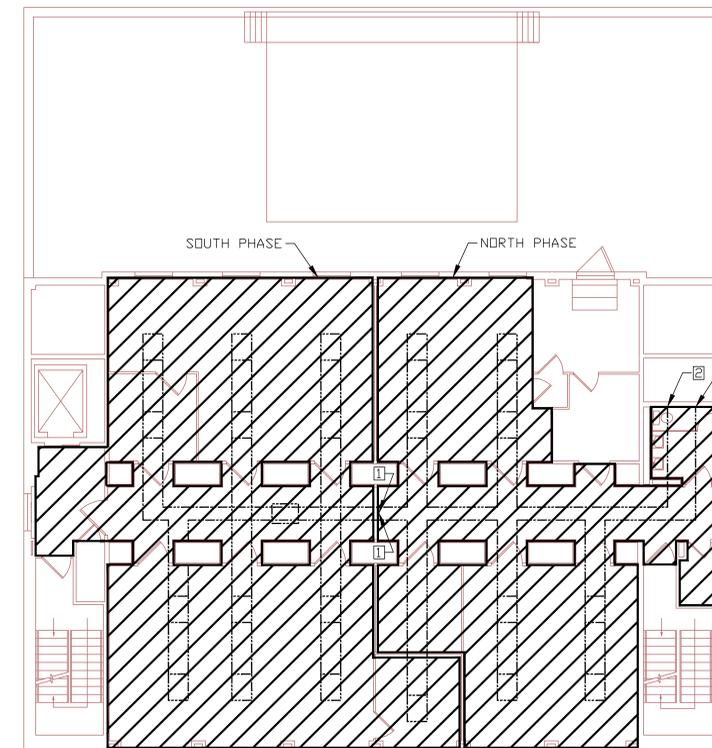
THE CELLULOSE-BASED CEILING TILES AND FIBERGLASS PIPE INSULATION ARE ASBESTOS-CONTAMINATED AND MUST BE WETTED AND REMOVED WITHIN THE REGULATED NEGATIVE PRESSURE CONTAINMENT AND PROPERLY DISPOSED AS ASBESTOS WASTE.

METAL CEILING TILE GRID AND DIFFUSERS SHALL BE CLEANED AND DISPOSED/RECYCLED. ITEMS SUCH AS LIGHT FIXTURE, SPEAKERS, ETC. SHALL BE CLEANED, SECURED IN-PLACE, AND TIGHTLY SEALED WITH POLYETHYLENE SHEETING DURING GROSS FIRE PROOFING REMOVAL.

FIREPROOFING IS TO BE ABATED IN TWO PHASES AS NOTED (NORTH PHASE AND SOUTH PHASE). THE SOUTH PHASE IS TO OCCUR FIRST, FOLLOWED BY THE NORTH PHASE AFTER COMPLETION OF MECHANICAL CONTRACTOR'S REINSTALLATION WORK IN THE SOUTH PHASE.

- 1 DURING THE SOUTH PHASE AND AFTER COMPLETION OF WORK AREA SETUP (CRITICAL BARRIERS, NEGATIVE AIR, AND DECONTAMINATION FACILITIES INSTALLED), THE ABATEMENT CONTRACTOR MUST COORDINATE WITH THE BUILDING OWNER AND OR MECHANICAL CONTRACTOR TO ENSURE THAT THE TWO MAIN HVAC SUPPLY DUCTS IN THE CENTRAL HALLWAY ARE TEMPORARILY DEACTIVATED WHILE THEY ARE BEING CAPPED. DURING THIS TEMPORARY DEACTIVATION PERIOD, THE ABATEMENT CONTRACTOR MUST DISCONNECT AND CAP THE TWO MAIN SUPPLY DUCTS IN ACCORDANCE WITH PROJECT SPECIFICATION SECTION 23 31 00 (HVAC DUCTS AND CASING). THIS PROCESS IS NECESSARY TO ALLOW FOR THE HVAC SYSTEM TO BE DEACTIVATED IN THE SOUTH PHASE WORK AREA PRIOR TO COMMENCEMENT OF ABATEMENT ACTIVITIES.
- 2 DURING THE NORTH PHASE, THE HARD HVAC MAIN SUPPLY DUCTS SHALL BE DISCONNECTED BY THE ABATEMENT CONTRACTOR AT THE MAIN CHASE AND TEMPORARY FLEX DUCTS SHALL BE INSTALLED AND EXTENDED BY THE ABATEMENT CONTRACTOR TO THE NEW SOUTH PHASE WORK. A 22" COLD FLEX DUCT SHALL BE EXTENDED TO THE NEW 18" COLD DUCT AND AN 18" HOT FLEX DUCT SHALL BE EXTENDED TO THE NEW 14" HOT DUCT IN THE SOUTH PHASE. THE TEMPORARY FLEX DUCTS SHALL BE INSTALLED AND PROTECTED IN A MANNER TO PREVENT RIPS/TEARS AND WITH ENOUGH SLACK TO ALLOW THEM TO BE MOVED IF NECESSARY TO ALLOW FOR REMOVAL OF THE FIREPROOFING WITHOUT INTERRUPTION OF AIRFLOW TO THE SOUTH PHASE. ALSO SEE SECTION 23 31 00 (HVAC DUCTS AND CASING) FOR CONNECTIONS.

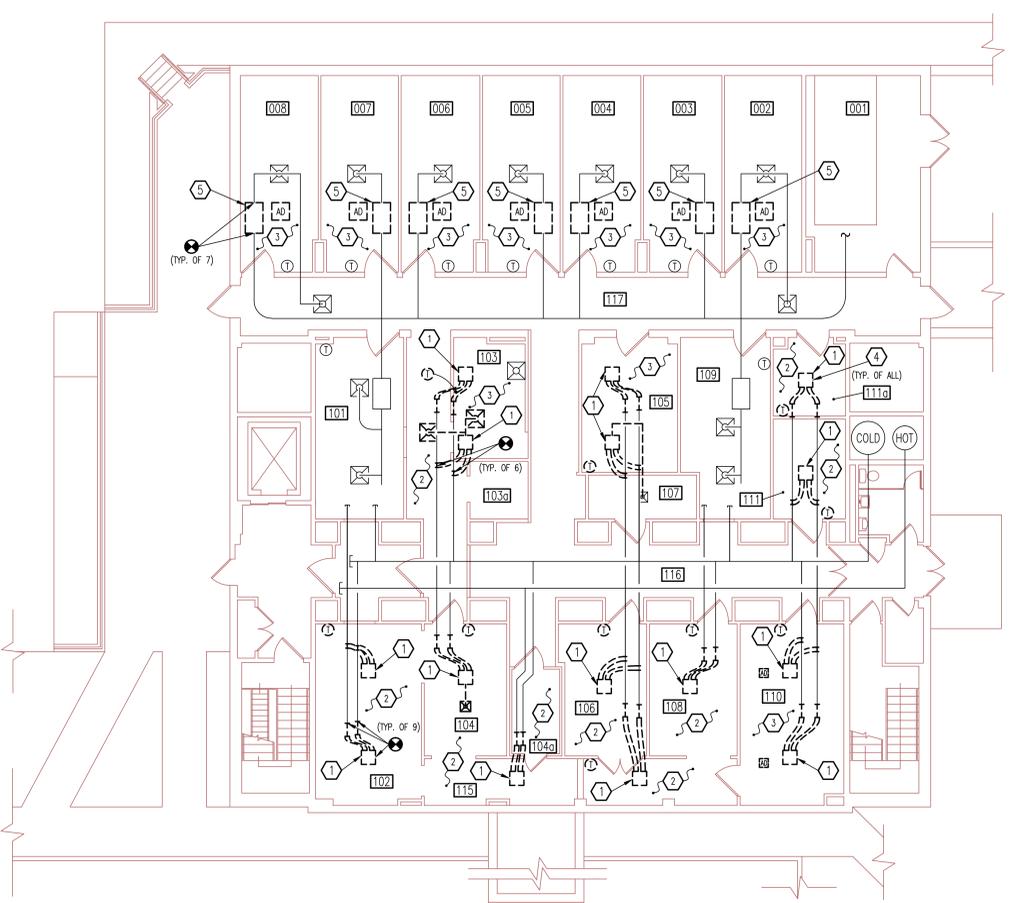
INDICATES APPROXIMATE LOCATIONS OF OVERSPRAY CONTAMINATED HARD AND/OR FLEX DUCTS AND MIXING BOXES TO BE WRAPPED WITH 2 LAYERS OF 6-MIL POLYETHYLENE SHEETING AND CUT FOR REMOVAL AND PROPER DISPOSAL.



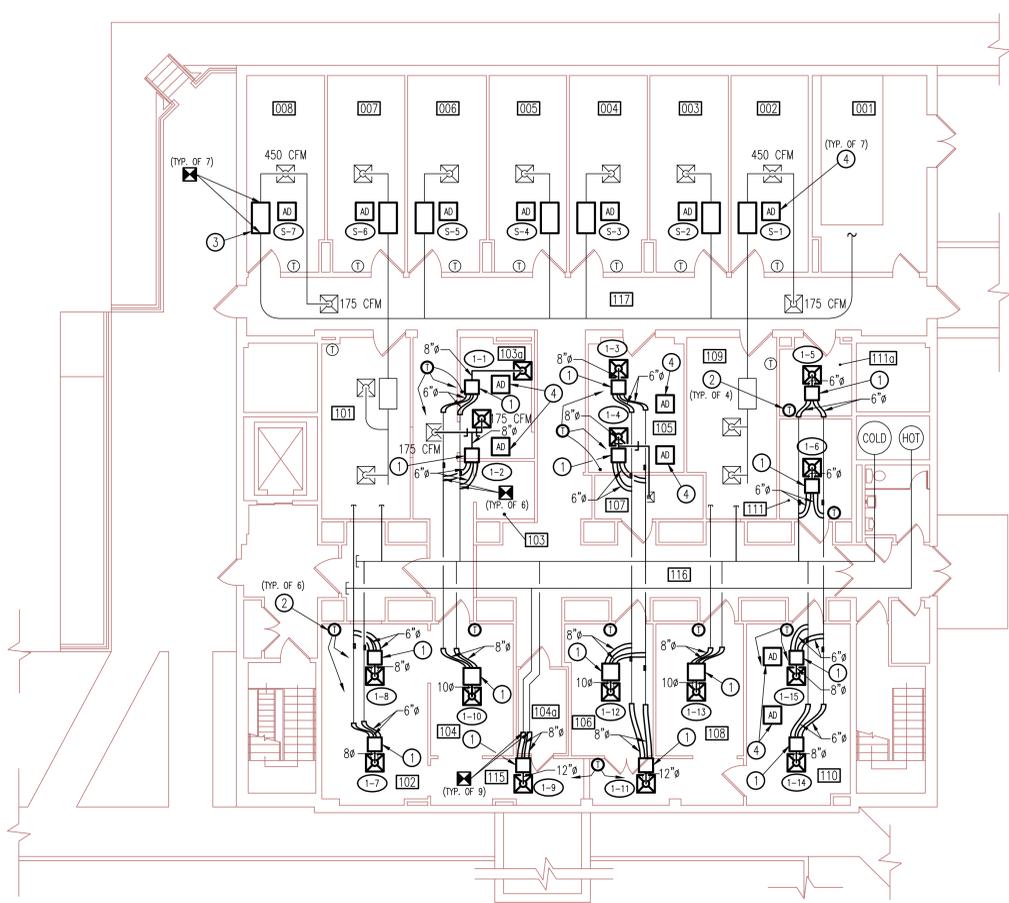
DEMOLITION - BUILDING 15
SECOND FLOOR PLAN
 SCALE: 1/8" = 1'-0"

BID DOCUMENTS

CONSULTANTS:  Consulting Engineers and Scientists 611 LUNKEN PARK DRIVE CINCINNATI, OHIO 45226 PH. (513) 321-5816 FAX. (513) 321-4540				ENGINEER: STAN Engineers SA JOB #574 7887 Washington Village Drive Dayton, Ohio 45459 phone: 937 438-0177 fax: 937 438-0183 copyright 2009 All rights reserved		Drawing Title Partial First Floor Plan - Asbestos Abatement Plan Approved: Project Director		Project Title FCA-Replace Mixing Boxes, Bldg. 15 - - Location Cincinnati, Ohio Date JULY 20, 2012 Checked FJB Drawn MJK		Project Number 539-09-109 Building Number Bldg. 15 Drawing Number A1 Dwg. 2 of 6		Office of Construction and Facilities Management 	
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DEMOLITION - BUILDING 15
FIRST FLOOR PLAN
 SCALE: 1/8" = 1'-0"



NEW WORK - BUILDING 15
FIRST FLOOR PLAN
 SCALE: 1/8" = 1'-0"

LEGEND:

- SYMBOLS**
- ⑤ DEMOLITION PLAN NOTE
 - ③ NEW WORK PLAN NOTE
 - ①-① TERMINAL UNIT IDENTIFICATION
 - ① ROOM THERMOSTAT - 60" A.F.F.
 - ⊕ REMOVE TO THIS POINT
 - ⊕ CONNECT TO EXISTING AT THIS POINT
 - ⊕ SUPPLY AIR DIFFUSER
 - AD ACCESS DOOR
 - XXX ROOM NUMBER

DEMOLITION NOTES:

- ① REMOVE EXISTING DUAL DUCT TERMINAL UNIT, ASSOCIATED DUCTWORK, THERMOSTAT, AND CONTROLS.
- ② REMOVE CEILING TILE AND GRID. REINSTALL SAME AFTER INSTALLATION OF THE NEW UNITS. REPLACE ANY BROKEN CEILING TILES WITH MATCHING TILES.
- ③ REMOVE PORTION OF EXISTING GYPSUM BOARD CEILING AND ACCESS DOOR(S) AS REQUIRED FOR THIS PROJECT. PREPARE REMAINING CEILING TO BE PATCHED AND FINISHED WITH MATCHING MATERIAL.
- ④ EXISTING DIFFUSER LOCATED DIRECTLY BELOW TERMINAL UNIT TO BE REMOVED.
- ⑤ REMOVE EXISTING SINGLE DUCT TERMINAL UNIT, ASSOCIATED DUCTWORK CONNECTIONS AND REHEAT COIL, EXISTING THERMOSTAT, CONTROLS, REHEAT COIL VALVE AND ACTUATORS TO REMAIN.

NEW WORK NOTES:

- ① PROVIDE NEW DUAL DUCT TERMINAL UNIT, ASSOCIATED DUCTWORK AND DIFFUSER. CAP UNUSED BRANCH TAKE-OFFS. SEE TERMINAL UNIT SCHEDULES FOR TYPE AND SIZING. PROVIDE RECTANGULAR-TO-ROUND DUCT ADAPTER FROM NEW TERMINAL UNIT TO SUPPLY DIFFUSER INLET.
- ② PROVIDE NEW THERMOSTAT AND ASSOCIATED CONTROLS FOR NEW TERMINAL UNIT(S). NEW BOX CONTROLS SHALL TIE INTO THE NEW JOHNSON CONTROLS BUILDING ENERGY MANAGEMENT SYSTEM. A PROJECT TO FURNISH AIR HANDLING UNIT CONTROLS IS TO BE COMPLETED UNDER A SEPARATE CONTRACT. CONTROLS CONTRACTOR TO COORDINATE THIS WORK WITH THAT PROJECT.
- ③ PROVIDE NEW SINGLE DUCT TERMINAL UNIT, REHEAT COIL, AND ASSOCIATED CONNECTIONS. SEE TERMINAL UNIT SCHEDULES FOR TYPE AND SIZING. EXISTING CONTROLS, REHEAT VALVE AND ACTUATORS TO REMAIN.
- ④ FURNISH AND INSTALL NEW 24" X 24" ACCESS DOOR TO ALLOW EASY ACCESS TO HOT WATER REHEAT PIPING SIDE OF THE TERMINAL UNIT. PAINT ACCESS DOORS TO MATCH CEILING.

GENERAL NOTES:

1. THE BUILDING WILL BE OCCUPIED THROUGHOUT THE CONSTRUCTION. THE CONTRACTOR WILL ONLY BE ALLOWED TO WORK IN ONE ROOM AT A TIME ON THE FIRST FLOOR TO MINIMIZE DISTURBANCES TO THE ANIMALS AND OCCUPANTS. THE CONTRACTOR SHALL DEVELOP A COMPLETE SCHEDULE OF CONSTRUCTION FOR OWNER APPROVAL BY PRE-CONSTRUCTION MEETING. VA WILL BE GIVEN (2) WEEKS NOTICE PRIOR TO ANY AIR HANDLING UNIT SHUTDOWN.
2. CONTRACTOR SHALL REMOVE LIGHT FIXTURES, ELECTRICAL CONDUIT, FIRE SPRINKLER HEADS OR ANY OTHER SURROUNDING INTERFERENCES FOR THE REMOVAL OF THE TERMINAL UNITS.
3. HANDLE EXISTING PNEUMATIC LINES WITH CAUTION AS THEY ARE OLD AND FRAGILE. ANY PNEUMATIC LINES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN-KIND.
4. CONTRACTOR TO PROVIDE 120V CIRCUIT TO NEW TERMINAL UNIT CONTROL PANELS.
5. TO PROTECT ANIMALS' HEALTH, AHU-31 AND ASSOCIATED TERMINAL UNITS SHOULD NOT FAIL TO FULL HEAT BUT INSTEAD TO FULL COOLING.
6. WORK ON THE FIRST FLOOR REQUIRES THAT THE CONTRACTORS WILL WEAR SPECIAL SUITS (PROVIDED BY THE VA) BEFORE ENTERING THE FLOOR. THE CONTRACTOR NEEDS TO ALLOW TIME EACH DAY FOR THEIR EMPLOYEES TO DON THE PROTECTIVE GEAR.

INFECTION CONTROL NOTES:

1. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING ITEMS DURING ALL PHASES OF CONSTRUCTION:
 - A. DUE TO THE NATURE OF THE RESEARCH BEING DONE IN THIS BUILDING, THE CONTRACTOR SHALL SET UP, AS A DUST CONTROL MEASURE, A NEGATIVE PRESSURE MACHINE IN ROOMS WHERE WORK IS OCCURRING.
 - B. CONTRACTOR SHALL BUILD A CONTAINMENT WALL WITH HEPA FANS TO CONTROL EXFILTRATION WHILE PERFORMING WORK IN ANIMAL ROOMS ASSOCIATED WITH AHU-31.
 - C. PROVIDE ACTIVE MEANS TO PREVENT AIRBORNE DUST FROM DISPERSING INTO ATMOSPHERE.
 - D. WATER MIST WORK SURFACES TO CONTROL DUST WHILE CUTTING.
 - E. SEAL UNUSED DOORS WITH DUCT TAPE.
 - F. BLOCK OFF AND SEAL AIR VENTS.
 - G. PLACE DUST MAT AT ENTRANCE AND EXIT OF WORK AREA.
 - H. REMOVE OR ISOLATE HVAC SYSTEMS IN AREAS WHERE WORK IS BEING PERFORMED.
2. BETWEEN EACH MAJOR PHASE AND UPON COMPLETION OF THE PROJECT THE CONTRACTOR SHALL:
 - A. WIPE WORK SURFACES WITH DISINFECTANT.
 - B. CONTAIN CONSTRUCTION WASTE BEFORE TRANSPORT IN TIGHTLY COVERED CONTAINERS.
 - C. WET MOP AND/OR VACUUM WITH HEPA FILTERED VACUUM BEFORE LEAVING WORK AREA.
 - D. REMOVE ISOLATION OF HVAC SYSTEM IN AREAS WHERE WORK IS BEING PERFORMED.

BID DOCUMENTS

BID SET	7-20-12
Revisions	Date

CONSULTANTS:



ENGINEER:
STAN
 Engineers
 SA JOB #574
 7887 Washington Village Drive
 Dayton, Ohio 45459
 phone: 937 438-0177 fax: 937 438-0183
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Drawing Title
 Partial First Floor Plan - Demolition/New Work
Approved: Project Director

Project Title
 FCA-Replace Mixing Boxes, Bldg. 15
Project Number
 539-09-109
Building Number
 Bldg. 15
Drawing Number
 H1
 Dwg. 3 of 6

Office of Construction and Facilities Management
 Department of Veterans Affairs

SECOND FLOOR PHASING NOTES:

1. THE SOUTH PHASE SHALL BE COMPLETED FIRST. THE ABATEMENT CONTRACTOR SHALL CAP THE DUCT MAINS IN THE CORRIDOR AT THE DIVIDING LINE BETWEEN PHASES SO THAT THE DUCT MAINS IN THE NORTH PHASE WILL REMAIN ACTIVE WHILE THE SOUTH PHASE IS DONE.
2. ABATEMENT WILL BE COMPLETED FOR THE SOUTH PHASE.
3. NEW FIRE PROOFING INSTALLATION WILL BE COMPLETED FOR THE SOUTH PHASE.
4. ALL MECHANICAL AND FINISH WORK WILL BE COMPLETED FOR THE SOUTH PHASE.
5. THE ABATEMENT CONTRACTOR SHALL START THE NORTH PHASE BY CUTTING THE DUCT MAINS AS THEY LEAVE THE CHASE. THE ABATEMENT CONTRACTOR WILL INSTALL TEMPORARY FLEXIBLE DUCT THROUGH THROUGH THE NORTH PHASE AND CONNECT IT TO THE DUCT IN THE SOUTH PHASE SO THAT THE SOUTH PHASE IS PROVIDED WITH AIRFLOW AND CAN BE OCCUPIED WHILE ALL WORK IS COMPLETED IN THE NORTH PHASE.
6. ABATEMENT WILL BE COMPLETED FOR THE NORTH PHASE.
7. NEW FIRE PROOFING WILL BE COMPLETED FOR THE NORTH PHASE.
8. ALL MECHANICAL AND FINISH WORK WILL BE COMPLETED FOR THE NORTH PHASE.
9. TEMPORARY DUCTWORK WILL BE REMOVED AND PERMANENT CONNECTION OF THE NEW DUCT MAINS WILL BE MADE.

INFECTION CONTROL NOTES:

1. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING ITEMS DURING ALL PHASES OF CONSTRUCTION:
 - A. DUE TO THE NATURE OF THE RESEARCH BEING DONE IN THIS BUILDING, THE CONTRACTOR SHALL SET UP, AS A DUST CONTROL MEASURE, A NEGATIVE PRESSURE MACHINE IN ROOMS WHERE WORK IS OCCURRING.
 - B. PROVIDE ACTIVE MEANS TO PREVENT AIRBORNE DUST FROM DISPERSING INTO ATMOSPHERE.
 - C. WATER MIST WORK SURFACES TO CONTROL DUST WHILE CUTTING.
 - D. SEAL UNUSED DOORS WITH DUCT TAPE.
 - E. BLOCK OFF AND SEAL AIR VENTS.
 - F. PLACE DUST MAT AT ENTRANCE AND EXIT OF WORK AREA.
 - G. REMOVE OR ISOLATE HVAC SYSTEMS IN AREAS WHERE WORK IS BEING PERFORMED.
2. BETWEEN EACH MAJOR PHASE AND UPON COMPLETION OF THE PROJECT THE CONTRACTOR SHALL:
 - A. WIPE WORK SURFACES WITH DISINFECTANT.
 - B. CONTAIN CONSTRUCTION WASTE BEFORE TRANSPORT IN TIGHTLY COVERED CONTAINERS.
 - C. WET MOP AND/OR VACUUM WITH HEPA FILTERED VACUUM BEFORE LEAVING WORK AREA.
 - D. REMOVE ISOLATION OF HVAC SYSTEM IN AREAS WHERE WORK IS BEING PERFORMED.

DEMOLITION NOTES:

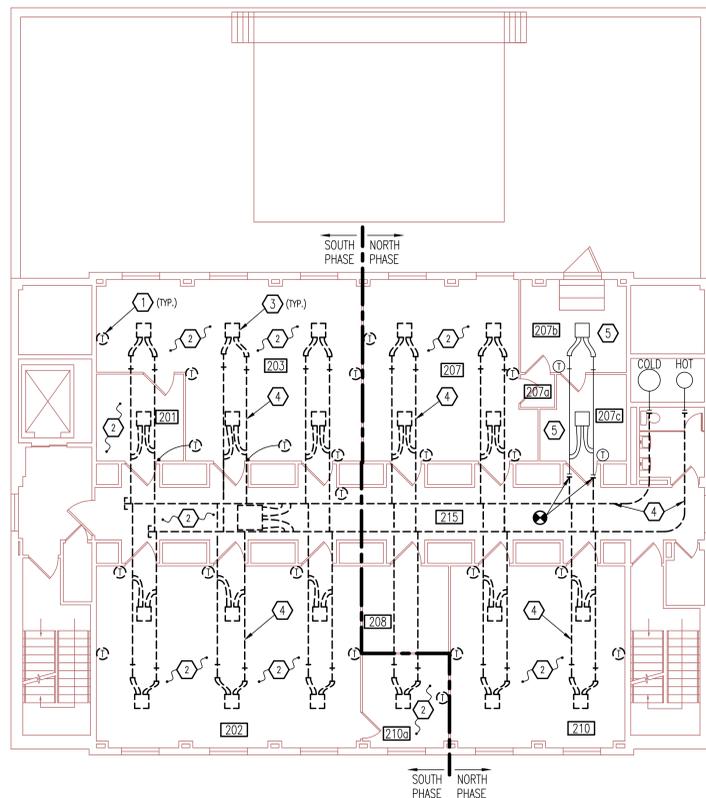
1. REMOVE EXISTING THERMOSTAT AND CONTROLS. SEE EXCEPTION, DEMOLITION NOTE NO. 5.
2. CEILING TILE AND GRID WILL BE REMOVED BY THE ABATEMENT CONTRACTOR PRIOR TO THE MECHANICAL WORK.
3. EXISTING DIFFUSERS AND TERMINAL UNITS WILL BE REMOVED AND DISCARDED BY THE ABATEMENT CONTRACTOR. SEE EXCEPTION, DEMOLITION NOTE NO. 5.
4. ALL DUCT WILL BE REMOVED AND DISCARDED BY THE ABATEMENT CONTRACTOR.
5. AREA UNAFFECTED BY THIS WORK, ALL EQUIPMENT, DUCT, ETC. TO REMAIN AS IS.

NEW WORK NOTES:

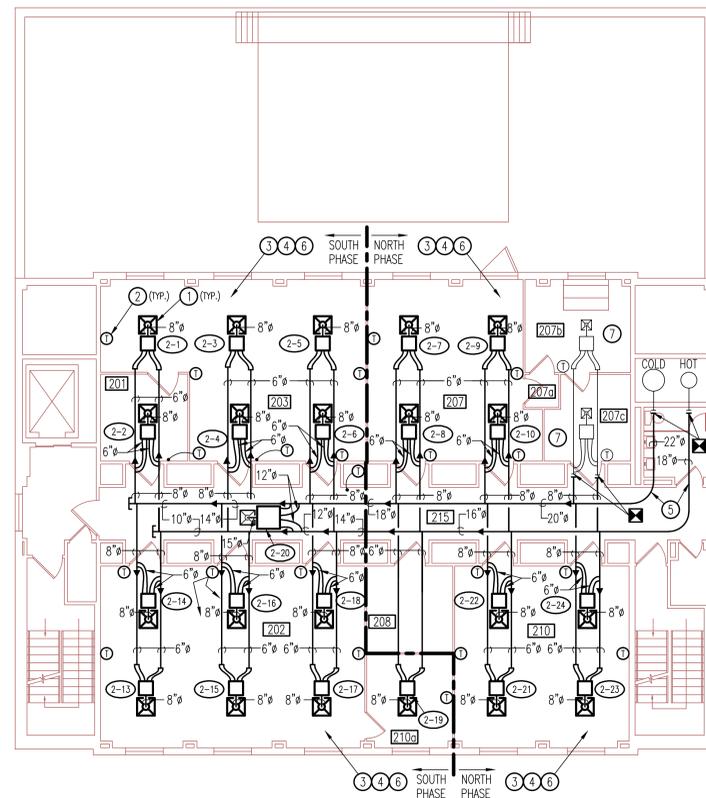
1. PROVIDE NEW DUAL DUCT TERMINAL UNIT, DIFFUSERS AND ASSOCIATED DUCTWORK. CAP UNUSED BRANCH TAKE-OFFS. SEE TERMINAL UNIT SCHEDULES FOR TYPE AND SIZING. PROVIDE RECTANGULAR-TO-ROUND DUCT ADAPTER FROM NEW TERMINAL UNIT TO NEW SUPPLY DIFFUSER INLET. SEE EXCEPTION, NEW WORK NOTE NO. 7.
2. PROVIDE NEW THERMOSTAT AND ASSOCIATED CONTROLS FOR NEW TERMINAL UNIT(S). NEW BOX CONTROLS SHALL TIE INTO THE NEW JOHNSON CONTROLS BUILDING ENERGY MANAGEMENT SYSTEM. A PROJECT TO FURNISH AIR HANDLING UNIT CONTROLS IS TO BE COMPLETED UNDER A SEPARATE CONTRACT. CONTROLS CONTRACTOR TO COORDINATE THIS WORK WITH THAT PROJECT. SEE EXCEPTION, NEW WORK NOTE NO. 7.
3. PROVIDE AND APPLY NEW FIRE PROOFING MATERIAL TO ABOVE CEILING STRUCTURAL BEAMS WHERE IT WAS PREVIOUSLY REMOVED BY THE ABATEMENT CONTRACTOR. PROTECT ALL ABOVE CEILING MECHANICAL, ELECTRICAL, PLUMBING SERVICES AND EQUIPMENT FROM OVERSPRAY.
4. PROVIDE NEW CEILING GRID AND PADS AT SAME ELEVATION AS EXISTING. THE CONTRACTOR SHALL NOTE THE EXISTING GRID PATTERN AND ELEVATION PRIOR TO DEMOLITION AND SHALL INSTALL NEW GRID AND PADS TO MATCH EXISTING. THIS CONTRACTOR SHALL REINSTALL ALL LIGHTS, SPEAKERS, FIRE ALARM DEVICES AND OTHER ACCESSORIES THAT WERE REMOVED DURING THE ABATEMENT. THE NEW PADS SHALL MATCH EXISTING AND BE 2 X 2 X 15/16" SQUARE LAY-IN TYPE WITH MEDIUM TEXTURE, WET FORMED MINERAL FIBER WITH FACTORY APPLIED WHITE LATEX PAINT FINISH. THEY SHALL HAVE AN ACOUSTICS NRC RATING OF 0.55, CAC OF 33, CLASS A FIRE RATING, 0.82 LIGHT REFLECTANCE AND SHALL CONFORM WITH ASTM E84 AND ASTM E1264. THE EXISTING PADS ARE ARMSTRONG, CORTEGA MINABOARD NO. 770 NON-DIRECTIONAL WITH A WHITE 2 X 2 X 5/8" GRID OR APPROVED EQUAL.
5. PROVIDE NEW DUCT AFTER ABATEMENT. SIZES AS SHOWN. DUCT MAINS SHALL BE 6" PRESSURE CLASS. PROVIDE NEW BRANCH TAKEOFFS AND CONNECT TO MAINS.
6. DUCT AND PIPE INSULATION WILL HAVE BEEN REMOVED DUE TO ASBESTOS ABATEMENT WORK ON THIS FLOOR. THIS CONTRACTOR SHALL PROVIDE NEW DUCT AND PIPE INSULATION IN ALL AREAS OF ABATEMENT. DUCTWORK TO BE INSULATED IS SHOWN. HOT WATER PIPING TO BE INSULATED INCLUDES APPROXIMATELY 550 FT. OF 3/4".
7. AREA UNAFFECTED BY THIS WORK, ALL EQUIPMENT, DUCT, ETC. TO REMAIN AS IS.

GENERAL NOTES:

1. THE BUILDING WILL BE OCCUPIED THROUGHOUT THE CONSTRUCTION. THE CONTRACTOR WILL DIVIDE THE SECOND FLOOR INTO TWO PHASES AS SHOWN. THE CONTRACTOR SHALL DEVELOP A COMPLETE SCHEDULE OF CONSTRUCTION FOR OWNER APPROVAL BY PRE-CONSTRUCTION MEETING. VA WILL BE GIVEN (2) WEEKS NOTICE PRIOR TO ANY AIR HANDLING UNIT SHUTDOWN. THE SECOND FLOOR REQUIRES ASBESTOS ABATEMENT. THE MECHANICAL CONTRACTOR SHALL ACT AS THE LEAD CONTRACTOR AND SHALL COORDINATE ALL ASBESTOS CONTRACTOR ACTIVITY WITH THEIR OWN. WORK SHALL BE COMPLETED IN ONE PHASE BEFORE ANY WORK WILL BE ALLOWED IN THE OTHER.
2. CONTRACTOR SHALL REMOVE LIGHT FIXTURES, ELECTRICAL CONDUIT, FIRE SPRINKLER HEADS OR ANY OTHER SURROUNDING INTERFERENCES FOR THE REMOVAL OF THE TERMINAL UNITS.
3. HANDLE EXISTING PNEUMATIC LINES WITH CAUTION AS THEY ARE OLD AND FRAGILE. ANY PNEUMATIC LINES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN-KIND.
4. CONTRACTOR TO PROVIDE 120V CIRCUIT TO NEW TERMINAL UNIT CONTROL PANELS.



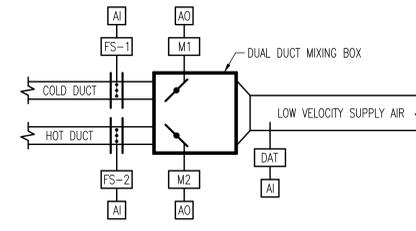
**DEMOLITION - BUILDING 15
SECOND FLOOR PLAN**
SCALE: 1/8" = 1'-0"



**NEW WORK - BUILDING 15
SECOND FLOOR PLAN**
SCALE: 1/8" = 1'-0"

BID DOCUMENTS

<p>CONSULTANTS:</p>			<p>ENGINEER:</p> <p>STAN Engineers</p> <p>SA JOB #574 7887 Washington Village Drive Dayton, Ohio 45459 phone: 937 438-0177 fax: 937 438-0183 copyright 2009 All rights reserved</p>		<p>Drawing Title Partial Second Floor Plan - Demolition/New Work</p>		<p>Project Title FCA-Replace Mixing Boxes, Bldg. 15</p>		<p>Project Number 539-09-109</p>		<p>Office of Construction and Facilities Management</p>
<p>BID SET Revisions</p>			<p>Approved: Project Director</p>		<p>Location Cincinnati, Ohio</p>		<p>Building Number Bldg. 15</p>		<p>Drawing Number H2</p>		
<p>7-20-12 Date</p>				<p>Date JULY 20, 2012</p>		<p>Checked FJB</p>		<p>Drawn MJK</p>		<p>Dwg. 4 of 6</p>	



AI - T ROOM THERMOSTAT AT 60" AFF.
DI - OC OCCUPANCY SENSOR AT 60" AFF. (FUTURE)

DUAL DUCT DIGITAL MIXING BOX CONTROL
N.T.S.

SEQUENCE OF OPERATION

CONSTANT VOLUME MIXING BOXES - DUAL DUCT

- A. OCCUPIED MODE:
1. A VOLUME CONTROLLER SHALL CONTROL FOR A CONSTANT CONSTANT TOTAL AIRFLOW VOLUME SETPOINT. ALL AIRFLOW VALUES SHALL BE SET AS INDICATED ON THE SCHEDULES.
 2. THE SPACE SHALL BE CONTROLLED FOR THE OCCUPIED TEMPERATURE SETPOINTS.
 3. FOR SPACES SERVED BY MULTIPLE BOXES AND MORE THAN ONE TEMPERATURE SENSOR IN THOSE SPACES, THE TEMPERATURE OF THE SENSORS SHALL BE AVERAGED AND THAT AVERAGE TEMPERATURE SHALL BE USED TO CONTROL ALL BOXES TOGETHER.
 4. AS THE SPACE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING SETPOINT, 75° F TO 78° F (ADJ.), THE UNIT SHALL DERIVE A GREATER AMOUNT OF ITS TOTAL AIRFLOW FROM THE COLD AIR SUPPLY, AND A PROPORTIONALLY LESSER AMOUNT OF IT'S TOTAL AIRFLOW FROM THE HOT AIR SUPPLY.
 5. AS THE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING SETPOINT, 70° F - 78° F (ADJ.), THE UNIT SHALL DERIVE A GREATER AMOUNT OF IT'S AIRFLOW FROM THE HOT AIR SUPPLY, AND A PROPORTIONALLY LESSER AMOUNT OF IT'S TOTAL AIRFLOW FROM THE COLD AIR SUPPLY.
- B. UNOCCUPIED MODE:
- UNDER THIS PROJECT, THE FOLLOWING UNOCCUPIED MODE SHALL BE PROGRAMMED AND TESTED. HOWEVER, THE BOXES SHALL ALL BE SET TO OCCUPIED MODE 24 HOURS PER DAY UNTIL A FUTURE PROJECT IS UNDERTAKEN THAT WILL ALLOW THE BUILDING EXHAUST AND SUPPLY VOLUME TO BE REDUCED TOGETHER TO ACCOUNT FOR AN UNOCCUPIED MODE.
1. THE UNIT SHALL BE CONTROLLED IN A SIMILAR MANNER AS DESCRIBED IN THE OCCUPIED MODE USING THE UNOCCUPIED TEMPERATURE SETPOINT, 60° F (ADJ.). THE UNIT'S TOTAL AIRFLOW VOLUME SETPOINT IN UNOCCUPIED MODE SHALL BE HALF OF IT'S SCHEDULED OCCUPIED AIRFLOW VALUE.
 2. AN OVERRIDE BUTTON SHALL BE PROVIDED AT EACH SENSOR TO OVERRIDE THE UNOCCUPIED MODE AND RETURN THE UNIT TO THE OCCUPIED MODE FOR A FIXED PROGRAMMABLE TIME.
 3. CONTRACTOR SHALL PROVIDE PROGRAMMING FOR FUTURE OCCUPANCY SENSOR SUCH THAT ONCE THE SENSORS ARE INSTALLED, THEY CAN IMMEDIATELY OPERATE TO REDUCE VENTILATION IN UNOCCUPIED MODE.

AHU SEQUENCE OF OPERATION ADD'L

1. THE CONTROLS CONTRACTOR SHALL ADD THE PROGRAMMING NECESSARY TO TOTAL ALL HOT DECK FLOWS FOR ALL BOXES (ON ALL FLOORS) CONNECTED TO AHU-30. IN SIMILAR FASHION, THE TOTAL COLD DECK FLOWS FROM ALL BOXES CONNECTED TO AHU-30 SHALL BE TOTALED. THE TOTAL FLOW FROM EACH DECK SHALL BE DISPLAYED ON THE AHU-30 GRAPHIC PAGE.
2. FOR AHU-30 ALL BOXES SHALL BE POLLED FOR HEATING AND COOLING PERCENTAGE AND ALL BOXES SHALL BE INCLUDED IN THE HOT DECK AND COLD DECK TEMPERATURE RESET SEQUENCES THAT ARE DESCRIBED FOR AHU-30 IN THE FCA REPLACE ENERGY MANAGEMENT PHASE 2 PROJECT (VA PROJECT #539-09-105).

BID DOCUMENTS

	CONSULTANTS: 		ENGINEER: STAN Engineers SAJ JOB #574 7887 Washington Village Drive Dayton, Ohio 45459 phone: 937 438-0177 fax: 937 438-0183 copyright 2009 All rights reserved	Drawing Title TEMPERATURE CONTROLS AND SEQUENCES OF OPERATION Approved: Project Director	Project Title FCA-Replace Mixing Boxes, Bldg. 15 - - Location Cincinnati, Ohio Date JULY 20, 2012 Checked FJB Drawn MJK	Project Number 539-09-109 Building Number Bldg. 15 Drawing Number TC1 Dwg. 6 of 6	Office of Construction and Facilities Management 
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