

VA MONTANA HEALTHCARE SYSTEM  
FT. HARRISON VETERANS AFFAIRS MEDICAL CENTER  
FT. HARRISON, MT  
BUILDING 141 HEAT SYSTEMS

PROJECT NO. VA 436-17-104  
CONTRACT NO. VA259-16-C-0313



INTERIM LIFE SAFETY MEASURES (ILSM) NOTES:

IF APPLICABLE:  
HOT WORK PERMITS: PERMITS MUST BE OBTAINED 24 HOURS PRIOR TO COMMENCEMENT OF WORK, WHENEVER POSSIBLE. ORIGINAL PERMIT TO BE POSTED WHERE WORK IS BEING PERFORMED. CONTRACTOR MUST RETURN PERMIT TO SAFETY OFFICE WHEN WORK IS COMPLETED.  
FIRE WATCH: CONTRACTOR MUST INITIAL, DATE AND TIME EVERY 30 MINUTES AFTER HOT WORK HAS STARTED.  
CONTRACTOR TO PROVIDE WARNING AND DIRECTIONAL SIGNAGE THAT SHALL BE POSTED OUTSIDE CONSTRUCTION AREA WHILE WORK IS PERFORMED.  
CONFINED SPACE: CONTRACTOR TO OBTAIN CONFINED SPACE PERMIT PRIOR TO ENTRY INTO MECHANICAL CHASE. ENSURE IT IS APPROVED BY VA SAFETY DEPARTMENT AND COR.

INFECTION CONTROL RISK ASSESSMENT:

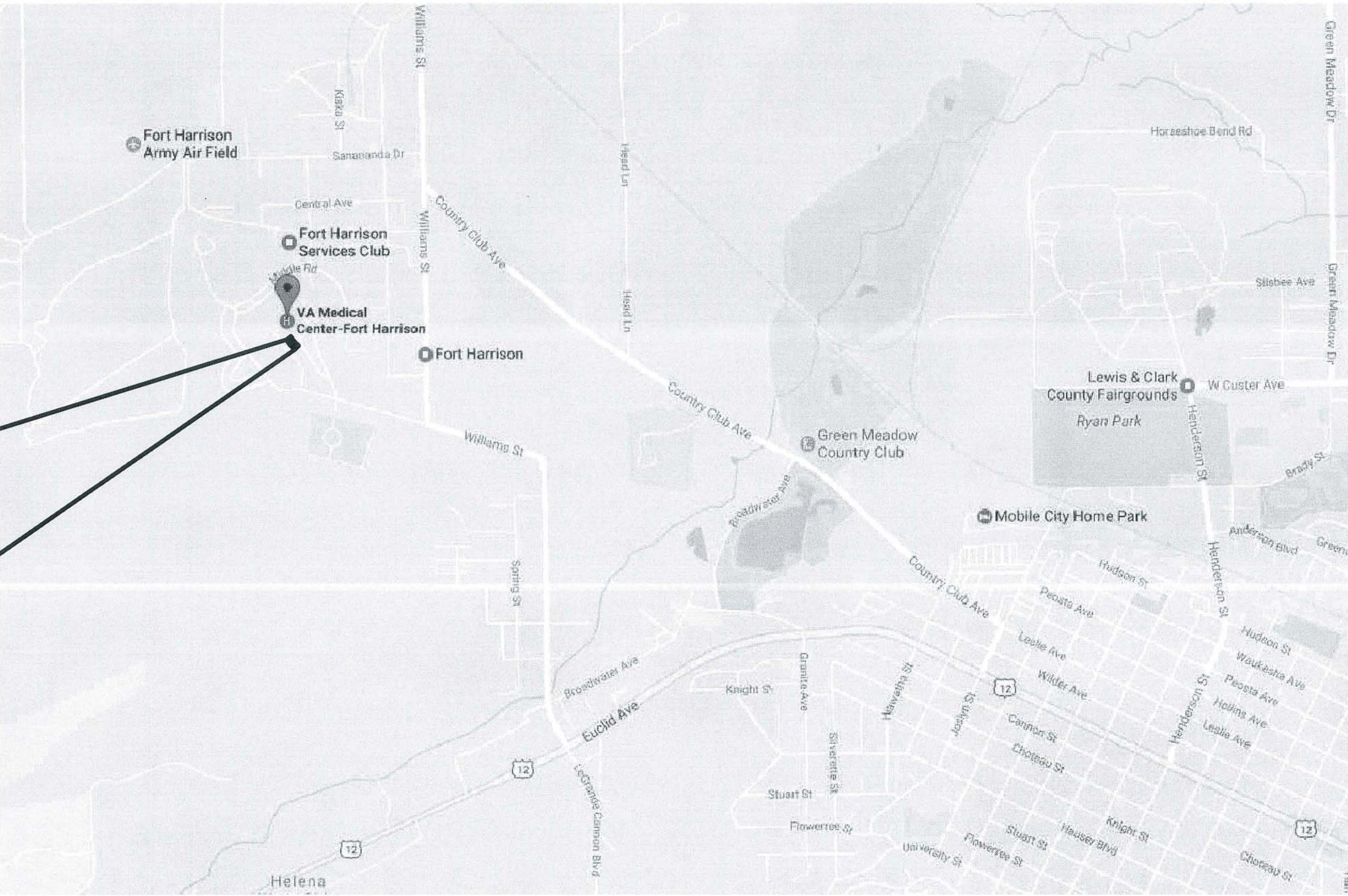
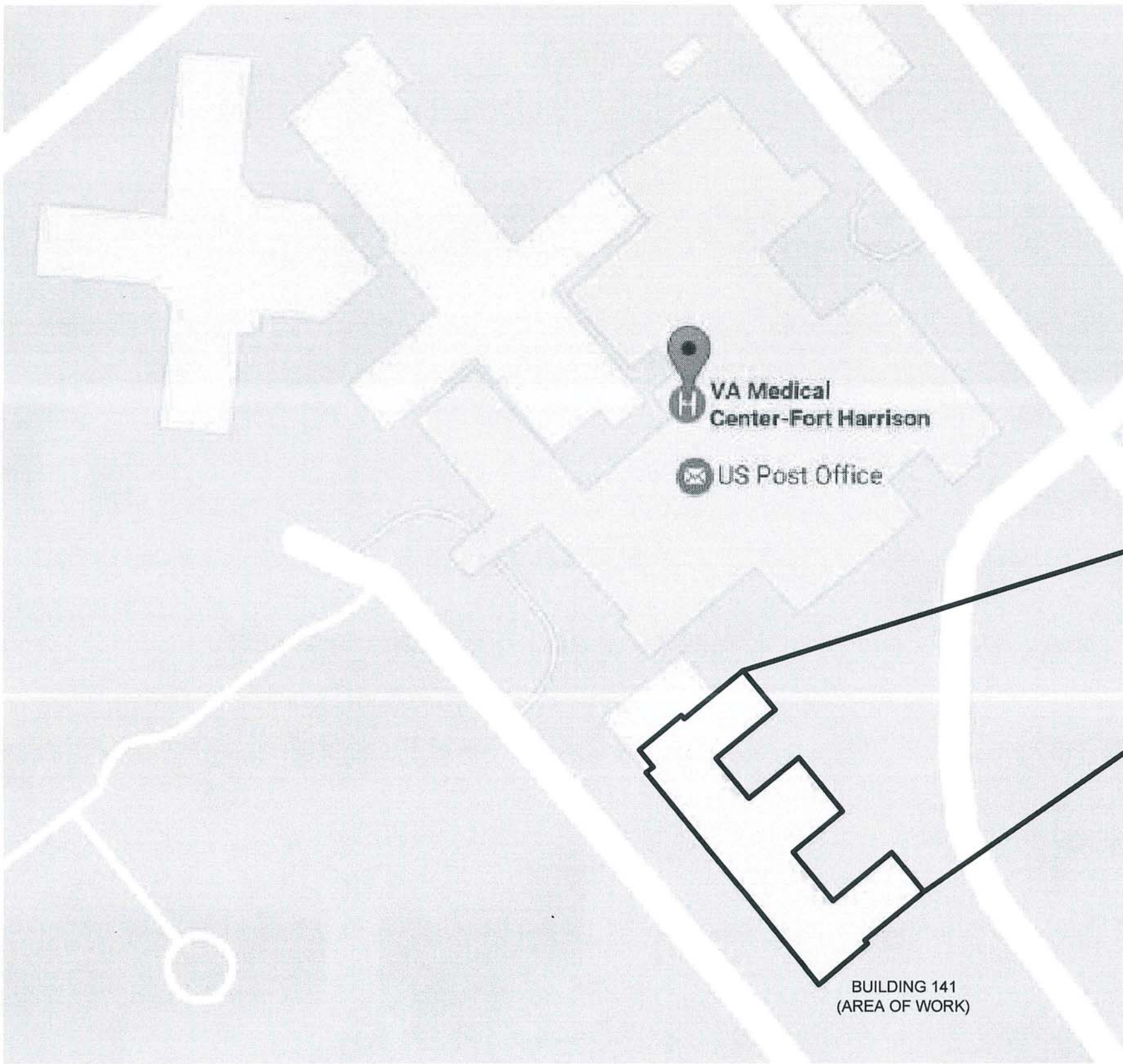
TYPE C ACTIVITY  
RISK CLASS I  
LEVEL/CLASS I PRECAUTIONS  
1. EXECUTE WORK BY METHODS TO MINIMIZE RAISING DUST FROM CONSTRUCTION OPERATIONS.  
2. IMMEDIATELY REPLACE ANY CEILING TILE DISPLACED FOR VISUAL INSPECTION.  
3. REPLACE ANY STAINED/SOILED OR DAMAGED CEILING TILE DUE TO CONSTRUCTION WITH A NEW TILE.  
LEVEL/CLASS II PRECAUTIONS  
IN ADDITION TO CLASS I PRECAUTIONS ABOVE:  
1. PROVIDES ACTIVE MEANS TO PREVENT AIRBORNE DUST FROM DISPERSING INTO ATMOSPHERE.  
2. WATER MIST WORK SURFACES TO CONTROL DUST WHILE CUTTING.  
3. SEAL UNUSED DOORS WITH DUCT TAPE.  
4. BLOCK OFF AND SEAL AIR VENTS.  
5. PLACE DUST MAT AT ENTRANCE AND EXIT OF WORK AREA-KEEP DAMP IF NEEDED.  
6. CONTAIN CONSTRUCTION WASTE BEFORE TRANSPORT IN TIGHTLY COVERED CONTAINERS. WIPE DOWN EQUIPMENT BEFORE REMOVING FROM THE WORK SITE.  
7. UPON COMPLETION, WIPE WORK SURFACES WITH DISINFECTANT, WET MOP AND/OR VACUUM AND REMOVE ISOLATION OF HVAC SYSTEM.  
LEVEL/CLASS III PRECAUTIONS  
IN ADDITION TO CLASS I & II PRECAUTIONS ABOVE:  
1. OBTAIN INFECTION CONTROL INVOLVEMENT BEFORE CONSTRUCTION BEGINS.  
2. COMPLETE ALL CRITICAL BARRIERS OR IMPLEMENT CONTROL CUBE METHOD BEFORE CONSTRUCTION BEGINS.  
3. CONTROL AIRFLOW: ISOLATE HVAC SYSTEM IN AREAS WHERE WORK IS BEING PERFORMED AND MAINTAIN NEGATIVE AIR PRESSURE WITHIN WORK SITE.  
4. COVER TRANSPORT RECEPTACLES OR CARTS. WIPE DOWN EQUIPMENT BEFORE REMOVING FROM THE WORK SITE.  
5. SEAL HOLES, PIPES, CONDUITS, AND PUNCTURES APPROPRIATELY.  
6. USE APPROPRIATE PROTECTIVE CLOTHING.  
7. UPON COMPLETION, DO NOT REMOVE BARRIERS UNTIL INSPECTED BY SAFETY AND INFECTION CONTROL AND THOROUGHLY CLEANED BY HOUSEKEEPING. REMOVE BARRIER MATERIALS CAREFULLY, ROLL PLASTIC ON TO ITSELF AND CLEAN HARD WALLS, TO MINIMIZE SPREADING OF DIRT AND DEBRIS.

VA APPROVED FOR CONSTRUCTION

Director VA Montana Healthcare	Medical Chief of Staff
Associate Director VA Montana Healthcare	FS 085D
Chief Engineering/ FMS	Safety
FMS Engineering/COR	AFGE Union

DRAWING LIST

GENERAL:		
GI001	COVER SHEET	1 OF 2
GI101	PHASING PLANS	2 OF 2
STRUCTURAL:		
S101	BASEMENT SHEARWALL PENETRATION PLAN	1 OF 4
S102	FIRST FLOOR SHEARWALL PENETRATION PLAN	2 OF 4
S103	SECOND FLOOR SHEARWALL PENETRATION PLAN	3 OF 4
S201	GENERAL NOTES AND DETAILS	4 OF 4
MECHANICAL:		
M-001	MECHANICAL GENERAL NOTES, ABBREVIATIONS AND LEGEND	1 OF 29
MD101	BASEMENT MECHANICAL DEMOLITION PLAN - WEST	2 OF 29
MD102	BASEMENT MECHANICAL DEMOLITION PLAN - EAST	3 OF 29
MD103	FIRST FLOOR MECHANICAL DEMOLITION PLAN - WEST	4 OF 29
MD104	FIRST FLOOR MECHANICAL DEMOLITION PLAN - EAST	5 OF 29
MD105	SECOND FLOOR MECHANICAL DEMOLITION PLAN - WEST	6 OF 29
MD106	SECOND FLOOR MECHANICAL DEMOLITION PLAN - EAST	7 OF 29
MD107	THIRD FLOOR MECHANICAL DEMOLITION PLAN - WEST	8 OF 29
MD108	THIRD FLOOR MECHANICAL DEMOLITION PLAN - EAST	9 OF 29
MD109	ATTIC MECHANICAL DEMOLITION PLAN - WEST	10 OF 29
MD110	ATTIC MECHANICAL DEMOLITION PLAN - EAST	11 OF 29
MH101	BASEMENT MECHANICAL PLAN - WEST	12 OF 29
MH102	BASEMENT MECHANICAL PLAN - EAST	13 OF 29
MH103	FIRST FLOOR MECHANICAL PLAN - WEST	14 OF 29
MH104	FIRST FLOOR MECHANICAL PLAN - EAST	15 OF 29
MH105	SECOND FLOOR MECHANICAL PLAN - WEST	16 OF 29
MH106	SECOND FLOOR MECHANICAL PLAN - EAST	17 OF 29
MH107	THIRD FLOOR MECHANICAL PLAN - WEST	18 OF 29
MH108	THIRD FLOOR MECHANICAL PLAN - EAST	19 OF 29
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M-603	MECHANICAL SCHEDULES	29 OF 29
ELECTRICAL:		
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E-102	FIRST FLOOR ELECTRICAL PLANS	3 OF 6
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E-104	THIRD FLOOR ELECTRICAL PLANS	5 OF 6
E-105	ATTIC ELECTRICAL PLANS	6 OF 6



PROJECT LOCATION MAP  
SCALE: NTS



CONSULTANTS:

ARCHITECT/ENGINEERS:



Drawing Title  
COVER SHEET

Approved: Roy Steiner, COR

Project Title  
BUILDING 141 HEAT SYSTEMS

Location  
3687 VETERANS DRIVE FT. HARRISON, MT 59636

Date  
3/5/2018

Project Number  
436-17-104

Building Number  
141

Drawing Number  
GI001

Dwg.1 of 2

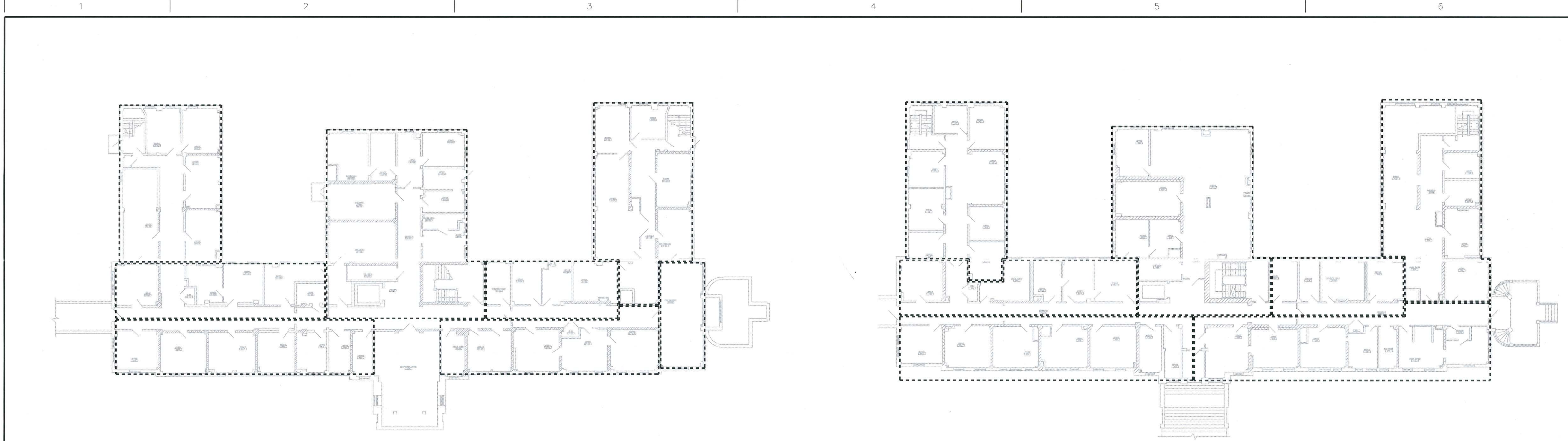
Office of  
Construction  
and Facilities  
Management



100% CONSTRUCTION DOCUMENTS  
FULLY SPRINKLERED

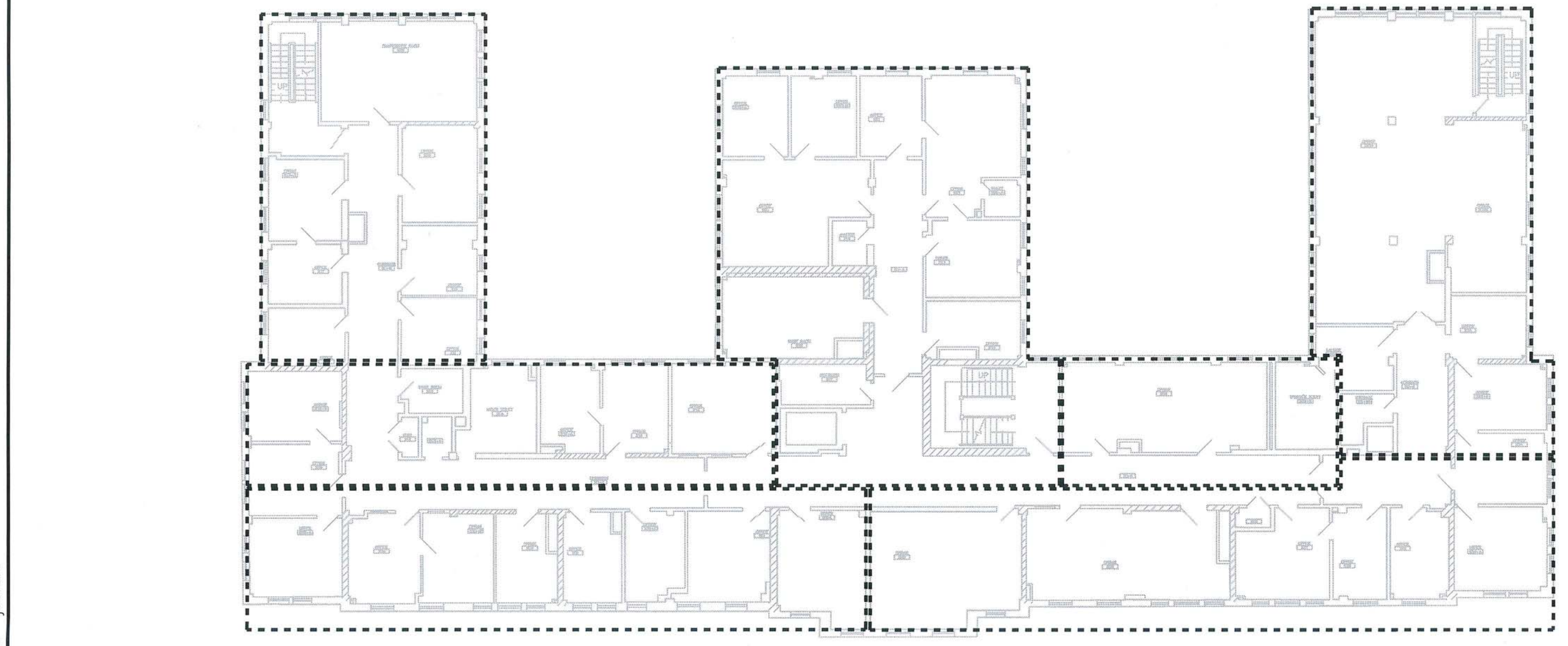


one eighth inch = one foot  
one quarter inch = one foot  
three eighths inch = one foot  
one half inch = one foot  
three quarters inch = one foot  
one inch = one foot  
one and one half inches = one foot  
two inches = one foot  
three inches = one foot

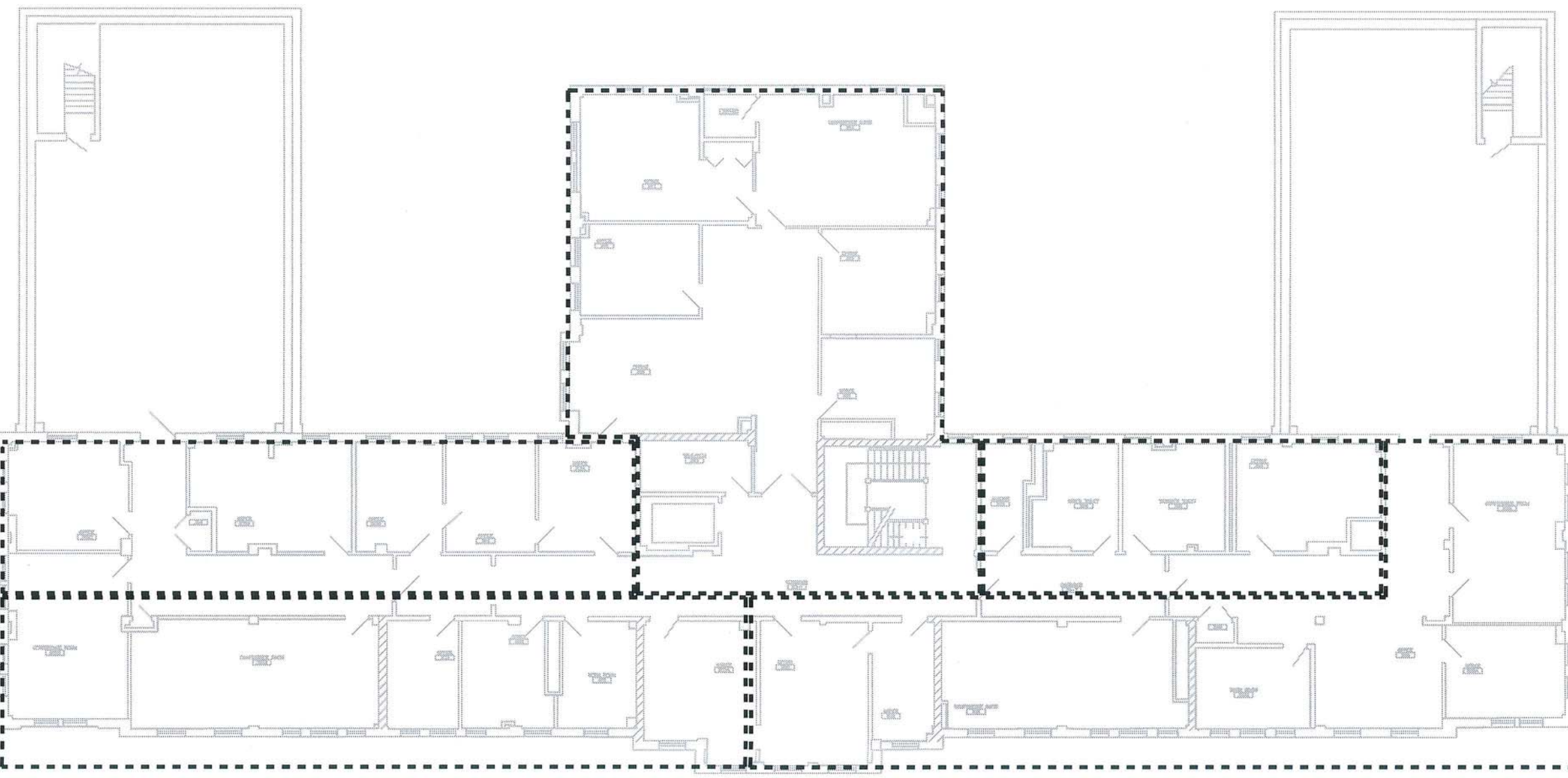


1 BASEMENT PHASING PLAN  
SCALE: N.T.S.

2 FIRST FLOOR PHASING PLAN  
SCALE: N.T.S.



3 SECOND FLOOR PHASING PLAN  
SCALE: N.T.S.



4 THIRD FLOOR PHASING PLAN  
SCALE: N.T.S.

DEDUCT ALTERNATES	
1	DEDUCT ALL WORK ASSOCIATED WITH THE DUCTWORK REVISIONS IN THE BASEMENT INCLUDING PROVIDING HOT WATER REHEAT. MAIN HOT WATER LINES SHALL STILL BE ROUTED IN THE CORRIDORS, JUST NO BRANCH PIPING. EXISTING VAV BOXES WILL STILL BE CONVERTED TO NEW CONTROLS.
2	DEDUCT THE REPLACEMENT OF THE PERIMETER HEAT CONTROL VALVE ACTUATORS IN THE BASEMENT.
3	DEDUCT THE ADDITION OF REMOVABLE JACKETS ON ANY VALVE LESS THAN 1".
4	DEDUCT ADDITIONAL CONTROLLER IN THE ATTIC FOR FUTURE EXPANSION.

NOTES:  
1. DEDUCTS ARE TO BE INCLUDED IN THE BASE PRICE AND PRICED SEPARATELY AS THE DEDUCTS INDICATED. REFER TO THE STATEMENT OF BID ITEMS IN THE SPECIFICATIONS.

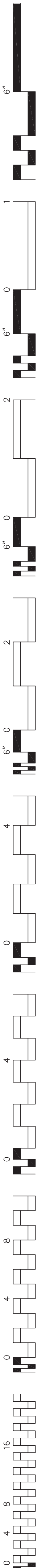
SHEET NOTES


- DUCTWORK REVISIONS AND HW PIPING INSTALLATION SHALL BE PHASED BASED ON AREAS SHOWN. INDIVIDUAL AREA OUTLINES ARE A GUIDELINE AND SHALL BE COORDINATED WITH THE COR. AT A MINIMUM, EACH FLOOR IS TO BE SPLIT UP INTO 5 AREAS OF WORK.
- PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A PHASING PLAN IN ACCORDANCE WITH SPECIFICATION SECTION 01 33 23. THIS PHASING PLAN SHALL OUTLINE DATES FOR WHICH EACH AREA WILL NEED TO BE SHUT DOWN FOR WORK TO OCCUR.
- FACILITY TO BE FULLY OCCUPIED THROUGHOUT CONSTRUCTION. ALL WORK IS TO BE DONE IN A MANNER TO MINIMIZE DISRUPTIONS TO THE REST OF THE BUILDING.
- COORDINATE WORKING HOURS WITH VA COR AS INSTRUCTED IN GENERAL REQUIREMENTS. WORK TO PRIMARILY TAKE PLACE AFTER BUSINESS HOURS AND SCHEDULED WEEKEND PERIODS. CONTRACTOR SHALL COORDINATE EACH AREA OF WORK WITH THE COR A MINIMUM OF TWO WEEKS IN ADVANCE.
- PROVIDE INFECTION CONTROL PRECAUTIONS/CONTAINMENT SYSTEM AS REQUIRED BY THE VA HOSPITAL INFECTION CONTROL REPRESENTATIVE FOR THE AREA OF WORK.
- PROVIDE CONTAINMENT AT THE FLOOR FOR ANY WORK ABOVE CEILING. THIS INCLUDES COVERING FURNITURE AND EQUIPMENT IN THE SPACES WITH A SUITABLE PLASTIC BARRIER WHILE WORK IS BEING PERFORMED.
- WORK IN THE MECHANICAL ROOM OR ATTIC IS ALLOWABLE ANYTIME WITH PRIOR APPROVAL FROM THE COR.
- AHU SHUTDOWN FOR COIL REPLACEMENT SHALL OCCUR OVER A SINGLE WEEKEND DURING A PERIOD FORECASTED FOR MILD WEATHER, AS DETERMINED BY THE COR. DEMOLITION AND REPLACEMENT OF THE COIL IS TO OCCUR TOGETHER AND BE PERFORMED BEFORE ANY OTHER WORK IN THIS PROJECT.
- CONTRACTOR TO CLEAN AREA OF WORK DAILY. THIS INCLUDES BUT IS NOT LIMITED TO ALL EXISTING EQUIPMENT, FIXTURES, LIGHTS, WINDOWS, BLINDS AND REGISTERS. REPLACE ANY STAINED/SOILED OR DAMAGED CEILING TILE DUE TO CONSTRUCTION WITH A NEW TILE.

Revisions:		Date:		CONSULTANTS:				ARCHITECT/ENGINEERS:		Drawing Title PHASING PLANS		Project Title BUILDING 141 HEAT SYSTEMS		Project Number 436-17-104		Office of Construction and Facilities Management 			
										Approved: Roy Steiner, COR		Location 3687 VETERANS DRIVE FT. HARRISON, MT 59636		Drawing Number GH101					
												Date 3/5/2018		Checked DJR		Drawn JMB2		Dwg. 2 of 2	







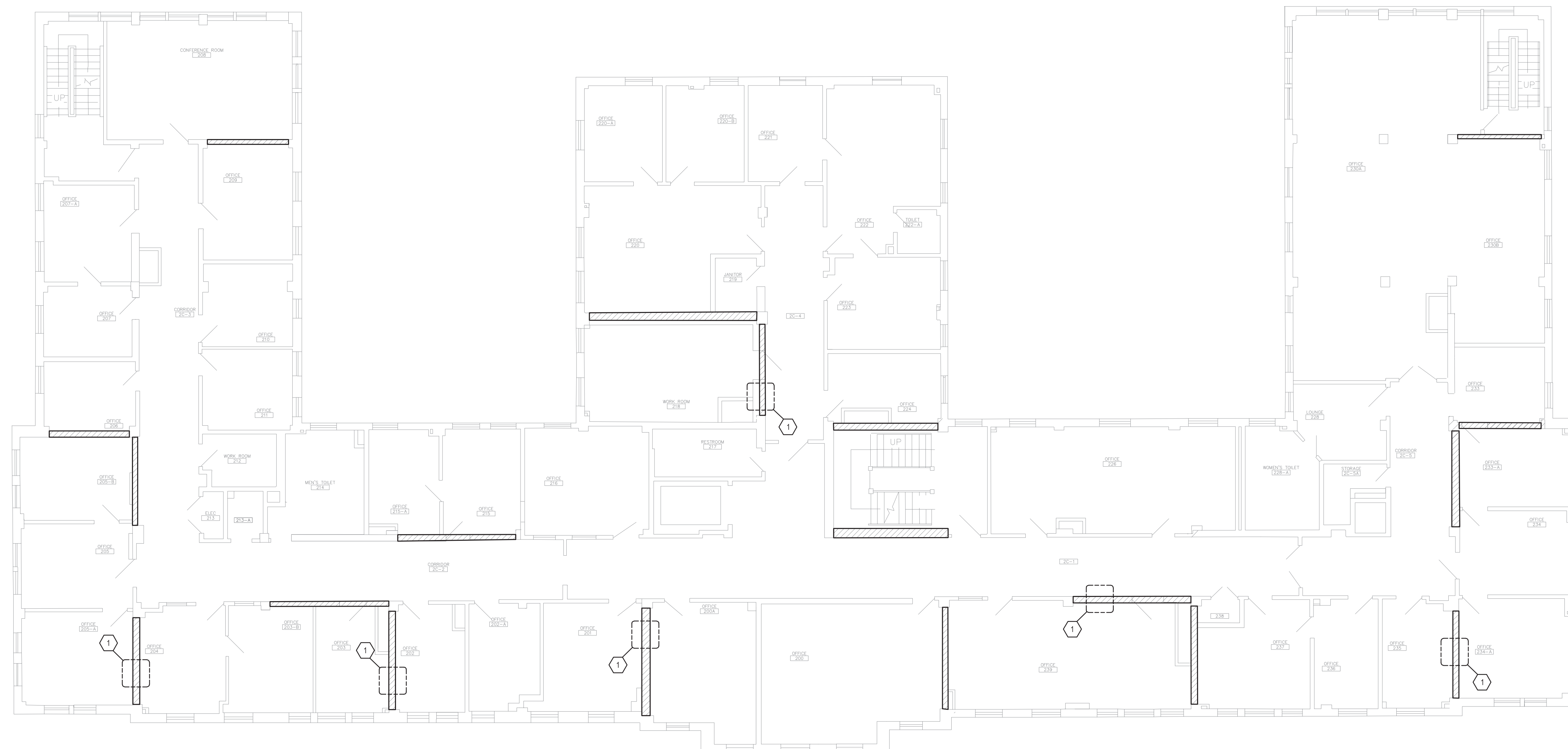
1.  INDICATES LOCATION OF EXISTING MASONRY SHEARWALLS, AS REFERENCED IN PHASE 2 SEISMIC STUDY BY ENGINEERED WITH LAYTON, PLC REPORT, AUGUST 2017, EWL PROJECT #2017-0401, VA PROJECT #436-401. IT IS ASSUMED THAT ALL SHEAR WALL OPENING REINFORCEMENT RECOMMENDATIONS FROM THAT REPORT HAVE BEEN COMPLETED.

1 INDICATES APPROXIMATE LOCATION OF NEW MECHANICAL PENETRATION THROUGH EXISTING MASONRY SHEARWALL. SEE DETAIL 1/S201 FOR SHEARWALL OPENING REINFORCEMENT REQUIREMENTS.




Construction  
and Facilities  
Management

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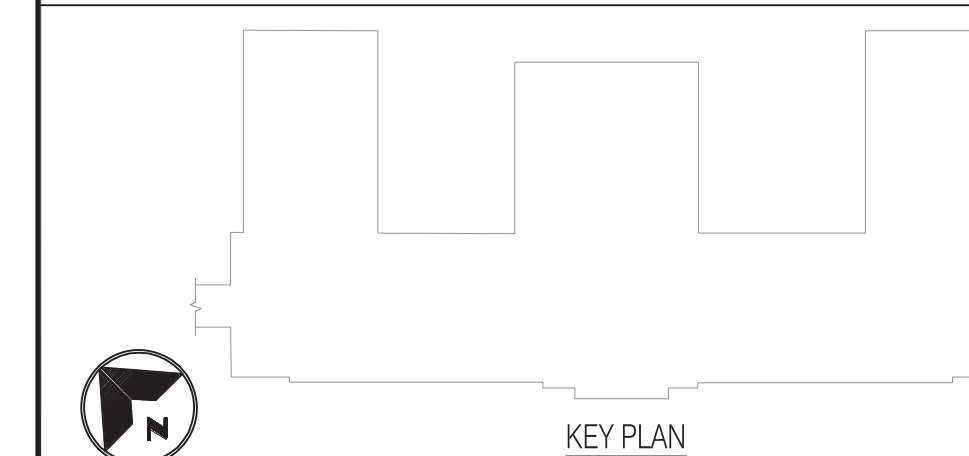


SHEET NOTES



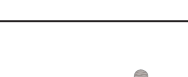

1.  INDICATES LOCATION OF EXISTING MASONRY SHEARWALLS, AS REFERENCED IN PHASE 2 SEISMIC STUDY BY ENGINEERED WITH LAYTON, PLC REPORT, AUGUST 2017, EWL PROJECT #2017-0401, VA PROJECT #436-401. IT IS ASSUMED THAT ALL SHEAR WALL OPENING REINFORCEMENT RECOMMENDATIONS FROM THAT REPORT HAVE BEEN COMPLETED.

## KEY NOTES

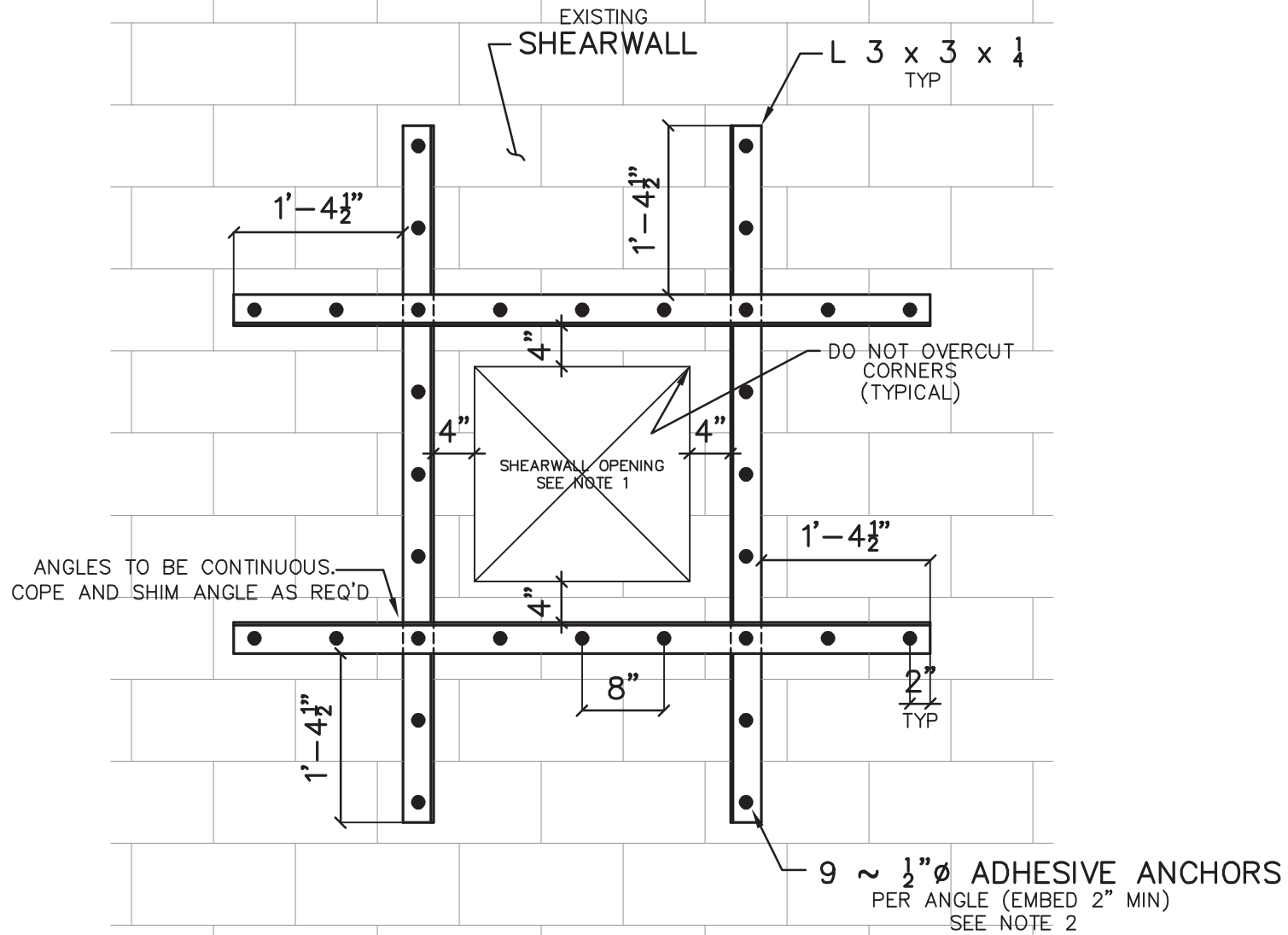
- 1 INDICATES APPROXIMATE LOCATION OF NEW MECHANICAL PENETRATION THROUGH EXISTING MASONRY SHEARWALL. SEE DETAIL 1/S201 FOR SHEARWALL OPENING REINFORCEMENT REQUIREMENTS.



100% CONSTRUCTION DOCUMENTS  
FULLY SPRINKLERED

		CONSULTANTS:		ARCHITECT/ENGINEERS:		Drawing Title SECOND FLOOR SHEARWALL PENETRATION PLAN		Project Title BUILDING 141 HEAT SYSTEMS		Project Number 436-17-104		Office of Construction and Facilities Management	
		 <b>RED ENGINEERING &amp; DESIGN</b> STRUCTURAL ENGINEERS				 Raleigh, NC Indianapolis, IN Philadelphia, PA Pittsburgh, PA Virginia Beach, VA Fort Collins, CO (919) 658-7200 NC License # C-1649 Apogee Project # 15-488		Approved: Project Director		Location 3687 VETERANS DRIVE FT. HARRISON, MT 59636		Drawing Number S-103	
Revisions:		C-3479						Date 3/5/18		Checked BM		Drawn AC	
		126 SALEM TOWNE CT APEX, NORTH CAROLINA 27502 TEL: (919) 833-3486 REDENGINEERING@GMAIL.COM								Dwg. 3 of 4		 Department of Veterans Affairs	

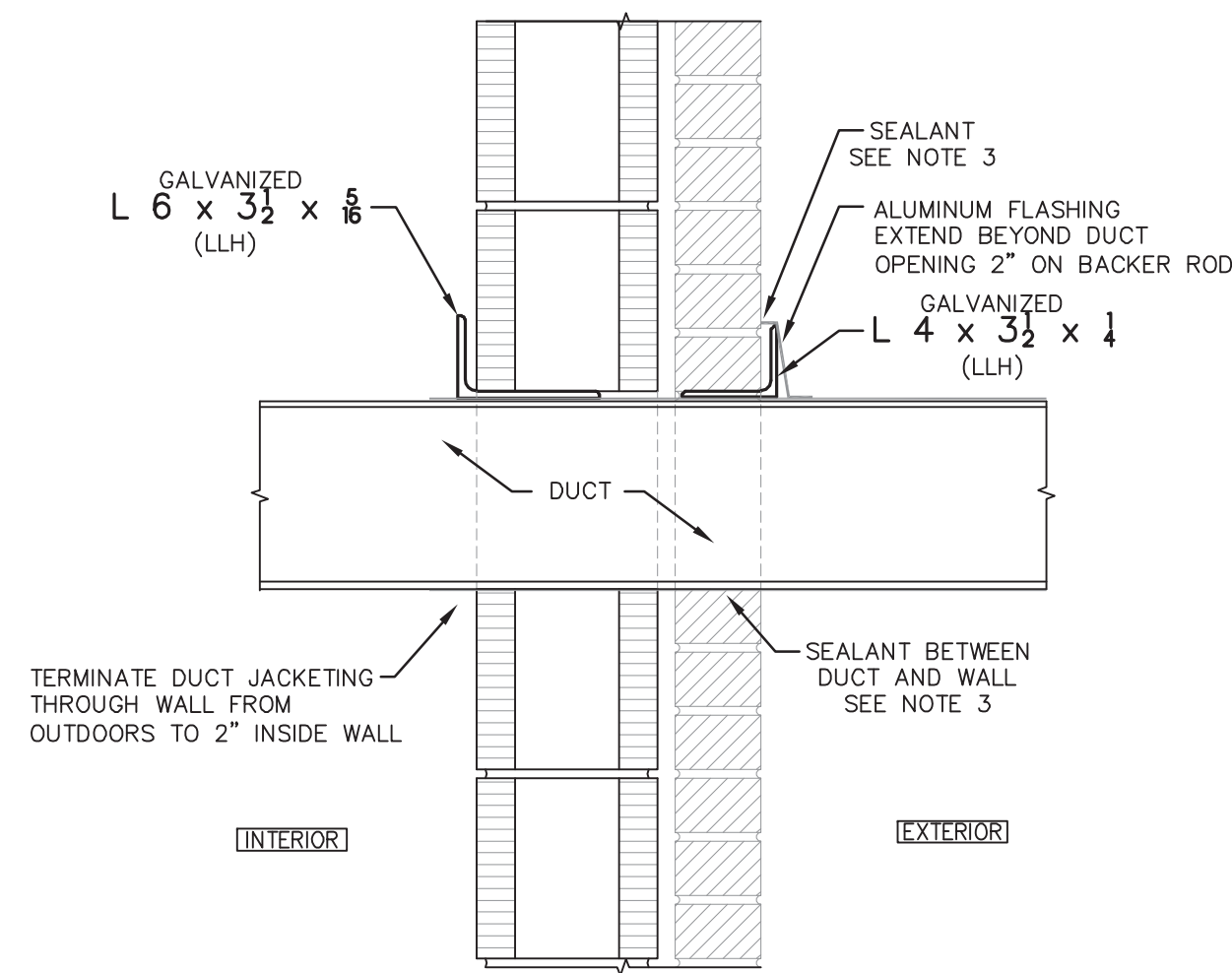




1  
1" = 1'-0" DETAIL  
SHEARWALL OPENING REINFORCEMENT DETAIL

NOTES:

- 1.) SHEARWALL REINFORCEMENT REQUIRED FOR ALL OPENINGS WITH EITHER:  
a. A TOTAL AREA EQUAL TO OR GREATER THAN 196 SQ.IN. OR  
b. ONE SIDE DIMENSION EQUAL TO AND GREATER THAN 14"
- 2.) ADHESIVE ANCHORS TO BE HILTI HAS-V RODS WITH SCREEN TUBES (AS REQ'D) OR APPROVED EQUAL. INSTALL WITH HILTI HIT-HY70 ADHESIVE SYSTEM, OR APPROVED EQUAL.



2  
1/2" = 1'-0" DETAIL  
NEW OPENING AT EXTERIOR WALL

NOTES:

- 1.) MAX. MASONRY OPENING = 2'-0".
- 2.) BEAR ALL LINTELS 6" MINIMUM, EACH END.
- 3.) SEALANT SHALL BE SKAPHLEX-250 OR SIMILAR SILANE MODIFIED POLYMER SEALANT.

GENERAL CONSTRUCTION SPECIFICATION

1. NO OTHER PARTY MAY REVISE, ALTER, OR DELETE THESE CONSTRUCTION DOCUMENTS WITHOUT WRITTEN PERMISSION FROM RED ENGINEERING & DESIGN, INC.
2. THIS STRUCTURE IS ONLY STABLE IN ITS COMPLETED FORM. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED TEMPORARY BRACING DURING CONSTRUCTION TO STABILIZE THE STRUCTURE. TEMPORARY SHORING AND BRACING METHODS ARE NOT THE RESPONSIBILITY OF RED ENGINEERING & DESIGN, INC. AND ARE BEYOND THE SCOPE OF THESE DRAWINGS.
3. THE SER IS NOT RESPONSIBLE FOR CONSTRUCTION SEQUENCES, METHODS, OR TECHNIQUES IN CONNECTION WITH THE CONSTRUCTION OF THIS STRUCTURE. THE SER WILL NOT BE HELD RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CONFORM TO THE CONSTRUCTION DOCUMENTS, SHOULD ANY NON-CONFORMITIES OCCUR.
4. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH AND COORDINATED WITH THE ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL, AND CIVIL DRAWINGS. SHOULD ANY DISCREPANCIES BECOME APPARENT, THE CONTRACTOR SHALL NOTIFY COR BEFORE ANY CONSTRUCTION BEGINS.
5. THE CONTRACTOR SHALL VERIFY THE FIELD CONDITIONS AND REPORT ANY DISCREPANCIES TO COR BEFORE CONSTRUCTION BEGINS.
6. ANALYSIS BASED ON PHASE II SEISMIC STUDY, BY ENGINEERED WITH LAYTON, P.L.C., AUGUST 2017, EWL PROJECT #2017-0401, VA PROJECT #436-401

MATERIAL SPECIFICATION

1. ALL STRUCTURAL STEEL TO BE PREFERRED MATERIAL SPECIFICATION IN ACCORDANCE WITH:  
a. AISC 360-10, SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS  
b. AISC 348-09, RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS  
c. AISC 303-10, CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.
2. ALL WELDING TO BE PERFORMED BY CERTIFIED WELDERS AND IN ACCORDANCE WITH:  
a. AWS D1.1:2010, STRUCTURAL WELDING CODE - STEEL  
b. AWS D1.7:2010, GUIDE FOR STRENGTHENING AND REPAIRING EXISTING STRUCTURES
3. ALL POST-INSTALLED ADHESIVE ANCHORAGE INTO GROUT FILLED MASONRY UNITS SHALL BE IN ACCORDANCE WITH:  
a. TMS 402/AQI 350 & ICC-ES AC508, ACCEPTANCE CRITERIA FOR ADHESIVE ANCHORS IN MASONRY ELEMENTS.
4. ALL POST-INSTALLED ADHESIVE ANCHORAGE INTO HOLLOW CONCRETE MASONRY UNITS SHALL BE IN ACCORDANCE WITH:  
a. TMS 402/AQI 350 & ICC-ES AC508, ACCEPTANCE CRITERIA FOR ADHESIVE ANCHORS IN MASONRY ELEMENTS.
5. ALL GALVANIZED STEEL SHALL BE IN ACCORDANCE WITH:  
a. ASTM A123/A123M-15, "STANDARD SPECIFICATION FOR ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS."

DESIGN CRITERIA

1. BUILDING CODES  
a. INTERNATIONAL BUILDING CODE 2015 EDITION  
b. MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES, ASCE 7-10

		CONSULTANTS:		ARCHITECT/ENGINEERS:		Drawing Title GENERAL NOTES & DETAILS		Project Title BUILDING 141 HEAT SYSTEMS		Project Number 436-17-104		Office of Construction and Facilities Management			
		RED ENGINEERING & DESIGN STRUCTURAL ENGINEERS 126 SALEM TOWNE CT APEX, NORTH CAROLINA 27502 TEL: (919) 553-3486 REDENGINEERINGDESIGN.COM		APOGEE Consulting Group Raleigh, NC Indianapolis, IN Philadelphia, PA Pittsburgh, PA Virginia Beach, VA Fort Collins, CO (919) 858-7420 NC License # C-1548 Apogee Project # 15-488		Approved: Project Director		Location 3687 VETERANS DRIVE FT. HARRISON, MT 59636		Building Number 141					
Revisions:		Date		03.05.18				Date 3/5/18		Checked BM		Drawing Number S-201		Department of Veterans Affairs	
										Dwg. 4 of 4					