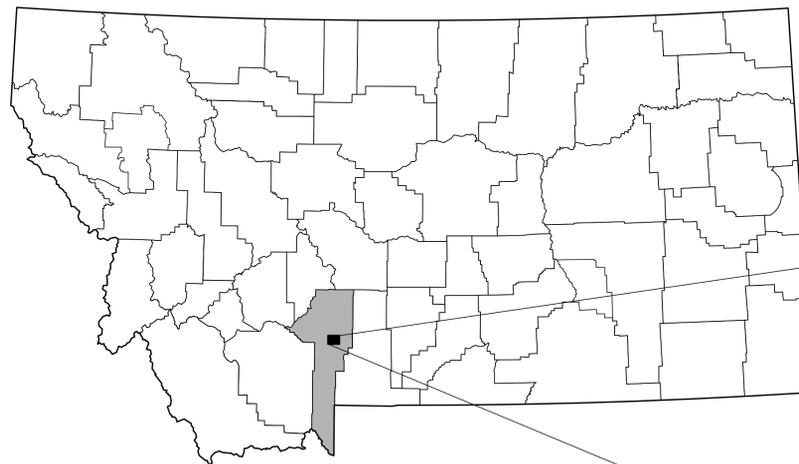


REM01 – GENERAL NOTES:

- 1) The project abatement contractor (AC) shall coordinate asbestos and lead-based paint (LBP) work activities, including any proposed changes, with the Owner or the Owner's Representative (hereafter collectively referred to as OR) and Owner's General Contractor (GC). Asbestos and LBP work, including associated selective demolition and/or abatement activities, if any - shall be performed by the AC, unless noted otherwise. Owner requires GC to utilize the services of a 3rd party professional industrial hygienist (PIH), and AC shall coordinate with PIH as noted below.
- 2) AC to comply with all applicable federal (EPA, OSHA), state (Montana DEQ), and local (Gallatin County, City of Bozeman) regulations, as well as requirements of the project documents. All asbestos work is to be completed by individuals holding current Montana accreditation as Asbestos Contractor/Supervisors or Asbestos Workers. All LBP work to be completed by individuals currently trained as required by OSHA for handling of LBP.
- 3) The intent of the project is to disturb asbestos and/or LBP only where necessary to complete the renovation work. AC to coordinate with OR/GC to determine locations where removal or disturbance of these materials will be completed by AC. Where disturbance and/or removal of asbestos or LBP is necessary, intact removal shall be favored when feasible. Where intact removal is infeasible, work practices shall be selected to limit the potential for exposure to workers, building occupants, and the environment while adhering to applicable regulatory requirements. As an example, dust generated during drilling an anchor point or hole into a surface with LBP may be captured with a HEPA-filtered vacuum, a foam-filled cup, etc.
- 4) It is understood disturbance of asbestos "target materials" required as part of AC's asbestos work for the project is likely to exceed DEQ's asbestos project quantity criteria (e.g., 10 SF, 3 LF, 3 CF of RACM). The inspection report denotes the anticipated condition of the asbestos target materials if impacted. However, since these determinations depend on conditions at the time of disturbance which cannot be known during the inspection, AC to determine friability during completion of the work. In the event the quantity of ACM to be disturbed exceeds DEQ's asbestos project quantity criteria, it is also understood some asbestos target materials may be feasibly removed as either Category I/II non-friable ACM. If the DEQ asbestos project quantity criteria are not exceeded for the overall project, a DEQ asbestos project permit may not be required for this project. AC to coordinate with PIH regarding likelihood of ACM being rendered friable (RACM) in quantities exceeding the DEQ asbestos project quantity thresholds. If DEQ's asbestos project quantity criteria are exceeded, any ACM which will be or is likely to be friable during completion of the work must be included on the asbestos project permit.
- 5) Prior to initiation of the scope of work, AC to provide all requested submittal information and receive written notice to proceed from OR. Required submittal information includes, but may not be limited to: 1) Copies of current Montana DEQ asbestos accreditation for all on-site project personnel conducting asbestos work. At least 1 individual must hold current Asbestos Contractor/Supervisor accreditation (meeting OSHA's definition of a Competent Person with regard to asbestos, per 29 CFR 1926.1101). All others may instead hold current Montana DEQ Asbestos Worker accreditations, at a minimum; 2) DEQ asbestos project permit, if required per Montana DEQ regulations; 3) Documentation of OSHA lead awareness training for all on-site project personnel conducting LBP work, per 29 CFR 1926.62, Appendix B, Paragraph L.
- 6) Asbestos and LBP "target materials" locations are shown in the project documents for informational purposes only. The actual locations where these materials will be disturbed (and the resulting quantities) may depend on the means and methods selected by the GC for completion of the project. AC shall satisfy themselves regarding the actual quantities to be included in the work during the pre-bid site walk and/or through coordination with OR and GC.
- 7) The PIH shall perform on-site oversight of AC throughout the project, which shall include initial inspections of work areas (e.g., regulated areas, containments, etc.) established by AC for each work area; periodic spot checks of AC's activities; and post-abatement clearance monitoring. PIH shall have stop-work authority over AC in the event noted deficiencies are not adequately addressed by the AC.
- 8) AC to perform asbestos and LBP work in areas noted in the project documents, as necessary for completion of the project (see General Note 6, above). AC to coordinate removal strategies with PIH prior to initiating preparation and/or removal activities, including agreement between AC and PIH regarding which materials will be removed as RACM (if any) and which can be removed as Category I/II non-friable ACM or non-ACM (< 1% asbestos), and methods for removal and/or disturbance of LBP materials. In the event a Montana DEQ asbestos project permit is required for the project, AC to coordinate alternate work practice requests submitted to DEQ, if any, with PIH. Changes to initial removal strategies agreed upon between AC and PIH must be approved in writing by the PIH prior to being initiated.
- 9) Discovery of additional and/or previously unidentified suspect/confirmed asbestos or LBP target materials, if any, shall be reported to the PIH and/or OR as quickly as practicable. Previously unidentified suspect target materials shall be assessed by the PIH or assumed to be asbestos-containing/LBP materials, at the discretion of the PIH and in coordination with the OR. Removal of additional target materials will be coordinated between the OR, PIH, and AC. Additional RACM shall be added to the asbestos project permit by the AC prior to removal, if applicable.
- 10) Electric and mechanical (heat, water, etc.) services at the site will be available for AC's use in completing the work, except where necessary to be deactivated to complete the work. Owner or GC will deactivate services as necessary to complete the work. AC to coordinate with OR and/or GC regarding which services to deactivate for each work area (if any) and whether or not the work may result in potential damage to the building systems.
- 11) AC to provide ground fault circuit interrupters (GFCI) for electrical equipment to be used during asbestos or LBP work which utilizes wet methods. AC shall not be allowed to begin work activities requiring electrical equipment and wet methods until GFCIs are present. AC to coordinate with OR and/or GC to ensure electrical circuits are de-energized as necessary to safely complete the work.
- 12) AC to prevent exposure to hazardous materials associated with their work for the Owner, PIH, GC and other trades, building occupants, the public, the environment, and AC's staff. This may include - but may not be limited to - use of appropriate work area demarcation, use of appropriate work practices (e.g., wet methods, HEPA-filtered vacuums, tools with point-of-cut dust collection and HEPA filtration, etc.), and/or various combinations of the following to prevent migration of contaminants from the work areas: drop sheets, critical barriers, mini-containments, negative pressure enclosures, etc.

- 13) AC to coordinate asbestos and LBP work with PIH prior to initiation of activities, including number and general layout of work areas (e.g., regulated areas, critical barriers, negative pressure enclosures, etc.). AC shall demarcate asbestos and LBP work areas in a manner consistent with OSHA requirements, and which minimizes the number of persons within the area and protects persons outside the area from exposure to contaminants which may be generated as a result of the work. Regulated areas, drop sheets, critical barriers, negative pressure enclosures, etc., shall be utilized in accordance with OSHA requirements for Class I - IV asbestos work (29 CFR 1926.1101) and OSHA requirements for disturbance of materials containing lead (29 CFR 1926.62), as appropriate.
- 14) Removal of asbestos materials and/or stripping of LBP from components shall be completed within negative pressure enclosures. Where asbestos and LBP target materials are impacted without causing potential exposure issues, or where LBP target materials are removed intact, critical barriers, containments, and negative-pressure enclosures may not be required. Where required, AC shall construct work area barriers, critical barriers, or negative pressure enclosures (as applicable) before asbestos or LBP work begins. This shall include use of 6-mil, fire-retardant plastic sheeting for work area critical barriers (2 layers at HVAC openings), mini-containments, or free-standing containment walls/ceilings. Containment walls and ceilings which cover existing surfaces shall consist of 4-mil (or heavier) fire-retardant plastic sheeting unless noted otherwise. Containment floors shall consist of 6-mil (or heavier) fire-retardant plastic sheeting, unless noted otherwise. AC shall construct critical barriers and containment walls and ceilings to extend to fixed surfaces where feasible in order to prevent contaminant leakage. AC shall inspect critical barriers and containments daily and repair failed seams, rips, tears, and/or other damage immediately upon discovery.
- 15) Where negative pressure enclosures are required or otherwise utilized, AC to ensure required air changes (4 per hour, minimum) and negative pressure (minimum of -0.02 column inches water pressure differential) are maintained in each containment from the time of the initial containment inspection (or prior to initiation of abatement activities, if no initial containment inspection is conducted) through satisfactory completion of post-abatement clearance monitoring for the respective containments. Negative air pressure shall be monitored with a manometer fitted with a recording strip or digital recorder. Negative pressure shall be achieved through use of HEPA-filtered negative air machines (NAM), with all exhaust vented to the building exterior. AC responsible for securing all exhaust locations. Additional NAMs shall be available for "scrubbing" in work areas with little or no air movement. At least 1 additional spare NAM shall be available on site for each active containment area, as a back-up in case of failure.
- 16) Unless otherwise noted, filtered make-up air locations on negative pressure containment areas (if any) shall consist of MERV 11 filters (minimum) with interior gravity (weighted) flaps to prevent fiber release in the event of loss of negative pressure within the containment. AC is responsible for securing make-up air locations.
- 17) Items to be left in place (e.g., cabinets, shelves, non-ACM materials, etc.) within each work area should be covered with plastic sheeting and sealed by AC prior to initiation of AC's asbestos or LBP work. Alternatively, uncovered materials which become contaminated may be thoroughly decontaminated by AC or disposed as contaminated waste. Note that non-porous surfaces (e.g., smooth painted walls) can typically be readily decontaminated, whereas porous surfaces (e.g., unpainted walls, most ceiling tiles, carpets, etc.) typically cannot be readily decontaminated. Contaminated materials not already scheduled for disposal may be subject to replacement (i.e., replaced with new materials of equal or greater quality) at AC's expense. Coordinate with OR and/or GC.
- 18) At Owner's option, the PIH shall collect and analyze work area and/or ambient air samples during AC's work; if air samples are occluded or result in concentrations above regulatory criteria, Owner or PIH may issue a stop-work order until AC satisfactorily addresses the deficiency. In any case, AC shall be responsible for conducting all required exposure monitoring for their own personnel.
- 19) AC shall not remove target materials or contaminated materials which cannot be safely and effectively cleaned up during the same work shift they were removed. Owner or PIH may issue a stop worker order if materials or work areas are left uncleaned.
- 20) AC shall place all asbestos and LBP target material waste in rigid, air-tight and leak-tight containers. Alternatively, asbestos and/or LBP target material waste may be double bagged. For sharp or jagged waste, the first bag shall consist of a burlap or woven nylon sack to prevent tearing/ripping. The outer bag shall consist of 6-mil poly and must bear the appropriate labels as required by EPA, OSHA, and/or DEQ. All asbestos waste to be properly packaged, transported, and disposed by AC as asbestos special waste. In the absence of a leachable lead assessment indicating otherwise, AC shall package, transport, and dispose LBP target material waste as presumed hazardous waste, with regard to lead. AC may choose to undertake completion of a leachable lead assessment, at their own expense, following coordination with Owner and PIH. AC's leachable lead assessment methods and results must be reviewed by Owner and PIH to confirm the findings are usable in determining waste disposal requirements.
- 21) AC to complete asbestos and LBP work to minimize damage and leave clean edges where feasible (e.g., where ceiling/wall systems or floor tile will be left in place, etc.) to minimize deterioration of materials and allow for easier tie-in with replacement materials, as appropriate. Coordinate with OR and/or GC.
- 22) "Post-abatement" clearance monitoring may not be regulatorily required for some areas where asbestos and/or LBP work is conducted, so long as the asbestos work is limited to conditions less than the Montana DEQ "asbestos project" criteria, and if the LBP work is not expected to be considered a "lead abatement" as defined by EPA (40 CFR Part 745.223). However, Owner requires post-abatement clearance monitoring in all instances where asbestos or LBP are removed/abated, even when not regulatorily required. Clearance monitoring shall be completed by the PIH and shall include visual confirmation of asbestos or LBP target material removal and cleanup. Post-abatement asbestos clearance air sampling and analysis shall be completed in accordance with either the NIOSH 7400 Method for PCM or the AHERA Method for TEM. LBP clearance monitoring shall consist of collection of surface wipe samples from window sills and/or floors adjacent to LBP work areas, in general accordance with select portions of the methods outlined in 40 CFR 745.277(e)(8). Successful asbestos clearance criteria shall include no visible target material (or associated dust or debris) in the work area; airborne fiber concentrations of ≤ 0.01 f/cc for all asbestos clearance samples from a given PCM air sampling event; and airborne asbestos concentrations ≤ 70 S/mm³ for all asbestos clearance samples from a given TEM air sampling event. Successful LBP clearance criteria shall include no visible target material (or associated dust or debris) in the work area; < 5 $\mu\text{g}/\text{ft}^2$ lead for floor wipe samples; < 40 $\mu\text{g}/\text{ft}^2$ lead for window sill wipe samples; and < 100 $\mu\text{g}/\text{ft}^2$ lead for window trough wipe samples. PIH shall utilize overnight shipping and request expedited analytical turnaround for all laboratory analyses of samples. Alternatively, PIH may analyze PCM samples using a portable microscope, adhering to DEQ's analytical requirements. AC to coordinate clearance schedules with PIH and provide as much advanced notice as feasible.
- 23) Upon completion of the work, AC to submit to Owner and PIH documentation of proper disposal of asbestos waste (and LBP waste, if applicable) resulting from their work.

BOZEMAN, GALLATIN COUNTY, MONTANA



PREPARED BY:
AIR WATER SOIL, LLC
1321 8TH AVENUE NORTH, SUITE 104
GREAT FALLS, MONTANA 59401
CONTACT: J. SCOTT VOSEN
406.315.2201

APPROVED BY (PROJECT OWNER):
MONTANA STATE UNIVERSITY
UNIVERSITY FACILITIES MANAGEMENT
PLANNING, DESIGN & CONSTRUCTION
P.O. BOX 172760
BOZEMAN, MONTANA 59717
CONTACT: DENA KNUTSON
406.994.5265

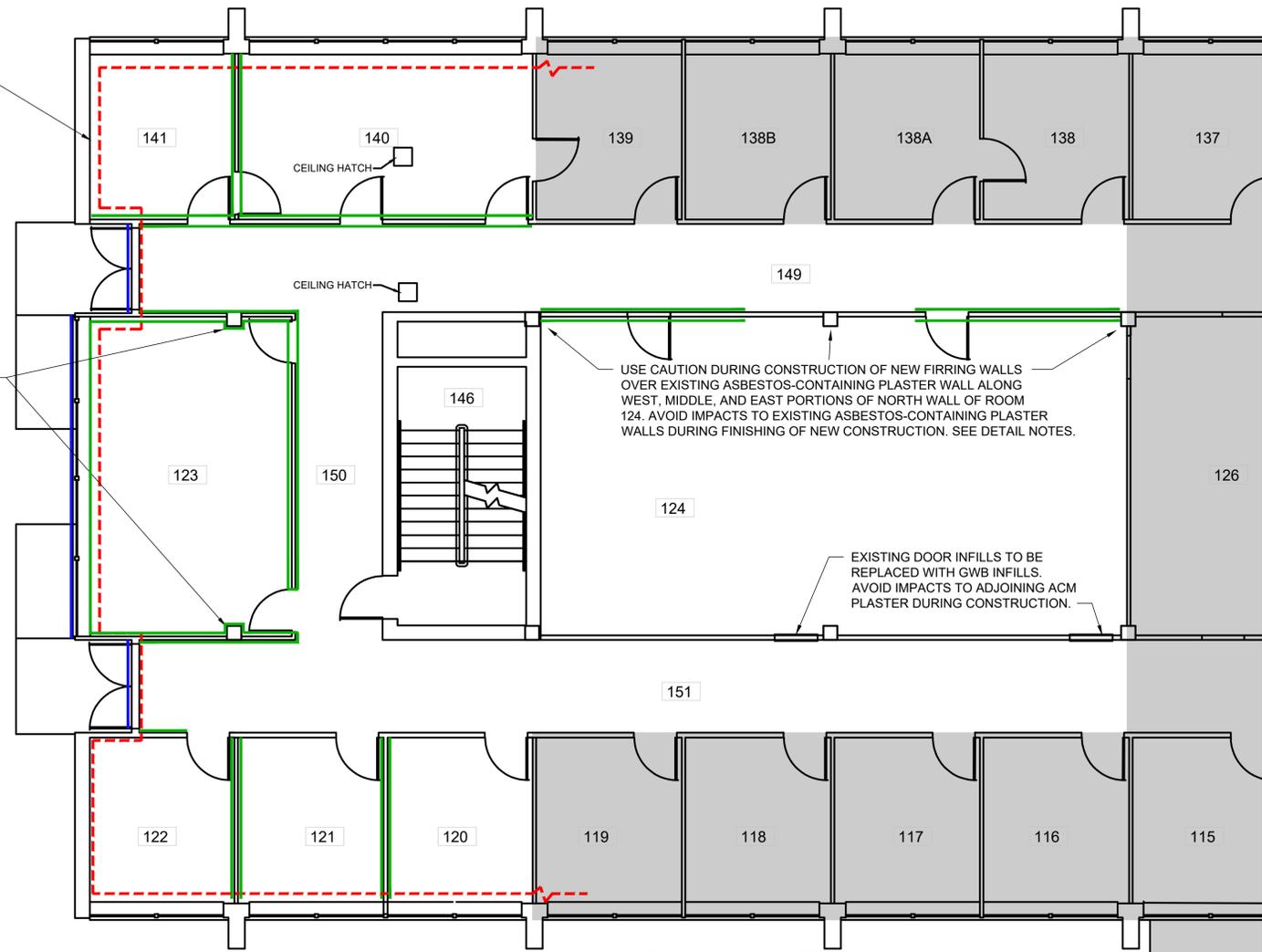
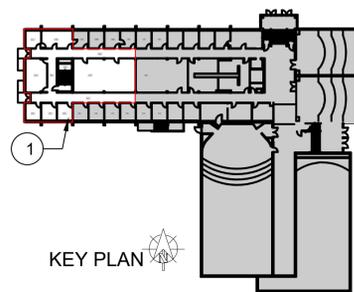
PROPERTY OWNER:
MONTANA STATE UNIVERSITY
P.O. BOX 172760
BOZEMAN, MONTANA 59717

REM02 - DETAIL 1 - BASE SCOPE - EXISTING FIRST FLOOR - ACM NOTES:

- A) Owner will remove any unfastened equipment, furniture, supplies, etc., as necessary for GC/AC to complete the work.
- B) Although LBP was identified on structural steel beams above ceilings within the project area, disturbance of the LBP is not anticipated as part of this project. As noted on Detail 1, steel columns in Room 123 are expected to be exposed during construction but were not accessible for evaluation during the inspection. If structural steel columns are exposed, further evaluation may be required to determine if they are coated with LBP. In the event confirmed or presumed LBP is expected to be impacted during new construction, coordinate with PIH and AC to ensure LBP is properly removed prior to impacts.
- C) If selective demolition activities are necessary and are likely to result in disturbance of asbestos or LBP, they should be conducted using the same controls and methods required for asbestos or LBP removal, respectively. This may include removal of the lay-in ceiling grid from the plaster wall system materials, for example. See below.
- D) The plaster wall system (P1.1) contains detectable asbestos at a concentration of 0.75%. Although the plaster walls are not ACM, they must be handled in accordance with OSHA worker protection requirements and disposed in accordance with DEQ Solid Waste requirements. The intent of the project is to remove the asbestos-containing plaster walls at select locations only, as shown on Detail 1.
- E) Plaster ceilings throughout the project area (including overspray on surfaces above the ceilings) were determined to be a different homogenous area from the plaster wall system. Plaster ceiling materials were determined not to contain detectable asbestos as confirmed through separate sampling and analysis. The intent of the project is to remove non-asbestos plaster ceilings throughout the project area. AC to remove sufficient non-asbestos plaster at edges of ceilings which contact asbestos-containing plaster walls to ensure GC does not impact asbestos-containing plaster walls during remaining ceiling removal. Selective demolition of non-asbestos ceiling tiles (applied with non-asbestos mastic) may be necessary to determine locations where this will be required.
- F) Presumed ACM thermal system insulation (TSI), including fiberglass straight pipe insulation and mudded joint fittings, was observed above the existing ceiling along the exterior north wall of Room 140 and is presumed to be present along exterior walls throughout project area. The intent is to avoid impacts to TSI during this project - do not impact, damage, or remove, if feasible. Promptly notify OR if damage is caused or expected to be unavoidable.
- G) As discussed in the general notes, Owner requires negative pressure enclosures for removal of all interior asbestos materials (including ACM and non-ACM with detectable asbestos), regardless of condition. Specifically, removal of non-ACM asbestos-containing plaster will require full negative-pressure enclosures for this project.
- H) Non-asbestos waste materials, if any, may be disposed as general construction debris (with regard to asbestos) if removed from the work area prior to initiation of abatement activities, unless noted otherwise. Non-asbestos materials which are contaminated with asbestos (if any) shall be removed as asbestos during abatement and are NOT to be included in the general construction waste stream. All asbestos waste shall be transported and properly disposed by AC as asbestos special waste, as discussed in the General Notes.
- I) Clearance monitoring and clearance criteria must be completed as discussed in the General Notes.
- J) Following completion of abatement, GC shall use appropriate caution when installing the new construction, avoiding any impacts to the existing asbestos-containing plaster walls. This includes, but may not be limited to, replacement of existing door infills with new gypsum wallboard infills along the south wall of Room 124, as well as tie-in of new walls to existing plaster walls at various locations throughout the project area. Where anchoring into existing asbestos-containing plaster walls is required, GC to select methods which limit the potential for fiber release and/or exposure. For example, avoid drilling pilot holes and setting anchors into existing asbestos-containing plaster. GC to promptly notify Owner or Owner's Rep in the event impacts to the existing plaster walls are experienced or expected to be unavoidable. See the Construction Documents for work in these areas and how the new construction interfaces with the existing building.

USE CAUTION DURING CONSTRUCTION OF NEW FIRRING WALL OVER EXISTING ASBESTOS-CONTAINING PLASTER WALL ALONG WEST EDGE OF ROOM 141. AVOID IMPACTS TO EXISTING ASBESTOS-CONTAINING PLASTER WALLS DURING FINISHING OF NEW CONSTRUCTION. SEE DETAIL NOTES.

STEEL COLUMNS MAY BE IMPACTED BY REFINISHING AFTER REMOVAL OF PLASTER. NOT ACCESSIBLE FOR INITIAL TESTING - MAY BE COATED WITH LEAD-BASED PAINT. ADDITIONAL TESTING MAY BE REQUIRED.



AC TO REMOVE NON-ASBESTOS PLASTER AT EDGES OF CEILINGS WHICH CONTACT ASBESTOS-CONTAINING PLASTER WALLS TO ENSURE GC DOES NOT IMPACT ASBESTOS-CONTAINING PLASTER WALLS DURING CEILING REMOVAL. CAREFUL SELECTIVE DEMOLITION OF NON-ASBESTOS CEILING TILES THROUGHOUT MAY BE NECESSARY TO DETERMINE LOCATIONS WHERE THIS WILL BE REQUIRED. SEE DETAIL NOTES AND PLASTER NOTE IN LEGEND FOR MORE INFO.



LEGEND

— P1.1 - GRAY PLASTER WALL SYSTEM THROUGHOUT PROJECT AREA. CONFIRMED TO CONTAIN 0.75% ASBESTOS. NON-ACM, BUT MUST BE HANDLED PER OSHA AND DISPOSED PER DEQ SOLID WASTE. CEILING PLASTER DOES NOT CONTAIN DETECTABLE ASBESTOS.

INTENT IS TO REMOVE ASBESTOS-CONTAINING PLASTER WALLS AT SELECT LOCATIONS ONLY. AC TO REMOVE PLASTER WALLS IN AREAS SHOWN BY GREEN LINES ON DETAIL 1. AC ALSO TO REMOVE SUFFICIENT NON-ASBESTOS PLASTER AT EDGES OF CEILINGS WHICH CONTACT ASBESTOS-CONTAINING PLASTER WALLS TO ENSURE GC DOES NOT IMPACT ASBESTOS-CONTAINING PLASTER WALLS DURING REMAINING CEILING REMOVAL. CAREFUL SELECTIVE DEMOLITION OF NON-ASBESTOS CEILING TILES MAY BE NECESSARY TO DETERMINE LOCATIONS WHERE THIS WILL BE REQUIRED.

ADDITIONALLY, GC TO USE CAUTION DURING NEW CONSTRUCTION TO AVOID LATER IMPACTS TO REMAINING ASBESTOS-CONTAINING PLASTER WALLS. SEE DETAIL NOTES AND PHOTOS FOR MORE INFO.

— M1.1 WHITE PUTTY. PRESENT ALONG EXTERIOR EDGES OF WINDOWS, DOORS, AND ROOF FLASHING (ABOVE ENTRYWAY AWNING). CONFIRMED TO CONTAIN 2% ASBESTOS. NON-FRIABLE IN PLACE, SO ANTICIPATED TO BE CATEGORY II NON-FRIABLE ACM DURING REMOVAL, UNLESS RENDERED FRIABLE. INTENT IS TO REMOVE COMPLETELY DURING WINDOW AND DOOR REPLACEMENT, INCLUDING COMPLETE REMOVAL FROM ADJOINING BRICK. DO NOT REMOVE FROM FLASHING ABOVE AWNING, BECAUSE THE PROJECT DOES NOT INCLUDE WORK AT THE AWNING ROOF. SEE DETAIL NOTES AND PHOTOS FOR MORE INFO.

- - - I2.2 - YELLOW FIBERGLASS PIPE INSULATION WITH PAPER JACKET AND I2.3 - MUDDLED JOINT FITTINGS WITH CLOTH WRAP WERE OBSERVED ON PIPES ALONG THE NORTH EXTERIOR WALL OF ROOM 140 AND ARE PRESUMED TO BE PRESENT ALONG EXTERIOR WALLS THROUGHOUT THE PROJECT AREA. THESE THERMAL SYSTEM INSULATION (TSI) MATERIALS ARE NOT EXPECTED TO BE IMPACTED BY THE CONSTRUCTION PROJECT AND WERE THEREFORE EXCLUDED FROM THE SCOPE OF THE ASBESTOS INSPECTION. IN THE ABSENCE OF ANALYTICAL DATA, BOTH TYPES OF TSI ARE PRESUMED TO BE ACM AND ARE ANTICIPATED TO BE FRIABLE (RACM) IF DAMAGED OR REMOVED. THE INTENT OF THE PROJECT IS TO AVOID DISTURBING OR REMOVING BOTH TSI MATERIALS, IF FEASIBLE. SEE DETAIL NOTES AND PHOTOS FOR MORE INFO.



PHOTO 1:
1) REMOVE PLASTER WALL SYSTEM (CONTAINS 0.75% ASBESTOS) AT SELECT LOCATIONS SHOWN ON DETAIL 1, INCLUDING ALONG NORTH ENTRANCE TO ROOM 124 (SHOWN).
2) USE CAUTION TO AVOID IMPACTS TO REMAINING ASBESTOS-CONTAINING PLASTER WALLS DURING NEW CONSTRUCTION, INCLUDING AT NEW CEILING GRID INSTALLATION POINTS AND AT DOOR INFILL LOCATIONS (PICTURED AT BACK OF ROOM 124).



PHOTO 2:
1) CEILING PLASTER AND OVER SPRAY (PICTURED) DID NOT CONTAIN DETECTABLE ASBESTOS.
2) FIBERGLASS STRAIGHT AND MUDDLED JOINT FITTING THERMAL SYSTEM INSULATION (BOTH PICTURED) ARE PRESUMED TO BE ACM. DO NOT DAMAGE OR REMOVE, IF FEASIBLE.
3) ORANGE PAINT ON STRUCTURAL BEAMS IS LEAD-BASED PAINT (LBP). DO NOT DAMAGE OR REMOVE, IF FEASIBLE.



PHOTO 3:
1) REMOVE ACM WHITE PUTTY FROM ALONG WINDOWS AND DOORS AT THE EXTERIOR WEST ENTRANCE AREA.
2) DO NOT REMOVE ACM WHITE PUTTY FROM FLASHING ABOVE THE AWNING.



PHOTO 4:
1) REMOVE ACM WHITE PUTTY FROM ALONG WINDOWS (PICTURED) AND DOORS AT THE EXTERIOR WEST ENTRANCE AREA, INCLUDING FROM ADJOINING BRICK SURFACES.