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TECHNICAL SPECIFICATIONS

PREPARED FOR

**UPPER DARBY SCHOOL DISTRICT
8201 N. LANSDOWNE AVENUE
UPPER DARBY, PA 19082**

FOR

ASBESTOS REMOVAL

AT

**FORMER DELAWARE COUNTY MEMORIAL HOSPITAL
501 N. LANSDOWNE AVENUE
DREXEL HILL, PA 19026**

CRITERION'S PROJECT NO. 261264

PREPARED BY

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SECTION 1

TECHNICAL SPECIFICATIONS

1.1 TERMINOLOGY

The following terms used in these Specifications are defined as listed below:

- A. Abatement: Procedures to control fiber release from asbestos-containing building materials. These procedures include securing the Work area, removing the material, cleaning the area, and disposal of the material.
- B. Air Monitoring: The process of measuring the fiber content of a specific volume of air in a stated period of time.
- C. Air Lock: A System for permitting ingress and egress with minimum air movement between a contaminated area and an uncontaminated area. It consists of two curtained doorways separated by a dead air space of 4 feet.
- D. Amended Water: Water to which a surfactant has been added.
- E. Onsite Hygienist: The onsite professional employed by Criterion Laboratories, Incorporated and hired by the Owner for the purpose of ensuring that Work is in compliance with these specifications.
- F. Authorized Person or Visitor: The building Owner(s), or his authorized representative, or any representative of a regulatory or other agency having jurisdiction over the Project.
- G. AHERA: Asbestos Hazard Emergency Response Act (and associated regulations; 40 CFR 763)
- H. Clean Room: An uncontaminated area or room which is a part of the Work decontamination unit with provisions for storage of worker's street clothes and protective equipment.
- I. Curtained Doorway: A device to allow ingress and egress from one room to another while permitting minimal air movement between the rooms. It is typically constructed by placing two overlapping sheets of plastic over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one sheet along one vertical side of the doorway, and securing the vertical edge of the other sheet along the opposite vertical side of the doorway.

- J. Decontamination Enclosure System: A series of connected rooms, with curtained doorways between any two adjacent rooms, for the decontamination of workers and of materials and equipment. A decontamination enclosure system always contains at least one air lock.
- K. Equipment Decontamination Enclosure: That portion of a decontamination unit designed for controlled transfer of materials and equipment, typically consisting of a washroom and a holding area.
- L. Equipment Room: A contaminated area or room which is part of the worker decontamination unit with provisions for storage of contaminated clothing and equipment.
- M. Fixed Object: A unit of equipment or furniture in the Work area which cannot be removed for the Work area.
- N. Glovebag Technique: A method with limited applications for removing small amounts of friable asbestos-containing material (ACM) from HVAC ducts, short piping runs, valves, joints, elbows, and other nonplanar surfaces in a non-contained work area. The glovebag assembly is a manufactured or fabricated device consisting of a glovebag (typically constructed of 6 mil transparent plastic), two inward projecting longsleeve rubber gloves, one inward projecting waterwand sleeve, an internal tool pouch, and an attached, labeled receptacle for asbestos waste. The glovebag is constructed and installed in such a manner that it surrounds the object or area to be decontaminated and contains all asbestos fibers released during the removal process. All workers who are permitted to use the glovebag technique must be highly trained, experienced, and skilled in this method.
- O. HEPA Filter: A high efficiency particulate absolute (HEPA filter capable of trapping and retaining 99.97 percent of particles (asbestos fibers) greater than 0.3 micrometers in mass median aerodynamic equivalent diameter.
- P. HEPA Vacuum Equipment: Vacuuming equipment with a HEPA filter system.
- Q. Holding Area: A chamber in the equipment decontamination area located between the washroom and an uncontaminated area. The holding area comprises an air lock.
- R. Log Book: A notebook or other book containing essential project data and daily project information and a daily project diary. This book is kept on the project site at all times.
- S. Movable Object: A unit of equipment or furniture in the Work area which can be removed from the Work area (this does not include objects that are bolted to the floor, i.e. bookshelves).

- T. Negative Air Pressure Equipment: A portable local exhaust system equipped with HEPA filtration and capable of maintaining a constant, low velocity air flow into contaminated areas from adjacent uncontaminated areas.
- U. Removal: All herein specified procedures necessary to remove ACM from the designated areas and to dispose of these materials at an acceptable site.
- V. Shower Room: A room between the clean room and the equipment room in the worker decontamination unit with hot and cold or warm running water and suitably arranged for complete showering during decontamination. The shower room comprises an air lock between contaminated and clean areas.
- W. Surfactant: A chemical wetting agent added to water to improve penetration.
- X. Washroom: A room between the Work area and the holding area in the equipment decontamination area. The washroom comprises an air lock.
- Y. Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with water, and by afterwards disposing of these cleaning tools as asbestos-contaminated waste.
- Z. Work Area: Designated rooms, spaces, or areas of the Project in which asbestos abatement actions are to be undertaken or which may become contaminated as a result of such abatement actions. A contained work area is a work area which has been sealed, plasticized, and equipped with a decontamination enclosure system. A non-contained work area is an isolated or controlled-access work area which has neither been plasticized nor equipped with a decontamination enclosure system.
- AA. Worker Decontamination Enclosure System: That portion of a decontamination unit designed for controlled passage of workers, and other personnel and authorized visitors, typically consisting of a clean room, a shower room and an equipment room.

1.2 SCOPE OF WORK

The Work shall include furnishing all materials, labor, equipment, and incidentals for the complete and proper removal and disposal of all accessible asbestos-containing and asbestos-contaminated materials (ACM) outlined in the scope of work and within the time constraints and associated with the following areas:

- A. Former Delaware County Memorial Hospital
501 N. Lansdowne Avenue
Drexel Hill, PA 19026

Technical Specifications for Asbestos Removal at the Former Delaware County Memorial Hospital

<u>Location</u>	<u>Floor</u>	<u>Material</u>	<u>Quantity</u>	<u>Condition</u>	<u>Friable (Y/N)</u>
Penthouse Areas					
Penthouse 1	-	Window Glazing (Interior)	15 LF	Damaged	N
		Door Caulk (Exterior)	10 LF	Not Damaged	N
		Vent Caulk on Red Metal Louvres (Exterior)	60 LF	Not Damaged	N
		Window Caulk (Exterior)	15 LF	Not Damaged	N
Penthouse 2	-	Expansion Caulk (Exterior)	200 LF	Not Damaged	N
Penthouse 3	-	Insulation Associated w/ Generator #3 tank	60 SF	Not Damaged	Y
		Door Caulk (Interior) to Large Orange Door	50 LF	Not Damaged	N
South Stair Tower	-	Floor Tile - 12x12 Tan w/ White Speck & Black Mastic	1,500 SF	Not Damaged	N
		Stair Tread (Green) & Black Mastic	1,500 SF	Not Damaged	N
6 th Floor					
A-Wing Hallway	6	12x12 Floor Tile Brown W/ Mastic Black	700 SF	Not Damaged	N
		12x12 Floor Tile White W/ Mastic Black	700 SF	Not Damaged	N
West Stair Tower	6	9x9 Floor Tile W/ Mastic Black	1,500 SF	Not Damaged	N
Restricted Area Nurse Admin Office	6	12x12 Floor Tile White (Bottom Layer) W/ Mastic Black	120 SF	Not Damaged	N
Sterile Processing	6	12x12 Floor Tile White W/ Black Mastic	2,000 SF	Not Damaged	N
Men's Locker Room	6	Sheet Floor W/ Black Mastic	500 SF	Not Damaged	N
Women’s Locker Room	6	Sheet Floor W/ Black Mastic	400 SF	Not Damaged	N
Hemodialysis	6	12x12 Floor Tile Brown (Under Sheet Floor) W/ Black Mastic	500 SF	Not Damaged	N
Hemodialysis Storage	6	12x12 Floor Tile White (Under Sheet Floor) W/	100 SF	Not Damaged	N

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<u>Location</u>	<u>Floor</u>	<u>Material</u>	<u>Quantity</u>	<u>Condition</u>	<u>Friable (Y/N)</u>
		Black Mastic			
X-Ray Supply Closets	6	9x9 Floor Tile Brown (Bottom Layer) W/ Yellow Mastic	200 SF	Not Damaged	N
Main Pipe Chase (South)	6	Block Pipe Insulation (assumed)	20 LF	Not Damaged	Y
Room 632	6	Corrugated Pipe Insulation	30 LF	Not Damaged	Y
Waiting Room Bathroom 6A	6	Black Mastic A/W Ceramic Floor Tile	50 SF	Not Damaged	N
Restricted Area Conference Room	6	12x12 Floor Tile Beige W/ Black Mastic	225 SF	Not Damaged	N
Exam Room across from Restricted Area Conf. Room	6	12x12 Floor Tile Beige W/ Black Mastic (Bottom Layer)	300 SF	Not Damaged	N
Medical Waste Storage	6	12x12 Floor Tile White (Under Sheet Floor) W/ Black Mastic	60 SF	Not Damaged	N
Storage Closet Across from Room 620	6	12x12 Floor Tile Light Gray W/ Black Mastic	35 SF	Not Damaged	N
Office Supply Room - PT + Monitoring Wing	6	12x12 Floor Tile Beige W/ Black Mastic	50 SF	Not Damaged	N
Endoscopy/Bronchoscopy Rooms	6	Black Mastic A/W Gray Levelling Compound	1,000 SF	Not Damaged	Y
Waiting Room Bathroom	6	Black Mastic under Ceramic Floor Tile	50 SF	Not Damaged	Y
Right Office adj. Courtyard Stairwell	6	Floor Tile - White & Black Mastic (Bottom Layer)	200 SF	Not Damaged	N
Left Office adj. Courtyard Stairwell	6	Floor Tile - White & Black Mastic (Bottom Layer)	150 SF	Not Damaged	N
Middle Office adj. Courtyard Stairwell	6	Floor Tile - Brown & Black Mastic (Bottom Layer)	100 SF	Not Damaged	N
Utility Closet adj. 6C Reception Desk	6	Floor Tile - Tan (Bottom Layer)	50 SF	Not Damaged	N
6C Wing Hall	6	Floor Tile - White & Black Mastic (2 nd Layer)	2,200 SF	Not Damaged	N
		Floor Tile - Brown & Black Mastic (Bottom)	2,200 SF	Not Damaged	N
Rooms 625, 626, 627,	6	Floor Tile - Brown &	1,550 SF	Not	N

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<u>Location</u>	<u>Floor</u>	<u>Material</u>	<u>Quantity</u>	<u>Condition</u>	<u>Friable (Y/N)</u>
628 & 631		Black Mastic (Bottom)		Damaged	
Room 635 Bathroom	6	Floor Tile - green (Bottom Layer)	30 SF	Not Damaged	N
Rooms 632, 633, 634, 635	6	Floor Tile - White & Black Mastic	1,200 SF	Not Damaged	N
6C Exam Room	6	12x12 Floor Tile Beige W/ Black Mastic	150 SF	Not Damaged	N
Offices across from 6C Exam Room	6	12x12 Floor Tile Brown W/ Mastic Black	300 SF	Not Damaged	N
	6	12x12 Floor Tile White W/ Mastic Black	300 SF	Not Damaged	N
6C Medical Waste Storage	6	Floor Tile - 12x12 Beige & Black Mastic (Top Layer)	30 SF	Not Damaged	N
		Floor Tile -12x12 Brown & Black Mastic (Bottom Layer)	35 SF	Not Damaged	N
Bathroom Between Rooms 629 & 631	6	Floor Tile - 12x12 Beige & Black Mastic (Bottom Layer)	35 SF	Not Damaged	N
Courtyard Stairwell	6	Green Stair Tread & Brown Mastic	1,500 SF	Not Damaged	N
5th Floor					
Oxygen Storage	5	12x12 Floor Tile Beige w/ Tan Streak & Black Mastic	225 SF	Not Damaged	N
Utility Closet, 5A adj. Reception Desk	5	Double Layer, 12x12 White w/ Blue & Brown Streak Over Brown Floor Tile	130 SF	Not Damaged	N
5A Patient Room Bathrooms	5	Sheet Floor, Green w/ Black Mastic	500 SF	Not Damaged	N
Room 501	5	Leveling Compound Under Sheet Floor	45 SF	Not Damaged	N
Utility Closet, 5A adj. Double Elevators	5	12x12 Floor Tile White & Black Mastic	20 SF	Not Damaged	N
	5	12x12 Floor Tile Brown & Black mastic	20 SF	Not Damaged	N
Bathroom adj. Elevator, 5A	5	12x12 Floor Tile White w/ Blue Speck & Black Mastic	35 SF	Not Damaged	N

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<u>Location</u>	<u>Floor</u>	<u>Material</u>	<u>Quantity</u>	<u>Condition</u>	<u>Friable (Y/N)</u>
Room 510 - 5B	5	Black Mastic A/W: Sheet Floor	50 SF	Not Damaged	N
		Elbow A/W: Fiber Glass Pipe Insulation	3 SF	Not Damaged	Y
Care Management - 5B	5	Sheet Floor W/ Mastic/Levelling Compound	150 SF	Not Damaged	Y
Hallway by Room 520 - 5C	5	Magnesium Pipe Insulation	25 LF	Not Damaged	Y
Room 523 - 5C	5	Magnesium Pipe Insulation	30 LF	Not Damaged	Y
Room 536	5	Block Pipe Insulation	2 LF	Damaged	Y
Therapy Room - 5B	5	Sheet Floor W/ Mastic	200 SF	Not Damaged	N
5B Common Room	5	Sheet Floor W/ Mastic	650 SF	Not Damaged	N
Room 516	5	Sheet Floor W/ Mastic	220 SF	Not Damaged	N
Room 518	5	Sheet Floor W/ Mastic	220 SF	Not Damaged	N
Room 522	5	Sheet Floor W/ Mastic	220 SF	Not Damaged	N
Soiled Utility Room	5	Sheet Floor W/ Mastic	120 SF	Not Damaged	N
Reception Supply Closet	5	12x12 Floor Tile White W/ Black Mastic	30 SF	Not Damaged	N
Bathroom Between Rooms 530 & 532	5	Brown Sheet Floor w/ Leveling Compound & Black Mastic	35 SF	Not Damaged	N
527 Pipe Chase	5	Block Pipe Insulation	30 LF	Damaged	Y
Rooms 540-534	5	Block Pipe Insulation (above plaster ceiling)	80 LF	Damaged	Y
Rooms 535-545	5	Block Pipe Insulation (above plaster ceiling)	110 LF	Damaged	Y
Room 511	5	Block Pipe Insulation (behind plaster wall)	50 LF	Damaged	Y
Room 511 Bathroom	5	Pipe Fittings A/W Fiberglass	8 EA	Not Damaged	Y
Hallway outside 510	5	Block Pipe Insulation	20 LF	Damaged	Y
Fire Tower Hallway by 510	5	Block Pipe Insulation	15 LF	Damaged	Y

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<u>Location</u>	<u>Floor</u>	<u>Material</u>	<u>Quantity</u>	<u>Condition</u>	<u>Friable (Y/N)</u>
Room 512	5	Block Pipe Insulation (behind hard walls and ceilings)	20 LF	Significant	Y
Room 512	5	Block Pipe Insulation Debris	120 SF	Significant	Y
Room 514	5	Block Pipe Insulation and Debris (above plaster ceiling)	160 SF	Significant	Y
Room 516	5	Block Pipe Insulation (behind hard wall)	20 LF	Damaged	Y
Room 516	5	Block Pipe Insulation Debris	60 SF	Significant	Y
Room 516 Bathroom	5	Block Pipe Insulation Debris	60 SF	Significant	Y
Room 512 Bathroom	5	Sheet Floor W/ Mastic	45 SF	Not Damaged	N
Room 510 Bathroom	5	Sheet Floor W/ Mastic	45 SF	Not Damaged	N
Rooms 515 and 517	5	Block Pipe Insulation (behind hard walls)	40 LF	Damaged	Y
Rooms 515 and 517	5	Block Pipe Insulation (above hard ceiling)	50 LF	Damaged	Y
5C Wing Patient Room Bathrooms	5	Sheet Floor W/ Mastic	140 SF	Not Damaged	N
Room 531	5	Block Pipe Insulation	4 LF	Not Damaged	Y
Room 550-546	5	Block Pipe Insulation (behind hard walls and ceilings)	60 LF	Damaged	Y
Rooms 535-539, 541-547	5	Block Pipe Insulation (behind hard walls and ceilings)	130 LF	Damaged	Y
MOB- Suite 502	5	Black Mastic A/W Brown Mottled 12"x12" Floor Tile	200 SF	Not Damaged	N
4th Floor					
Rooms 3 through 7	4	Black Mastic under Sheet Floor (multiple colors)	2,250 SF	Not Damaged	N
Medical Waste Storage	4	Sheet Floor w/ Mastic	200 SF	Not Damaged	N
Electrical Panel Closet	4	Double Layer Floor Tile, 12x12 White Over	60 SF	Not Damaged	N

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<u>Location</u>	<u>Floor</u>	<u>Material</u>	<u>Quantity</u>	<u>Condition</u>	<u>Friable (Y/N)</u>
		Brown & Black Mastic			
Office adj. Elevator 7	4	9x9 Brown Floor Tile (Under Carpet, Bottom Layer)	100 SF	Not Damaged	N
		9x9 White Floor Tile (Under Carpet, 2nd Layer)	100 SF	Not Damaged	N
Office across from Elevator 8	4	9x9 White Floor Tile (Under Carpet)	100 SF	Not Damaged	N
X-Ray Hallway	4	Brown Floor Tile & Black Mastic (Bottom Layer)	1,200 SF	Not Damaged	N
X-Ray Hallway	4	12x12 Light Gray w/ Gray Speck Floor Tile & Black Mastic	350 SF	Not Damaged	N
Tomography Room 28	4	12x12 Brown w/ Beige Streak Floor Tile & Black Mastic (Bottom Layer)	250 SF	Not Damaged	N
Radiology Bathrooms	4	9x9 Green Floor Tile & Black Mastic	50 SF	Not Damaged	N
Radiology Office adj. Elevator	4	9x9 Green Floor Tile (Under Carpet, 2nd Layer)	150 SF	Not Damaged	N
Radiology Office across from Elevator	4	9x9 White Floor Tile (Under Carpet, Bottom Layer)	150 SF	Not Damaged	N
IR Procedure Room	4	Light Blue Sheet Floor & Black Mastic	400 SF	Not Damaged	N
Medical Waste Storage	4	Sheet Floor, Blue w/ Dark Blue Speck	100 SF	Not Damaged	N
Ultrasound Room 1	4	Floor Tile 12x12 White & Black Mastic (Bottom Layer)	325 SF	Not Damaged	N
Ultrasound Wing Bathroom 4C	4	Black Mastic A/W Leveling Compound	25 SF	Not Damaged	N
Ultrasound Wing Bathroom 4C	4	Black Mastic A/W Brown Floor Tile (2 nd Floor)	25 SF	Not Damaged	N
Office across from Ultrasound Room 1	4	Floor Tile 12x12 Brown & Black Mastic (Bottom Layer)	325 SF	Not Damaged	N

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<u>Location</u>	<u>Floor</u>	<u>Material</u>	<u>Quantity</u>	<u>Condition</u>	<u>Friable (Y/N)</u>
Nuclear Medicine 2	4	Floor Tile 12x12 White & Black Mastic (Bottom Layer)	325 SF	Not Damaged	N
Nuclear Medicine 3	4	Floor Tile 12x12 Brown & Black Mastic (Bottom Layer)	600 SF	Not Damaged	N
Room 438	4	Block Pipe Insulation (above hard ceiling)	20 LF	Damaged	Y
Room 440	4	Block Pipe Insulation (behind hard walls and ceilings)	60 LF	Damaged	Y
Rooms 441-448	4	9x9 White Floor Tile (Bottom Layer)	1200 SF	Not Damaged	N
Rooms 442-448	4	Block Pipe Insulation (behind hard walls and ceilings)	130 LF	Damaged	Y
Rooms 437-447	4	Block Pipe Insulation (behind hard walls and ceilings)	195 LF	Damaged	Y
Rooms 453 to 455	4	Block Pipe Insulation (behind hard walls and ceilings)	100 LF	Damaged	Y
Rooms across from 451 and 449	4	Block Pipe Insulation (behind hard walls)	70 LF	Damaged	Y
Room 451	4	Block Pipe Insulation (above hard ceiling)	25 LF	Damaged	Y
Rooms next to 454	4	Block Pipe Insulation (behind hard walls and ceilings)	60 LF	Damaged	Y
4 th Fl Hallway outside main pipe chase (south)	4	Block Pipe Insulation	20 LF	Damaged	Y
4 th Floor end room next to electrical panels	4	Block Pipe Insulation (behind hard walls and ceilings)	32 LF	Damaged	Y
4 th Floor Main Pipe Chase	4	Block Pipe Insulation	30 LF	Damaged	Y
4 th Floor Maternal Nursing Office	4	Block Pipe Insulation	4 LF	Damaged	Y
4th Floor Nuclear Medicine Room 3	4	Block Pipe Insulation (above hard ceiling)	30 LF	Damaged	Y
4th Floor Nuclear Medicine Room 2	4	Block Pipe Insulation (above hard ceiling)	20 LF	Damaged	Y

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<u>Location</u>	<u>Floor</u>	<u>Material</u>	<u>Quantity</u>	<u>Condition</u>	<u>Friable (Y/N)</u>
4th Floor Nuclear Medicine Room 1	4	Block Pipe Insulation (above hard ceiling)	60 LF	Damaged	Y
4th Floor Nuclear Medicine Room 1	4	Block Pipe Insulation (above hard ceiling)	40 SF	Damaged	Y
4 th Floor RIA Lab	4	Block Pipe Insulation (behind hard walls)	40 LF	Not Damaged	Y
Office across from Nuclear Medicine Room 2	4	Block Pipe Insulation (behind hard walls)	20 LF	Not Damaged	Y
3rd Floor					
Bathroom adj. Elevator	3	12x12 White Floor Tile & Black Mastic (Under Sheet Floor)	35 SF	Not Damaged	N
IT Closet adj. Reception	3	12x12 Gray w/ Blue & Brown Streak & Black Mastic	35 SF	Not Damaged	N
Clean Utility Room	3	12x12 White & Black Mastic (Bottom Layer)	325 SF	Not Damaged	N
3A Wing Patient Room Bathrooms	3	Black Mastic Under Sheet Floor	750 SF	Not Damaged	N
Lab Throughout	3	12x12 white w/ Gray Streak Floor Tile & Black Mastic	800 SF	Not Damaged	N
		12x12 Gray w/ Dark Gray Streak Floor Tile & Black Mastic	1,500 SF	Not Damaged	N
		12x12 Tan Mottled Floor Tile & Black Mastic	1,500 SF	Not Damaged	N
Lab Rear Office	3	12x12 White w/ Blue Speck Floor Tile & Black Mastic	120 SF	Not Damaged	N
Medication Room	3	9x9 Brown Floor Tile & Black Mastic (Bottom Layer)	200 SF	Not Damaged	N
3rd floor Staff room to 345	3	Block Pipe Insulation (behind hard walls and ceilings)	100 LF	Damaged	Y
Room 346 to room adjacent fire tower	3	Block Pipe Insulation (behind hard walls and ceilings)	80 LF	Damaged	Y

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Room 343 to Care Management	3	Block Pipe Insulation (behind hard walls and ceilings)	120 LF	Damaged	Y
Room 340	3	Block Pipe Insulation (behind hard walls)	20 LF	Damaged	Y
3rd Floor Clean Utility Pipe Chase	3	Block Pipe Insulation	30 LF	Damaged	Y
3rd Floor Clean Utility	3	Block Pipe Insulation	50 LF	Damaged	Y
3C Patient Rooms & Bathrooms	3	Black Mastic Under Sheet Floor	1200 SF	Not Damaged	N
Room 335	3	Block Pipe Insulation Debris (above hard ceiling)	10 SF	Significant	Y
Room 335	3	Pipe Fitting Insulation	2 LF	Damaged	Y
Room 327 Right Wing	3	Block Pipe Insulation (behind hard walls)	10 LF	Not Damaged	Y
3rd Floor Storage Room to 328	3	Block Pipe Insulation (behind hard walls and ceilings)	100 LF	Damaged	Y
Rooms 330 to 332	3	Block Pipe Insulation (behind hard walls and ceilings)	20 LF	Significant	Y
Rooms 330 to 332	3	Block Pipe Insulation Debris (above hard ceiling)	200 SF	Significant	Y
Rooms 334 to 336	3	Block Pipe Insulation (behind hard walls and ceilings)	20 LF	Significant	Y
Rooms 334 to 336	3	Block Pipe Insulation Debris (above hard ceiling)	400 SF	Significant	Y
Room 325 Right Wing	3	Block Pipe Insulation (behind hard wall)	20 SF	Damaged	Y
Nurse's Station Adjacent to Room 335	3	Pipe Fitting Insulation	2 EA	Not Damaged	Y
Rooms 349 to 355	3	Block Pipe Insulation (behind hard walls and ceilings)	270 SF	Damaged	Y
Rooms 349 to 355	3	Pipe Fitting Insulation (behind hard walls and	20 LF	Damaged	Y

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<u>Location</u>	<u>Floor</u>	<u>Material</u>	<u>Quantity</u>	<u>Condition</u>	<u>Friable (Y/N)</u>
		ceilings)			
3 rd Floor Dictation Room to Room 352	3	Block Pipe Insulation (behind hard walls and ceilings)	50 LF	Damaged	Y
3 rd Floor Dictation Room to Room 352	3	Pipe Fitting Insulation (behind hard walls and ceilings)	10 LF	Damaged	Y
Hallway to CICU	3	Block Pipe Insulation	210 LF	Damaged	Y
Hallway outside CICU by electrical room	3	Block Pipe Insulation (behind hard wall)	12 LF	Not Damaged	Y
Office by CICU adjacent to Electrical Closet	3	Block Pipe Insulation Debris	10 SF	Significant	Y
CICU Electrical Closet	3	Block Pipe Insulation Debris	10 SF	Significant	Y
3 rd Floor Hallway outside Elevator 3 and Historiology	3	Corrugated Pipe Insulation	70 LF	Damaged	Y
2nd Floor					
Executive Office Bathroom	2	12x12 Beige Floor Tile & Black Mastic (Bottom Layer)	15 SF	Not Damaged	N
		12x12 Brown Floor Tile & Black Mastic (Bottom Layer)	15 SF	Not Damaged	N
Daily Living Area	2	Sink mastic	4 SF	Not Damaged	Y
Daily Living Area & adj. Offices	2	Black Mastic under Floor Tile	520 SF	Not Damaged	N
Offices in ED Hallway	2	12x12 White w/ Blue & Brown Streak Floor Tile & Black Mastic	400 SF	Not Damaged	N
ED Hallway	2	Elbow Joint Associated W/ Fiberglass Pipe Insulation	5 LF	Not Damaged	Y
ED X-Ray Area throughout	2	12x12 Blue w/ White Streak Floor Tile & Black Mastic (bottom layer)	1,000 SF	Not Damaged	N
Area 2B Throughout	2	Fitting Associated /w Fiberglass Piping	15 LF	Not Damaged	Y

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<u>Location</u>	<u>Floor</u>	<u>Material</u>	<u>Quantity</u>	<u>Condition</u>	<u>Friable (Y/N)</u>
		Insulation			
Conference Room L Bathroom	2	12x12 Brown Floor Tile & Black Mastic	55 SF	Not Damaged	N
Hall Throughout	2	9x9 Gray Floor Tile (2nd layer)	1,500 SF	Not Damaged	N
Room 212	2	9x9 Gray Floor Tile (2nd layer)	150 SF	Not Damaged	N
2C Wing Patient Rooms	2	12x12 White Floor Tile & Black Mastic	3,600 SF	Not Damaged	N
Universal Bathroom	2	9x9 Tan w/ Beige Floor Tile & Yellow Mastic (Bottom Layer)	400 SF	Not Damaged	N
2C Wing Kitchenette	2	12x12 Tan Floor Tile & Yellow Mastic (3rd layer)	100 SF	Not Damaged	N
2C Wing West	2	Elbow Joint Associated W/ Fiberglass Pipe Insulation	5 LF	Not Damaged	Y
Rooms 213-223	2	Block Pipe Insulation (behind hard walls and ceilings)	260 LF	Damaged	Y
Rooms 214-222	2	Block Pipe Insulation (behind hard walls and ceilings)	260 LF	Damaged	Y
2 nd Floor Main Pipe Chase	2	Block Pipe Insulation	30 LF	Not Damaged	Y
2 nd Floor Kitchen Pipe Chase	2	Block Pipe Insulation	15 LF	Not Damaged	Y
Rooms 210 -212	2	Block Pipe Insulation (behind hard walls and ceilings)	100 LF	Damaged	Y
Rooms 204-208	2	Block Pipe Insulation (behind hard walls and ceilings)	90 LF	Damaged	Y
Room 202	2	Block Pipe Insulation (above hard ceilings)	20 LF	Damaged	Y
Room 202	2	Block Pipe Insulation Debris	10 SF	Significant	Y
Rooms 201-207	2	Block Pipe Insulation (behind hard walls and ceilings)	200 LF	Damaged	Y
Rooms 209-211	2	Block Pipe Insulation	125 LF	Damaged	Y

Technical Specifications for Asbestos Removal at the Former Delaware County Memorial Hospital

<u>Location</u>	<u>Floor</u>	<u>Material</u>	<u>Quantity</u>	<u>Condition</u>	<u>Friable (Y/N)</u>
		(behind hard walls and ceilings)			
Room 224	2	Block Pipe Insulation (behind hard walls and ceilings)	35 LF	Damaged	Y
2 nd Floor Tub Room	2	Block Pipe Insulation (behind hard walls and ceilings)	45 LF	Damaged	Y
2nd Floor old wing Large Room	2	Block Pipe Insulation (above hard ceilings)	40 LF	Damaged	Y
2 nd Floor- Throughout West Wing	2	Pipe Fittings A/W Fiberglass	25 LF	Not Damaged	Y
2nd Floor Volunteer Office	2	Pipe Fittings A/W Fiberglass	6 LF	Damaged	Y
2nd Floor Suite across from Volunteer Office	2	Pipe Fittings A/W Fiberglass	2 LF	Not Damaged	Y
1st Floor					
Loading Dock	1	12x12 Floor Tile Tan W/ White Speck	1,000 SF	Not Damaged	N
Maintenance Area Hall	1	12x12 Floor Tile Tan W/ White Speck	800 SF	Not Damaged	N
Annex Office Area	1	Floor Tile Beige & Black Mastic (2nd Layer)	3,200 SF	Not Damaged	N
		Floor Tile Green & Black Mastic (Bottom Layer)	3,200 SF	Not Damaged	N
1 st Floor Hall Throughout	1	Floor Tile Tan & Black Mastic (Bottom Layer)	7,000 SF	Not Damaged	N
Pharmacy	1	Floor Tile Tan & Black Mastic (Bottom Layer)	1,400 SF	Not Damaged	N
PT/Speech & Language Office	1	Floor Tile Tan & Black Mastic (Bottom Layer)	550 SF	Not Damaged	N
West - Employee Health	1	12x12 Floor Tile Flat Brown & Black Mastic	250 SF	Not Damaged	N
West - Respiratory Storage	1	12x12 Floor Tile Flat Brown & Black Mastic	250 SF	Not Damaged	N
		12x12 Floor Tile Flat White & Black Mastic	250 SF	Not Damaged	N
West - Employee Health	1	12x12 Floor Tile Flat White & Black Mastic	250 SF	Not Damaged	N
Care Management	1	9x9 Brown Floor Tile & Black Mastic	100 SF	Not Damaged	N

Technical Specifications for Asbestos Removal at the Former Delaware County Memorial Hospital

<u>Location</u>	<u>Floor</u>	<u>Material</u>	<u>Quantity</u>	<u>Condition</u>	<u>Friable (Y/N)</u>
Laundry Locker Room	1	9x9 Gray Floor Tile & Black Mastic	400 SF	Not Damaged	N
Conference Rooms A&C	1	Black Glue Dot Associated /W Chalkboard	50 SF	Not Damaged	N
1st Floor Morgue	1	Block Pipe Insulation (above hard ceilings)	45 LF	Damaged	Y
1st floor Hallway East across from Laundry Clean Room	1	Block Pipe Insulation	16 LF	Not Damaged	Y
1st Floor East Storage room to hallway across from Laundry clean room	1	Block Pipe Insulation	10 LF	Damaged	Y
1st Floor Hallway outside 1E	1	Block Pipe Insulation	6 LF	Not Damaged	Y
1st Floor West Wing - Heart Station	1	Pipe Fittings A/W Fiberglass	44 LF	Damaged	Y
1st Floor West Wing care management hallway outside high voltage room	1	Block Pipe Insulation	2 LF	Not Damaged	Y
1st Floor Cafeteria	1	Block Pipe Insulation	100 LF	Damaged	Y
1st Floor Cafeteria	1	Corrugated Pipe Insulation	40 LF	Damaged	Y
1st Floor Kitchen outside Dietary Office	1	Block Pipe Insulation	75 LF	Damaged	Y
1 st Floor- Kitchen	1	Pipe Fittings A/W Fiberglass	20 LF	Not Damaged	Y
1 st Floor- Kitchen	1	White Fireproofing (on columns)	180 SF		
1st Floor West Medical Library	1	Pipe Fittings A/W Fiberglass	4 LF	Not Damaged	Y
1 st Floor- West Wing Hallway	1	White Fireproofing (on columns)	280 SF	Not Damaged	Y
1st Floor Hallway outside Elevator 2 and 3	1	Block Pipe Insulation	20 LF	Damaged	Y
1st Floor Women's Bathroom across from Mail Room	1	Block Pipe Insulation	5 LF	Damaged	Y
1st Floor Women's Bathroom across from Mail Room	1	Block Pipe Insulation Debris	10 SF	Significant	Y
1st Floor Women's	1	Pipe Fittings A/W	8 LF	Not	Y

Technical Specifications for Asbestos Removal at the Former Delaware County Memorial Hospital

<u>Location</u>	<u>Floor</u>	<u>Material</u>	<u>Quantity</u>	<u>Condition</u>	<u>Friable (Y/N)</u>
Bathroom across from Mail Room		Fiberglass		Damaged	
1st Floor Hallway outside Women's Bathroom	1	Block Pipe Insulation	15 LF	Damaged	Y
Room 1E-02	1	Block Pipe Insulation	20 LF	Damaged	Y
1st Floor High Voltage Room in Care Management Office	1	Block Pipe Insulation	10 LF	Not Damaged	Y
Hallway Outside 1E-03	1	Block Pipe Insulation (in wall)	2 LF	Not Damaged	Y
Room 1E-06	1	Block Pipe Insulation (above hard ceiling)	30 LF	Not Damaged	Y
Room 1E-03	1	Block Pipe Insulation (in wall)	50 LF	Not Damaged	Y
1st Floor Care Management Office, along rear wall	1	Block Pipe Insulation (Metal Jacketed)	70 LF	Not Damaged	Y
Boiler Room above office	1	Block Pipe Insulation	20 LF	Not Damaged	Y
Boiler Room- Mezzanine	1	Boiler Rope	50 LF	Not Damaged	Y
Boiler Room- Mezzanine	1	Boiler Fire Box	50 SF	Not Damaged	Y
Annex-Mechanical Room in Basement	1	Block Pipe Insulation	1000 LF	Damaged	Y
Exterior					
Courtyard- 1 st Floor Entrance	-	Door caulk	15 LF	Not Damaged	N
Courtyard Roof	-	2 nd Layer Roof Field Tar	2000 SF	Not Damaged	N
Throughout Building					
Throughout	All	Contaminated Non-Asbestos Plaster	24,314 SF	Not Damaged	Y

SCOPE OF WORK NOTES:

1. Contractors are reminded to follow all OSHA regulations regarding safety and work in elevated spaces.
2. All quantities are approximate and must be verified by contractors.
3. Demolition of plaster walls and ceilings is required to access most of the asbestos-containing pipe insulation and pipe fittings. Approximately 24,314 SF of plaster demolition will be required. Much of the plaster is contaminated with asbestos pipe insulation debris and shall be removed and disposed of as asbestos-containing waste.
4. Water utilities at the property have been shut off. The abatement contractor is responsible for providing all water necessary to complete abatement.
5. Electrical power at the property is limited and the abatement contractor is responsible for supplying electrical power to each work area.
6. Abatement contractor is responsible for providing portable toilet.

Abatement Schedule

- **Fall 2026**

1.3 APPLICABLE DOCUMENTS

The current issue of each document shall govern. Where conflict among requirements or with these Specifications exists, the more stringent requirements, as determined by the Engineer, shall apply.

1.3.1 Regulations

Comply with applicable federal, state, and local regulations.

1.3.2 Title 29, Code of Federal Regulations, Section 1910.1001 and 1926.1101, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor

1.3.3 Title 40, Code of Federal Regulations, Part 61, Subparts A and B, National Emission Standards for Hazardous Air Pollutants (NESHAP)

1.3.4 Title 40, Code of Federal Regulations, Part 763, Asbestos-Containing Materials in Schools, Final Rule and Notice (ASHERA)

1.3.5 Compliance with Pennsylvania Asbestos Accreditation and Certification Act #161, effective December 21, 1998, which amends Act #194.

1.3.6 All state, county, and city codes and ordinances as applicable.

1.4 SUBMITTALS AND NOTICES

Prior to commencement of Work:

- 1.4.1** Send written notice of proposed abatement Work, to the applicable state agencies (DOLI) and EPA (with copy to Engineer) as follows:
- A. Not fewer than ten (10) days prior to Work.
1. U.S. Environmental Protection Agency
Asbestos NESHAP Contact
Air and Waste Management Division
1650 Arch St.
Philadelphia, PA 19103
 2. Pennsylvania Department of Environmental Protection
 3. Pennsylvania Department of Labor and Industry
- 1.4.2** Submit proof satisfactory to the Engineer that all required permits, site location, and arrangements for transport and disposal of asbestos-containing or contaminated materials, supplies, have been obtained.
- 1.4.3** Submit to the Engineer the Plans and Shop Drawings for the construction of decontamination enclosure systems and for the isolation of the Work areas in compliance with this Specification and applicable regulations.
- 1.4.4** Submit documentation to the Engineer indicating that each employee has had instruction on the hazards of asbestos exposure, on use and fitting of respirator, on protective dress, on the use of showers, on entry and exit from Work area, and on all aspects of Work procedures and protective measures and understands this instruction. Training must be in compliance with 40 CFR 763.
- 1.4.5** Submit verification, signed by a medical doctor, that the employee has been recently examined as required by OSHA regulations. Medical examination will be required for all personnel who may enter the Work areas.
- 1.4.6** Submit names and training certificate of superintendent and foremen who will be performing work related to this Project. Copies of these documents shall be maintained in Project Log Book. Substitutions may be made by written notice to Engineer.

Note: All supervisors and crew foreman who will work on this project must hold a valid certificate of supervisor training granted by an accredited training agency.

- 1.4.7** Submit authorized personnel list of employees who have received training and medical examinations per paragraphs 5.4.4 and 5.4.5 of this section. A copy of this list is to be maintained in Project Log Book.
- 1.4.8** Submit front-end documents of Project Log Book. These documents will include copies of the Contractor's Respiratory Protection program, EPA, and OSHA documents, worker decontamination procedures, equipment decontamination procedures, authorized personnel list, format of daily report sheets, and format of landfill manifests. The completed daily reports and landfill manifests shall be submitted along with pay requests for completed work. Copies of these front-end documents shall be maintained at the site during the asbestos removal phase of the Project.
- 1.4.9** Post warning signs in and around the Work area to comply with OSHA regulations 20 CFR 1910.1001(g)(1) and 1926.1101. The placement of these signs must be coordinate with the Owner.
- 1.4.10** The Owner or Engineer, and the Contractor must agree in writing on building and fixture condition prior to commencement of Work. The Contractor shall submit an inventory of all items removed from the Work area and inventory of all items remaining in the Work area.
- 1.4.11** Submit manufacturer's certificate that vacuums, negative air pressure equipment, and other local exhaust ventilation equipment conform to ANSI Z9.2-79.
- 1.4.12** The asbestos Contractor must inform other employers on-site of the nature of the Contractor's work with asbestos and the existence of and requirements pertaining to regulated areas in order to comply with OSHA regulation 29 CFR 1926.1101(d).

1.5 SUPERINTENDENT, FOREMAN, CRAFTSMAN

The Contractor shall have a job superintendent present at all times while work in this Contract is in progress.

The Project Superintendent shall be thoroughly familiar and experienced with asbestos removal and related work and shall be familiar with and shall enforce the use of all safety procedures and equipment. He shall be knowledgeable of all EPA, OSHA, and NIOSH requirements and guidelines.

In addition to the Superintendent, the Contractor shall furnish one (1) or more licensed supervisor(s) who are familiar and experienced with asbestos removal and its related work, safety procedures, and equipment.

- 1.5.1** It shall be a requirement of this Contract that the superintendent and/or one or more of the Contractor's supervisors be inside the Work area at all times while work is in progress.
- 1.5.2** It is the intent of these Specifications that all phases of the Work shall be executed by skilled craftsmen experienced or receiving training by experienced personnel in each respective trade.
- 1.5.3** Contractor's Superintendent is required to keep the Project Log Book up to date, ensure that all Work criteria is followed in the proper sequence, and to document the progression of the job. Documentation will be required for each individually prepared Work area.

1.6 MATERIAL AND EQUIPMENT

1.6.1 Materials

- 1.6.1.1** Deliver all materials in the original packages, container, or bundles bearing the name of the manufacturer and the brand name.

Store all materials subject to damage off the ground, away from wet or damp surfaces, and under cover sufficient to prevent damage or contamination.

Damaged or deteriorating materials shall not be used and shall be removed from the premises. Material that becomes contaminated with asbestos shall be disposed of in accordance with the applicable regulations.

- 1.6.1.2** Plastic (polyethylene) sheet, of 6 mil thickness or greater as specified in sizes to minimize the frequency of joints.
- 1.6.1.3** Tape capable of sealing joints of adjacent sheets of polyethylene and for attachment of polyethylene sheet to finished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water. Use tape with tough backing which does not leave residue on the adhering surface.
- 1.6.1.4** Surfactant: Shall consist of 50 percent polyoxyethylene ether and 50 percent of polyoxyethylene ester, or equivalent, and shall be mixed with water to provide a concentration of one (1) ounce of surfactant to 5 gallons of water.
- 1.6.1.5** Impermeable containers: Suitable to receive and retain any asbestos-containing or contaminated materials until disposal at an approved site,

labeled in accordance with OSHA Regulation 29 CFR 1910.1001. Containers must be both air and watertight and must be resistant to damage and rupture. Plastic bags shall be a minimum of 6 mil thick.

1.6.1.6 Warning labels and signs: As required by OSHA Regulation 29 CFR 1901.1001 and 1926.1101 and NESHAP 61.149.

1.6.1.7 Other materials: Provide all other materials, such as lumber, nails, and hardware, which may be required to construct and dismantle the decontamination area and the barriers that isolate the Work area.

1.6.2 Tools and Equipment

1.6.2.1 Provide suitable tools for asbestos removal.

1.6.2.2 Negative air pressure equipment: High efficiency particulate absolute (HEPA) filtration systems shall be equipped with filtration equipment in compliance with ANSI Z9.2-79, local exhaust ventilation. No air movement system or air filtering equipment shall discharge unfiltered air outside the Work area. A negative pressure shall be held on the Work area continuously (24 hours a day) from the start of work in the area until the area has been decontaminated and certified as such by the required testing. There shall be a sufficient number of units to provide a minimum of four (4) air changes per hour or a minimum negative pressure differential of 0.02 inches of water in the work area. All exhausted air shall be filtered and discharged outside the building away from any air intake devices. A positive indication of negative air pressure must be present and visible. Continuous negative pressure recording shall be the responsibility of the Contractor. Negative pressure will be verified by the on-site hygienist using smoke testing and/or manometers.

1.7 WORK AREA PREPARATION (Contained Space)

Section 1 covers the removal under full containment for asbestos contaminated plaster wall and ceiling material, fireproofing, generator insulation, boiler insulation, and floor tile and mastic, if approved non-friable removal methods are not used.

Work area must be fully contained with two (2) layers of 6-mil plastic on walls and floors. A 3-stage decontamination unit and keeping work area under negative pressure is also required.

The Contractor understands that this Work will occur at a partially occupied facility and that the utmost care must be taken to prevent the exposure of occupants to airborne asbestos fibers.

In addition, the Contractor understands that asbestos removal Work may present various hazards to his workforce. The Contractor shall take all precautions to assure his workers' safety.

In order to increase workplace safety and security, the Contractor shall abide by the following conditions:

1.7.1 General

- A. All asbestos removal areas shall be restricted to authorized personnel only. All routes through the building to be used by the Contractor shall be approved by the Owner.
- B. All air filtration devices (AFDs) shall exhaust to the exterior of the building. For work areas where no barriers border the exterior of the building, AFDs shall be exhausted into a plastic barrel filled halfway with water. An AFD pre-filter will be attached to the top of the barrel that is in compliance with ANSI Z9.2-79, to filter the exhausted air prior to it reaching the water. After clearance testing has been conducted and passed in compliance with AHERA and NESHAP regulations, and the Engineer approves teardown of the work area, the water shall be disposed of in accordance with applicable regulations. For every 10 AFDs or portion thereof, there shall be at least one AFD unit on-site for backup purposes. The Engineer, at his/her option, may require more AFDs as backups.
- C. Electrical power sources shall meet the following requirements:
 - 1. Only a licensed electrician shall be permitted to install wiring other than extension wires and/or make connections to an electrical panel box. He/she shall be on 24-hour standby status for the purpose of restoring electrical power to the containment area. The licensed electrician shall check all of the wiring and load test the circuits supplying power to the containment area prior to any removal activities.
 - 2. All electrical power to the Work area shall be protected by Ground Fault Circuit Interrupters located outside of the Work area.
 - 3. No electrical room servicing the Work area shall be sealed with polyethylene. Access to all over-current devices protecting the conductors supplying both the occupied and the Work areas shall remain readily accessible throughout the duration of the project.
- D. All Federal regulations wherever applicable shall be met in all cases.
- E. All surrounding Work, fixtures, soil lines, drains, water lines, gas pipes, electrical conduit, wires, utilities, railings, shrubbery, landscaping, etc.

which are to remain in place shall be carefully protected and, if disturbed or damaged, shall be repaired or replaced as directed by the Owner, at no additional cost. Where drains, or water lines are to be removed and/or disturbed during abatement activities, the Contractor shall coordinate with the Owner to schedule shut-off of the water lines in advance of the commencement of work.

- F. The Contractor shall assure that no exits from the building are obstructed, that appropriate safety barriers are established to prevent access and that Work areas are kept neat, clean, and safe.
- G. Replace or repair any items damaged, due to Work performed under this contract, equal to their original construction and finish. Repaired or replaced items will be subject to the Owner's approval.
- H. Use rubber-tired vehicles which use non-volatile fuels for conveying material inside building and provide temporary covering, as necessary, to protect floors.
- I. Debris shall be removed from the site daily. Premises shall be left neat and clean after each work shift, so that work may proceed the next regular workday without interruption.
- J. Protect and maintain floors along removal routes from damage, wear, and staining. Damage to be corrected to the satisfaction of and at no cost to the Owner.

1.7.2 Separation Barriers

- A. The Work area shall be separated from the occupied portion of the building and/or operating equipment (mechanical, electrical, etc.) by separation barriers (if applicable).

Construction of barriers shall meet the following minimum requirements:

- 1. Where framing is required for the installation of separation barriers, 2-inch by 4-inch studs spaced not more than 24 inches on center shall be used.
 - 2. A minimum of 1/2 inch thick plywood shall be used for separation barriers adjacent to the containment area and/or areas which are part of the containment.
 - 3. Two layers of polyethylene sheeting shall be installed on each side of the separation barriers.
- B. All separation barriers shall be secured to the building structure with all joints caulked and all seams taped.

1. Exception:

The separation barrier(s) at the emergency means of egress from the Work zone shall be of the pull down and/or kick out type. Duct tape shall cover all seams located on the work zone side and critical barriers shall be installed on each side.

- C. Emergency means of egress for the building occupants and for workers shall not be blocked.

1.7.3 Openings Around Penetrations

- A. Prior to asbestos removal, all floor, ceiling, and wall openings shall first be cleaned using an approved asbestos removal vacuum cleaner and shall be wet wiped. Where openings are found to contain gross amounts of asbestos-containing material, localized removal methods shall be conducted prior to cleaning.
- B. All penetrations, whether sealed prior to asbestos removal or as a result of asbestos removal, shall be sealed using materials determined to be non-combustible in accordance with ASTM Standard E-136 which will maintain the fire rating of any rated assembly in which they are used.
- C. Sealing of penetrations, localized asbestos removal, and subsequent sealing work shall be performed under negative pressure. The area shall also be kept under negative pressure when testing for penetration leaks or missed penetrations.

1.7.4 Contingency Plans During Abatement

The current state-of-the-art should be used to establish a contingency plan. A flexible contingency plan shall be based on: the kind of asbestos involved, the number of persons exposed, and the degree of occupancy at the time in question; the fiber concentration level at which removal would have to stop (while remedial measures are taken) and the levels at which the building would need to be vacated will be a function of the relationship between measured fiber concentrations and established background levels.

Increasingly aggressive responses up to and including vacating of the building would be undertaken based on the degree which fiber concentrations exceed established background levels.

- A. In case of loss of power to the air filtration units, the procedures given below shall be followed:
1. All removal activities and preparation work shall cease immediately.

2. All removed waste within the Work area shall be sprayed with amended water. A sufficient number of airless sprayers shall be used to mist the air in the Work area.
3. An attempt shall be made to restore power by resetting the electrical breakers and/or switches, replacing fuses, and checking extension cord connections. If power cannot be restored by these means, the electrician, pursuant to Section 5.7.1(c) of these specifications, shall be called upon to restore the electrical power.
4. Electrical power shall be restored to all of the required air filtration units without substantial loss of time. This shall be done by the use of generator(s), if necessary.

1.8 EXECUTION

1.8.1 Preparation

- A. Separation of Work areas from occupied areas (if applicable):
 1. Separate the parts of the building required to remain in use from parts of the building that will undergo asbestos removal by means of airtight barriers, constructed as follows:
 - a. Construct a barrier of 1/2 inch thick (minimum) plywood to isolate the Work areas from occupied areas.
 - b. Cover both sides of the partition with a double layer of plastic sheet with joints staggered and sealed with tape. Edges of partition at floor, walls, and ceiling shall be caulked or taped airtight.
 2. Shut down and lock out electric power. Provide temporary power and lighting and ensure safe installation of temporary power sources and equipment per applicable electrical code requirements. Control of all Work area power sources shall be from outside of the work areas.
 3. Shut down and isolate heating, cooling, and ventilating air systems to prevent contamination and fiber dispersal to other areas of the structure. Physically block off, with light gauge metal, all supply and return air ductwork which leads to and from an isolated Work area when the air handling unit serves areas other than within the isolated Work areas.

4. Seal off all openings, including but not limited to window, corridors, doorways, skylights, ducts, grill, diffusers, and any other penetrations of the Work areas, with two (2) layers of plastic sheeting (minimum of 6 mil thick) sealed with tape. The Contractor shall check above suspended ceilings in classrooms adjacent to hallway Work areas for penetrations into hallway. All such penetrations shall be sealed as critical barriers.

B. Pre-clean Work area:

1. Clean all moveable objects within the Work area using HEPA vacuum equipment and wet cleaning methods. Remove these objects from the Work area to a designated temporary storage location.

Protection of and accounting for the stored materials is the sole responsibility of the Contractor.

2. Pre-clean fixed objects within the proposed Work areas, using HEPA vacuum equipment and/or wet cleaning methods as appropriate and enclose with a minimum of two (2) layers of 6 mil polyethylene sheeting sealed with tape. In work areas where fixed objects are to be removed to access asbestos-containing materials underneath (shelves, lockers, built-ins), pre-cleaning should still be conducted, and the parts of the objects that will not be impacted by removal should be enclose with a minimum of two (2) layers of 6 mil polyethylene sheeting sealed with tape. Placement and cleaning of these objects should be discussed with the Owner prior to, during, and after the project as outlined in Section 1.4.10.
3. Pre-clean the proposed Work areas using HEPA vacuum equipment or wet cleaning methods as appropriate. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters.

C. Prepare work area:

1. Cover wall and ceiling surfaces (friable floor tile and mastic only) with plastic sheeting sealed with tape. Use a minimum of two layers of 6 mil plastic on walls and one layer of 6 mil plastic on ceiling.

All joints in the plastic sheeting shall have a minimum of 12 inches of overlap and shall be securely sealed with tape to prevent leakage of air and water.

D. Decontamination enclosure systems:

Build suitable enclosure systems described herein before start of construction.

In all cases, access between contaminated and uncontaminated rooms or areas shall be through an air lock previously defined. Access between any two rooms within the decontamination enclosure system shall be through a curtained doorway.

1. Construct a work decontamination enclosure system contiguous to the Work area consisting of three totally enclosed chambers to conform with standard plans and as follows:
 - a. A shower room with two curtained doorways, one to the equipment room and one to the clean room. Plastic on shower room and adjoining equipment and clean rooms shall be opaque.
 - b. The shower room shall contain at least one shower with hot and cold or warm water. Careful attention shall be paid to the shower enclosure to ensure against leaking of any kind.
2. Provide or construct an equipment decontamination enclosure system consisting of two (2) totally enclosed chambers as follows:
 - a. A washroom constituting an air lock, with a curtained doorway to a designated area of the work area and a curtained doorway to the holding area.
 - b. A holding area, constituting an air lock, with a curtained doorway to the washroom and a curtained doorway to an uncontaminated area.

E. Maintenance of enclosure system (if applicable):

1. Ensure that barriers and plastic linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.
2. Visually inspect enclosures (if applicable) at the beginning of each work period.
3. Use smoke methods to test effectiveness of barriers (if applicable) when directed by Owner or Engineer.

F. Asbestos removal work shall not commence until:

1. Arrangements have been made for disposal of waste at an acceptable site.
2. Work areas and decontamination enclosure systems and parts of the building required to remain in use are effectively segregated.
3. Tools, equipment, and material waste receptors are on hand.
4. Arrangements have been made for building security.
5. All other preparatory steps have been taken, applicable notices posted, and permits obtained.
6. The Contractor requests a pre-commencement inspection.
7. The Engineer authorizes work to commence.

1.8.2 Asbestos Removal

- A. Prepare site per paragraph 1.8.1.
- B. Remove and clean ceiling mounted objects (if applicable), such as lights and other items not previously sealed off, that may interfere with asbestos removal. Use hand held water spraying or HEPA vacuum equipment during fixture removal to reduce fiber dispersal. Decontaminate the lights, wrap in plastic and store for reinstallation (if applicable) upon completion of testing procedures.
- C. Provide negative pressure of adequate capacity to remove air from each room of the Work area that is undergoing asbestos removal. This may be accomplished through moving individual machines or ducting to individual rooms. The negative pressure shall be designed to provide a complete air change in the work area, each 15 minutes maintaining a minimum negative pressure differential. The Contractor will make calculations to determine the minimum number of Air Filtration Devices which must be used in each Work area.
- D. Spray asbestos material with amended water, using spray equipment capable of providing a "mist" application to reduce the release of fibers. Saturate the material sufficiently to wet it to the substrate without causing excess dripping. Spray the asbestos material repeatedly during Work process to maintain wet conditions and to minimize asbestos fiber dispersion.

- E. Protect all fixtures, grills, lockers, and other non-removable equipment from amended water. Surfactants can cause oxidation. Also, protect painted surfaces and flooring.
- F. Remove saturated asbestos material in manageable sections. Materials shall not be allowed to dry out. Material drop shall not exceed 15 feet.
- G. During each day's work, the bulk asbestos material shall be bagged in 6-mil thick bags, before it dries. No asbestos material shall be allowed to lie on the floor overnight. Place the material in sealed containers. Place caution labels on containers in accordance with OSHA Regulation 29 CFR 1910.1001(g)(2); 1926.1101; and NESHAPS 61.149(d) if not already preprinted on containers. Clean external surfaces of containers thoroughly by wet sponging in the designated area. Move containers to the washroom, wet clean each container thoroughly and move to holding area pending removal to uncontaminated areas. Ensure that containers are removed from the holding area by workers who have entered from uncontaminated areas dressed in clean coveralls. Ensure that workers do not enter from uncontaminated areas into the washroom or the work area; ensure that contaminated workers do not exit the Work area through the equipment decontamination enclosure system.
- H. After completion of stripping work, all surfaces from which asbestos has been removed shall be wet brushed and sponged or cleaned by a equivalent method to removal all visible material. During this work, the surfaces being cleaned shall be kept wet. At the Contractor's option, the layer of plastic exposed to the asbestos may be removed, leaving intact the final layer of plastic.

1.8.3 Cleanup and Air Monitoring

Employ the following procedures in cleaning up the Work area:

- A. Wet clean all surfaces and remove all visible accumulation of ACM from the Work area including the inner layer of plastic if not previously removed. Prepare the Work area for the initial air test which will be performed after a visual inspection.
- B. The Contractor shall request a pre-sealant inspection, in writing.
- C. After visual inspection of Work area by Engineer, apply one coat of an asbestos encapsulant sealer following manufacturer's recommendations for application prior to the initial air test while all plastic sheeting is in place.

- D. While still under respirator protection, remove the outer layer or layers of plastic sheeting from the walls and floors after the sealant has dried. The seals on the window, vents, doors, etc., shall remain, and HEPA filtration negative air pressure systems and decontamination enclosure system shall also remain in service.

Wet clean or HEPA vacuum Work area underneath the plastic and leave the area visibly clean.

- E. Dust, both visible and invisible, shall be allowed to settle for 24 hours within the Work area without being disturbed during this period.
- F. After a 24-hour settling period, wet clean or HEPA vacuum all surfaces within the Work area. Once this cleaning operation is complete, visually inspect the Work area to ensure that it is free of contamination.
- G. Engineer will conduct a thorough visual inspection prior to air testing. Upon successful completion of the visual inspection, the final air clearance test will be conducted.
- H. For work areas where >160 square feet (SF) of asbestos is removed, the final air clearance test will consist of an air test read by Transmission Electron Microscopy (TEM) with a maximum level of 70 structures/mm² being achieved prior to acceptance (according to AHERA [40 CFR 763] protocol). For smaller work areas where <160 SF of asbestos is removed, the final clearance test will consist of an air test read by Phase Contrast Microscopy (PCM) with a level less than 0.01 fibers per cubic centimeter of air (f/cc) being achieved prior to acceptance. High volume pumps (5 L/min to 10 L/min) will be used to collect a 1250 L minimum volume sample for 385 sq mm effective filter area.

Aggressive sampling techniques will be used to re-entrain any fibers on the walls or floors in each area to be tested. Use of a one (1) hp "Leaf Blower" will be employed. The floors and lower wall will be blasted with air immediately prior to running the final air test.

Contractor shall continue cleaning the Work site until the accepted fiber level is achieved.

Additional testing required after the one final test will be the responsibility of the Contractor. In the event of additional testing, the Contractor may reimburse Owner, or reduce the Contract amount by change order. It is the Owner's intent to have, at no additional charge to the Contractor, one initial test and one final test performed in each area. A test may consist of one sample or a series of samples performed at the same time.

- I. When appropriate, Engineer will issue permission to remove critical barriers, in writing.

1.8.4 Disposal of ACM and Asbestos-Contaminated Waste

- A. Asbestos materials: As the work progresses, and to prevent exceeding available storage capacity onsite, remove sealed and labeled containers of asbestos waste and dispose of such containers at an authorized disposal site in accordance with the requirements of disposal authority.
 1. Bags of asbestos materials removed from the Work area via the equipment decontamination enclosure shall be placed in a mechanically fastened drum or a second clean bag, which is then transported in an enclosed vehicle. Appropriate labels shall be affixed to the outside of the container. Contractor will coordinate with the Owner or Engineer with regard to the location of the dumpster and/or transport vehicle on the premises.
 2. The use of HEPA vacuum equipment may be employed to remove gross asbestos material from the work area. When use of such equipment is practical, a safety program shall be established to control release of asbestos fibers from routine operations and/or accidents. The use of the HEPA vacuum equipment and safety program shall be submitted for review.
 3. The drums or bags shall be cleaned in the equipment decontamination enclosure as previously described and placed in the transport vehicle.
 4. Local, state, and federal permits shall be obtained for the transportation of asbestos materials, and all procedures shall be followed as they pertain to transportation of asbestos materials.
 5. Respiratory protection will be required in loading and unloading asbestos materials.
 6. Transport vehicle shall be lined with 6 mil plastic prior to loading asbestos waste. The vehicle shall be used for the sole purpose of transporting asbestos waste. No other contract materials or supplies shall be stored or transported in the vehicle unless it has been decontaminated.
 7. Activities involving removal of waste, loading onto vehicle, and disposal at the landfill, shall be documented in daily reports indicating date and volume of material handled. A second document, Waste Shipment Record, shall be completed when

material is disposed at landfill. The Waste Shipment Records shall be forwarded to the Owner within thirty-five (35) days of the date the waste was accepted by the disposal transporter in accordance with NESHAP61.149 (d)(2).

B. Asbestos-containing wastewater:

1. All wastewater shall be filtered through a five-micron filter prior to final disposal in bags or plastic-lined drums and transported to a landfill per the previous requirements for disposal.
2. Asbestos waste including all contaminated water shall be drummed or bagged and transported as previously described.

1.8.5 Reestablishment of Objects and Systems

- A. Relocate objects moved to temporary locations in the course of the work to their proper positions. Only clean objects are to be moved into the areas.

Remount objects removed in the course of the work to their former positions. Repair any moveable or fixed objects damaged during the course of the work

Reestablish HVAC, mechanical, and electrical systems in proper working order.

Dispose of used HVAC filters as contained waste. Owner will reinstall new HVAC filters.

Repair any damage to building, or building systems (electrical, mechanical, plumbing, etc.), which was not noted in writing prior to Work area preparation.

Repaint any areas damaged during the course of the work unless this work is scheduled to be repaired by others. Quality of paint and workmanship shall be consistent with that found within the building prior to the Project, unless otherwise stated.

- B. When complete, the Contractor shall request a final inspection of the Work area.
- C. After a minimum of 24 hours following this request, the Engineer will conduct a final inspection.

1.8.6 Final Report

Contractor will prepare a comprehensive final report to be submitted to Owner within 30 days following completion of the Project. This report will include as a minimum, landfill manifests, descriptions of procedures used during the project, descriptions of unusual events (fines, citations, etc.) and description and warranty of workmanship on replacement insulation (if applicable).

*****END OF SECTION*****

SECTION 2

ASBESTOS REMOVAL NON-FRIABLE REMOVAL OF MISCELLANEOUS MATERIALS (Caulking, Glue Dots, and Glazing Materials)

2.0 GENERAL

2.1 Scope

This specification covers the abatement of asbestos containing materials in the following locations:

- 1) Removal of caulking and glazing materials in various locations at the property.
- A. When removing the above-referenced ACM, the contractor shall ensure that the following work practices are followed:
1. Outside access to the work area shall be restricted and security of the work area is the responsibility of the contractor. Appropriate warning signs shall be posted to prevent unauthorized entrance to the work area.
 2. The ACM shall be thoroughly wetted with amended water prior to their removal.
 3. Any scraping to remove ACM must be performed wet.
 4. The caulking and glazing material shall be placed in 6 mil plastic bags, double-bagged with visible labels for disposal as asbestos-containing waste and securely sealed with high quality duct tape.
- B. Following asbestos removal, a final air clearance test will be conducted in accordance with AHERA (40 CFR Part 763) protocol. At minimum, the final air clearance test will consist of an air test by Phase Contrast Microscopy (PCM) with limits of 0.01 f/cc by NIOSH Method 7400.

*****END OF SECTION*****

SECTION 3

ASBESTOS REMOVAL

GLOVEBAG REMOVAL

3.1 GENERAL

3.1.1 Scope

This Specification covers the abatement of asbestos-containing pipe insulation and fittings not removed under full containment.

3.1.2 Description of Work

- A. The work specified herein shall be the removal of ACM by persons knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of ACM material by glovebags and the subsequent cleaning of the affected environment, and who comply with federal and state regulations which mandate work practices, and who are capable of performing the work of the contract.
- B. The Contractor shall supply all labor, materials, equipment, services, insurance, and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these Specifications.
- C. Related Work Specified Elsewhere: Refer to Sections:
 - 1. Asbestos Removal – Sections 1 and 2

3.1.3 Terminology

The following terms used in these Specifications are defined in Section 1.1.

3.1.4 Applicable Documents

See Section 3.1 for Applicable Documents.

3.1.5 Submittals and Notices

In addition to the submittals and notices required in Section 1.4, the following are required:

Historic Airborne Fiber Data: Submit airborne asbestos fiber count data from an independent air monitoring firm to demonstrate the ability to perform work of this Section while maintaining an airborne fiber count below 0.1 fiber per cubic centimeter in the breathing zone of the individual performing the work. Include the following data for each procedure required by the work:

- ◆ Date of measurements
- ◆ Operations monitored
- ◆ Sampling and analytical methods used and evidence of their accuracy
- ◆ Number, duration, and results of samples taken

3.1.6 Personal Protection and Safety

- A. The Contractor alone shall be responsible for the safety, efficiency, and adequacy of his work plan, appliances, methods, and for any damages which may result from his operations, improper construction practices, or maintenance. He shall erect and properly maintain at all times as required by the conditions and progress of the work, proper safeguards for the protection of workmen and the public and shall post warning signs around the job site.
- B. During the removal operations, the Contractor may be placing his workers in a potentially hazardous electrical environment. Care and special consideration should be exercised by the Contractor to avoid electrical shock to his employees. The requirements as set forth in the latest edition of the National Electrical Code, shall be adhered to at all times. Particular emphasis shall be placed on the requirements listed in Article 210 BRANCH CIRCUITS, Article 225 - OUTSIDE BRANCH CIRCUITS AND FEEDERS, Article 250 - GROUNDING, Article 300 – WIRING METHODS, and Article 305 - TEMPORARY WIRING, whenever and wherever the existing electrical power service shall be de-energized and temporary electrical power utilized.
- C. Respiratory Protection Requirements
 - 1. All respiratory protection programs shall be established in accordance with the respiratory protection requirements of 29 CFR 1910.134, 29 CFR 1910.1001 and 1926.1101. Copies of these regulations are included herein by reference and shall be considered as a requirement of these Specifications.

2. All respirators used shall be selected from those approved by the Mine Safety and Health Administration (MSHA) and/or the National Institute of Occupational Safety and Health (NIOSH) for use in atmospheres containing asbestos fibers.
 3. Respiratory protection: half-face, negative air-purifying respirators are required as a minimum.
 4. Provide authorized visitors with suitable respirators whenever they are required to enter the work area.
 5. The following activities may be performed wearing a half-face, negative air-purifying respirator: pre-cleaning the work area, preparing the work area, loading the asbestos material in the transport vehicle and unloading the transport vehicle at the landfill.
- D. Provide workers and authorized visitors with sufficient sets of protective full body impervious protective clothing. Such clothing shall consist of full body coveralls and headgear. Provide eye protection and hard hats as required by applicable safety regulations. Reusable type protective clothing and footwear shall be left in the Contaminated Equipment Room until the end of the asbestos abatement work, at which time such items shall be disposed of as asbestos waste, or shall be thoroughly cleaned of all asbestos or ACM. Disposable type protective clothing, headgear, and footwear may be provided.
- E. Provide and post, at the work area, the decontamination and work procedures to be followed by workers and authorized visitors as described in these Specifications.
- F. Worker Protection Procedures
1. Each worker and authorized visitor shall, remove street clothes in a Change Room provided by the Contractor and put on a respirator and clean protective clothing before entering the work area.
 2. Workers removing waste containers from the work area enclosure shall enter the holding area from outside wearing a respirator and dressed in clean disposable coveralls.
 3. Workers shall not eat, drink, smoke, or chew gum or tobacco while in the work area.
 4. Workers shall be fully protected with respirators and protective clothing from the time of first disturbance of ACM or asbestos-contaminated materials prior to commencing actual asbestos abatement and until final cleanup is completed.

- G. Equipment removal procedures: Clean surfaces of contaminated containers and equipment thoroughly by wet sponging or wiping before moving such items to uncontaminated areas.
- H. During summer work activities, the work area environment may be very hot and humid. The Contractor shall take precautions to protect his workers from the hostile environment as well as the asbestos fibers. First-aid items such as stretchers, water and cold packs should be kept adjacent to the work area exits, thus allowing any personnel requiring emergency treatment egress from the work area with minimum contamination to the clean environment. No worker shall be allowed to reach through the barrier to get water or first-aid supplies during break periods inside the work area. Breaks, lunch, or worker rest periods should be held outside the work area. All decontamination procedures shall be followed prior to exiting the work area except in extreme emergencies.
 - 1. During cold weather periods, the workers shall be provided with adequate protection from the environment to not cause harm to the workers.
 - 2. If evacuation of the work area is required by contaminated personnel due to an emergency, all work efforts shall stop, and all forces shall be directed at minimizing the area contamination, cleanup operations and first-aid procedures. These activities shall be noted in the daily log book.
- I. Post safety warning signs which following the "Sample Format Warning Sign" shown below:

Sample Format Warning Sign
Minimum Size – 24" x 36"
Material - Aluminum or Fiberglass
Script:

DANGER

ASBESTOS

CANCER AND LUNG DISEASE HAZARD

AUTHORIZED PERSONNEL ONLY

**RESPIRATORS AND PROTECTIVE
CLOTHING ARE REQUIRED
IN THIS AREA**

Color - Black Letters on Red Background

- J. During work activities requiring decontamination procedures, the Contractor shall provide a means of communication for the workers inside the work area without requiring personnel to enter or leave the work area. This method of communications shall be a two-way radio, localized wire-connected telephone, or similar system.
 - 1. This communication system shall remain intact until the work area barriers are removed. Then all equipment shall be wiped down, HEPA vacuumed or disposed of as asbestos-contaminated material.
- K. Adequate shower facilities shall be provided by the Contractor. An employee leaving the work area shall following all decontamination procedures necessary or as described herein.

3.1.7 Superintendent, Foreman, Craftsman

- A. The Contractor shall have a job superintendent present at all times while work on this Contract is in progress.
- B. The Project Superintendent shall be thoroughly familiar and experienced with asbestos removal using glovebag procedures and related work and shall be familiar with and shall enforce the use of all safety procedures and equipment. He shall be knowledgeable to all EPA, OSHA, and NIOSH requirements and guidelines.
- C. In addition to the Superintendent, the Contractor shall furnish one (1) or more supervisors who are familiar and experienced with asbestos removal using glovebag procedures and its related work, safety procedures, and equipment.
 - 1. It shall be a requirement of this Contract that the superintendent and/or one (1) or more of the Contractor's foremen be inside the work area at all times while work is in progress.
 - 2. It is the intent of these Specifications that all phases of the work shall be executed by skilled craftsmen experienced or receiving training by experienced personnel in each respective trade.

3.2 MATERIAL AND EQUIPMENT

3.2.1 Materials

- A. Deliver all materials in the original packages, container, or bundles bearing the name of the manufacturer and the brand name.

1. Store all materials subject to damage off the ground, away from wet or damp surfaces, and under cover sufficient to prevent damage or contamination.
 2. Damaged or deteriorating materials shall not be used and shall be removed from the premises. Material that becomes contaminated with asbestos shall be disposed of in accordance with the applicable regulations.
- B. Plastic (polyethylene) sheet, of 6 mil thickness or greater as specified in sizes to minimize the frequency of joints.
- C. Tape capable of sealing glovebags and for attachment of glovebags to finished or unfinished surface of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water. Use tape with tough backing, which does not leave residue on the adhering surface. Paperbacked tape is not acceptable.
- D. Surfactant: Shall consist of 50 percent polyoxyethylene ether and 50 percent of polyoxyethylene ester, or equivalent, and shall be mixed with water to provide a concentration of one (1) ounce surfactant to 5 gallons of water.
- E. Impermeable containers: Suitable to receive and retain any ACM or asbestos-contaminated materials until disposal at an approved site, labeled in accordance with OSHA Regulation 29 CFR 1910.1001. Containers must be both air and watertight and must be resistant to damage and rupture. Plastic bags shall be a minimum of 6 mil thick.
- F. Warning labels and signs: As required by OSHA Regulation 29 CFR 1910.1001.
- G. Other materials: Provide all other materials, such as lumber, nails and hardware, which may be required to construct and dismantle the decontamination area and the barriers that isolate the work area.

3.2.2 Tools and Equipment

Provide suitable tools for use in a glovebag and suitable for the work at hand.

3.3 EXECUTION

3.3.1 Preparation

- A. Separation of Work Areas from Occupied Areas
1. Separate the parts of the building required to remain in use from parts of the building that will undergo asbestos removal by means of barriers, constructed as follows:

- a. Critical barriers between the work area and other areas of the building are to be constructed. The critical barriers shall consist of two layers of 6-mil plastic. If the integrity of the barriers is not acceptable to the Engineer, then an acceptable wood frame shall be constructed so as to enhance the integrity of the barrier.
 - b. Place asbestos warning signs at the barrier and at all open entrances to work area. Signs must be placed conspicuously and must be easily read. Signs must conform to legal size and wording.
 2. Shut down electric power. Provide temporary power and lighting and ensure safe installation of temporary power sources and equipment per applicable electrical code requirements.
 3. Shut down and isolate heating, cooling, and ventilating air systems to prevent contamination and fiber dispersal to other areas of the structure. Physically blank off, with light gauge metal, all supply and return air duct work which leads to and from an isolated work area when the air-handling unit serves areas other than within the isolated work area.
- B. Pre-Clean Work Area
1. Clean all moveable objects within the work area using HEPA vacuum equipment and wet cleaning methods. Remove these objects from the work area to a designated temporary storage location.
 - a. Protection of and accounting for the stored materials is the sole responsibility of the Contractor.
 2. Pre-clean fixed objects, within the proposed work areas, using HEPA vacuum equipment and/or wet cleaning methods as appropriate, and cover with minimum of 6-mil polyethylene.
 3. Pre-clean the proposed work areas using HEPA vacuum equipment or wet cleaning methods as appropriate. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters.
- C. Prepare work Area
1. Cover floor with plastic sheeting sealed with tape. Use a minimum of one layer of 6-mil plastic on floors.

- a. All joints in the plastic sheeting shall have a minimum of 12 inches of overlap and shall be securely sealed with tape to prevent leakage of air and water.
2. Maintain emergency and fire exits from the work areas, or establish alternative exits satisfactory to fire officials.
3. Employ air filtration devices inside the work area.
- D. Decontamination Enclosure Systems
 1. Building suitable decontamination systems as described in Section 1.8.1 (D). Decontamination systems may be located in an area remote from but central to the work.
- E. Maintenance of Enclosure System
 1. Ensure that barriers are maintained and intact at all times. Repair damaged barriers and remedy defects immediately upon discovery.
 2. Visually inspect enclosures at the beginning of each work period.
- F. Asbestos removal work shall not commence until:
 1. Arrangements have been made for disposal of waste at an acceptable site.
 2. Work areas and decontamination systems and parts of the building required to remain in use are effectively segregated.
 3. Tools, equipment, and material waste receptors are on hand.
 4. Arrangements have been made for building security.
 5. All other preparatory steps have been taken, and applicable notices posted, and permits obtained.
 6. The Contractor requests a pre-commencement inspection by the engineer.
 7. The engineer authorizes work to commence.

3.3.2 Asbestos Removal - Glovebag Procedures

NOTE: Glovebag removal should not be used if the use of the glovebag will cause fiber release from sections of the work that are not enclosed.

- A. Glovebags are single use items only, unless they have been designed and certified for multiple use.
- B. Check pipe, valve, etc., to ensure that it is not too hot to work on.
- C. If insulation is badly damaged, fully wrap and seal those sections not being removed with polyethylene and tape.
- D. Determine the size of glovebag needed and slit sides of bag to fit around pipe to be serviced.
- E. Place all tools in tool pouch and attach glovebag to work area. Ensure that glovebag is secured to the work area so that it is able to support itself and all materials in it. Seal edges of glovebag to make an airtight seal.
- F. Thoroughly wet the work site insulation inside bag with amended water. Remove any wires, bands, or protection sheathing and re-wet insulation if necessary.
- G. Remove insulation while wetting insulation with amended water. Clean bare pipe of visible accumulations of ACM. Clean pipe with brush and then wet wipe. Apply encapsulant and seal exposed ends of insulation.
- H. Thoroughly clean all reusable tools in bag. Wash down inside of bag so that all visible debris is in bottom portion of bag.
- I. Place tools in glove and pull glove inside out. Seal glove from bag and cut off glove.
- J. Remove air from bag using HEPA filter equipped vacuum. Twist and seal bag with tape or tie. Remove glovebag.
- K. Inspect bare pipe for visible asbestos and clean work area.
- L. Properly dispose of coveralls, and other contaminated items. All contaminated materials must be disposed of properly as per Section 1.

3.3.3 Cleanup and Air Monitoring

- A. Employ the following procedures in cleaning up the work area:
 - 1. Wet clean all surfaces and remove all visible accumulation of ACM from the work area.
 - 2. Air sampling will be conducted during the glovebag removal. If the results of the air tests indicate a 0.01 f/cc level or greater, the work shall be stopped and the source of the fibers shall be determined. Upon mitigation of the fiber source, authorization to continue the work may be issued.

3. After a visual inspection by the onsite engineer and encapsulation of the work area, a final air clearance test will be conducted.
4. The final air clearance test will be conducted in accordance with E.P.A.-recommended regulations. At minimum, the final air clearance test will consist of an air test by Phase Contract Microscopy (PCM) with limits of 0.010 f/cc by NIOSH Method 7400.

3.3.4 Disposal of Asbestos-Containing Materials and Asbestos-Contaminated Waste

- A. Disposal of ACM and asbestos-contaminated wastes shall be as determined in Section 1.8.4.

3.3.5 Re-establishment of Objects and Systems

- A. Reestablish objects and systems in accordance with paragraph 1.8.5.

*****END OF SECTION*****

SECTION 4

NON-FRIABLE FLOOR TILE AND MASTIC REMOVAL

4.1 GENERAL

4.1.1 Scope

This Specification covers the abatement of vinyl-asbestos floor tile (VAT) and mastic. All floor tile removal must be performed in a non-friable manner (dry ice or infrared heat) and mastic to be removed using a chemical solvent; otherwise a full containment is required as described in Section 1.

4.1.2 Description of Work

- A.** Remove all vinyl asbestos floor tile as required. All floors shall be removed to original base flooring (wood, concrete, etc.) by asbestos contractor. Floor mastic, as well as cove base adhesive shall also be removed.
- B.** The work specified herein shall be the removal of VAT by persons knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of asbestos-containing material, and the subsequent cleaning of the affected environment, and who comply with federal and state regulations which mandate work practices, and who are capable of performing the work of this contract.
- C.** The Contractor shall supply all labor, materials, equipment, services, insurance, and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these Specifications.

MATERIAL AND EQUIPMENT

4.2.1 Materials

Materials shall be as described in Section 1.6.

4.2.2 Tools and Equipment

- A.** Provide approved electric heat appliance(s), dry ice or approved equal for removal of VAT. Submit documentation to Owner and Engineer for review and approval.

- B. If asbestos-containing floor tile is rendered friable, entire work area must be fully contained.
- C. If shot blast method is employed for mastic removal, asbestos-containing material is rendered friable and entire work area must be fully contained in accordance with Section 5 of this specification. Additionally, one layer of 6-mil thick polyethylene sheeting would be required to protect the ceiling.

4.3 EXECUTION

4.3.1 Preparation

A. Prepare Work Area

1. Critical barriers between the work area and other areas of the building are to be constructed. The critical barriers shall consist of two layers of 6-mil plastic. If the integrity of the barrier is not acceptable to the Engineer, then an acceptable wood frame shall be constructed so as to enhance the integrity of the barrier.
2. All HVAC registers, diffuses, duct, etc. shall be cleaned and sealed with plastic and duct tape.
3. Maintain established emergency and fire exits or establish alternative exit satisfactory to fire officials.
4. Outside access to the work area shall be restricted and security of the work area is the responsibility of the Contractor. Appropriate warning signs shall be posted to prevent unauthorized entrance to the work area.
5. Air filtration devices (AFD's) shall be employed inside the work area to provide air changes.
6. If applicable, remove and dispose of carpets and cove base moldings.

B. Decontamination Enclosure System

Build suitable decontamination systems as described in Section 1.8.1.D. In small enclosures where <160 SF of vinyl asbestos floor tile/mastic is removed; Contractor's employees shall have access to shower facility after performing asbestos-related work.

In all cases, access between contaminated and uncontaminated rooms or areas shall be through an airlock previously defined.

C. Maintenance of Barrier System

1. Ensure that barriers and plastic linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.
2. Visually inspect barriers at the beginning of each work period.

D. Asbestos Removal Work Shall Not Commence Until:

1. Arrangements have been made for disposal of waste at an acceptable site.
2. Work areas and decontamination enclosure systems and parts of the building required to remain in use are effectively segregated.
3. Tools, equipment, and material waste receptors are on hand.
4. Arrangements have been made for building security.
5. All other preparatory steps have been taken and applicable notices posted, and permits obtained.
6. The Contractor requests a pre-commencement inspection, in writing.
7. Removal work will not begin until the Engineer authorizes work to commence, in writing.

4.3.2 Asbestos Removal

- A. Prepare site in accordance with paragraph 4.3.1.
- B. Contractor shall utilize approved electrical heating applicants or dry ice to remove all floor tile.
- C. Contractor shall exercise extreme caution when removing vinyl asbestos floor tiles to ensure that breakage is minimal.
- D. Contractor shall exercise extreme caution when removing vinyl asbestos floor tiles to ensure that the surface from which they are removed as well as adjacent surfaces are not damaged in any way.
- E. Contractor shall use a low odor mastic remover for the removal of floor mastic.
- F. All vinyl and wooden baseboards associated with floor tile removal must be removed.
- G. There will be no encapsulation following non-friable floor tile removal.

- H.** Contractor shall utilize safe work practices and proper cleanup procedures.
- I.** Personal protection shall be “Tyvek” suits and half-face air purifying respirators at a minimum.
- J.** All debris generated from the removal shall be placed daily in sealed containers. The containers shall be labeled in accordance with OSHA Regulation 29 CFR 1910.1001(g)(2) and NESHAP 61.149(d). Clean external surfaces of containers thoroughly by sponging in the designated areas. Move containers to holding area pending disposal. Ensure that containers are removed from the holding area by workers who have entered from uncontaminated work areas and are dressed in clean coveralls and wearing an appropriate respirator.

4.3.3 Cleanup and Air Monitoring

During the work, the Engineer shall monitor the outside fiber levels.

Employ the following procedures in cleaning up the work area:

- A.** Prepare the work area for the air test, which will be performed after a visual inspection of the work area.
- B.** For work areas where >160 square feet (SF) of asbestos is removed, the final air clearance test will consist of an air test read by Transmission Electron Microscopy (TEM) with a maximum level of 70 structures/mm² being achieved prior to acceptance (according to AHERA [40 CFR 763] protocol). For smaller work areas where <160 SF of asbestos is removed, the final clearance test will consist of an air test read by Phase Contrast Microscopy (PCM) with a level less than 0.01 fibers per cubic centimeter of air (f/cc) being achieved prior to acceptance. High volume pumps (5 L/min to 10 L/min) will be used to collect a 1250 L minimum volume sample for 385 sq mm effective filter area.

Aggressive sampling techniques will be used to re-entrain any fibers on the walls or floors in each area to be tested. Use of a one (1) hp "Leaf Blower" will be employed. The floors and lower wall will be blasted with air immediately prior to running the final air test.

Contractor shall continue cleaning the Work site until the accepted fiber level is achieved.

Additional testing required after the one final test will be the responsibility of the Contractor. In the event of additional testing, the Contractor may reimburse Owner, or reduce the Contract amount by change order. It is the Owner's intent to have, at no additional charge to the Contractor, one initial test and one final test performed in each area. A test may consist of one sample or a series of samples performed at the same time.

- C. After barriers are removed, the Engineer will conduct a final thorough visual inspection. The Contractor shall continue cleaning the work site until it passes the visual inspection.

4.3.4 Disposal of Asbestos-Containing Materials and Asbestos-Contaminated Waste

Disposal shall be performed in accordance with paragraph 1.8.4.

4.3.5 Re-establishment of Objects and Systems

Re-establish objects and systems in accordance with paragraph 1.8.5.

*****END OF SECTION*****

SECTION 5

NON-FRIABLE ROOFING REMOVAL

5.0 GENERAL

5.1 Scope

This specification covers the abatement of asbestos containing materials in the following locations:

- 2) Removal of all asbestos-containing roof material present at the property.

5.2 Description of Work

1. The work specified herein shall be the removal of asbestos-containing roofing material by persons knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of asbestos-containing material, and the subsequent cleaning of the affected environment, and who comply with federal and state regulations which mandate work practices, and who are capable of performing the work of this contract.
2. The Contractor shall supply all labor, materials, equipment, services, insurance, and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these specifications.

5.3 Terminology

The terms used in this section are defined in Section 1.1.

5.4 Applicable Documents

The current issue of each document shall govern. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.

Regulations: Comply with applicable federal, state, and local regulations.

Title 29, Code of Federal Regulations, Section 1910.1001 and 1926.1101. Occupational Safety and Health Administration (OSHA), U.S. Department of Labor.

Title 40, Code of Federal Regulations, Part 61, Subparts A and B, National Emissions Standards for Hazardous Air Pollutants (NESHAP). U.S. Environmental Protection Agency (EPA).

All state, county, and city codes and ordinances as applicable.

5.5 Submittals and Notices:

Prior to the commencement of work:

Send a written notice of proposed abatement work, with copy to Engineer, to the applicable air pollution control agency, state agency, and/or EPA as applicable, not fewer than ten (10) days before work commences on the Project.

Submit proof satisfactory to the Engineer that all required permits, site location, and arrangements for transport and disposal of asbestos-containing or contaminated materials, supplies, and the like have been obtained.

Submit to the Engineer plan and shop drawing for construction of decontamination enclosure systems and for isolation of the work areas in compliance with this specification and applicable regulations.

Submit documentation to the Engineer indicating that each employee has had instruction on the hazard of asbestos exposure, on use and fitting of respirator, on protective dress, on use of showers, on entry and exit of work areas, and on all aspects of work procedures and protective measures and understands this instruction.

Submit verification, signed by a medical doctor that the employee has been recently examined as required by OSHA regulations. Medical examination will be required for all personnel prior to entering the work area. The OSHA required medical questionnaire should be filled out and taken to the medical doctor prior to the examination.

Submit names and training certificate of superintendent and foreman who will be performing work related to this project. Copies of these documents shall be maintained in the Project Log Book. Substitution may be made by written notice to Engineer.

Submit authorized personnel list of employees who have received training and medical examination per paragraphs D and E of this section. A copy of this list is to be maintained in Project Log Book.

Submit front-end documents of Project Log Book. These documents will include copies of the Contractor's Respiratory Protection Program, EPA and OSHA documents, worker decontamination procedures, equipment decontamination procedures, authorized personnel list, format of daily report sheets and format of landfill manifests. The completed daily reports and landfill manifests shall be submitted along with pay requests for completed work. Copies of these front-end documents shall be maintained at the site during the asbestos removal phase of the project.

Post warning signs in and around the work area to comply with OSHA regulations 29 CFR 1910.1001 (g)(1) and 1926.1101.

Owner, or Engineer, and Contractor must agree in writing on building condition prior to commencement of Work. The Contractor shall submit an inventory of all items removed from the work area and an inventory of all items remaining in the work area. Refer to Section 01340, Submittals and Substitutions.

Submit manufacturer's certificate that vacuums, negative air pressure equipment, and other local exhaust ventilation equipment conform to ANSI Z9.2-79.

Superintendent is required to keep the Project Log Book up to date, ensure that all work criteria is followed in the proper sequence, and to fill out the enclosed check list to document the progression of the job. A separate check list will be required for each individually prepped work area.

The asbestos contractor must inform other employers on site of the nature of the Contractor's work with asbestos and the existence of and requirements pertaining to regulated areas in order to comply with OSHA's regulation 29 CFR 1926.1101 (d).

Contractor must provide verification to the Engineer that the employer has provided the following information to the examining physician or physicians:

1. A copy of OSHA regulation Standard 29 CFR 1926.1101 and Appendices D, E, and F.
2. A description of the affected employee's duties as they relate to the employee's exposure.
3. The employee's representative exposure level or anticipated exposure level.
4. A description of any personal protective and respiratory equipment used or to be used.
5. Information from previous medical examinations of the affected employee that is not otherwise available to the examining physician.

5.6 Personal Protection and Safety:

- A. The Contractor alone shall be responsible for the safety, efficiency, and adequacy of his plant, appliances, methods, and for any damages which may result from his operations, improper construction practices, or maintenance. He shall erect and properly maintain at all times as required by the conditions and progress of the work, proper safeguards for the protection of workmen and the public and shall post warning signs around the job site.
- B. During the removal operations the Contractor may be placing his workers in a potentially hazardous electrical environment. Care and special consideration should be exercised by the Contractor to avoid electrical shock to his employees. The requirements as set forth in the latest edition of the National Electrical Code, shall be adhered to at all times. Particular emphasis shall be placed on the requirements listed in Article 210-BRANCH CIRCUITS, Article 225-OUTSIDE BRANCH CIRCUITS AND FEEDERS, Article 250-GROUNDING, Article 300-WIRING METHODS, and Article 305-TEMPORARY WIRING, whenever and wherever the existing electrical power service shall be de-energized and temporary electrical power utilized.
- C. Respiratory protection requirements:
 - 1. All respiratory protection programs shall be established in accordance with the respiratory protection requirements of 29 CFR 1910.134, CRF 1910.1001 and 1926.1101. Copies of these regulations are included herein by reference and shall be considered as a requirement of these specifications.
 - 2. All respirators used shall be selected from those approved by the Mine Safety and Health Administration (MSHA) and/or the National Institute of Occupational Safety and Health (NIOSH) for use in atmospheres containing asbestos fibers.
 - 3. Respiratory protection, half-face negative air-purifying respirators are required as a minimum.
 - 4. All activities which are performed during and after removal and prior to the actual removal of the barrier (if applicable) shall be conducted wearing a half-face NIOSH approved negative air-purifying respirator.
 - 5. Provide authorized visitors with sufficient sets of protective full body impervious protective clothing. Such clothing shall consist of full body coveralls and headgear. Provide eye protection and hard hats as required by applicable safety regulations. Reusable type protective clothing and footwear shall be left in the

Contaminated Equipment Room until the end of the asbestos abatement work, at which time such items shall be disposed of as asbestos waste, or shall be thoroughly cleaned of all asbestos-containing material. Disposable type protective clothing, headgear, and footwear may be provided.

- D. Provide and post, in the Equipment Room and the Clean Room, the decontamination and work procedures to be followed by workers, and authorized visitors as described in these specifications.
- E. Worker protection procedures: Each worker and authorized visitor shall, upon entering the job site: remove street clothes in the Clean Change Room and put on a respirator and clean protective clothing before entering the Equipment Room or the work area.

All workers and authorized visitors shall, each time they leave the work area: remove gross contamination from clothing before leaving the work area; proceed to the Equipment Room and remove all clothing except respirators; still wearing the respirator proceed naked to the showers, clean the outside of the respirator with soap and water while showering; remove the respirator; thoroughly shampoo and wash themselves.

Following showering and drying off, each worker and authorized visitor shall proceed directly to the Clean Change Room and dress in clean clothes at the end of each day's work, or before eating, smoking, or drinking. Before re-entering the work area from the Clean Change Room, each worker and authorized visitor shall put on a clean respirator and shall dress in clean protective clothing.

Contaminated work footwear shall be stored in the Equipment Room when not in use in the Work area. Upon completion of asbestos abatement, dispose of footwear as contaminated waste.

Workers removing roofing material from the enclosure (if applicable) shall enter the area from outside wearing a respirator and dressed in clean disposable coveralls.

Workers shall not eat, drink, smoke, or chew gum or tobacco while in the work area.

Workers shall be fully protected with respirators and protective clothing from the time of first disturbance of asbestos-containing or contaminated materials prior to commencing actual asbestos abatement and until final cleanup is completed.

- F. Equipment removal procedures: Clean surfaces of contaminated containers and equipment thoroughly by wet sponging or wiping before moving such items into uncontaminated areas.
- G. During summer work activities the work area environment may be very hot and humid. The Contractor shall take precautions to protect his workers from the hostile environment as well as the asbestos fibers. First-aid items such as stretchers, salt tablets, water and cold packs should be kept adjacent to the work area, thus allowing any personnel requiring emergency treatment egress from the work area with minimum contamination to the clean environment. No worker shall be allowed outside the work area to get water or first-aid supplies during break periods inside the work area. Breaks, lunch or worker rest periods should be held outside the work area. All decontamination procedures shall be followed prior to exiting the work area except in extreme emergencies.

During cold weather periods the workers shall be provided with adequate protection from the environment to not cause harm to the workers.

If evacuation of the work area is required by contaminated personnel due to an emergency, all work efforts shall stop, and all forces shall be directed at minimizing the area contamination, cleanup operations and first-aid procedures. These activities shall be noted in the daily log book.

- H. Post two (2) safety warning signs which follow the “Sample Format Warning Sign” shown below:

Sample Format Warning Sign
Minimum Size – 24”x36”
Material – Aluminum or Fiberglass
Script:

DANGER

ASBESTOS

CANCER AND LUNG DISEASE HAZARD

AUTHORIZED PERSONNEL ONLY

RESPIRATORS AND PROTECTIVE
CLOTHING ARE REQUIRED
IN THIS AREA

- I. Adequate shower facilities shall be provided by the Contractor. An employee leaving the work area shall follow all decontamination procedures necessary or as described herein.

5.7 Superintendent, Foreman, Craftsman:

The Contractor shall have a job superintendent present at all times while work on this contract is in progress.

The project superintendent shall be thoroughly familiar and experienced with asbestos removal and related work and shall be familiar with and shall enforce the use of all safety procedures and equipment. He shall be knowledgeable of all EPA, OSHA, and NIOSH requirements and guidelines.

In addition to the Superintendent, the Contractor shall furnish one (1) or more foremen who are familiar and experienced with asbestos removal and its related work, safety procedures, and equipment.

- A. It shall be a requirement of this Contract that the superintendent and/or one (1) or more of the Contractor's foremen be inside the work area at all times while work is in progress.
- B. It is the intent of these specifications that all phases of the work shall be executed by skilled craftsmen experienced or receiving training by experienced personnel in each respective trade.

5.8 Material and Equipment

5.8.1 Materials

Materials shall be as described in Section 1.6

5.8.2 Tools and Equipment

Provide suitable tools for removal of roofing and asbestos contaminated debris.

5.9 Execution

5.9.1 Preparation

- A. Prepare the work area:
 - 1. Install critical barriers over all openings into the building, adjacent buildings, or equipment within 30 feet of the work area. The barrier shall consist of two layers of 6 mil plastic.

The barrier shall be constructed so as to isolate the removal work area.

All joints in the plastic sheeting shall have a minimum of twelve (12) inches of overlap and shall be securely sealed to prevent leakage of air and water.

2. Maintain established emergency and fire exits, or establish alternative exits satisfactory to fire officials.
3. Outside perimeter of the work area shall be defined by a barricade established at a minimum of 30 linear feet from the work. Appropriate warning signs shall be posted to prevent unauthorized entrance to the work area.

B. Decontamination enclosure systems:

1. Build suitable enclosure systems as described in Section 5.8.1.D. Decontamination systems may be located in an area remote from but central to the work.
2. In all cases access between contaminated and uncontaminated rooms or areas shall be through an air lock previously defined.

C. Maintenance of barrier system:

1. Ensure that barriers and plastic linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.
2. Visually inspect barriers at the beginning of each work period.

D. Asbestos removal work shall not commence until:

1. Arrangements have been made for disposal of waste at an acceptable site.
2. Work areas and decontamination enclosure systems and parts of the building required to remain in use are effectively segregated.
3. Tools, equipment, and material waste receptors are on hand.
4. Arrangements have been made for building security.
5. All other preparatory steps have been taken and applicable notices posted and permits obtained.
6. Removal work will not begin until the Engineer authorized work to commence, in writing.

5.9.2 Asbestos Removal

- A. Prepare site per paragraph 2.9.1.
- B. Remove and clean any fixtures or objects, which can be removed, that may interfere with the roofing removal. Use hand-held water spraying or HEPA vacuum equipment during fixture and object removal to reduce fiber dispersal.
- C. Roof air intakes shall be isolated or shut down prior to abatement activities.
- D. Roofing shall be removed in an intact state to the extent feasible. Do not sand, abrade or grind roofing material. Carry out all roofing removal in a manner that will minimize pulverizing, breaking or abrading of involved materials.
- E. Use manual methods, which do not render roofing material “non-intact”. These include the use of spud, spade, flat-blade or slicing tools, such as axes, mattocks, pry bars, spud bars, crow bars, shovels, flat-blade knives, and utility knives, to slice, cut, strip-off, shear-under or pry up the material.
- F. Wet removal methods shall be employed where such methods do not preclude safety. Wet surface of roof area with amended water. Use sufficient water to completely wet the surface, but do not cause a ponding or running water.
- G. All loose dust created must be HEPA-vacuumed immediately.
- H. Unwrapped or unbagged debris shall be immediately lowered to the ground via a covered, dust-tight chute. Waste bags and materials wrapped in plastic sheeting shall be lowered to the ground no later than the end of the work shift.
- I. During each day’s work, the roofing shall be enclosed in 6 mil thick polyethylene plastic, before the wetted areas dry. The transport vehicle can be lined with 6 mil polyethylene plastic such as to constitute an enclosure for the roofing material. The Engineer shall deem if the enclosure is acceptable. All debris generated from the removal shall be placed in sealed containers. The containers shall be labeled in accordance with OSHA Regulation 29 CFR 1910.2001 (g)(2). Clean external surfaces of containers thoroughly by wet sponging in the designated area. Move containers to holding area pending disposal. Ensure that containers are removed from the holding area by workers who have entered from uncontaminated work areas and are dressed in clean overalls and wearing an appropriate respirator.

5.9.3 Cleanup and Air Monitoring

During the work, the Engineer and/or the Owner's environmental consultant shall monitor the background fiber levels, outside fiber levels, and the work area fiber levels.

Employ the following procedures in cleaning up the work area:

- A. Wet clean all surfaces and remove all visible accumulation of asbestos containing material from the work area. Prepare the work area for the air test which will be performed after a visual inspection and encapsulation of the work area.
- B. Once the work area is clean of visible accumulations of asbestos material, the Owner's environmental consultant will perform the clearance test in accordance with AHERA (40 CFR 763) protocol. The Contractor will continue the wet cleaning process until the designated fiber level is achieved. It is the Owner's intent to pay for one initial series of air tests per area.
- C. After barriers are removed, the Engineer will conduct a thorough visual inspection. Contractor shall continue cleaning the work site until it passes the visual inspection.
- D. Additional testing required after the first test will be the responsibility of the Contractor. In the event of additional testing, the Contractor may reimburse Owner or reduce the contract amount by change order. It is the Owner's intent to have, at no charge to the Contractor, one test performed in each area. A test may consist of one sample or a series of samples performed at the same time.

5.9.4 Disposal of Asbestos-Containing Materials and Asbestos Contaminated Waste

- A. Asbestos materials: As the work progresses, and to prevent exceeding available storage capacity onsite, remove sealed and labeled containers of asbestos waste and dispose of such containers at an authorized disposal site in accordance with the requirements of disposal authority.
 - 1. Bags of contaminated asbestos materials removed from the work area shall be placed in a mechanically fastened drum or a second clean bag which is then transported in an enclosed vehicle. Appropriate labels shall be affixed to the outside of the container.

2. The use of vacuum equipment may be employed to remove gross asbestos material from the work area. When use of such equipment is practical, a safety program shall be established to control release of asbestos fibers from routine operations and/or accidents. The use of the vacuum equipment and safety program shall be submitted for review.
3. The drums or bags shall be cleaned in the equipment decontamination area as previously described and placed in the transport vehicle.
4. Local, state, and federal permits shall be obtained for the transportation of asbestos materials, and all procedures shall be followed as they pertain to transportation of asbestos materials.
5. Respiratory protection will be required in loading and unloading asbestos materials.
6. Transport vehicle shall be lined with 6 mil plastic prior to loading asbestos waste. The vehicle shall be used for the sole purpose of transporting asbestos waste. No other contract materials or supplies shall be stored or transported in the vehicle unless it has been decontaminated.
7. Activities involving the removal of waste, loading onto vehicle, and disposal at the landfill, shall be documented in daily reports. A second document, landfill manifest, shall be completed when material disposed at landfill. Both documents shall indicate date and volume of material handled.

B. Asbestos waste:

1. All wastewater shall be filtered through a five-micron filter prior to final disposal in a sanitary sewer. In the absence of a sanitary sewer system, the wastewater shall be drummed and transported to a landfill per the previous requirements for disposal.
2. Asbestos waste other than contaminated water shall be drummed or bagged and transported as previously described.

5.9.5 Re-establishment of Objects and Systems:

Relocate objects or fixtures moved to temporary locations in the course of the work to their proper positions. Only clean objects are to be moved into the areas.

Remount objects in the course of the work in their former positions. Repair any moveable or fixed objects damaged during the course of the work.

Repair any damage to building, or building systems (electrical, mechanical, plumbing, etc.), which was not noted in writing prior to work area preparation.

Repaint any areas damaged during the course of the work unless this work is scheduled to be repaired by others.

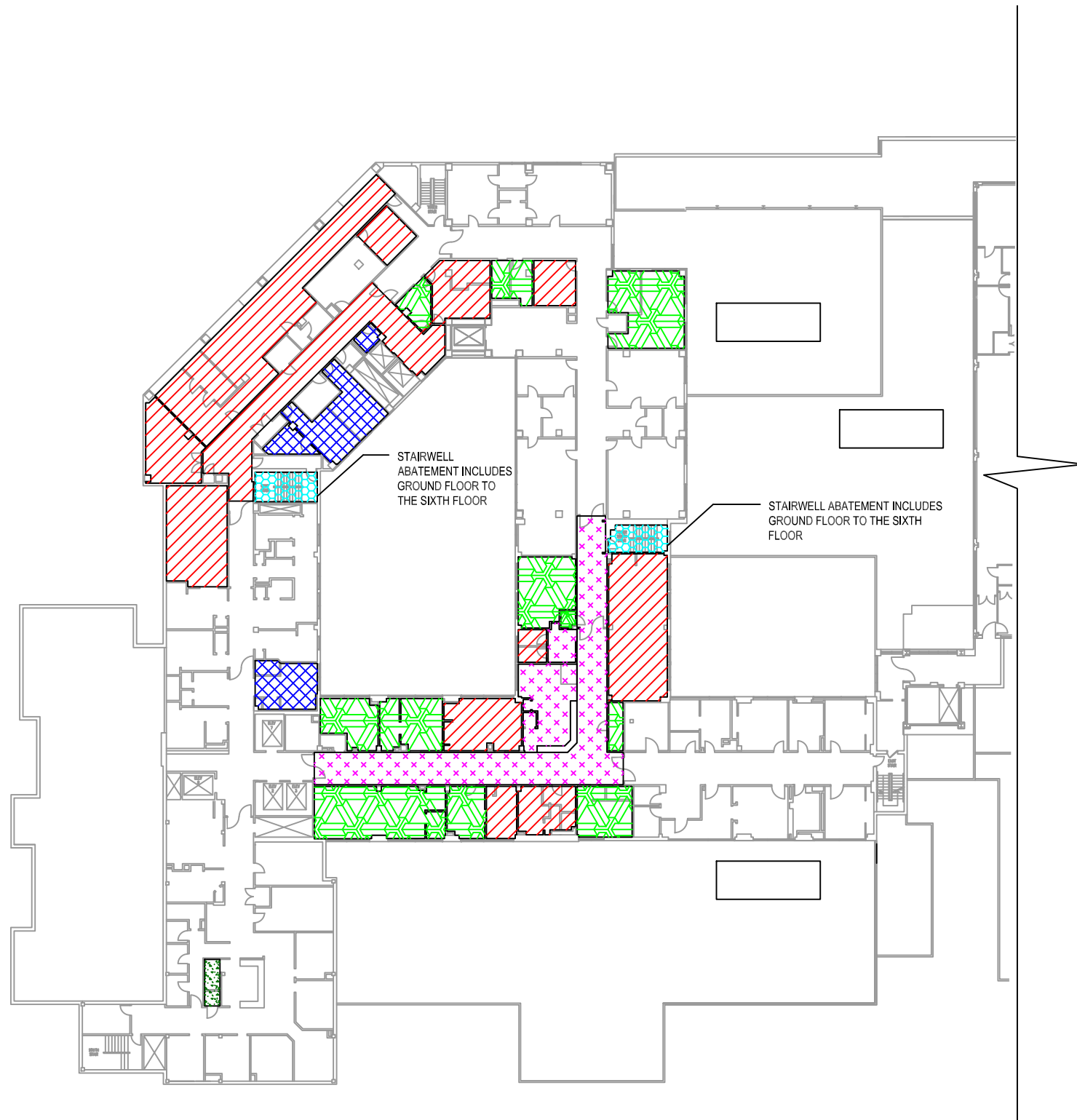
i. Final Report

Contractor will prepare a comprehensive final report to be submitted to Owner within 30 days following completion of the Project. This report will include as a minimum, landfill manifests, descriptions of procedures used during the project, descriptions of unusual events (fines, citations, etc.) and description and warranty of workmanship on replacement insulation (if applicable)

*****END OF SECTION*****

APPENDIX A

FLOOR PLAN HIGHLIGHTING LOCATIONS OF ASBESTOS-CONTAINING MATERIALS TO BE REMOVED



GENERAL ASBESTOS ABATEMENT NOTES – NON-FRIABLE

1. ALL ASBESTOS ABATEMENT WORK SHALL COMPLY WITH APPLICABLE OSHA, EPA, PA DEP, AND LOCAL REGULATORY REQUIREMENTS AND SHALL BE PERFORMED BY PROPERLY LICENSED AND CERTIFIED PERSONNEL.
2. SCOPE INCLUDES REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING NON-FRIABLE FLOORING MATERIALS, INCLUDING FLOOR TILE, SHEET FLOORING, ASSOCIATED MASTICS, ADHESIVE RESIDUE, AND RELATED DEBRIS WITHIN AREAS INDICATED.
3. ESTABLISH REGULATED WORK AREAS, PROVIDE REQUIRED WARNING SIGNAGE, AND IMPLEMENT ENGINEERING CONTROLS NECESSARY TO PREVENT THE SPREAD OF ASBESTOS CONTAMINATION.
4. REMOVE FLOORING AND MASTIC USING METHODS THAT MINIMIZE BREAKAGE, DUST GENERATION, AND FIBER RELEASE. GRINDING, SANDING, ABRASIVE BLASTING, OR OTHER METHODS THAT MAY RENDER NON-FRIABLE ACM FRIABLE ARE PROHIBITED UNLESS SPECIFICALLY PERMITTED BY APPLICABLE REGULATIONS.
5. ALL REMOVED FLOORING, MASTIC, ADHESIVE RESIDUE, DISPOSABLE PPE, CONTAINMENT MATERIALS, AND ASBESTOS-CONTAMINATED DEBRIS SHALL BE CONSIDERED ASBESTOS-CONTAINING WASTE AND SHALL BE PACKAGED, TRANSPORTED, AND DISPOSED OF AS ASBESTOS WASTE AT AN APPROVED DISPOSAL FACILITY.
6. CONTRACTOR SHALL PROVIDE WASTE SHIPMENT RECORDS, DISPOSAL MANIFESTS, AND ALL REQUIRED CLOSEOUT DOCUMENTATION TO THE OWNER. OWNER SHALL HOLD FINAL PAYMENTS UNTIL RECEIVED.
7. IF SUSPECT ASBESTOS-CONTAINING MATERIAL NOT IDENTIFIED IN THE SCOPE OF WORK IS ENCOUNTERED, STOP WORK IN THE AFFECTED AREA AND NOTIFY THE OWNER IMMEDIATELY.

PLEASE SEE COMPLETE CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION.

SITE CONDITIONS NOTES

1. WATER UTILITIES AT THE PROPERTY HAVE BEEN SHUT OFF. THE ABATEMENT CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL WATER NECESSARY TO COMPLETE ABATEMENT.
2. ELECTRICAL POWER AT THE PROPERTY IS LIMITED, AND THE ABATEMENT CONTRACTOR IS RESPONSIBLE FOR SUPPLYING ELECTRICAL POWER TO EACH WORK AREA.

LEGEND

	ASBESTOS-CONTAINING BLACK MASTIC WITH CONTAMINATED FLOOR TILE AND/OR SHEET FLOORING (1 LAYER)
	ASBESTOS-CONTAINING BLACK MASTIC WITH CONTAMINATED SHEET FLOORING AND FLOOR TILES (2 LAYERS)
	ASBESTOS-CONTAINING BLACK MASTIC WITH CONTAMINATED FLOOR TILES (2 LAYERS)
	ASBESTOS-CONTAINING ADHESIVE AND STAIR TREAD
	ASBESTOS-CONTAINING BLACK MASTIC AND FLOOR TILES (3 LAYERS)
	ASBESTOS-CONTAINING BLACK MASTIC AND FLOOR TILES (1 LAYER)



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**ASBESTOS ABATEMENT
NON-FRIABLE MATERIALS
SIXTH FLOOR**

**FORMER DELAWARE COUNTY MEMORIAL HOSPITAL
501 N. LANSDOWNE AVENUE
DREXEL HILL, PA 19026**

DATE: **7-14-2026**

PROJECT NO. **261264**

SCALE: **NTS**

DRAWN BY: **MC**

REVIEWED BY: **CG**

SHEET # H-100.00



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3. ESTABLISH REGULATED WORK AREAS, PROVIDE REQUIRED WARNING SIGNAGE, AND IMPLEMENT ENGINEERING CONTROLS NECESSARY TO PREVENT THE SPREAD OF ASBESTOS CONTAMINATION.
4. REMOVE FLOORING AND MASTIC USING METHODS THAT MINIMIZE BREAKAGE, DUST GENERATION, AND FIBER RELEASE. GRINDING, SANDING, ABRASIVE BLASTING, OR OTHER METHODS THAT MAY RENDER NON-FRIABLE ACM FRIABLE ARE PROHIBITED UNLESS SPECIFICALLY PERMITTED BY APPLICABLE REGULATIONS.
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LEGEND

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**ASBESTOS ABATEMENT
NON-FRIABLE MATERIALS
FIFTH FLOOR**

**FORMER DELAWARE COUNTY MEMORIAL HOSPITAL
501 N. LANSDOWNE AVENUE
DREXEL HILL, PA 19026**

DATE: **7-14-2026**

PROJECT NO. **261264**

SCALE: **NTS**

DRAWN BY: **MC**

REVIEWED BY: **CG**

SHEET # H-101.00



GENERAL ASBESTOS ABATEMENT NOTES – NON-FRIABLE

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ASBESTOS ABATEMENT
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FOURTH FLOOR

FORMER DELAWARE COUNTY MEMORIAL HOSPITAL
501 N. LANSDOWNE AVENUE
DREXEL HILL, PA 19026

DATE: 7-14-2026	SCALE: NTS
PROJECT NO. 261264	DRAWN BY: MC
	REVIEWED BY: CG

SHEET # H-102.00



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THREE FLOOR

FORMER DELAWARE COUNTY MEMORIAL HOSPITAL
501 N. LANSDOWNE AVENUE
DREXEL HILL, PA 19026

DATE: 7-14-2026

PROJECT NO. 261264

SCALE: NTS

DRAWN BY: MC

REVIEWED BY: CG

SHEET # H-103.00



GENERAL ASBESTOS ABATEMENT NOTES – NON-FRIABLE

1. ALL ASBESTOS ABATEMENT WORK SHALL COMPLY WITH APPLICABLE OSHA, EPA, PA DEP, AND LOCAL REGULATORY REQUIREMENTS AND SHALL BE PERFORMED BY PROPERLY LICENSED AND CERTIFIED PERSONNEL.
2. SCOPE INCLUDES REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING NON-FRIABLE FLOORING MATERIALS, INCLUDING FLOOR TILE, SHEET FLOORING, ASSOCIATED MASTICS, ADHESIVE RESIDUE, AND RELATED DEBRIS WITHIN AREAS INDICATED.
3. ESTABLISH REGULATED WORK AREAS, PROVIDE REQUIRED WARNING SIGNAGE, AND IMPLEMENT ENGINEERING CONTROLS NECESSARY TO PREVENT THE SPREAD OF ASBESTOS CONTAMINATION.
4. REMOVE FLOORING AND MASTIC USING METHODS THAT MINIMIZE BREAKAGE, DUST GENERATION, AND FIBER RELEASE. GRINDING, SANDING, ABRASIVE BLASTING, OR OTHER METHODS THAT MAY RENDER NON-FRIABLE ACM FRIABLE ARE PROHIBITED UNLESS SPECIFICALLY PERMITTED BY APPLICABLE REGULATIONS.
5. ALL REMOVED FLOORING, MASTIC, ADHESIVE RESIDUE, DISPOSABLE PPE, CONTAINMENT MATERIALS, AND ASBESTOS-CONTAMINATED DEBRIS SHALL BE CONSIDERED ASBESTOS-CONTAINING WASTE AND SHALL BE PACKAGED, TRANSPORTED, AND DISPOSED OF AS ASBESTOS WASTE AT AN APPROVED DISPOSAL FACILITY.
6. CONTRACTOR SHALL PROVIDE WASTE SHIPMENT RECORDS, DISPOSAL MANIFESTS, AND ALL REQUIRED CLOSEOUT DOCUMENTATION TO THE OWNER. OWNER SHALL HOLD FINAL PAYMENTS UNTIL RECEIVED.
7. IF SUSPECT ASBESTOS-CONTAINING MATERIAL NOT IDENTIFIED IN THE SCOPE OF WORK IS ENCOUNTERED, STOP WORK IN THE AFFECTED AREA AND NOTIFY THE OWNER IMMEDIATELY.

PLEASE SEE COMPLETE CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION.

SITE CONDITIONS NOTES

1. WATER UTILITIES AT THE PROPERTY HAVE BEEN SHUT OFF. THE ABATEMENT CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL WATER NECESSARY TO COMPLETE ABATEMENT.
2. ELECTRICAL POWER AT THE PROPERTY IS LIMITED, AND THE ABATEMENT CONTRACTOR IS RESPONSIBLE FOR SUPPLYING ELECTRICAL POWER TO EACH WORK AREA.

LEGEND

	ASBESTOS-CONTAINING BLACK MASTIC WITH CONTAMINATED FLOOR TILE AND/OR SHEET FLOORING (1 LAYER)
	ASBESTOS-CONTAINING BLACK MASTIC WITH CONTAMINATED FLOOR TILES (2 LAYERS)
	ASBESTOS-CONTAINING ADHESIVE AND STAIR TREAD
	ASBESTOS-CONTAINING BLACK MASTIC AND FLOOR TILES (3 LAYERS)



400 Street Road
Bensalem, PA 19020
(215) 244-1300
web: www.criterionlabs.com

ASBESTOS ABATEMENT
NON-FRIABLE MATERIALS
SECOND FLOOR

FORMER DELAWARE COUNTY MEMORIAL HOSPITAL
501 N. LANSDOWNE AVENUE
DREXEL HILL, PA 19026

DATE: 7-14-2026

PROJECT NO. 261264

SCALE: NTS

DRAWN BY: MC

REVIEWED BY: CG

SHEET # H-104.00



STAIRWELL ABATEMENT
INCLUDES GROUND FLOOR
TO THE SIXTH FLOOR

ASBESTOS-CONTAINING
CHALKBOARD GLUE DOTS

STAIRWELL ABATEMENT INCLUDES
GROUND FLOOR TO THE SIXTH FLOOR

CARPET OVER 3-LAYERS OF TILE

RUBBER FLOORING OVER
3-LAYERS OF TILE

CARPET OVER 2-LAYERS OF TILE

GENERAL ASBESTOS ABATEMENT NOTES – NON-FRIABLE

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2. SCOPE INCLUDES REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING NON-FRIABLE FLOORING MATERIALS, INCLUDING FLOOR TILE, SHEET FLOORING, ASSOCIATED MASTICS, ADHESIVE RESIDUE, AND RELATED DEBRIS WITHIN AREAS INDICATED.
3. ESTABLISH REGULATED WORK AREAS, PROVIDE REQUIRED WARNING SIGNAGE, AND IMPLEMENT ENGINEERING CONTROLS NECESSARY TO PREVENT THE SPREAD OF ASBESTOS CONTAMINATION.
4. REMOVE FLOORING AND MASTIC USING METHODS THAT MINIMIZE BREAKAGE, DUST GENERATION, AND FIBER RELEASE. GRINDING, SANDING, ABRASIVE BLASTING, OR OTHER METHODS THAT MAY RENDER NON-FRIABLE ACM FRIABLE ARE PROHIBITED UNLESS SPECIFICALLY PERMITTED BY APPLICABLE REGULATIONS.
5. ALL REMOVED FLOORING, MASTIC, ADHESIVE RESIDUE, DISPOSABLE PPE, CONTAMINATION MATERIALS, AND ASBESTOS-CONTAMINATED DEBRIS SHALL BE CONSIDERED ASBESTOS-CONTAINING WASTE AND SHALL BE PACKAGED, TRANSPORTED, AND DISPOSED OF AS ASBESTOS WASTE AT AN APPROVED DISPOSAL FACILITY.
6. CONTRACTOR SHALL PROVIDE WASTE SHIPMENT RECORDS, DISPOSAL MANIFESTS, AND ALL REQUIRED CLOSEOUT DOCUMENTATION TO THE OWNER. OWNER SHALL HOLD FINAL PAYMENTS UNTIL RECEIVED.
7. IF SUSPECT ASBESTOS-CONTAINING MATERIAL NOT IDENTIFIED IN THE SCOPE OF WORK IS ENCOUNTERED, STOP WORK IN THE AFFECTED AREA AND NOTIFY THE OWNER IMMEDIATELY.

PLEASE SEE COMPLETE CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION.

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LEGEND

-  ASBESTOS-CONTAINING BLACK MASTIC WITH CONTAMINATED FLOOR TILE AND/OR SHEET FLOORING (1 LAYER)
-  ASBESTOS-CONTAINING CHALKBOARD GLUE DOTS
-  ASBESTOS-CONTAINING BLACK MASTIC WITH CONTAMINATED FLOOR TILES (2 LAYERS)
-  ASBESTOS-CONTAINING ADHESIVE AND STAIR TREAD
-  ASBESTOS-CONTAINING BLACK MASTIC AND FLOOR TILES (3 LAYERS)
-  ASBESTOS-CONTAINING BLACK MASTIC AND FLOOR TILES (1 LAYER)



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**ASBESTOS ABATEMENT
NON-FRIABLE MATERIALS
FIRST FLOOR**

**FORMER DELAWARE COUNTY MEMORIAL HOSPITAL
501 N. LANSDOWNE AVENUE
DREXEL HILL, PA 19026**

DATE: **7-14-2026**

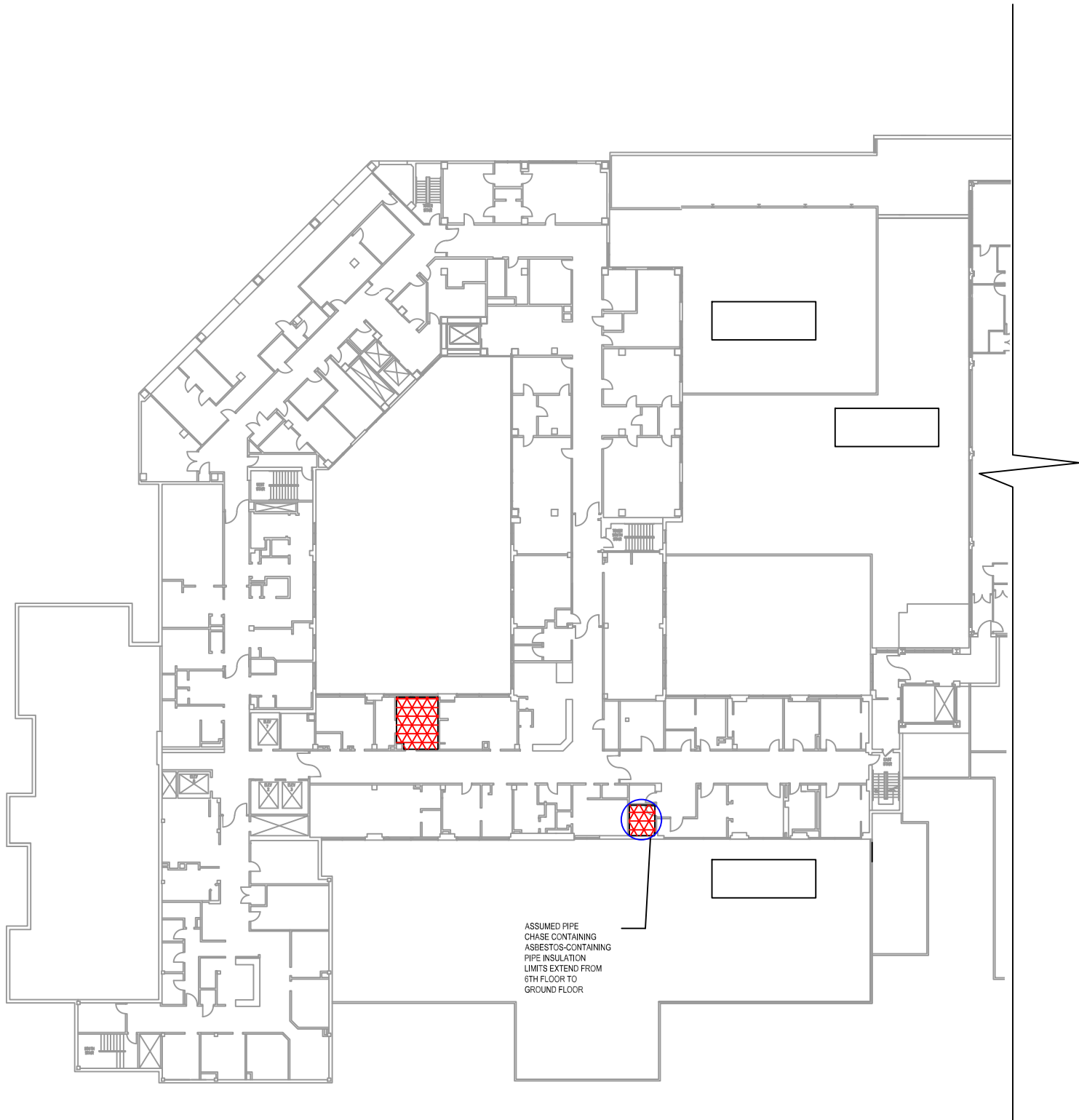
PROJECT NO. **261264**

SCALE: **NTS**

DRAWN BY: **MC**

REVIEWED BY: **CG**

SHEET # H-105.00



GENERAL ASBESTOS ABATEMENT NOTES - FRIABLE

1. ALL ASBESTOS ABATEMENT WORK SHALL COMPLY WITH APPLICABLE OSHA, EPA, PA DEP, AND LOCAL REGULATORY REQUIREMENTS AND SHALL BE PERFORMED BY PROPERLY LICENSED AND CERTIFIED PERSONNEL.
2. SCOPE INCLUDES THE REMOVAL AND DISPOSAL OF FRIABLE ASBESTOS-CONTAINING THERMAL SYSTEM INSULATION (TSI), INCLUDING PIPE INSULATION, FITTINGS INSULATION, ELBOWS, VALVES, MUDDED JOINTS, AND ASSOCIATED ASBESTOS-CONTAMINATED PLASTER, DEBRIS, AND BUILDING MATERIALS WITHIN AREAS INDICATED.
3. CONTRACTOR SHALL PERFORM ALL REQUIRED SELECTIVE DEMOLITION NECESSARY TO ACCESS AND REMOVE ASBESTOS-CONTAINING MATERIALS. DEMOLITION LIMITS SHALL BE MINIMIZED TO THE EXTENT PRACTICABLE WHILE ALLOWING COMPLETE REMOVAL OF IDENTIFIED ACM.
4. ESTABLISH REGULATED WORK AREAS, INSTALL REQUIRED CRITICAL BARRIERS AND WARNING SIGNAGE, AND MAINTAIN NEGATIVE AIR PRESSURE CONTAINMENTS AS REQUIRED TO PREVENT THE MIGRATION OF ASBESTOS FIBERS.
5. REMOVE ALL IDENTIFIED ASBESTOS-CONTAINING PIPE INSULATION, FITTINGS INSULATION, AND CONTAMINATED PLASTER USING METHODS THAT MINIMIZE FIBER RELEASE AND COMPLY WITH APPLICABLE REGULATORY REQUIREMENTS.
6. ALL POROUS MATERIALS AND DEBRIS CONTAMINATED BY ASBESTOS-CONTAINING PIPE INSULATION, INCLUDING PLASTER, DRYWALL, INSULATION, CEILING MATERIALS, FLOOR DEBRIS, AND OTHER IMPACTED BUILDING MATERIALS, SHALL BE REMOVED AND DISPOSED OF AS ASBESTOS-CONTAINING WASTE.
7. ALL REMOVED ACM, CONTAMINATED BUILDING MATERIALS, DISPOSABLE PPE, POLYETHYLENE SHEETING, FILTERS, CLEANING MATERIALS, AND ASBESTOS-CONTAMINATED DEBRIS SHALL BE CONSIDERED ASBESTOS-CONTAINING WASTE AND SHALL BE PACKAGED, TRANSPORTED, AND DISPOSED OF AT AN APPROVED DISPOSAL FACILITY.
8. CONTRACTOR SHALL CLEAN WORK AREAS UTILIZING HEPA VACUUMING AND WET CLEANING METHODS. NO VISIBLE DEBRIS, DUST, OR SUSPECT ACM SHALL REMAIN AT PROJECT COMPLETION.
9. CONTRACTOR SHALL PROVIDE WASTE SHIPMENT RECORDS, DISPOSAL MANIFESTS, AIR CLEARANCE DOCUMENTATION, AND ALL REQUIRED CLOSEOUT DOCUMENTATION TO THE OWNER. OWNER SHALL HOLD FINAL PAYMENTS UNTIL ALL DOCUMENTS ARE RECEIVED.
10. IF ADDITIONAL SUSPECT ASBESTOS-CONTAINING MATERIALS ARE ENCOUNTERED THAT ARE NOT IDENTIFIED IN THE SCOPE OF WORK STOP WORK IN THE AFFECTED AREA AND NOTIFY THE OWNER IMMEDIATELY.

PLEASE SEE COMPLETE CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION.

SITE CONDITIONS NOTES

1. WATER UTILITIES AT THE PROPERTY HAVE BEEN SHUT OFF. THE ABATEMENT CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL WATER NECESSARY TO COMPLETE ABATEMENT.
2. ELECTRICAL POWER AT THE PROPERTY IS LIMITED, AND THE ABATEMENT CONTRACTOR IS RESPONSIBLE FOR SUPPLYING ELECTRICAL POWER TO EACH WORK AREA.

LEGEND



ASSUMED ASBESTOS-CONTAINING PIPE INSULATION



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ASBESTOS ABATEMENT
FRIABLE MATERIALS
SIXTH FLOOR

FORMER DELAWARE COUNTY MEMORIAL HOSPITAL
501 N. LANSDOWNE AVENUE
DREXEL HILL, PA 19026

DATE: 7-14-2026

PROJECT NO. 261264

SCALE: NTS

DRAWN BY: MC

REVIEWED BY: CG

SHEET # H-106.00



GENERAL ASBESTOS ABATEMENT NOTES - FRIABLE

1. ALL ASBESTOS ABATEMENT WORK SHALL COMPLY WITH APPLICABLE OSHA, EPA, PA DEP, AND LOCAL REGULATORY REQUIREMENTS AND SHALL BE PERFORMED BY PROPERLY LICENSED AND CERTIFIED PERSONNEL.
2. SCOPE INCLUDES THE REMOVAL AND DISPOSAL OF FRIABLE ASBESTOS-CONTAINING THERMAL SYSTEM INSULATION (TSI), INCLUDING PIPE INSULATION, FITTINGS INSULATION, ELBOWS, VALVES, MUDDED JOINTS, AND ASSOCIATED ASBESTOS-CONTAMINATED PLASTER, DEBRIS, AND BUILDING MATERIALS WITHIN AREAS INDICATED.
3. CONTRACTOR SHALL PERFORM ALL REQUIRED SELECTIVE DEMOLITION NECESSARY TO ACCESS AND REMOVE ASBESTOS-CONTAINING MATERIALS. DEMOLITION LIMITS SHALL BE MINIMIZED TO THE EXTENT PRACTICABLE WHILE ALLOWING COMPLETE REMOVAL OF IDENTIFIED ACM.
4. ESTABLISH REGULATED WORK AREAS, INSTALL REQUIRED CRITICAL BARRIERS AND WARNING SIGNAGE, AND MAINTAIN NEGATIVE AIR PRESSURE CONTAINMENTS AS REQUIRED TO PREVENT THE MIGRATION OF ASBESTOS FIBERS.
5. REMOVE ALL IDENTIFIED ASBESTOS-CONTAINING PIPE INSULATION, FITTINGS INSULATION, AND CONTAMINATED PLASTER USING METHODS THAT MINIMIZE FIBER RELEASE AND COMPLY WITH APPLICABLE REGULATORY REQUIREMENTS.
6. ALL POROUS MATERIALS AND DEBRIS CONTAMINATED BY ASBESTOS-CONTAINING PIPE INSULATION, INCLUDING PLASTER, DRYWALL, INSULATION, CEILING MATERIALS, FLOOR DEBRIS, AND OTHER IMPACTED BUILDING MATERIALS, SHALL BE REMOVED AND DISPOSED OF AS ASBESTOS-CONTAINING WASTE.
7. ALL REMOVED ACM, CONTAMINATED BUILDING MATERIALS, DISPOSABLE PPE, POLYETHYLENE SHEETING, FILTERS, CLEANING MATERIALS, AND ASBESTOS-CONTAMINATED DEBRIS SHALL BE CONSIDERED ASBESTOS-CONTAINING WASTE AND SHALL BE PACKAGED, TRANSPORTED, AND DISPOSED OF AT AN APPROVED DISPOSAL FACILITY.
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10. IF ADDITIONAL SUSPECT ASBESTOS-CONTAINING MATERIALS ARE ENCOUNTERED THAT ARE NOT IDENTIFIED IN THE SCOPE OF WORK STOP WORK IN THE AFFECTED AREA AND NOTIFY THE OWNER IMMEDIATELY.

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LEGEND



ASBESTOS-CONTAINING PIPE INSULATION



ASBESTOS-CONTAINING PIPE FITTINGS



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ASBESTOS ABATEMENT
FRIABLE MATERIALS
FIFTH FLOOR

FORMER DELAWARE COUNTY MEMORIAL HOSPITAL
501 N. LANSDOWNE AVENUE
DREXEL HILL, PA 19026

DATE: 7-14-2026

PROJECT NO. 261264

SCALE: NTS

DRAWN BY: MC

REVIEWED BY: CG

SHEET # H-107.00



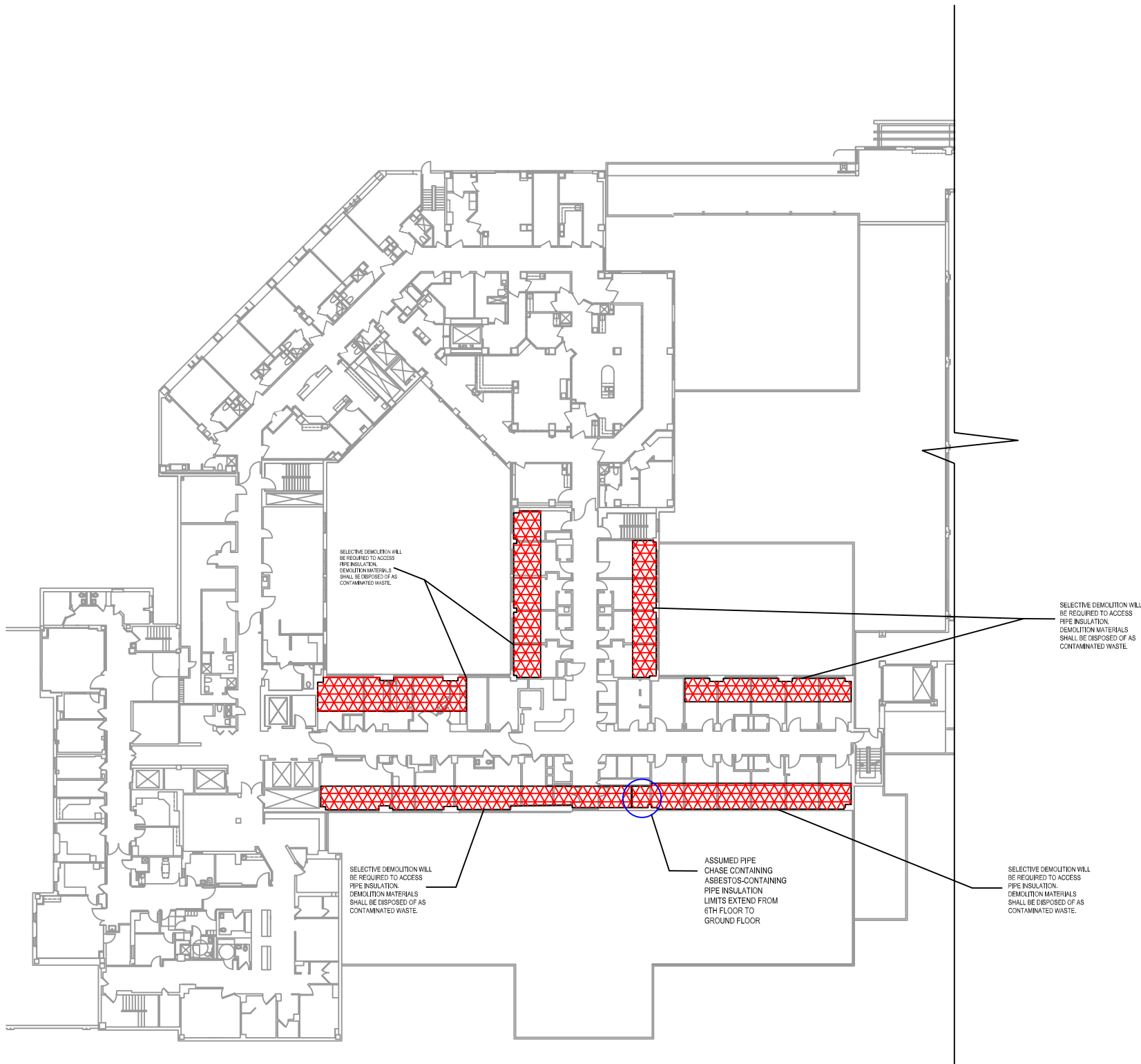
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LEGEND

 ASBESTOS-CONTAINING PIPE INSULATION



400 Street Road
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ASBESTOS ABATEMENT
FRIABLE MATERIALS
FOURTH FLOOR

FORMER DELAWARE COUNTY MEMORIAL HOSPITAL
501 N. LANSDOWNE AVENUE
DREXEL HILL, PA 19026

DATE: 7-14-2026

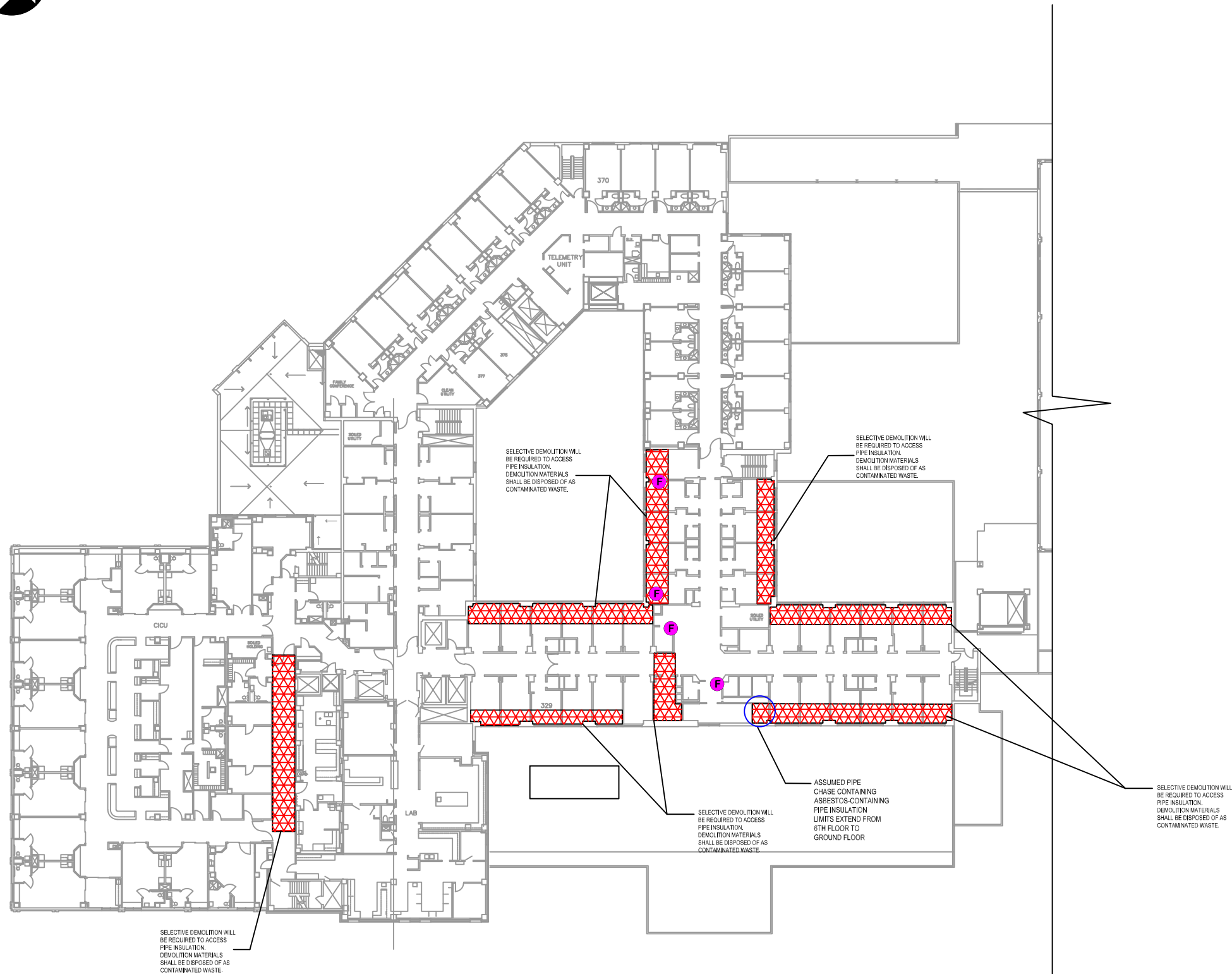
PROJECT NO. 261264

SCALE: NTS

DRAWN BY: MC

REVIEWED BY: CG

SHEET # H-108.00



GENERAL ASBESTOS ABATEMENT NOTES - FRIABLE

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LEGEND

-  ASBESTOS-CONTAINING PIPE INSULATION
-  ASBESTOS-CONTAINING PIPE FITTINGS



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ASBESTOS ABATEMENT
FRIABLE MATERIALS
THREE FLOOR

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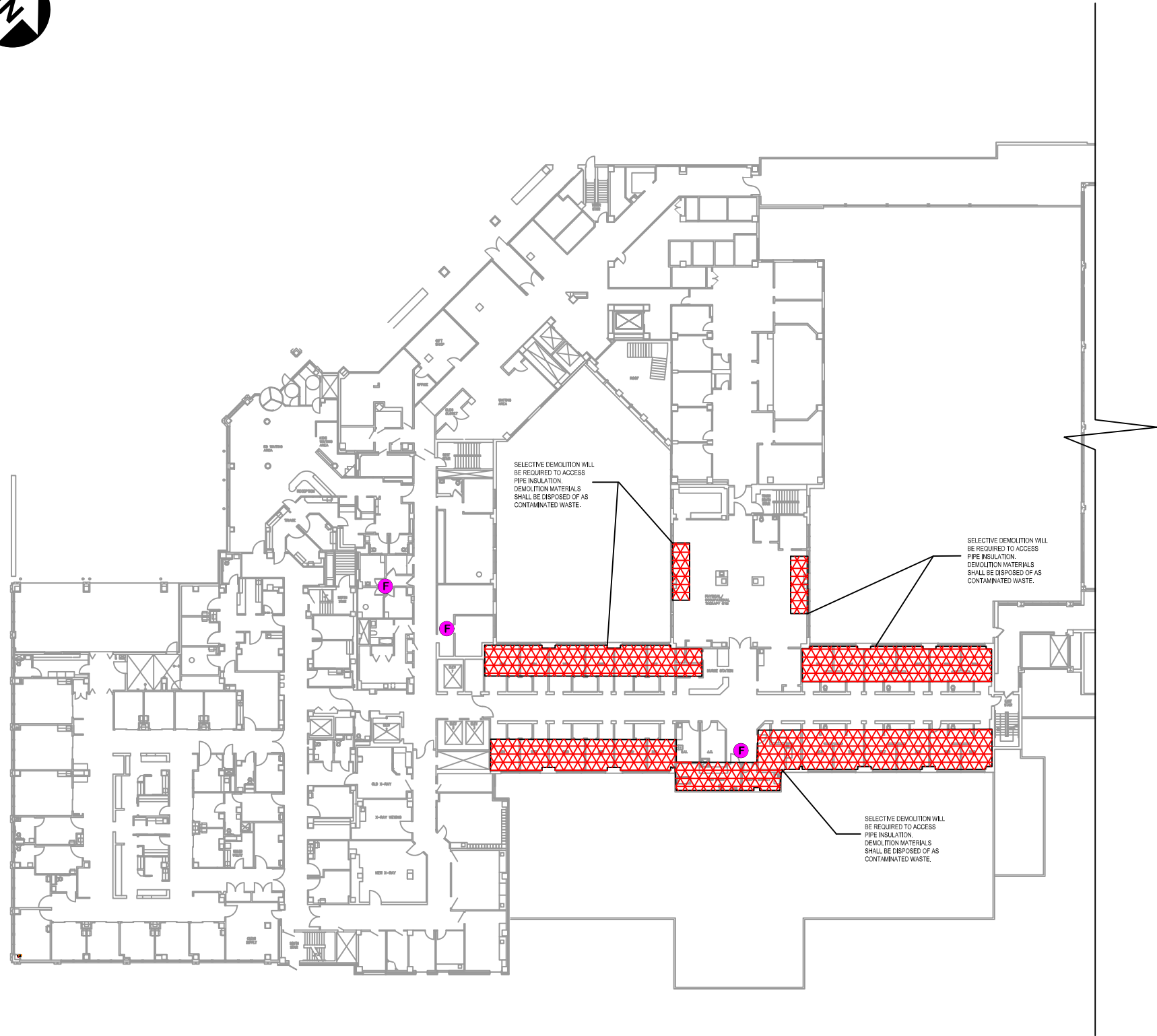
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LEGEND

-  ASBESTOS-CONTAINING PIPE INSULATION
-  ASBESTOS-CONTAINING PIPE FITTINGS



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ASBESTOS ABATEMENT
FRIABLE MATERIALS
SECOND FLOOR

FORMER DELAWARE COUNTY MEMORIAL HOSPITAL
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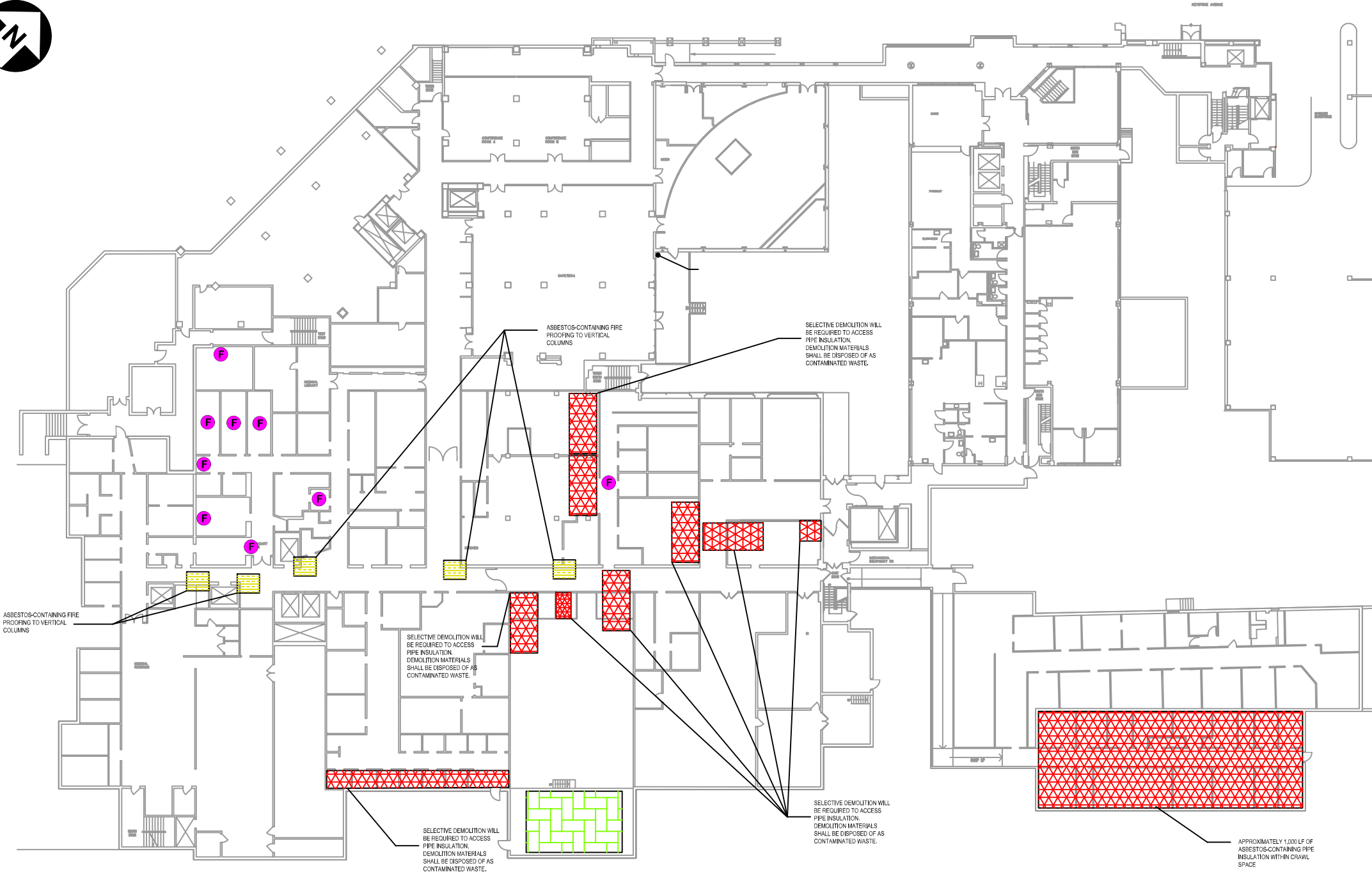
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DRAWN BY: MC

REVIEWED BY: CG

SHEET # H-110.00



GENERAL ASBESTOS ABATEMENT NOTES - FRIABLE

1. ALL ASBESTOS ABATEMENT WORK SHALL COMPLY WITH APPLICABLE OSHA, EPA, PA DEP, AND LOCAL REGULATORY REQUIREMENTS AND SHALL BE PERFORMED BY PROPERLY LICENSED AND CERTIFIED PERSONNEL.
2. SCOPE INCLUDES THE REMOVAL AND DISPOSAL OF FRIABLE ASBESTOS-CONTAINING THERMAL SYSTEM INSULATION (TSI), INCLUDING PIPE INSULATION, FITTINGS INSULATION, ELBOWS, VALVES, MUDD JOINTS, AND ASSOCIATED ASBESTOS-CONTAMINATED PLASTER, DEBRIS, AND BUILDING MATERIALS WITHIN AREAS INDICATED.
3. CONTRACTOR SHALL PERFORM ALL REQUIRED SELECTIVE DEMOLITION NECESSARY TO ACCESS AND REMOVE ASBESTOS-CONTAINING MATERIALS. DEMOLITION LIMITS SHALL BE MINIMIZED TO THE EXTENT PRACTICABLE WHILE ALLOWING COMPLETE REMOVAL OF IDENTIFIED ACM.
4. ESTABLISH REGULATED WORK AREAS, INSTALL REQUIRED CRITICAL BARRIERS AND WARNING SIGNAGE, AND MAINTAIN NEGATIVE AIR PRESSURE CONTAINMENTS AS REQUIRED TO PREVENT THE MIGRATION OF ASBESTOS FIBERS.
5. REMOVE ALL IDENTIFIED ASBESTOS-CONTAINING PIPE INSULATION, FITTINGS INSULATION, AND CONTAMINATED PLASTER USING METHODS THAT MINIMIZE FIBER RELEASE AND COMPLY WITH APPLICABLE REGULATORY REQUIREMENTS.
6. ALL POROUS MATERIALS AND DEBRIS CONTAMINATED BY ASBESTOS-CONTAINING PIPE INSULATION, INCLUDING PLASTER, DRYWALL, INSULATION, CEILING MATERIALS, FLOOR DEBRIS, AND OTHER IMPACTED BUILDING MATERIALS, SHALL BE REMOVED AND DISPOSED OF AS ASBESTOS-CONTAINING WASTE.
7. BOILERS IDENTIFIED FOR ASBESTOS ABATEMENT SHALL BE SELECTIVELY DEMOLISHED AS NECESSARY TO PROVIDE ACCESS TO INTERNAL ASBESTOS-CONTAINING INSULATION, GASKETS, REFRACTORY MATERIALS, AND OTHER ASBESTOS-CONTAINING COMPONENTS. CONTRACTOR SHALL PERFORM ALL REQUIRED DISASSEMBLY AND DEMOLITION IN ACCORDANCE WITH APPLICABLE SAFETY AND REGULATORY REQUIREMENTS. WHERE TORCH CUTTING OR OTHER HOT WORK IS REQUIRED, CONTRACTOR SHALL PROVIDE AND MAINTAIN A FIRE WATCH AND IMPLEMENT ALL REQUIRED HOT WORK SAFETY PROCEDURES.
8. ALL REMOVED ACM, CONTAMINATED BUILDING MATERIALS, DISPOSABLE PPE, POLYETHYLENE SHEETING, FILTERS, CLEANING MATERIALS, AND ASBESTOS-CONTAMINATED DEBRIS SHALL BE CONSIDERED ASBESTOS-CONTAINING WASTE AND SHALL BE PACKAGED, TRANSPORTED, AND DISPOSED OF AT AN APPROVED DISPOSAL FACILITY.
9. CONTRACTOR SHALL CLEAN WORK AREAS UTILIZING HEPA VACUUMING AND WET CLEANING METHODS. NO VISIBLE DEBRIS, DUST, OR SUSPECT ACM SHALL REMAIN AT PROJECT COMPLETION.
10. CONTRACTOR SHALL PROVIDE WASTE SHIPMENT RECORDS, DISPOSAL MANIFESTS, AIR CLEARANCE DOCUMENTATION, AND ALL REQUIRED CLOSEOUT DOCUMENTATION TO THE OWNER. OWNER SHALL HOLD FINAL PAYMENTS UNTIL ALL DOCUMENTS ARE RECEIVED.
11. IF ADDITIONAL SUSPECT ASBESTOS-CONTAINING MATERIALS ARE ENCOUNTERED THAT ARE NOT IDENTIFIED IN THE SCOPE OF WORK STOP WORK IN THE AFFECTED AREA AND NOTIFY THE OWNER IMMEDIATELY.

PLEASE SEE COMPLETE CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION.

SITE CONDITIONS NOTES

1. WATER UTILITIES AT THE PROPERTY HAVE BEEN SHUT OFF. THE ABATEMENT CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL WATER NECESSARY TO COMPLETE ABATEMENT.
2. ELECTRICAL POWER AT THE PROPERTY IS LIMITED, AND THE ABATEMENT CONTRACTOR IS RESPONSIBLE FOR SUPPLYING ELECTRICAL POWER TO EACH WORK AREA.

LEGEND

-  ASBESTOS-CONTAINING PIPE INSULATION
-  ASBESTOS-CONTAINING PIPE FITTINGS
-  ASBESTOS-CONTAINING FIREPROOFING
-  ASSUMED ASBESTOS-CONTAINING BOILER INTERNAL INSULATION/GASKETS



400 Street Road
Bensalem, PA 19020
(215) 244-1300
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ASBESTOS ABATEMENT
FRIABLE MATERIALS
FIRST FLOOR

FORMER DELAWARE COUNTY MEMORIAL HOSPITAL
501 N. LANSDOWNE AVENUE
DREXEL HILL, PA 19026

DATE: 7-14-2026

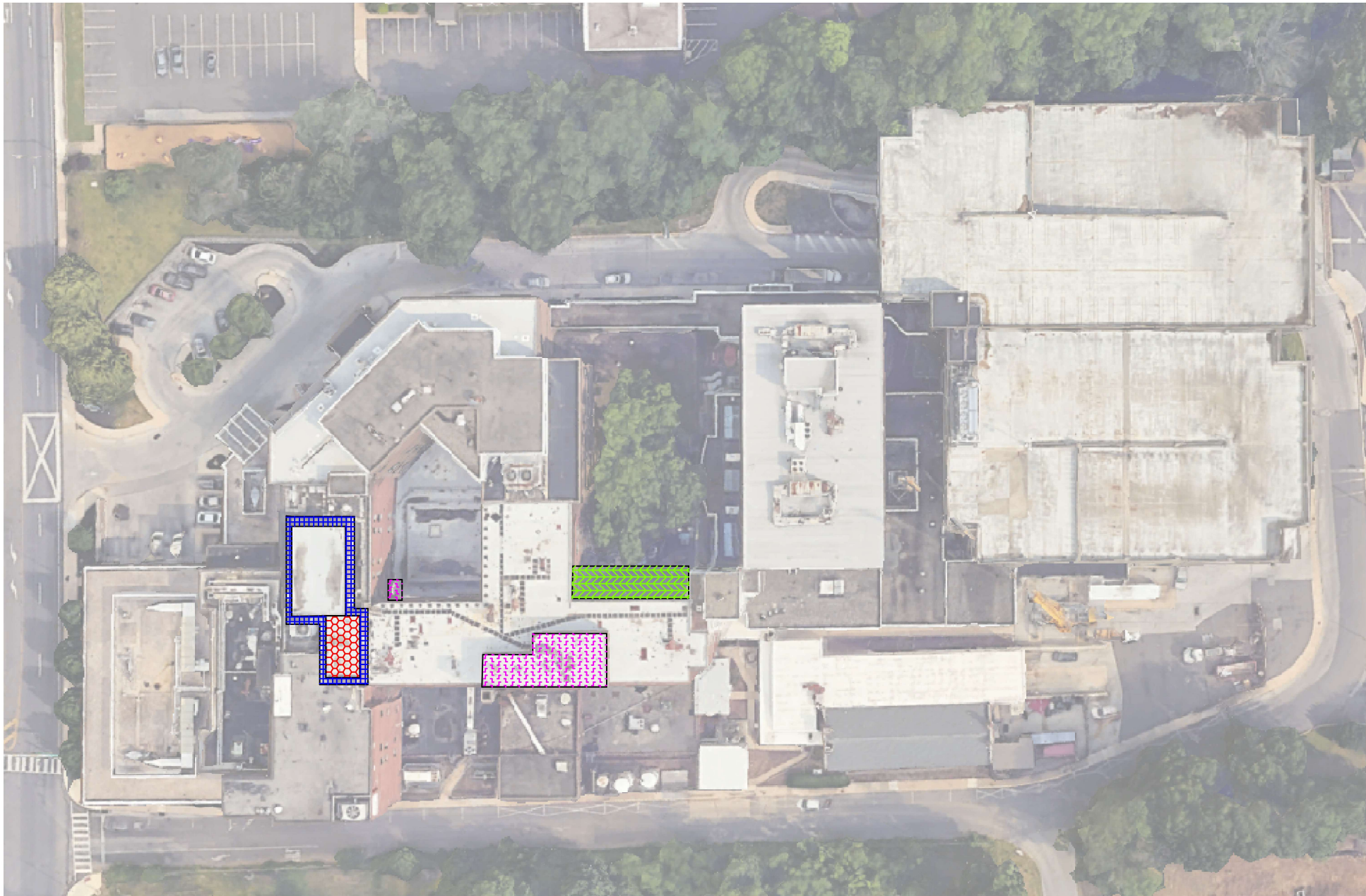
PROJECT NO. 261264

SCALE: NTS

DRAWN BY: MC

REVIEWED BY: CG

SHEET # H-111.00



GENERAL ASBESTOS ABATEMENT NOTE - EXTERIOR EXTERIOR

1. ALL CAULK, GLAZING COMPOUNDS, AND ROOFING MATERIALS IDENTIFIED AS CONTAINING ASBESTOS SHALL BE REMOVED, HANDLED, AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE OSHA, EPA, PA DEP, AND LOCAL REGULATORY REQUIREMENTS BY PROPERLY LICENSED AND CERTIFIED PERSONNEL.
2. SCOPE INCLUDES THE REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING EXTERIOR CAULK, WINDOW GLAZING COMPOUNDS, ROOFING MATERIALS, FLASHINGS, MASTICS, SEALANTS, AND ASSOCIATED DEBRIS WITHIN AREAS INDICATED.
3. ESTABLISH REGULATED WORK AREAS AS REQUIRED AND IMPLEMENT APPROPRIATE ENGINEERING CONTROLS, WORK PRACTICES, AND BARRIERS TO PREVENT THE RELEASE OR MIGRATION OF ASBESTOS FIBERS TO OCCUPIED OR ADJACENT AREAS. PROVIDE REQUIRED WARNING SIGNAGE AND RESTRICT ACCESS TO AUTHORIZED PERSONNEL ONLY.
4. REMOVE ASBESTOS-CONTAINING CAULKS, GLAZING MATERIALS, AND ROOFING COMPONENTS USING METHODS THAT MINIMIZE DISTURBANCE, DUST GENERATION, AND FIBER RELEASE CUTTING, GRINDING, ABRASIVE BLASTING, MECHANICAL ABRASION, OR OTHER METHODS THAT MAY CAUSE EXCESSIVE FIBER RELEASE SHALL NOT BE USED UNLESS SPECIFICALLY PERMITTED BY APPLICABLE REGULATIONS.
5. ALL REMOVED CAULK, GLAZING COMPOUNDS, ROOFING MATERIALS, DISPOSABLE PPE, CONTAINMENT MATERIALS, AND ASBESTOS-CONTAMINATED DEBRIS SHALL BE COLLECTED, PACKAGED, LABELED, TRANSPORTED, AND DISPOSED OF AS ASBESTOS-CONTAINING WASTE AT AN APPROVED DISPOSAL FACILITY.
6. CONTRACTOR SHALL MAINTAIN HOUSEKEEPING THROUGHOUT THE PROJECT AND SHALL CLEAN ALL WORK AREAS OF VISIBLE DEBRIS UPON COMPLETION OF ABATEMENT ACTIVITIES.
7. CONTRACTOR SHALL PROVIDE WASTE SHIPMENT RECORDS, DISPOSAL MANIFESTS, AIR MONITORING RESULTS (IF REQUIRED), AND ALL OTHER APPLICABLE CLOSEOUT DOCUMENTATION TO THE OWNER UPON PROJECT COMPLETION. OWNER SHALL HOLD FINAL PAYMENTS UNTIL ALL DOCUMENTS ARE RECEIVED.
8. IF ADDITIONAL SUSPECT ASBESTOS-CONTAINING MATERIALS NOT IDENTIFIED IN THE ASBESTOS SCOPE OF WORK ARE ENCOUNTERED DURING THE WORK, THE CONTRACTOR SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA, SECURE THE AREA, AND NOTIFY THE OWNER FOR FURTHER DIRECTION PRIOR TO PROCEEDING.

PLEASE SEE COMPLETE CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION.

SITE CONDITIONS NOTES

1. WATER UTILITIES AT THE PROPERTY HAVE BEEN SHUT OFF. THE ABATEMENT CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL WATER NECESSARY TO COMPLETE ABATEMENT.
2. ELECTRICAL POWER AT THE PROPERTY IS LIMITED, AND THE ABATEMENT CONTRACTOR IS RESPONSIBLE FOR SUPPLYING ELECTRICAL POWER TO EACH WORK AREA.

LEGEND

-  ASBESTOS-CONTAINING INSULATION ASSOCIATED W/ GENERATOR #3 TANK & DOOR CAULK
-  ASBESTOS-CONTAINING EXTERIOR VERTICAL EXPANSION CAULK
-  ASBESTOS-CONTAINING WINDOW GLAZING (INTERIOR), DOOR CAULK (EXTERIOR), VENT CAULK ON RED METAL LOUVERS (EXTERIOR), WINDOW CAULK (EXTERIOR)
-  ASBESTOS-CONTAINING COURTYARD ROOF