Building 201- LBP/AB Risk-Based Cleanup Decision Tree

Overview

This document outlines the decision-making process for risk-based cleanup at the OTIH-Building 201 site. It includes a decision tree diagram and key considerations for environmental remediation. This document was generated in general compliance with ASTM Standard E-2348-24 Guide for Framework for a Consensus-based Environmental Decision-making Process, ASTM Standard E-2081-22 Standard Guide for Risk-based Corrective Actions, EPA Regional Screening Level guidance, Traditional Tribal Subsistence Exposure Scenario and Risk Assessment Guidance Manual, Evaluating Tribal Dietary, Lifestyle, and Ceremonial Exposures for Use in EPA Superfund Risk Assessments, and CNO Risk-based Cleanup Decision Making for Site Cleanup guidelines.

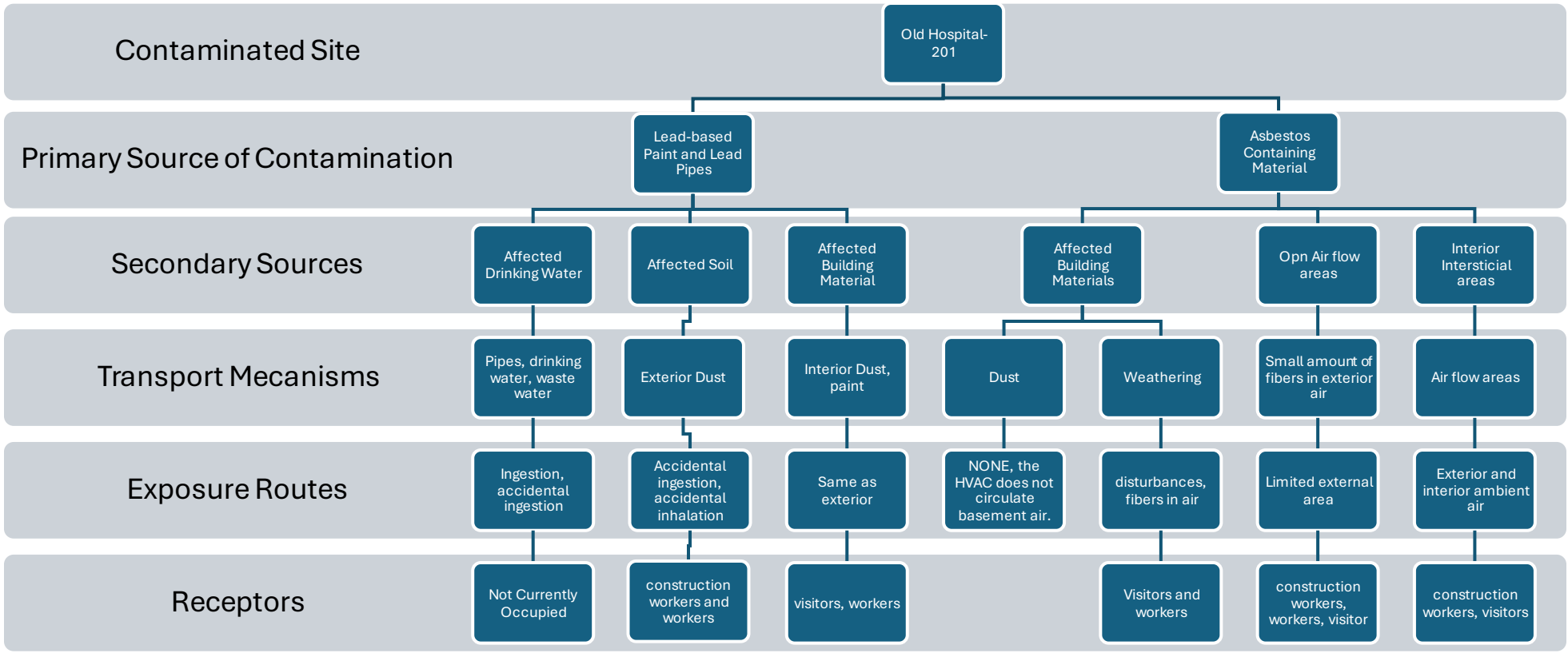
Where feasible, CNO BF prefers removal of source material that can release to the environment and will consider enforcement action as needed to ensure remediation of off-site contamination. CNO BF expects that treatment or engineering controls will be used to address source material and that groundwater will be returned to its beneficial use whenever practicable. Institutional controls may be used when contamination is first discovered, when cleanups are ongoing and when residual contamination remains on site at a level that does not allow for unlimited use and unrestricted exposure after cleanup.

This decision-making document does not take the place of a risk assessment. However, it is a required step prior to any risk assessment. CNO BF is committed to the application of consistent and practical decision making to determine the level of cleanup that needs to occur at a site. To remain consistent between programs, risk decisions are based on three primary elements: risk assessment, risk management and applicable rules or regulations.

Potential Exposure Pathways on Site

Lead: In dust, there could be accidental inhalation or ingestion by workers or visitors to the site, lead in drinking water could be an issue when watering plants, making water for coffee, or if it is ingested by workers when washing hands if not allowed to run for long enough. RACM and Asbestos in soil: small amounts of fibers could be circulating in the air on the exterior of the building. If workers venture into basement, they will have exposure to fibers.

Decision Tree Diagram



Key Steps / Considerations

- Identify contaminants and affected media:
  - Lead in Soil, LBP dust, deteriorated LBP on interior and exterior, severely damaged TSI and surfacing material (ACM) in the building.
  - State of RACM Areas: In areas where overhead TSI was visible, the material appeared severely damaged, and insulation debris was observed on the topside of ceiling assemblies, indicating potential migration within ceiling cavities and the need to incorporate asbestos controls and debris management into any intrusive work.
  - Joint Compound Layers (Sub-1% Chrysotile Detections) Layered joint compound samples collected from wall/ceiling finish systems returned sub-1% chrysotile results (reported in the approximate range of <0.25% to 0.75%). Several of these results were supported by 400-point count reporting as documented in the laboratory package. **While these results are below the ACM threshold, they confirm asbestos presence in the layer and should be accounted for in planning any disturbance** (e.g., demolition, wall/ceiling removal, above-ceiling access).
  - **TSI extent is likely underrepresented by visible observations; destructive access will be required to define actual quantities and removal.**
- Assess exposure pathways and receptors:
  - Pipes, inside and outside; exterior and interior dust, air flow
  - Per Risk-Based Decision-Making document, **outdoor workers exposure frequency** should be valued at **240 days per year except for the groundskeeper** who occupies the cottage. His exposure should be **valued at 365 days per year**, unless he moves off campus. The duration of exposure should be **valued at 25 years**, approximately with a rate of soil ingestion valued at **100 mg/day**.
  - The **Adult Lead Model (ALM)** is a tool for assessing risks associated with **non-residential** adult exposures to lead in soil.
    - Indoor workers exposure frequency should **be valued at 250 days/year** at an exposure **duration of 25 years**, and a soil ingestion **rate of 50 mg/day**. (dust)

- Adolescent trespassers are also evaluated with an **exposure frequency of 52 days/year, a duration of 6 years,** and with a body **weight of 52 kg (approximately 115 pounds).** The last time we spoke with Ian, Wanda, they were not aware of any recent trespassing events.
- For **schools, sensitive populations,** all inputs should be considered with **default residential soil values used**.
- Particulate Emission Factors (PEFs)
- Median concentrations for lead (Pb) across Oklahoma were 13.5mg/kg according to the OSU Soil Background Median Metal
- Concentration guidelines with a noncarcinogenic RSL of 400 mg/kg and an ISL (Industrial Screening Level) of 800 mg/kg.

- <u>Evaluate cleanup standards and regulatory requirements:</u>
  - Per NESHAP, TSCA, and AHERA, all Friable ACM needs to be removed from the interior and exterior of building 201.
    - Abatement practices should be AHERA compliant
    - Disposal of abated material should be AHERA and TSCA compliant
    - NESHAP paperwork will need to be filed w/ DEQ within 10 days of beginning.
    - Notice shall be filed with CNO IAQ within 30 days of beginning.
  - Per CERCLA:
    - Use ALM and Risk-Based Decision-Making documentation and risk assessments to establish site-specific cleanup goals if residential standards will not be used.
  - Per RCRA:
    - Lead waste generated from any abatement activities must undergo hazardous waste determination or TCLP testing.
      - If TCLP> 5mg/L- it's dubbed hazardous waste and must go for disposal to a RCRA Subtitle C facility
      - If TCLP is less than or equal to 5mg/L- it's dubbed non-hazardous solid waste and can go to an approved landfill.
  - Per OSHA, 29 CFR 1926:

    Asbestos and LBP exposure controls and protective measures for construction/renovation activities involving ACM and LBP Abatement.
  - Per TSCA Title IV:
    - Facilities Maintenance workers should complete an RRP class for repairs, renovations and painting activities which will be required for upkeep. (inclusion of educational programs for children at the museum could trigger this requirement) (BMP)

<u>Best Management Practices:</u>

- Follow the state's asbestos statutes (Title 40, Sections 451–457) and associated rules for the abatement of friable asbestos materials as a best-practice reference framework for safe handling, removal, and disposal of asbestos materials (noting the State does not have jurisdiction for this project and ODOL requirements are referenced for consistency/guidance).
- Mandatory Post-Abatement Clearance Testing: Conduct post-abatement air clearance testing for friable asbestos removal projects prior to re-occupancy or unrestricted access, demonstrating airborne asbestos fiber levels meet applicable criteria and that the area is suitable for future use.
- Mandatory Post-Abatement Clearance Visual Inspection: Conduct post-abatement visual inspection of all areas where abatement was completed, with final closeout report documenting locations/quantities removed, daily air monitoring results (as applicable) and clearance results. Waste shipment documentation and disposal records included.

- Determine risk-based cleanup options:
  - Abatement of all RACM and LBP, lead dust, and bagged debris in hallways and interstitial areas.
  - Soil interim controls in the following areas: around the exterior of the building

Material	Risk-Based Approach Allowed?	Requirement
ACM- TSI main risk driver ACM-Caulking (Cat. II planning)	No	Prescriptive federal abatement required
LBP	No (when disturbed)	Must manage/remove per EPA/OSHA
Soil/Environmental Media	Yes	Risk-based cleanup allowed

Select appropriate remediation strategy:

- Lead in Soil: Maintain grass around the facility.

- **All TSI RACM**: Full abatement w/ project design
- Based on Phase A findings, perform licensed asbestos abatement of confirmed ACM (and any additional ACM identified) and include cleanup of debris and impacted surfaces within affected cavities/spaces, particularly interstitial ceiling areas where damaged TSI and debris migration were observed. Abatement and associated cleanup activities should be implemented using

the most stringent applicable requirements where standards differ and should be conducted under a CIH-developed compliance program (Project Design and abatement QAPP/air program).

- State of Areas: In areas where overhead TSI was visible, the material appeared severely damaged, and insulation debris was observed on the topside of ceiling assemblies, indicating potential migration within ceiling cavities and the need to incorpo rate asbestos controls and debris management into any intrusive work.

The following homogenous areas tested positive for asbestos:

HA #	Location	Sample Descriptions	Asbestos Type (%)	Friable / Nonfriable	Approximate Measurements
39	Exterior Windows	Window Caulk	Chrysotile 4%	Nonfriable	Not Measurable
41	Throughout	3" Pipe Runs	Chrysotile 15%	Friable	Not Unquantifiable
42	Throughout	3" Hard Packs	Chrysotile 60%	Friable	Not Unquantifiable
43	Throughout	4" Pipe Runs	Chrysotile 10%	Friable	Not Unquantifiable
44	Throughout	4" Hard Packs	Chrysotile 60%	Friable	Not Unquantifiable
45	In H-13 & extending into the upper Boiler Room	6" Pipe Runs	Chrysotile 50%	Friable	~25 linear feet
46	In H-13 & extending into the upper Boiler Room	6" Hard Packs	Chrysotile 50%	Friable	~2 hard packs
47	In H-13 & extending into the upper Boiler Room	8" Pipe Runs	Chrysotile 10%	Friable	~20 linear feet

- All window caulking in interfaces/penetrations reported at 4% chrysotile, exterior, shall be removed.
- 3" pipe runs- Destructive demolition and RACM abatement of all horizontal pipe runs in the interstitial spaces and vertical runs in the ceiling pass throughs between floors.
- This includes the 3" hard pack found throughout the hospital.

- 4” pipe runs- Destructive demolition and RACM abatement of all 4” horizontal pipe runs in the interstitial spaces and vertical runs in the ceiling pass throughs between floors.
- This includes the 4” hard pack found throughout the hospital.
- 6” pipe runs-Destructive demolition and RACM abatement of all 6” pipe runs found in the H-25a closet hatch and the H-13 area extending into the upper Boiler Room (H-19).
- This includes the 6” hard pack found in the H-13 area extending into the upper Boiler Room (H-19).
- 8” pipe runs- Destructive demolition and RACM abatement of all 8” pipe runs found in the H-25a closet hatch and the H-13 area extending into the upper Boiler Room (H-19).
- In areas which are opened to complete the asbestos abatement, if non-homogeneous suspected ACM is encountered, contractors will be required to sample the suspected ACM prior to abatement of that same material. However, if contractors are confident that the new material is RACM by referencing the Asbestos Inspection from 2025.

- **Lead-Based Paint on non-Friction areas, in poor condition: Full abatement**
- For work planning, if a coating group is confirmed LBP-positive anywhere in the dataset (≥ 1.0 mg/cm^2), visually matching coatings on the same component/substrate should be treated as presumed LBP positive unless additional XRF testing demonstrates otherwise.
- Any untested or inaccessible painted/coated surfaces should be presumed LBP unless further evaluated.
- Cabinets: Remove all positive cabinets (51.6%)
- Stairs: Wet-scrape and remove, paint w/ elastomeric paint. (44%)
- Walls: Demolish, remove unless it is a load-barring wall (22.7%)
- Pipes: Remove 4 pipes that tested positive
- Ceilings: Remove (8.1% of ceilings tested positive)
- Radiators: Remove 4 which tested positive.
- **Lead-Based Paint in high-friction areas, etc.: Full abatement (Windows /Doors)**
- Remove all positive windows, window assemblies, and door assembly. Replace in-kind.
- Windows assemblies (85.9%)
- Doors and door assemblies (25.3%)
- However, any architectural components which can be saved should be wet-scraped and left in place, if possible.

- **Lead in tap water:**
- Undetermined currently, need sampling if redevelopment is planned.

- Implement and monitor cleanup activities:
  - All interim controls at the site must have periodic (quarterly/semi-annual) checks to ensure they are maintained.
  - All groundskeepers shall complete an RRP class certification, per TSCA Title IV
  - Sampling of drinking water if redevelopment is planned.

Notes

Additional notes and references can be added here as needed.

NORTH AND SOUTH BASEMENTS

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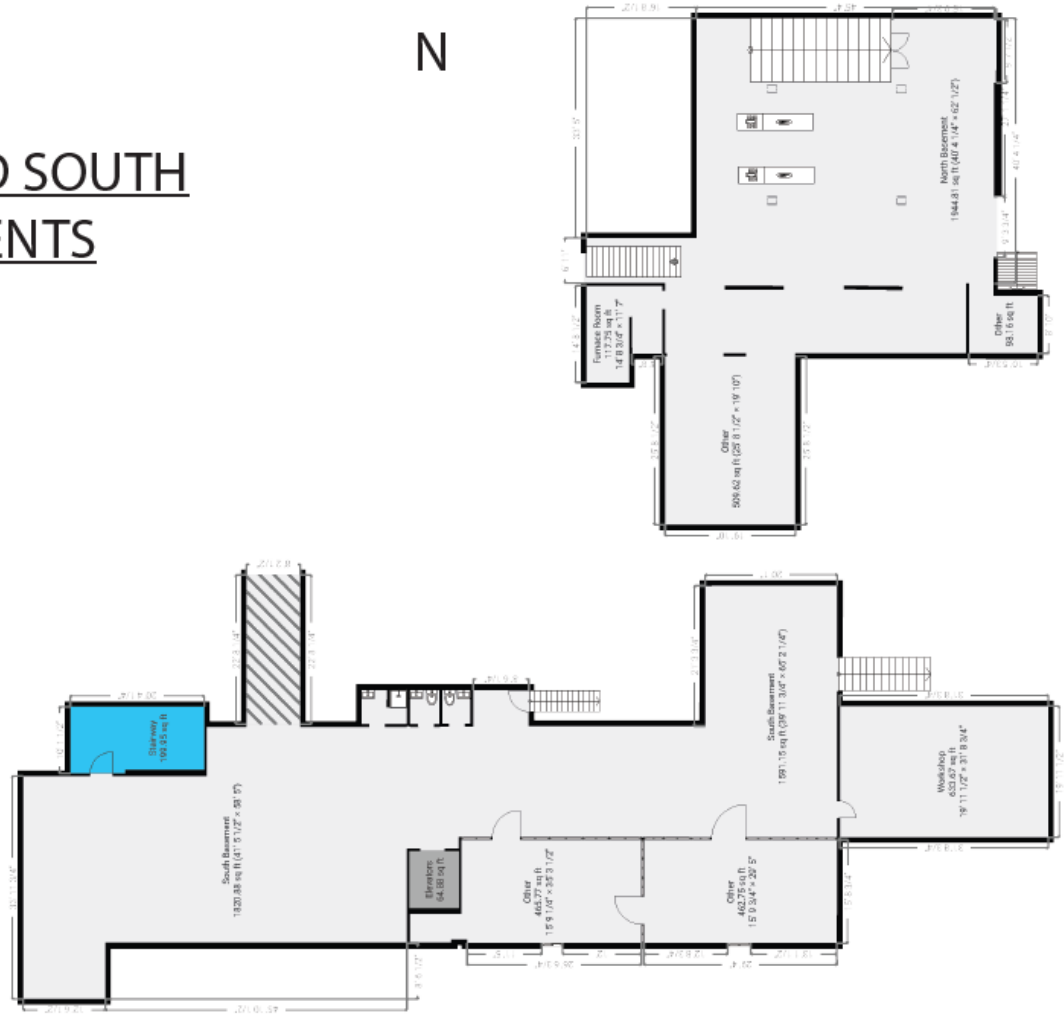
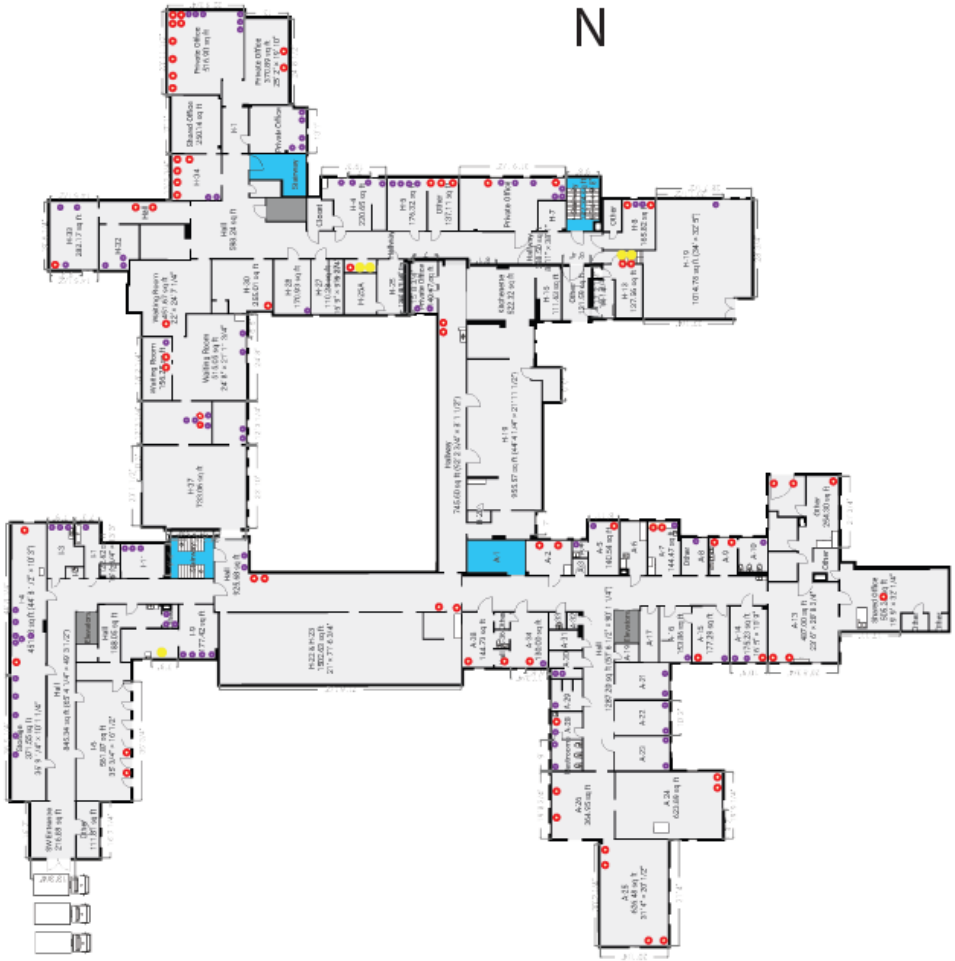


Stronghold Environmental
Inspection & Remediaiton Services
3431 N. MacArthur Blvd.
Warr Acres, OK 73122
(405) 286-5417

021-25 Asbestos Inspection Report

SE 202nd Choctaw Road
Talihina, OK 74571



Ground Floor/ 1st Floor

- 3" Pipe Run
- 4" Pipe Run
- 6-8" Pipe Run

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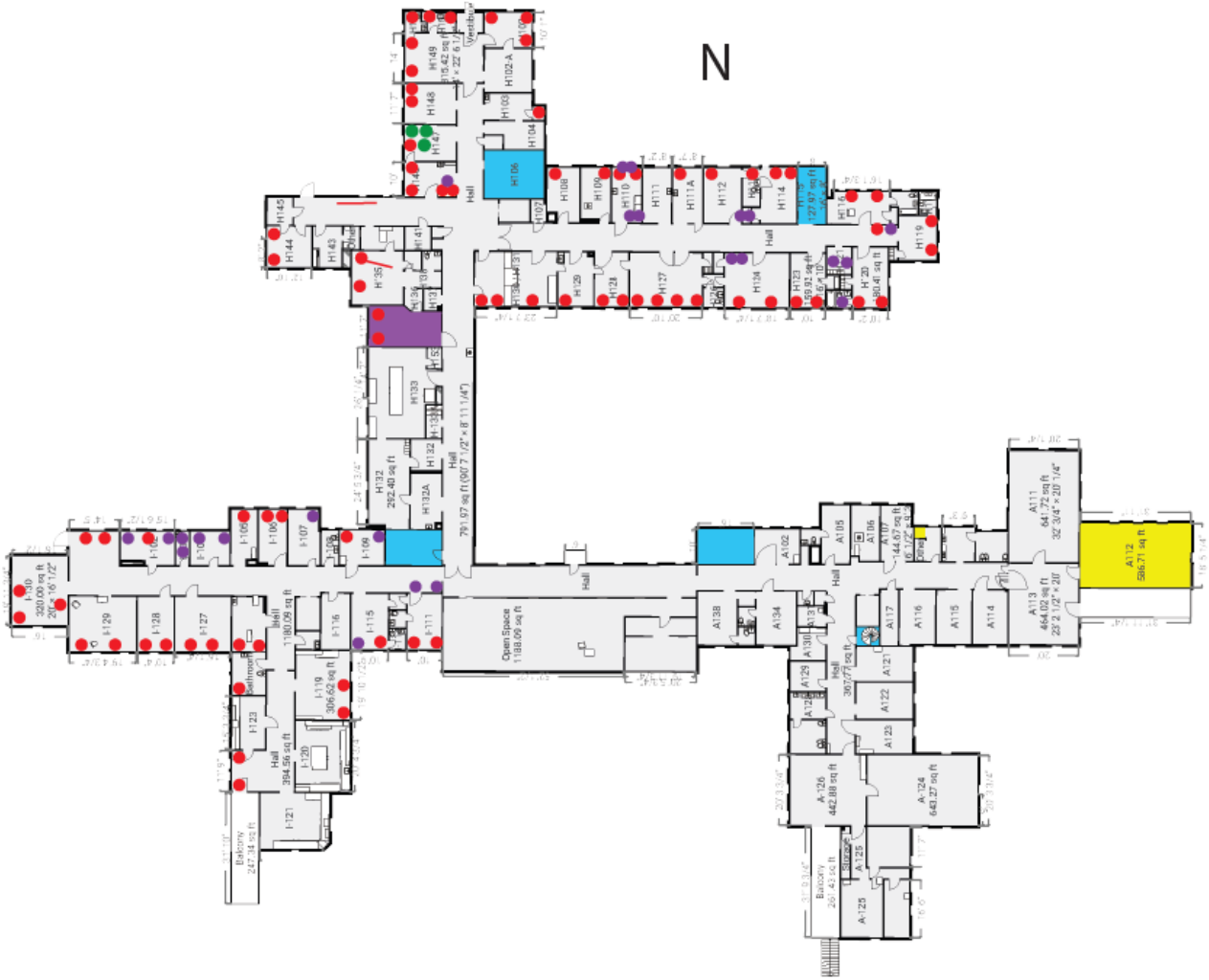

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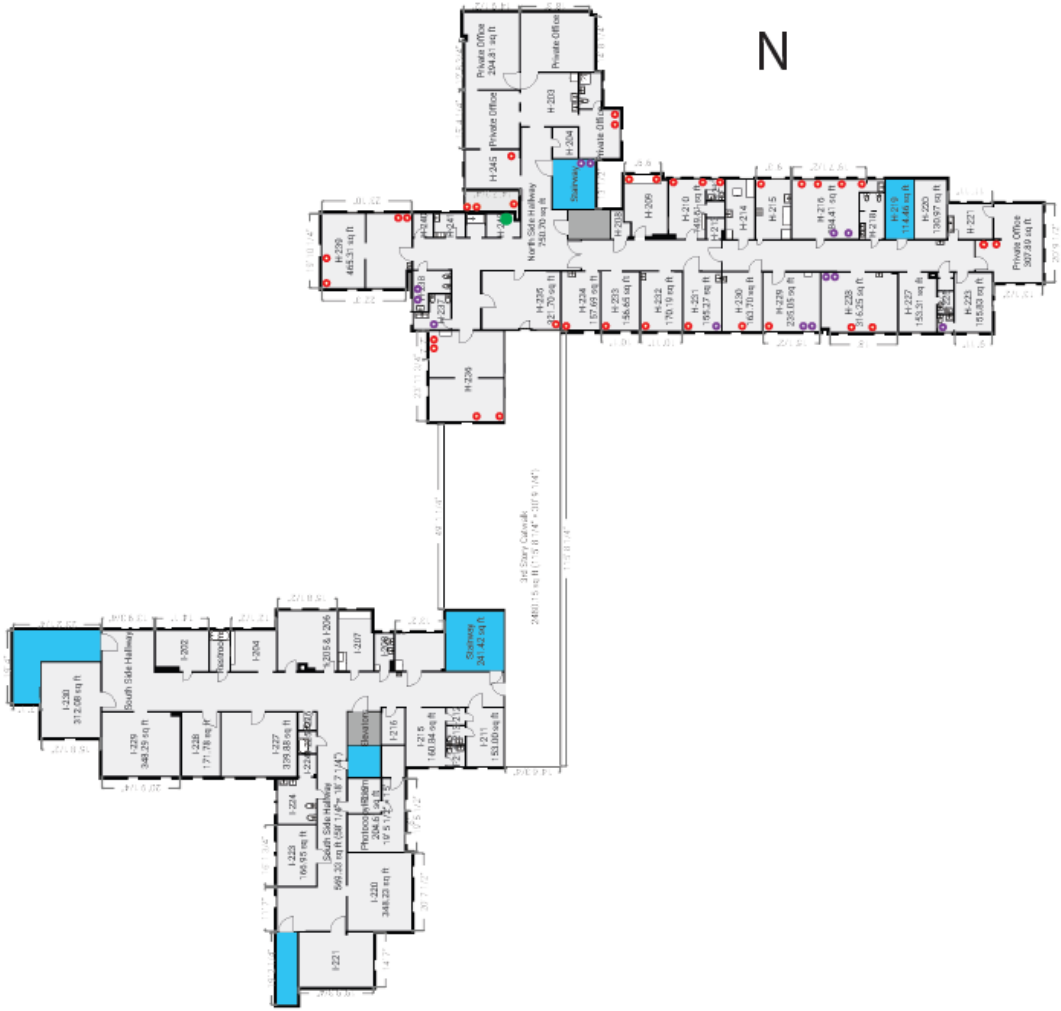

3rd Floor

- 3" Pipe Run
- 4" Pipe Run
- 3" Hard Pack

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4th Floor

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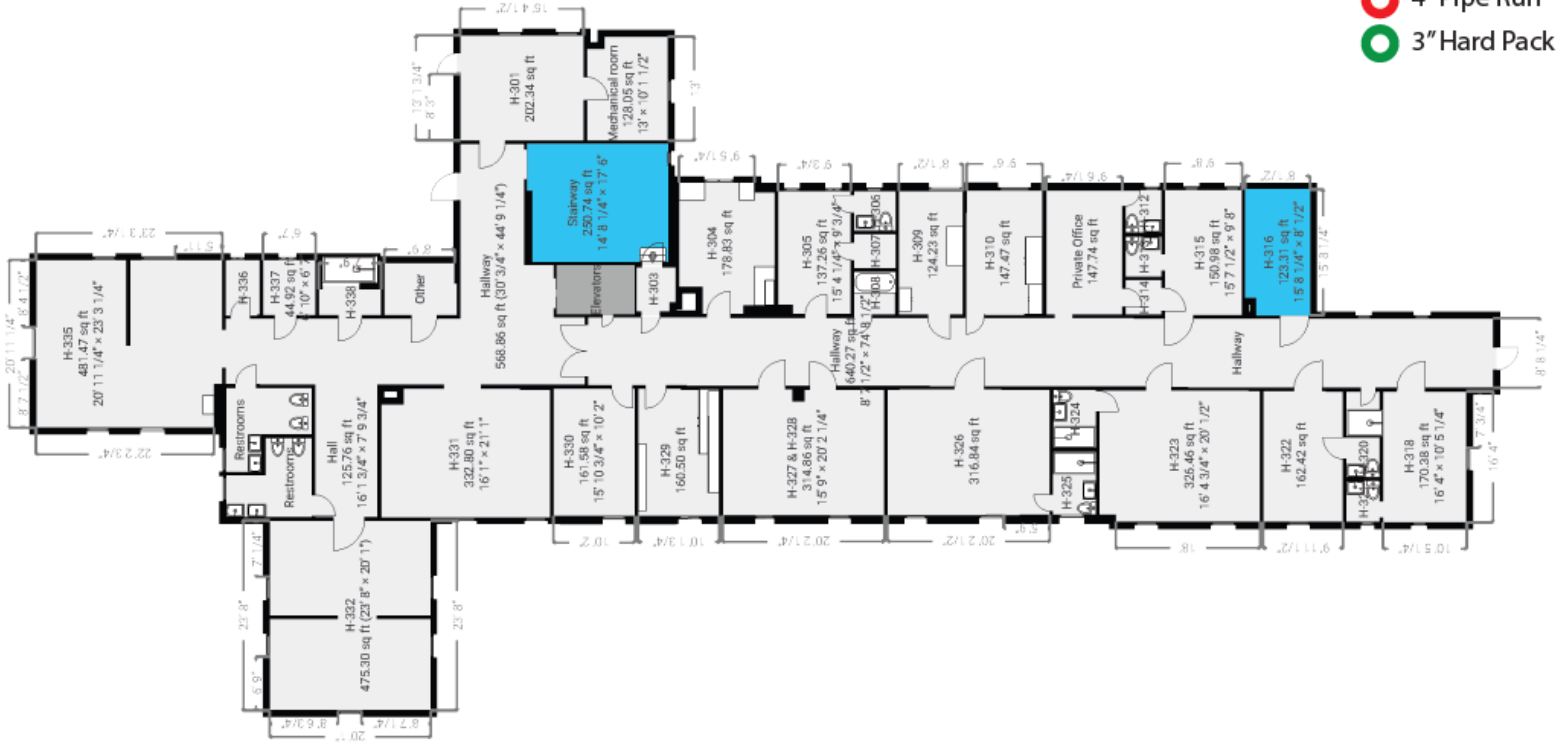
- 3" Pipe Run
- 4" Pipe Run
- 3" Hard Pack



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