

REVISED NOVEMBER 8, 2019 – CHANGES IN RED
ASBESTOS ABATEMENT WORK PLAN
BUILDING 950
950 Fawcett Avenue
Tacoma, WA 98402

AMERICAN WEST CONSTRUCTION, LLC

This work plan describes the procedures necessary to complete the tasks of Mobilization, Containment, Work site Preparation, Asbestos Abatement/ Interior Demolition, Disposal procedures, Encapsulation, Clean-Up and Demobilization.

The scope of work specified herein shall be performed by Washington State Certified asbestos workers trained, knowledgeable, and qualified in the handling techniques of asbestos waste. All disposal of asbestos contaminated materials shall be to an EPA approved landfill. The landfill used shall be approved for the interment of wastes generated.

THE WORK PLAN OBJECTIVES ARE AS FOLLOWS:

SITE INSPECTION: Prior to abatement, inspect the project for damage and discrepancies and give owner a written list, including photographs, noting all damaged items. Coordinate with Owner a storage area for equipment and supplies, verify parking requirements, disposal container area, work hours, emergency and fire procedures, etc.

MOBILIZATION: Arrive at the job site with a necessary equipment, manpower, and materials half hour before start time. Conduct a safety meeting with work-force and discuss the following objectives (see Safety and Hazardous Communication Plan).

SAFETY MEETING: Set up all Emergency procedures and one First Aid Station at appropriate location based on facility configuration. Conduct a safety meeting at site with crew for Health and Safety.

Key topics to be discussed at safety meeting:

- A. Medical and Emergency Response Plan.
- B. Fire and Emergency Exits and location of fire extinguishers.
- C. Hard Hats and Safe work practices.
- D. Long sleeve shirts, eye protection.
- E. Work boots, gloves, back support belts.
- F. Workman's comp. issues, postings.
- G. Behavior-attitude around public areas.
- H. Orderly disposal and dumpster coordination.
- I. Identify C. P. R. Foreman to crew.
- J. Work schedule, Work goals, and Milestones.

SUPERVISOR DUTIES: Set up regulated area and/or set up enclosure. Ensure the integrity of regulated area and/or enclosure. Set up control entry and exit from the enclosure or containment. Supervise all employee monitoring as well as conduct all other air monitoring for this project. Ensure that employees are wearing the proper PPE. Ensure that the correct work practices of NWAS, Inc. as well as OSHA are adhered to. Ensure that engineering controls are functioning properly. Ensure that notification requirements are met. Make sure all employees follow all of NWAS, Inc. policies, manuals, programs, etc.

SITE SPECIFIC DETAILS:

SCOPE OF WORK:

The overall scope of work is to abate/encapsulate the asbestos materials that would be impacted as part of the overall HVAC & sprinkler project. The specific asbestos materials to be abated include: hard pipe fittings associated with the chilling lines (100 elbows @ ¼", 30 elbows @ 2" and 15 @2.5"), ceiling texture on plaster substrate in record room on 2nd floor (750 sq ft), and encapsulation of the seam sealant on ceiling blocks (1,000 sq ft). This abatement work, when completed, will allow for others to perform the remodel scope without disturbing asbestos.

WORK AREA DESCRIPTION:

The work areas are throughout all floors (Basement – 3rd floors) typically above ceilings where piping systems run. The ceiling texture work will involve an enclosure for this work area – 2nd floor records room. The building is occupied during regular work hours so the abatement work will be scheduled off hours.

We do not anticipate any other construction trades interfering with our work.

WORK PRACTICES:

Prior to any work which may potentially cause the emissions of airborne Asbestos the following will be completed:

1. WORK AREA PREPARATION:

This class I asbestos work shall be conducted within regulated areas. The regulated area shall be demarcated to limit the number of persons within the area and to protect persons outside the area from exposure to airborne asbestos. Where critical barriers or negative pressure enclosures are used, the area will be demarcated. Access to regulated areas shall be limited to authorized personnel. The supervisor will control access to regulated areas, ensure that only authorized personnel enter, and verify that required medical surveillance, training and respiratory protection program requirements are met prior to allowing entrance.

We will erect all necessary critical barriers, and postings on doors, windows, corridors, entrances, pathways, drains, ducts, grills, diffusers, chases, access panels, vents, etc., using site preparation activities described in this section are to be conducted in protective clothing as described in this Work Plan.

2. DECON CHAMBER:

A **THREE**-stage worker decontamination facility or area will be constructed outside the entrance to the work area. Personnel decontamination facility will consist of a "clean room" opening to the ambient environment (area separating containment) and the "equipment room" opening to the work area – separated by Z flaps.

The clean room will have adequate storage facilities for each worker's clean street clothes and possessions. When exiting the containment, workers will desuit (outer suit will be removed leaving the inner suit on) in the equipment room, wet wipe and HEPA vacuum any visible debris (including from respirator) and dress in the clean room.

Material Decontamination area or two stage waste out will consist of a clean room opening to the ambient environment and an equipment room opening to the containment. Material will be decontaminated in the equipment room and will be clean when entering the clean room. Each room will be isolated at both openings via three flap doors ("Z flaps") to prevent migration of contaminated air from the work site.

3. PROPER PERSONAL PROTECTIVE CLOTHING:

All work to be performed which involves potential exposure to or disturbance of Asbestos will be conducted in required Personal Protective Equipment required for the project will consist of the following:

- PAPR, ½ face negative pressure respirator, and Type C pressure demand
- Disposable coveralls with integral booties and hood and elastic wrists and hood opening.
- Rubber gloves, Eye protection (safety glasses or goggles)
- Hard Hats
- Orange Reflective Vests
- Boots (rubber or vinyl w/low skid soles)
- Duct tape to seal arm/leg/openings
- Other equipment where employee will be above ground level (full body harness, lanyards)

4. PROPER FIT:

Personnel are to check PPE for proper fit, holes and tears, and perform respirator field fit tests prior to entering regulated areas (when possible workers will assist each other during pre-entry PPE check). Respirator cartridges are to be changed daily, or whenever an increase in effort required to inhale is noted by the wearer.

PRE-ASBESTOS ABATEMENT:

Prior to abatement the Owner or Owners Representative and Abatement contractor shall walk, verify and mark all items scheduled for removal. Once the work place has been established, document findings and begin preparation.

SET-UP: Demarcate the area as described above. Set up regulated area first by covering all openings (i.e. windows, doors, etc.) with 6mil poly to ensure proper integrity of the enclosure. Wet-wipe all windows and sills etc., to installation of said Criticals. Establish pressure differential air prior to commencement of any asbestos related work. Containment will be inspected by the Owner’s Rep. and by our onsite supervisor prior to abatement. Pre abatement and clearance monitoring will be performed as describe below and by the onsite supervisor.

WORK AREA DEMARCATION, for all class I asbestos operations:

Red and white asbestos danger tape will be strung around the individual work area. No boundary tape will be closer to the immediate work area than 20 feet where feasible. All potential access points to this area will be labeled accordingly. Signs, lines shall be at least equal to the height 20" x 14" spacing between two consecutive lines shall be at least equal to the height of the upper line.

The **Warning Sign** will read as follows:

DANGER	1-INCH SANS SERIF GOTHIC OR BLOCK
ASBESTOS	1-INCH SANS SERIF GOTHIC OR BLOCK
CANCER AND LUNG DISEASE HAZARD	¼ INCH SANS SERIF GOTHIC OR BLOCK
AUTHORIZED PERSONNEL ONLY RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA	¼ INCH SANS SERIF GOTHIC OR BLOCK

PRIOR TO GROSS REMOVAL: Conduct a meeting to review work procedures, and all plans, inspection of safety emergency exits and placement of fire extinguishers. Perform visual inspection and notice to proceed.

The following work practices and engineering controls shall not be used for work related to asbestos or for work which disturbs ACM, regardless of measured levels of asbestos exposure or the results of initial exposure assessments:

- a. High speed abrasive disc saws that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air.
- b. Compressed air used to remove asbestos, or materials containing asbestos, unless the compressed air is used in conjunction with an enclosed ventilation system designed to capture the dust cloud created by the compressed air.
- c. Dry sweeping or other dry cleanup of dust and debris containing ACM.
- d. Employee rotation as a means of reducing employee exposure to asbestos.

ASBESTOS ABATEMENT:

CONTAINMENT TYPE: A regulated area will be constructed for the removal of all material containing asbestos (ACM) . A restricted area will be established to prevent non Asbestos workers from entering the work area during time of removal through final clearance, Continuous air monitoring procedures, in and out of the work area will assure full containment

of asbestos removal areas. This Work Plan describes procedures necessary to complete the tasks of Mobilization, Pre-Cleaning, Demolition, Work Containment, ACM Removal, Encapsulation, Disposal and Clean-Up.

The work specified herein shall be performed by Washington State Certified persons trained, knowledgeable, and qualified in the techniques of demolition, abatement, handling and disposal of asbestos and or ACM, and the subsequent cleaning of contaminated material and areas.

Objectives for asbestos abatement are as follows:

- Criticals should cover all potential breeches within the containment area.
- Proper ACM removal, Demolition and encapsulation of abated surfaces.
- Saturated asbestos material shall be removed in small sections, and while still wet into 6 mil plastic bags, decontaminated exterior of, double-bagged and transported to an approved container.
- Bag-Out contaminated material through a bag-out area (material decontamination area) using NIOSH (National Institute for Occupational Safety and Health) requirements. Disposal bags or Bladder bags will contain Danger labels, that includes EPA and Generator information.
- Transportation of non-hazardous waste will be done by Northwest Services, Inc. We will haul, or have a private carrier haul all ACM to the authorized landfill.
- This Work Plan addresses the technical, health and safety, and regulatory issues that must be addressed to accomplish these objectives.

ABATEMENT PROCEDURES

PIPE INSULATION AND FITTINGS (class I):

Regulate the area as described above. The asbestos pipe insulation will be abated by hand using wet manual methods. The pipe insulation/fittings shall be removed using proper Glove bag procedures. The glove bag will be made of 6 mil thick plastic and seamless at the bottom. All tools will be placed in the glove bag prior to securing bag to pipe run, elbow, etc. The ends of the bag will be duct taped to the pipe itself. A wetting agent will be injected into the bag through the water sleeve provided. When complete, the sleeve will be sealed with duct tape. Wet methods will be utilized throughout the glove bag procedure. Wire brushes, scrub brushes, rags, and water will be used to clean the pipe itself to ensure that no visible ACM is detected. Once visual inspection of the pipe is made the entire area inside the bag will be encapsulated using a penetrating encapsulant. All tools will be cleaned of gross debris inside the bag, and then pulled through the arms of the bag where they will then be sealed with tape and cut free, to be used for the next glove bag removal. The glove bag will then be evacuated with a HEPA vacuum, sealed and cut free from the pipe itself. All ACM piping debris will be labeled with the appropriate Danger labels and removed from the site daily to be placed into our secure debris trailer at our shop until transported to Northern Wasco County Landfill.

CEILING TEXTURE ON PLASTER (CLASS I):

Regulate the area as described above. All ACM will be collected and removed using wet manual methods. Ceiling texture and associated plaster will be disposed of as ACM. The work area will be prepped as a class I HEPA filtered negative pressure enclosure – this will require the owner

to provide a location for our decon chamber, load-out chamber and HEPA exhaust route prior to beginning the prep etc. If possible the plaster rooms would be combined into a single enclosure limiting the space and time required. Removed ACM debris will be immediately sealed in a 6 mil poly bag using duct tape and **double-bagged** or sealed again in a 2nd 6 mil poly bag using duct tape. The material is then labeled appropriately. (PLASTER & METAL LATH WITH ASBESTOS TEXTURE may be disposed of using mega boxes with 6 mil poly bag liners, and sealed and labeled appropriately). All containerized ACM will then be removed from the site and transported to Northern Wasco County, The Dalles, OR for disposal.

SEAM SEALANT ENCAPSULATION:

Regulate the work area as described above. This scope of work will be performed at select areas where the GC and subs will be performing work. The asbestos seam sealant is located on the CMU/concrete floor deck above the drop ceilings throughout the **1ST & 2ND FLOORS OF THE** building. In the locations where the GC must work above the ceiling to perform their scope of work we will perform the encapsulation of the seam sealants in the area immediately adjacent to the future work area – approx. 5 foot perimeter depending on the area. Encapsulation will be performed using a bridging type product rolled on over the seams or **AT A MINIMUM** via a penetrating encapsulant sprayed over the areas – **THIS WILL ONLY BE DONE IN AREAS WHERE THE BRIDING CANNOT BE PHYSICALLY REACHED**. Each area of encapsulation will be prepped with a poly drop below the ceiling opening. Any debris generated will immediately be HEPA vacuumed and or wet wiped and disposed of properly. **IN ADDITION TO THE ENCAPSULATION, OUR CREW WILL REMAIN IN THE AREA WHILE THE GC PERFORMS THEIR SCOPE TO MAKE SURE THE ENCAPSULATION IS SUFFICIENT. IF VISIBLE DEBRIS IS OBSERVED DURING THE GC WORK WE WILL STOP THE WORK, PERFORM HEPA VACUUM CLEAN-UP AND REVISE WORK METHODS.**

NEGATIVE EXPOSURE ASSESSMENT:

If an exposure assessment is utilized, there will be one assessed for each different job task. The following criteria must be met:

1. Objective Data: Objective data demonstrating that the product or material containing asbestos or the activity involving such material cannot release airborne fibers in concentrations exceeding the PEL-TWA and PEL Excursion Limit under those work conditions having the greatest potential for releasing asbestos.
2. Prior asbestos jobs: 12 months of prior monitoring for the PEL and the PEL excursion limit. The data obtained during work operations, conducted under workplace conditions closely resembling the processes, type of material control methods, work practices and environmental conditions used and prevailing in our current operations. The data shows that under that under the conditions prevailing and which will prevail in the current work place, there is a high degree of certainty that the monitoring covered exposure from employee exposures will not exceed the PEL-TWA and PEL excursion limit.
3. Initial exposure monitoring: The results of initial exposure monitoring of the current job, made from breathing zone air samples that are representative of the 8-hour TWA and 30 minute short term exposures limit (STEL) of each employee. The monitoring covered exposure from operations which are most likely during the performance of the entire asbestos job to result in exposures over the PEL's.

BAG-OUT: Bag out will occur during and/or at the end of shift. Placing all ACM & Debris in (2) 6 mil poly Asbestos labeled bags, mark appropriately or insert or attach Bag-Out labels to each bag or wrap. (Labeling with EPA and GENERATOR identification). Method: Bag all ACM and load-out by HEPA vac and wet wipe all visible debris in containment, placing it into a second "clean" bag in the equipment room, not allowing the water to evaporate before disposal. Sealing both bags and marking appropriately. Debris is contained and ready to enter the clean room. After ACM, Debris HEPA Vacuum all loose debris from membranes, wet wipe tools, tear-down criticals and dispose of rags, criticals, brushes, filters, suites, etc., as contaminated with bag-out methods.

Disposable ACM Storage Containers will be labeled as follows:

DANGER

DO NOT DISTURB

THIS DISPOSAL CONTAINER

CONTAINS ASBESTOS FIBERS THAT

ARE KNOWN TO CAUSE

CANCER AND LUNG DISEASE HAZARD

BREATHING ASBESTOS DUST MAY

CAUSE SERIOUS BODILY HARM

CLEANING AND FINAL CLEANING:

Surfaces from which ACM has been removed shall be wet wiped, sponge cleaned or brushed by some equivalent method to remove all visible residue. The supervisor will visually inspect the work area. Re-clean as necessary.

ENCAPSULATION OF SUBSTRATES: After all asbestos has been removed, and after all final inspections, mist entire work area and substrates with a penetrating encapsulant (using an airless sprayer) to lock down any airborne asbestos fibers; use white encapsulant or equivalent. Allow a minimum of (1) hour (or the manufacturer specification recommendations dictate) for the encapsulant to settle.

ASBESTOS FINAL AIR CLEARANCE: All clearance air testing to be performed by NW Abatement Services, Inc. or via an independent third party firm hired by the owner or GC as per specs.

DISPOSAL SITE: All Asbestos containing materials shall be disposed of at an approved land-fill. All friable and non-friable ACM (i.e. fire proofing, demo debris, etc.,) shall be disposed as ACM waste and transported to an approved landfill (Northern Wasco County) by a private carrier or NORTHWEST ABATEMENT SERVICES, INC.

DE-MOBILIZE: Once the area has passed all final air clearances, tear down and dispose of the enclosure and critical barriers as contaminated waste.

WASTE MANIFEST DISPOSAL PROCEDURES: All dump receipts, trip tickets, transportation manifests or other disposal documentation shall be part of the final submittal.

WORK SCHEDULE AND TIME TABLE: The miscellaneous abatement work areas: pipe fittings and encapsulation of seam sealant – will be scheduled per the GC requirements and building availability. The ceiling texture work area will require multiple shifts (estimated 5-6 shifts) to complete and during this time this area will not be open to the public or GC and subs.

ASBESTOS ABATEMENT AIR MONITORING:

- 1) Pre-abatement air monitoring: One day prior to establishing the restricted work area, if possible, the appropriate number of samples based on the size of the work area will be taken at the boundary of the restricted area (one per each homogenous area). This will establish the reference against which subsequent air testing results will be compared and clearance levels are determined.
- 2) At least one (1) crew member in 4 will be monitored every eight hours of every work shift. We will select three employee whose work activity offers the highest potential for asbestos exposure. Sampling will begin when asbestos removal commences. Samples will be taken during each 8 hour work shift until abatement is complete. We will determine which worker in each work area is probably experiencing the most severe exposure (the most contaminated worker). 8 hour time waited average (TWA) and 30 minute short term excursion limit (STEL) samples will be collected on this worker. This worker will wear a personal sampling pump and the sample will be drawn from the breathing zone of this worker. Personal Air monitoring results will be posted with-in 48 hours.
- 3) Area Air Monitoring : All area tests will be conducted every eight hours of every shift. The following specific areas will be monitored: inside work area, outside work area decons and at negative air exhaust locations.
- 4) Final air clearance air monitoring will be conducted on the final day of abatement, but before the restricted area barriers/signs are removed. Clearance results will be below .01 fibers/cc and one sample - one lab blank ran in each homogenous area.

An independent testing lab (Orion Labs) will be retained by NWAS, Inc. for PCM analysis. All analysis will be performed by Orion Labs. All air monitoring will be performed by our onsite supervisor or independent third party firm hired by the owner or GC. Sampling and analysis of air samples for asbestos will be in compliance with WAC Chapter 296-62-07735, Appendix A – WISHA reference method.

Documentation will be kept for each filter sample procured as to worker sampled, social security number, activity, work area location, date and time taken, volume of air drawn through

filter, pump identification number and calibration. Documentation will indicate in what areas test were taken and shall clearly indicate the specified maximum allowable fiber levels for each area tested.

Orion Labs will submit sample analysis results , chain of custody, and equipment calibration records to the Owner within 24 hours from the time of collection.

All ACM will be transported by the following contractor:

D&B Trucking
1905 E. Lincoln
Tacoma, WA 98421
(253) 383-3860

All ACM Debris will be disposed of at:

Northern Wasco County Landfill
2550 Steele Rd
The Dalles, OR 97058
(541) 296-4082

DEBRIS CLEAN-UP, EMERGENCY SPILLS, AND UNCONTROLLED RELEASES OF ASBESTOS: The area will be immediately evacuated of all unprotected personnel. We will then establish a regulated area.

The work area will be identified and access restricted to minimize the number of persons within the work area and protects persons outside the work area from exposure above the PEL. Caution will be used to make sure that personnel are not tracking asbestos-containing debris to areas outside the regulated area and spreading the contamination.

The owner will be notified immediately. All vents, openings, etc., will then be sealed. The ACM debris will be wetted down, picked up and properly labeled etc., the area will be completely HEPA vacuumed as needed.

The surface area that was contaminated will then be encapsulated with a penetrating encapsulant. Work in this area will not commence in the regular work area until the approved by the Owner and the Owner's representative.

STOP WORK DUE TO EXCESS AIR MONITORING LEVELS: If at any time during the work, analysis of an air sample taken by NW Abatement indicates a fiber concentration in excess of the OSHA permissible exposure limit (PEL) or the outside area samples are 0.01 f/cc above background the following procedures will be followed by the competent person:

- A) Stop Work
- B) Identify source of high fiber count
- C) Immediately correct containment breaches, pressure differential changes, and potential causes of high fiber counts.
- D) Clean the affected area
- E) Resample air until fiber counts are determined to be below the specified max levels.

- F) Secure and repair containment barriers, repair or add equipment.
- G) Modify work procedures, and make other changes to reduce fiber counts.

After Owner's approval in writing, Contactor will resume work.

SUBMITALS

30 DAY POST ABATEMENT

- 1) Waste disposal manifests.
- 2) Waste Transport Manifests
- 3) Results of final air clearance.
- 4) Copies of all work logs.

Project Manager: Chris Eckholm
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