

Asbestos Abatement Project Design

**931 North Park Avenue
Montrose, Colorado**

November 20, 2020



**ASBESTOS ABATEMENT PROJECT DESIGN
STRUCTURE FOR DEMOLITION
931 NORTH PARK AVENUE
MONTROSE, COLORADO**

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ACRONYMS AND ABBREVIATIONS

| | |
|------------|--|
| ACM | asbestos-containing materials |
| AHERA | Asbestos Hazard Emergency Response Act |
| AMS | air-monitoring specialist |
| CDPHE | Colorado Department of Public Health and Environment |
| Contractor | Contractor awarded the bid |
| EPA | Environmental Protection Agency |
| GRE | Grande River Environmental, LLC |
| HEPA | high-efficiency particulate air |
| OSHA | Occupational Safety and Health Administration |
| Owner | City of Montrose |
| PCM | phase-contrast microscopy |



ASBESTOS ABATEMENT PROJECT DESIGN

STRUCTURE FOR DEMOLITION 931 NORTH PARK AVENUE MONTROSE, COLORADO

1 INTRODUCTION

Grande River Environmental, LLC (GRE) was contracted by the City of Montrose (Owner) to prepare a Project Design document for the abatement of asbestos-containing materials (ACM) from the structure located at 931 North Park Avenue in Montrose, Colorado. The purpose of these specifications is to provide details regarding the location and extent of identified ACMs, removal methods, and regulatory requirements for asbestos abatement. Asbestos-containing materials were identified during a building inspection conducted by GRE and others. The structure is planned for demolition; therefore, all friable and selected non-friable ACMs must be removed from the structure.

2 REGULATORY CONSIDERATIONS

Personnel abating ACM must be certified by the Environmental Protection Agency (EPA) and the Colorado Department of Public Health and Environment (CDPHE). The Contractor shall assume full responsibility and liability for complying with all applicable federal, state, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to abatement activities. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Occupational Safety and Health Administration (OSHA) regulations. The Contractor shall hold the Owner and GRE harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulations on the part of the Contractor, the Contractor's employees, or subcontractors. Where conflict between the regulations and this scope of work document exists, the most stringent requirements shall be followed.



3 SCOPE OF WORK

Various ACMs were identified in the structure. Descriptions and locations of each of the materials are presented in Table 1.

TABLE 1 - MATERIALS SCHEDULED FOR ABATEMENT

| Material Description | Location/ Comments | Approximate Amount |
|--|---|-----------------------|
| 931 North Park Avenue | | |
| CMU Block Filler | Original CMU Exterior Walls in South Section (Double Sided) | 3,760 ft ² |
| 9”x 9” Brown Floor Tiles | SE Offices, Mechanical Room and Restrooms in South Section (tiles go beneath walls) | 1,024 ft ² |
| 12”x 12” White and Yellow Floor Tiles and Mastic | Central Section (tiles go beneath walls) | 1,760 ft ² |
| Drywall with Joint Compound and Smooth Texture | Restrooms and Mechanical Room in South Section | 1,834 ft ² |

The Contractor shall be responsible for the removal of all materials necessary to facilitate abatement. Materials potentially contaminated with asbestos (e.g. – carpeting adhered to linoleum, insulation, etc.) shall be disposed as asbestos waste. A summary of the removal requirements is presented below.

CMU Block Filler, Floor Tiles, Floor Tiles and Mastic and Drywall with Joint Compound and Smooth Texture – Will be removed within a full containment under negative air pressure of at least negative 0.020 inches of water. All removed materials and debris generated during removal (including but not limited to insulation) shall be properly packaged, labeled, and disposed as asbestos waste. Removal operations shall be completed in one contiguous containment.

A GRE air-monitoring specialist (AMS) certified by EPA and CDPHE will conduct a final visual inspection and clearance air monitoring at the conclusion of abatement activities in each work area. The Contractor shall contact the AMS a minimum of 24 hours prior to applying encapsulant for a final visual inspection. Clearance air monitoring will be completed within 48 hours after the final visual inspection and application of the encapsulant. In the event that the AMS arrives on-site at the request of the Contractor and the area is identified to require extensive additional cleaning or that the encapsulant requires additional drying time, the cost of the additional time required for the AMS will be reduced from the contract amount by the Owner to compensate the AMS. **A minimum of 5 samples and 2 blanks will be collected from each work area and will be analyzed by phase-contrast microscopy (PCM) by an accredited laboratory.**



The locations of ACM to be removed are described in Table 1 and shown on figures 1 through 4. Quantities listed on the drawings are approximate and are for general information only; therefore, the Contractor is responsible for verifying actual site conditions. Variance from these quantities shall not be justification for a revision of the contract amount. By submitting a bid, the Contractor acknowledges that he has investigated and is satisfied with:

- A. The conditions affecting the work, including but not limited to, physical conditions which otherwise may affect performance of required activities.
- B. The character and quantity of all material to be removed.
- C. Project scheduling and coordination.
- D. All other aspects of implementing the project.

4 SPECIAL CONSIDERATIONS

The following special considerations shall be followed by the abatement contractor during removal activities.

A. Notices shall be provided to the CDPHE for each structure that will require the removal of more than 260 linear feet, 160 square feet, or the volume equivalent of a 55-gallon drum of friable ACM; therefore, the Contractor shall acquire an asbestos permit from the CDPHE for the structure.

B. The guidelines specified in Colorado Regulation No. 8 shall be followed by the Contractor. In addition to this requirement, the Contractor shall also comply with other requirements specified in EPA, OSHA, state, and local requirements and regulations.

C. The Contractor shall comply with the abatement sequence specified in Section III.H of Regulation No. 8.

D. Electricity, water, and sanitary sewer will be available for contractor use at the structure.

E. All makeup air for the work area shall be directed through the waste loadout and decontamination unit. Negative air machines shall be installed in the work area in an arrangement to maximize the airflow in each work area.

F. The movement and handling of all movable objects and surfaces within specified areas are within the scope of work. All porous materials, including but not limited to: fiberglass insulation, loose drywall, carpet, and loose porous wood shall be removed and disposed as asbestos-containing waste or decontaminated and isolated from the work area using critical barriers. All loose non-porous materials including, but not limited to: metal, glass, non-porous wood and plastic shall be decontaminated and removed from the area or isolated from work procedures. The Owner shall designate an area for storage of these non-porous materials (e.g. room or dumpster).



G. Exhaust filtration machines shall be ducted to exterior sides of the building in an inconspicuous manner. Filtration machines will not be exhausted to the interior of the buildings.

H. The use of protective equipment including respirators, boots, hoods, and gloves (such as leather, latex, or nitrile) in compliance with applicable regulations is mandatory at all times.

I. Provide temporary “hard walls” where the enclosure(s) or staging area(s) will be exposed to publicly-accessible areas. Where no permanent walls exist, the Contractor shall construct walls with metal or wood studs covered with one layer of 1/2" plywood on the side facing the public.

J. No items, equipment, tools, or elements of construction other than ACM waste shall be removed or disposed of without prior written permission from the Owner.

K. The Contractor is responsible for removing fixtures, fixed objects, structural enclosures (walls, ceilings, chases, etc), equipment and related components, and other items that may be required to facilitate abatement activities (i.e. installation of exhaust, access to ACM, etc.).

L. Polyethylene sheeting shall be affixed in a manner that will ensure it will remain in position throughout the length of the project. Any tears in the polyethylene sheeting shall be immediately repaired. The Contractor shall inspect spaces adjacent to the containment and shall seal any visible penetrations leading to the containment area.

M. Where specified or authorized by the Owner, (if due to project limited staging area, limited scope of work, etc), follow CDPHE requirements, by separating the Clean Room, Shower Room, and Equipment Room using sheet plastic flapped doorways.

For purposes of compliance with CDPHE regulations, CDPHE interprets an air-lock to mean a space or flapped doorway. Flapped doorways may be treated as an air-lock, resulting in true 3-chambered decontamination units.

N. The Owner will not attempt to enforce compliance with the specifications or applicable federal, state, or local regulations; however, the Owner reserves the right to stop asbestos abatement work when observed work practices are not in compliance with such laws, regulations, and requirements. Safety of the project area for the protection of the Contractor, the Owner, and the general public is the responsibility of the Contractor. The Contractor is solely responsible for evaluating compliance with all applicable laws and regulations.

O. Staging areas for equipment and personnel will be determined by the Owner. Security for any equipment and/or trucks left onsite is the responsibility of the Contractor. The Owner and Consultant will not be responsible for theft or vandalism of Contractor’s equipment.

P. The quantities identified herein are approximate. The Contractor is responsible for verifying material quantities and site conditions. Variance from these quantities shall not be justification for a revision of the contract amount. Any discrepancies or omissions must be brought to the



attention of the Owner prior to submitting a bid. By submitting a bid, the Contractor agrees with all conditions for completing the work including general work areas, quantities, schedules and procedures.

Q. Final visual inspection and clearance air monitoring will be conducted by GRE on Monday through Friday from 8:00 am to 2:00 pm. Inspection and monitoring activities will not be started later than 2:00 pm and must be able to be completed by 6:00 pm otherwise activities will be delayed to the next available weekday.

5 WORK PROCEDURES

All materials which require removal within a full containment are outlined in the procedures specified in Regulation No.8 and Section 5.1 of this document.

5.1 Asbestos Abatement Procedures – Full Containment

The following sequence of abatement activities shall be followed during removal operations that are required to be completed within a full containment in the order listed below unless a variance request is approved by the CDPHE and GRE and a copy of the approval is provided to the Owner. Work must be completed in accordance with all applicable federal, state, and local rules and regulations. In the event that there is a conflict in regulatory requirements and these specifications, the Contractor shall comply with the most stringent standard.

A. Install Critical Barriers – Critical barriers shall be installed over all openings between the work area and clean area to isolate the work area from the remainder of the structure. Critical barriers shall include 6-mil polyethylene sheeting affixed on all sides with spray glue and duct tape.

B. Establish Negative Pressure – Negative air machines equipped with high-efficiency particulate air (HEPA) filters shall be installed into the work area. The number of negative-air machines installed shall be sufficient to maintain a pressure differential of negative 0.02 inches of water and complete 4 air changes per hour. The units shall be exhausted to the exterior of the building and air flow direction shall be directed from outside the work area to the inside of the work area.

C. Construct the Decontamination Unit – A decontamination unit shall be constructed to include a clean room, shower, and equipment room leading into the work area. All personnel entering or exiting the work area shall do so through the decontamination unit.

D. Pre-Clean Surfaces – All surfaces inside the work area shall be pre-cleaned utilizing HEPA vacuuming and wet wiping methods. Collected dust and debris and cleaning supplies shall be disposed as asbestos waste.



E. Covering Fixed Objects – All fixed objects shall be covered with a minimum of 1 layer of 6-mil polyethylene sheeting.

F. Containment Construction – Floors shall be covered (where appropriate) with a minimum of 2 layers of 6-mil polyethylene sheeting. Floor sheeting shall extend up sidewalls at least 12 inches and be sized to minimize seams, with no seams located along the wall/ floor intersection. Walls shall be covered (where appropriate) with sheeting that shall consist of 2 layers of 4-mil or thicker polyethylene sheeting. Wall sheeting shall extend beyond wall/floor, wall/ceiling, and wall/wall intersections at least 12 inches and shall be sized and oriented to minimize seams. Ceilings shall be covered (where appropriate) with 1 layer of 4-mil or thicker polyethylene sheeting. Ceiling sheeting shall extend beyond the wall/ceiling intersection at least 12 inches and shall be sized to minimize seams. The containment will also be equipped with at least 1 12”x12” view port and a waste load-out area. The view port shall be installed in a location to maximize the viewing area inside each work area. The waste load-out unit shall be constructed separate from the decontamination unit and shall be used as a temporary storage area for bagged waste and as a port for transferring waste to the transport vehicle.

G. Conduct Abatement – Removal of the specified materials will include the use of wet methods, HEPA vacuuming, and wet wiping. Airless sprayers shall be used to apply amended water to all ACM before removal is attempted. All waste shall be kept adequately wet with amended water until bagged for disposal. Surfactants must be a commercially available product specifically designed to be mixed with water for use in wetting of ACM. Removed materials shall be immediately placed into 6-mil polyethylene bags after removal. Bags shall be immediately sealed when full. Waste shall be periodically transported out of the work area into the transport vehicle through the waste load-out. Prior to removing the waste from the work area, the waste shall be sealed in 2 layers of 6-mil polyethylene sheeting or bags and appropriate labels shall be affixed to the bags.

H. Conduct Final Visual Inspection – The final visual inspection shall be completed by a GRE certified AMS. The inspection shall be completed with only critical barriers remaining in place to determine whether all dust and debris has been removed from the work area and from behind critical barriers. Spray encapsulant may be applied after completion of the final visual inspection. Any carpeting present in the work area will be exposed during the final visual inspection.

I. Final Clearance Air Monitoring – At the conclusion of the final visual inspection and after an adequate drying time has elapsed for the encapsulant, the GRE AMS will conduct final clearance air monitoring. Monitoring will be completed aggressively using box fans and a leaf blower to create a turbulent atmosphere inside the work area. A minimum of 5 samples and 2 blanks will be collected from the interior of each work area. Samples will be analyzed by an accredited laboratory by PCM analysis. Results will be compared to the clearance standard of 0.01 fibers per cubic centimeter.



J. Containment Tear-Down – The containment will be dismantled upon receipt of sample results indicating that airborne asbestos concentrations are below the clearance standard.

K. If clearance air samples exceed the clearance standard, the Contractor shall at his own expense re-clean the area and the Owner shall deduct the cost of the additional clearance samples from the final contract payment.

5.2 Full Containment Clearance Procedures

Upon completion of the abatement action and application of the encapsulant in areas where removal was completed within a full or secondary containment, a pre-clearance inspection and clearance air-monitoring will be completed. The inspection and sampling will be conducted by a certified AMS. To determine if airborne asbestos concentrations have been reduced to below the maximum allowable asbestos level, the AMS will obtain samples and have them analyzed in accordance with EPA and Colorado regulations.

5.2.1 Pre-Clearance Inspection

Following the completion of clean up and lockdown operations, the Contractor shall notify the AMS that the work area is ready for clearance air-monitoring with 24 hours notice. At the conclusion of the abatement action and with only critical barriers still in place, the AMS will visually inspect the work area, determine whether all dust and debris has been removed, and evaluate if the lockdown/encapsulant has completely dried and a sufficient settling period has elapsed. When critical barriers are removed for inspection purposes, the area behind the critical barrier shall be cleaned and the critical barrier immediately replaced by the Contractor. In the event that the AMS identifies areas requiring additional cleaning, the contractor shall re-clean the area at no expense to the Owner.

5.2.2 Clearance Air Monitoring

The AMS shall collect air samples using aggressive techniques as described in 40 CFR Part 763 Appendix A of Subpart E using a leaf blower and box fans to suspend dust and keep the work area atmosphere in a turbulent state. Workers performing the aggressive sampling procedures will remain in appropriate protective clothing and respirators at all times. Stationary fans shall be placed in locations where they will not interfere with air monitoring equipment. Fans shall be directed towards abated surfaces. One fan shall be used for each 10,000 cubic feet of work space. All surfaces in the workspace will be swept with the leaf blower. In accordance with Asbestos Hazard Emergency Response Act (AHERA) and Regulation No. 8, a minimum of 5 samples will be collected from each work area.

Samples will be analyzed by a certified laboratory for PCM analysis. The contractor will allow 24 hours for sample collection and reporting of results by the AMS. The initial sampling will be conducted at the expense of the Owner. Sample results will be compared to the PCM clearance standard of 0.01 fibers per cubic centimeter.



6 SCHEDULE

A contractor walkthrough will not be held for the project. Scheduling will be based on the City of Montrose scheduling.



SUBMITTALS

The following submittals shall be required at the specified intervals. Required submittals shall be submitted to the Owner and copies shall be submitted to the Owner's Representative. Contact information for providing submittals is listed below.

Bidder Information (Due with Submittal of Bids)

Bid Form
General Abatement Certificate
Insurance Certificate(s)

On-Site Documents (Available for Review during Removal)

Respiratory Protection Program
Hazard Communication Program
Medical Response Program
Labor Postings

Pre-Start Submittals (Due upon Award of Contract)

Proposed Disposal Facility Information
List of Personnel with Certifications

Contract Closeout (Due Two Weeks after Completion)

Disposal Manifests
Summary of Change Orders
Daily Logs
Daily Entry/ Exit Sign-in Sheets
Visitor Documentation Forms
24-hour Manometer Chart
OSHA Air Monitoring Results
Accident Reports

SUBMITTAL CONTACT INFORMATION

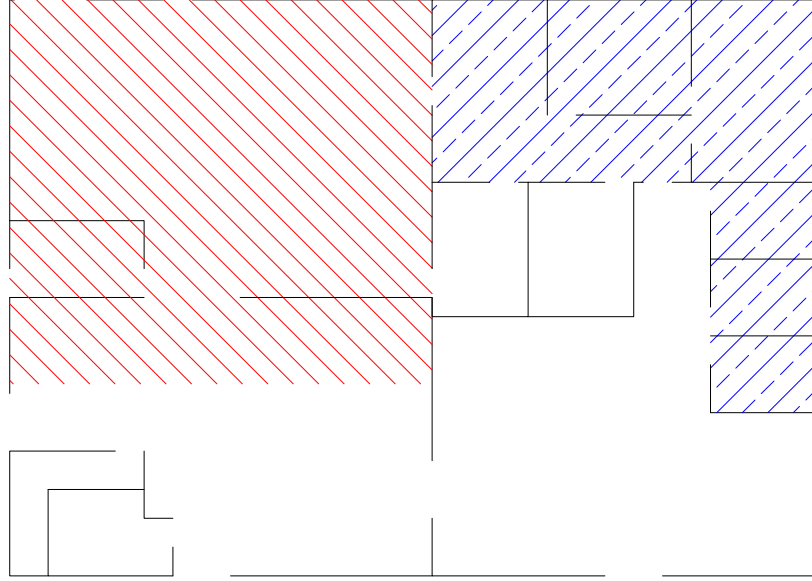
OWNER:
Mr. Mark Armstrong
Facilities Manager
City of Montrose
433 South 1st Street
Montrose, CO 81401

OWNER'S REPRESENTATIVE:
Mr. Jake Harris
Project Manager
Grande River Environmental, LLC
562 Huntington Point Lane
Clifton, CO 81520
(970) 970-201-9731 phone
Jakeh@GrandeRiverenv.com





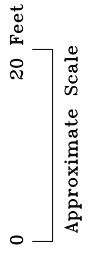
APPENDIX A

FIGURES



Explanation

-  ACM Floor Tile
-  ACM Floor Tile and Mastic

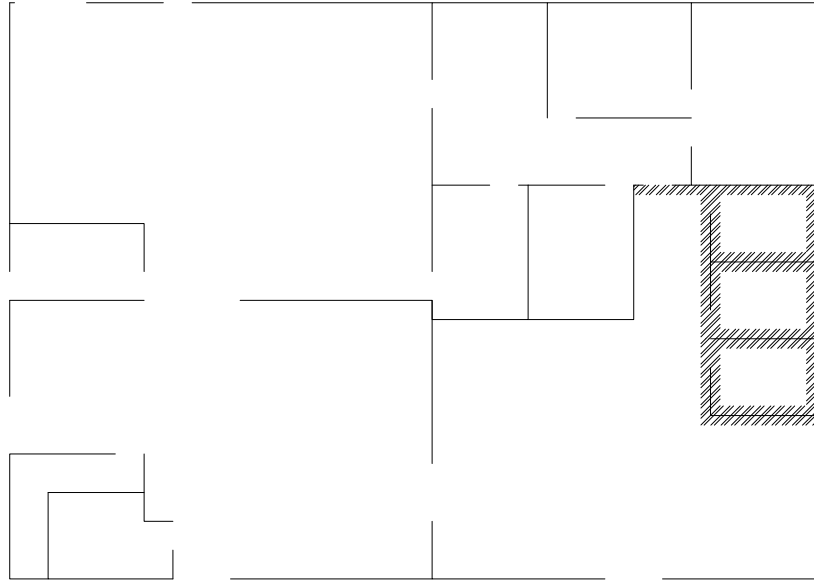


GRANDE RIVER ENVIRONMENTAL, LLC

ACM Location Map
 Commercial Structure
 931 North Park Avenue
 Montrose, Colorado

Date: November 2020

Figure 1



Explanation

 ACM Texture on Walls



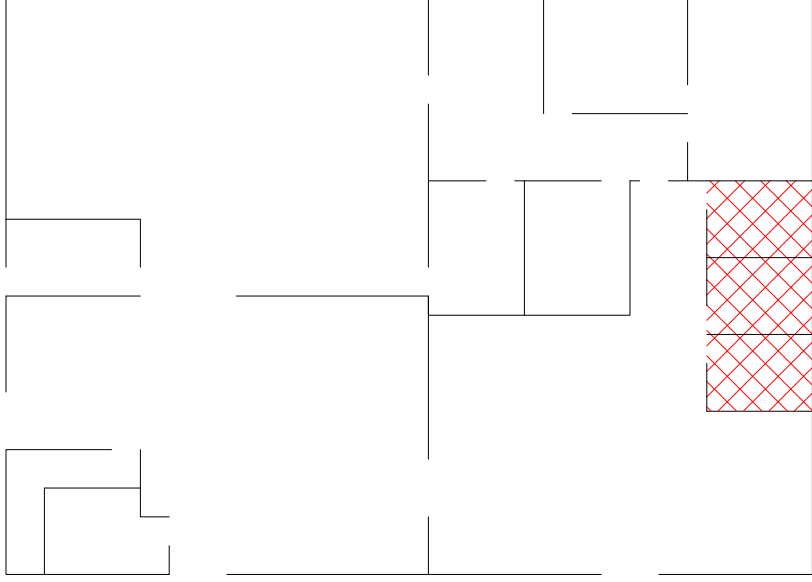
0 20 Feet
Approximate Scale

GRANDE RIVER ENVIRONMENTAL, LLC


ACM Location Map
Commercial Structure
931 North Park Avenue
Montrose, Colorado

Date: November 2020

Figure 2



Explanation

 ACM Texture on Ceiling



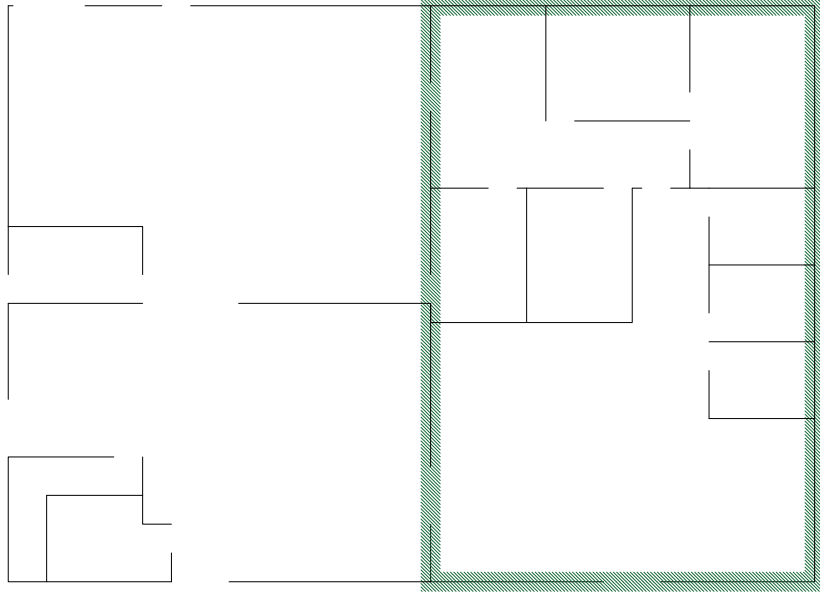
0 20 Feet
Approximate Scale

GRANDE RIVER ENVIRONMENTAL, LLC


ACM Location Map
Commercial Structure
931 North Park Avenue
Montrose, Colorado

Date: November 2020

Figure 3



Explanation

 ACM CMU Block



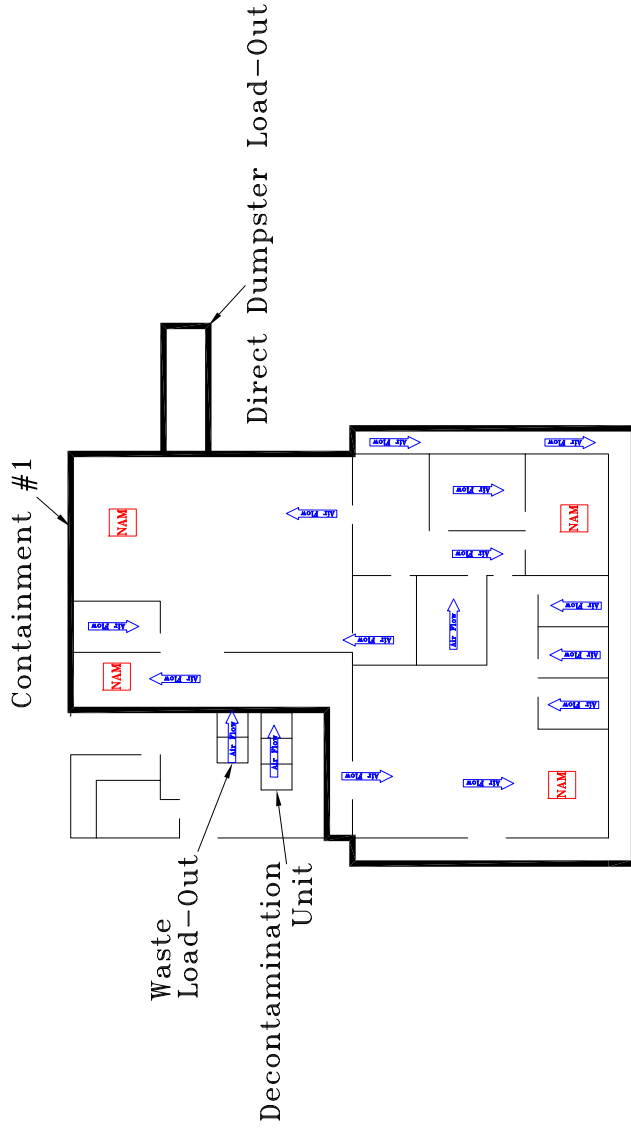
0 20 Feet
Approximate Scale

GRANDE RIVER ENVIRONMENTAL, LLC

ACM Location Map
Commercial Structure
931 North Park Avenue
Montrose, Colorado

Date: November 2020

Figure 4






SIZING AND SPECIFICATIONS FOR FULL CONTAINMENT

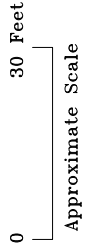
| | |
|----------------------------------|----------------|
| Containment Area | 4,850 sq. ft. |
| Average Ceiling Height | 10 ft. |
| Volume of Work Area | 48,500 cu. ft. |
| Average CFM/ Machine | 1,500 cfm |
| Air Changes per Hour | 4 |
| Machine Calculations | 3 |
| Contingency Factor | |
| (1 or 25%; whichever is greater) | 1 |
| Total Negative Air Machines | 4 |

Asbestos containing drywall texture, floor tile with mastic, and CMU block filler are present in the building. The texture and floor tile mastic be removed within a single contiguous modified full containment under a minimum negative pressure of 0.020 inches of water. All removal operations must be completed in accordance with the relevant regulatory requirements and the design document.

A decontamination unit and a separate waste load-out unit for equipment shall be constructed onto the containment to provide ingress and egress as required by Regulation No. 8. A direct dumpster load-out may be utilized to expedite waste handling activities; however, the load-out must be constructed in accordance with current industry standards and practices. Negative air machines must be arranged to maximize air flow throughout the entire work area. All removed materials must be properly packaged, labeled, and disposed as asbestos waste.

Explanation

-  Negative Air Machine
-  Direction of Air Flow
-  Containment Boundary





APPENDIX B

DIVISION APPROVED DIRECT LOAD-OUT SYSTEM



Division Approved Direct Load-out System

As of June 14, 2011

Related Work Specified Elsewhere:

Installation of negative pressure differential system as described in Section III.J. Temporary Pressure Differential and Air Circulation System.

Construction of Critical and Primary Barriers, and Work Area, Section III.N.

Submittals:

Before Start of Work: Submit the following to the Owner's Representative for review. Do not start Work until these submittals are reviewed by the Owner's Representative.

Drawing showing location, size, and placement of the transfer chamber and waste trailer in relation to the Work Area.

Product data identifying the dimensions and construction of waste trailer bag.

PART 1- PRODUCTS

Waste Trailer Bags: Provide a pre-manufactured waste disposal bag specifically designed for use in direct waste load-out. The bag shall be approximately 29' long x 7' tall x 7' wide and open on one end only. Support loops shall be integrated into the bag on minimum 4' centers along the top of the bag. The bag will be constructed of seamless poly sheeting; taped poly will not be permitted. The bag will be constructed as follows:

Outer Bag- constructed of 3 ounce un-coated woven polypropylene Primary Bag- 6 mil thick sheet polyethylene film

Secondary Bag- 6 mil thick sheet polyethylene film

Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 6 mil thick, clear, frosted, or black as required by job conditions.

Duct Tape: Provide Nashua 357 brand duct tape in 2" or 3" widths.

Plywood: Provide full sheets of ½" thick CDX plywood in good condition for the construction of the transfer chamber.

Framing: Provide 2"x4" wood framing member for the construction of the transfer chamber.

Flooring Protection: Provide new sheets of cardboard in the largest size possible to protect the sheet polyethylene floor in the transfer chamber and waste trailer bag.

Rope: Provide solid braid nylon rope minimum ½" diameter with a minimum tensile strength of 1,250 lbs.



Waste Trailer: Provide a clean enclosed roll-off type waste trailer sized to accommodate the waste trailer bag described above.

Steel Strapping: Provide minimum 5/8" x .017: cold-rolled, medium carbon steel strapping with a break strength of 1,830 lbs for sealing the ends of the waste trailer bags when full. Use seals, sealing tools, and strapping tensioner compatible with the specified steel strapping.

Airless Sprayer: Provide an airless sprayer for the application of amended water or removal encapsulants. A water hose and nozzle may not be substituted for an airless sprayer.

PART 2- EXECUTION

Transfer Chamber: Provide a transfer chamber to directly connect the waste trailer and work area. The transfer chamber shall be a minimum of 6' long x 6'6" wide x 6'6" tall. The opening of the transfer chamber shall not exceed the dimensions of the opening of the waste trailer bag. Construct the transfer chamber from 2" x 4" wood framing and 1/2" thick plywood sheeting. Construct the chamber weather tight and in a manner that maintains building security independent of the waste trailer. Install hinged doors that will swing 180 degrees to close the opening at the connection point with the waste trailer during separation.

Line transfer chamber with critical, primary, and secondary barriers as described in diagram.

At opening of transfer chamber and Work Area install a flapped doorway consisting of 2 layers of alternating sheets of poly. This flapped doorway may be taped open during periods of active waste load out.

At opening of transfer chamber and Waste trailer, Install 2 layers of sheet poly. These poly barriers are to be rolled up at all times except for periods when the waste trailer is separated from the transfer chamber. Refer to the Separation and Tie- In Sequences in this Section for Details.

At the floor opening of the transfer chamber at the waste trailer install a threshold constructed from 2" x 4" wood framing.

Protect the poly floor of the transfer chamber from load out operations with cardboard.

Waste Trailer and Waste Trailer Bag:

Line waste trailer with 6-mil poly prior to installing waste trailer bag.

Attach rope through closed end of dumpster and run through loops in waste trailer bag. Pull rope tight to support waste trailer bag and tie off to the transfer chamber.

Line the bottom of the waste trailer bag with cardboard to protect during waste load out.

Waste Trailer Bag to Transfer Chamber Tie- In Procedure:

Open hinged doors to transfer chamber and direct waste trailer driver to backup and deposit the opening of the waste trailer to within 2" of the opening of the transfer chamber.



From the outside attach the 3 ounce un-coated woven polypropylene outer bag to the opening of the transfer chamber. Secure using staples and duct tape.

Enter the Work Area and proceed to the transfer chamber. Roll-up and secure the 2 layer, 6 mil curtain at the opening of the transfer chamber/ waste trailer. When complete, the curtain should be rolled up between the outer bag and primary bag of the waste trailer bag.

Attach the primary bag to the primary layer in the transfer chamber with a minimum overlap of 12". Seal this joint with spray glue and duct tape. Install layers so that the primary bag is the innermost layer in the transfer chamber.

Attach the secondary bag to the secondary layer in the transfer chamber with a minimum overlap of 12". Seal this joint with spray glue and duct tape. Install layers so that the secondary bag is the innermost layer in the transfer chamber.

Install a plywood ramp to bridge the opening between the transfer chamber and the waste trailer. Use caution to not damage the poly sheeting and immediately repair and damage.

Waste Handling Procedures:

Remove asbestos containing material according to work plan. In lieu of immediately bagging the material as described in Regulation No. 8, the Contractor shall immediately place the material into a cart, wheelbarrow, or similar, and transport to the waste trailer bad via the transfer chamber.

Deposit the material into the waste trailer bag. At all times the debris in the waste trailer bag shall be maintained adequately wetted.

Continue the process until the waste trailer bag is full, and then proceed with Waste Trailer Separation as described below.

Waste Trailer Separation Procedures:

Close flapped doorway between Work Area and Transfer Chamber.

Remove plywood ramp, cardboard sheeting, and all gross debris from the transfer chamber.

Confirm that the debris in the waste trailer bag is adequately wet and continuously mist the air in the transfer chamber during the separation sequences.

Wet wipe and HEPA vacuum all debris from the secondary layer of the transfer chamber.

Remove the secondary bag from the transfer chamber, wrap and seal using the metal strapping. Seal with duct tape and fold the secondary bag into the waste trailer.

Remove the secondary barrier layer from the transfer chamber and pass back into the Work Area through the flapped doorway.

Wet wipe and HEPA vacuum all debris from the primary layer of the transfer chamber.



Division Approved Direct Load-out System

As of June 14, 2011

Related Work Specified Elsewhere:

Installation of negative pressure differential system as described in Section III.J. Temporary Pressure Differential and Air Circulation System.

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Product data identifying the dimensions and construction of waste trailer bag.

PART 1- PRODUCTS

Waste Trailer Bags: Provide a pre-manufactured waste disposal bag specifically designed for use in direct waste load-out. The bag shall be approximately 29' long x 7' tall x 7' wide and open on one end only. Support loops shall be integrated into the bag on minimum 4' centers along the top of the bag. The bag will be constructed of seamless poly sheeting; taped poly will not be permitted. The bag will be constructed as follows:

Outer Bag- constructed of 3 ounce un-coated woven polypropylene Primary Bag- 6 mil thick sheet polyethylene film

Secondary Bag- 6 mil thick sheet polyethylene film

Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 6 mil thick, clear, frosted, or black as required by job conditions.

Duct Tape: Provide Nashua 357 brand duct tape in 2" or 3" widths.

Plywood: Provide full sheets of ½" thick CDX plywood in good condition for the construction of the transfer chamber.

Framing: Provide 2"x4" wood framing member for the construction of the transfer chamber.

Flooring Protection: Provide new sheets of cardboard in the largest size possible to protect the sheet polyethylene floor in the transfer chamber and waste trailer bag.

Rope: Provide solid braid nylon rope minimum ½" diameter with a minimum tensile strength of 1,250 lbs.



Waste Trailer: Provide a clean enclosed roll-off type waste trailer sized to accommodate the waste trailer bag described above.

Steel Strapping: Provide minimum 5/8" x .017: cold-rolled, medium carbon steel strapping with a break strength of 1,830 lbs for sealing the ends of the waste trailer bags when full. Use seals, sealing tools, and strapping tensioner compatible with the specified steel strapping.

Airless Sprayer: Provide an airless sprayer for the application of amended water or removal encapsulants. A water hose and nozzle may not be substituted for an airless sprayer.

PART 2- EXECUTION

Transfer Chamber: Provide a transfer chamber to directly connect the waste trailer and work area. The transfer chamber shall be a minimum of 6' long x 6'6" wide x 6'6" tall. The opening of the transfer chamber shall not exceed the dimensions of the opening of the waste trailer bag. Construct the transfer chamber from 2" x 4" wood framing and 1/2" thick plywood sheeting. Construct the chamber weather tight and in a manner that maintains building security independent of the waste trailer. Install hinged doors that will swing 180 degrees to close the opening at the connection point with the waste trailer during separation.

Line transfer chamber with critical, primary, and secondary barriers as described in diagram.

At opening of transfer chamber and Work Area install a flapped doorway consisting of 2 layers of alternating sheets of poly. This flapped doorway may be taped open during periods of active waste load out.

At opening of transfer chamber and Waste trailer, Install 2 layers of sheet poly. These poly barriers are to be rolled up at all times except for periods when the waste trailer is separated from the transfer chamber. Refer to the Separation and Tie- In Sequences in this Section for Details.

At the floor opening of the transfer chamber at the waste trailer install a threshold constructed from 2" x 4" wood framing.

Protect the poly floor of the transfer chamber from load out operations with cardboard.

Waste Trailer and Waste Trailer Bag:

Line waste trailer with 6-mil poly prior to installing waste trailer bag.

Attach rope through closed end of dumpster and run through loops in waste trailer bag. Pull rope tight to support waste trailer bag and tie off to the transfer chamber.

Line the bottom of the waste trailer bag with cardboard to protect during waste load out.

Waste Trailer Bag to Transfer Chamber Tie- In Procedure:

Open hinged doors to transfer chamber and direct waste trailer driver to backup and deposit the opening of the waste trailer to within 2" of the opening of the transfer chamber.



From the outside attach the 3 ounce un-coated woven polypropylene outer bag to the opening of the transfer chamber. Secure using staples and duct tape.

Enter the Work Area and proceed to the transfer chamber. Roll-up and secure the 2 layer, 6 mil curtain at the opening of the transfer chamber/ waste trailer. When complete, the curtain should be rolled up between the outer bag and primary bag of the waste trailer bag.

Attach the primary bag to the primary layer in the transfer chamber with a minimum overlap of 12". Seal this joint with spray glue and duct tape. Install layers so that the primary bag is the innermost layer in the transfer chamber.

Attach the secondary bag to the secondary layer in the transfer chamber with a minimum overlap of 12". Seal this joint with spray glue and duct tape. Install layers so that the secondary bag is the innermost layer in the transfer chamber.

Install a plywood ramp to bridge the opening between the transfer chamber and the waste trailer. Use caution to not damage the poly sheeting and immediately repair and damage.

Waste Handling Procedures:

Remove asbestos containing material according to work plan. In lieu of immediately bagging the material as described in Regulation No. 8, the Contractor shall immediately place the material into a cart, wheelbarrow, or similar, and transport to the waste trailer bad via the transfer chamber.

Deposit the material into the waste trailer bag. At all times the debris in the waste trailer bag shall be maintained adequately wetted.

Continue the process until the waste trailer bag is full, and then proceed with Waste Trailer Separation as described below.

Waste Trailer Separation Procedures:

Close flapped doorway between Work Area and Transfer Chamber.

Remove plywood ramp, cardboard sheeting, and all gross debris from the transfer chamber.

Confirm that the debris in the waste trailer bag is adequately wet and continuously mist the air in the transfer chamber during the separation sequences.

Wet wipe and HEPA vacuum all debris from the secondary layer of the transfer chamber.

Remove the secondary bag from the transfer chamber, wrap and seal using the metal strapping. Seal with duct tape and fold the secondary bag into the waste trailer.

Remove the secondary barrier layer from the transfer chamber and pass back into the Work Area through the flapped doorway.

Wet wipe and HEPA vacuum all debris from the primary layer of the transfer chamber.



Remove the primary bag from the transfer chamber, wrap and seal using the metal strapping. Seal with duct tape and fold the primary bag into the waste trailer.

The transfer chamber shall be final cleaned, visually inspected, and cleared as identified in Section III.P.3 of Regulation No 8. Part B.

Unroll the 2-layer 6 mil curtain and seal to the opening of the transfer chamber.

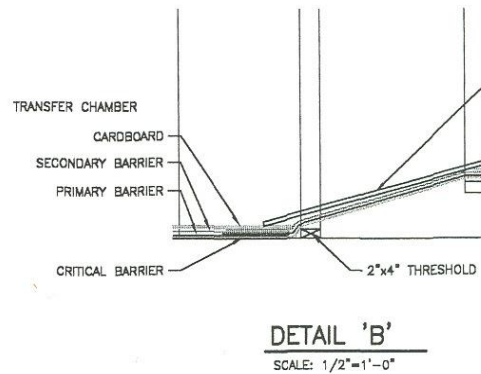
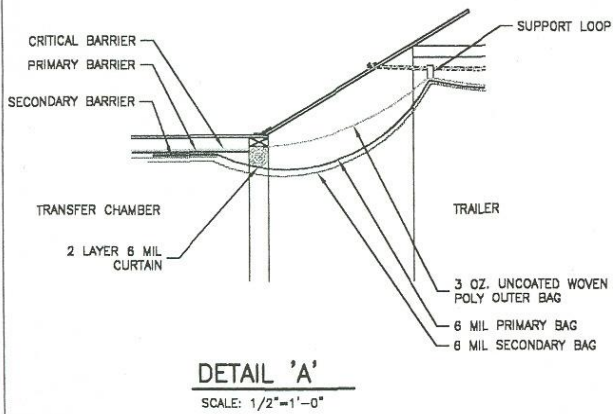
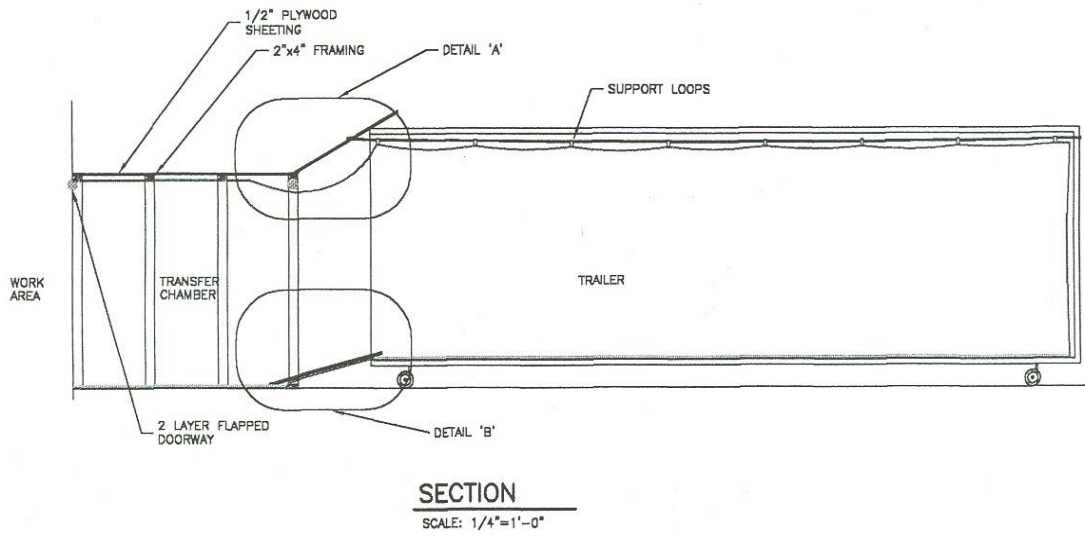
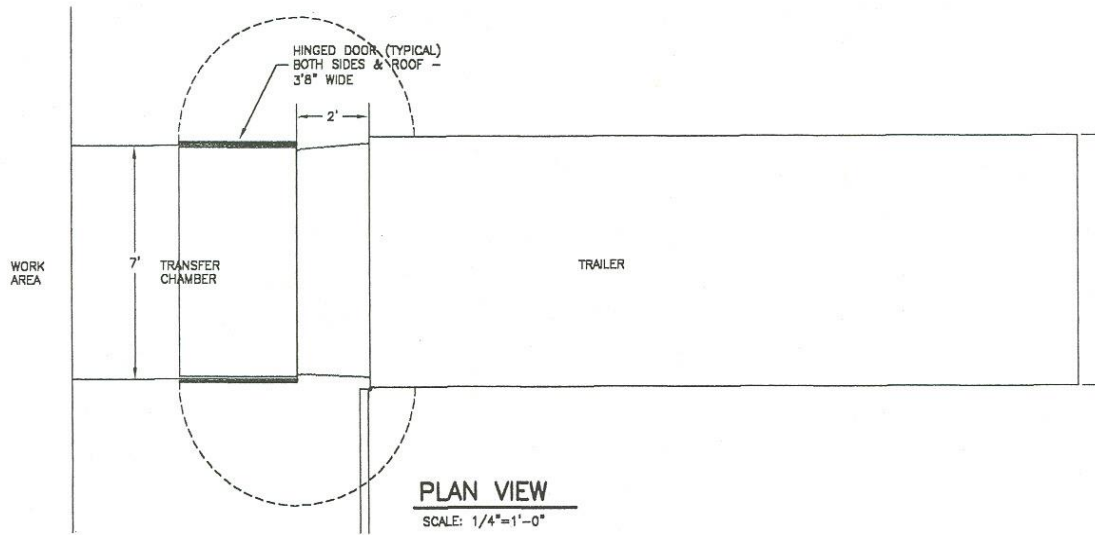
From outside the Work Area, open the plywood hinged doors at the transfer chamber and disconnect the outer bag from the transfer chamber, wrap and seal using the metal strapping. Seal with duct tape and fold the out bag into the waste trailer.

Label the outside bag with the four labels as per Section III.R.2. - Disposal of Asbestos Containing Waste Materials.

Remove the rope supporting the bag from the transfer chamber and from within the waste trailer.

Attach the waste trailer to the waste hauler's truck and carefully pull away from the transfer chamber and building.

Close the plywood doors to the transfer chamber and lock until beginning a new tie- in sequence.





APPENDIX C

BID FORMS



ASBESTOS ABATEMENT BID FORM

**STRUCTURE FOR DEMOLITION
931 NORTH PARK AVENUE
MONTROSE, COLORADO**

The project consists of removal of asbestos-containing materials from the above-referenced commercial structure prior to demolition. Details regarding the required abatement activities are presented in the document entitled *Asbestos Abatement Project Design* prepared by GRE dated November 20, 2020. The selected Contractor will enter into contract with the Owner. The project schedule will be provided by the OWNER.

Referencing the above-mentioned scope of work document prepared for this project, we hereby submit our bid in the amount stated in the blank of this bid form. Also the undersigned Bidder, having become thoroughly familiar with the terms and conditions of the document and with local conditions affecting performance and cost of the work at the place where the work is to be done, and having fully inspected the site in all particulars, hereby proposes and agrees to fully perform the work within the proposed schedule and by the specified deadline and in strict accordance with the contract for the following sum of money:

REMOVAL OF ACM AS SPECIFIED IN ABOVE REFERENCED SCOPE OF WORK:

Lump Sum Price for Removal of Specified Asbestos-Containing Materials:

_____ (\$ _____)

Bids include all labor, materials, services, equipment, insurance, bonds, security, etc, necessary for the completion of the work. The above listed price shall not be exceeded without approval by the Owner in the form of an approved change order request. The Owner reserves the right to accept any or all of the bid items. By requesting bids for the above-listed item, the Owner is not in any way obligated to award or conduct the projects.

COMMENTS: _____



UNIT RATES

Include costs for unit rates as indicated below. Assume you will already be onsite for determining your rates. If a mobilization is required to accomplish work using unit rates, the cost for mobilization will be added to the appropriate rate. Activities specified in the unit rates will be completed in accordance with the procedures outlined in these specifications and Colorado Regulation No. 8, Part B. Unit rates will be used to adjust the total project cost in the event of an increase or decrease in work activities included in the original scope of work. The rate to construct a full or secondary containment will be added to the cost to remove the specified material.

| <i>UNIT PRICE LIST</i> | | |
|--|-------------|-----------------------|
| DESCRIPTION | UNIT | PRICE PER UNIT |
| Drywall with Joint Compound and Smooth Texture | SF | |
| Floor Tile and Mastic on Concrete | SF | |
| Floor Tile on Concrete | SF | |
| CMU Block Filler | SF | |
| <i>UNIT PRICE LIST</i> | | |
| CONTAINMENT CONSTRUCTION | | |
| DESCRIPTION | UNIT | PRICE PER UNIT |
| Full Containment <500 Square Feet | SF | |
| Full Containment >500 Square Feet | SF | |
| Secondary Containment <500 Square Feet | SF | |
| Secondary Containment >500 Square Feet | SF | |
| Mobilization/Demobilization | EVENT | |
| Water (Alternate) Do not include in Lump Sum | DAY | |
| Generator (Alternate) Do not include in Lump Sum | DAY | |

NOTES: SF = square feet LF = linear feet

COMMENTS: _____



FIRM NAME AND ADDRESS:

SIGNED BY: _____ TITLE: _____

SIGNATURE: _____ DATE: _____

ATTESTED BY: _____ TITLE: _____

SIGNATURE: _____ DATE: _____

I understand the Owner reserves the right to reject this bid, and that this bid may not be withdrawn for a period of sixty (60) days after the bid opening date. I understand that if awarded the project, I will enter into and execute a contract on the basis of this bid. All work will be accomplished in accordance with contract documents and within specified calendar days after given notice to proceed. **I understand that required submittals specified in the Scope of Work Document must be submitted upon request by the Owner.**

By signing above I acknowledge that I have received the following addenda for the project.

I have received Addendum 1 (if applicable) _____ YES _____ NO

I have received Addendum 2 (if applicable) _____ YES _____ NO



Colorado Department
of Public Health
and Environment

ASBESTOS CERTIFICATION*

This certifies that

Travis Brophy

Certification No.: 13477

has met the requirements of 25-7-507, C.R.S. and Air Quality Control
Commission Regulation No. 8, Part B, and is hereby certified by the
state of Colorado in the following discipline:

Project Designer*

Issued: February 05, 2020

Expires: February 14, 2021

** This certificate is valid only with the possession of a
current Division-approved training course certification
in the discipline specified above.*


Authorized APCD Representative

SEAL



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855.60.CERTIFY

CERTIFICATE OF ACHIEVEMENT

This certificate is awarded to:

TRAVIS BROPHY

In recognition of satisfactory completion of the EPA-approved annual asbestos
refresher training course under section 206 of the Toxic Substance Control Act (TSCA)
and Colorado Regulation No. 8 entitled

PROJECT DESIGNER

COURSE DATE:

DECEMBER 19, 2019

EXPIRATION DATE:

DECEMBER 19, 2020

COURSE HOURS:

8.0

Danaya N. Benedetto
CEO & Training Program Manager

Credential License ID:
14346993

Daniel R. Beaver
Instructor

CHC Training Certificate No.
R19-1812-APD-CO



Verify this Credential



Visit our Website