Regulatory Submittal Part I(R)
Remediation Work Plan

Project:
Remediation of
Fiterman Hall – 30 West Broadway
New York, New York

Prepared for:
The Dormitory Authority of the State of New York
City University of New York

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1.0 General

PAL Environmental Safety Corp. has been retained by the Dormitory Authority of the State of New York (DASNY), and The City University of New York (CUNY) to prepare a Project Plan to conduct the environmental remediation of the Fiterman Hall Building located at 30 West Broadway, New York, NY (Fiterman Hall, the Building, the Site or 30 West Broadway). The Building is a fifteen-story, three hundred seventy thousand square foot classroom building owned by DASNY and operated prior to 9/11 by CUNY/Borough of Manhattan Community College. The Building was physically damaged by the collapse of 7 World Trade Center, and impacted by the environmental effects of the World Trade Center Collapse.

The purpose of Regulatory Submittal Part I(R) – Remediation Work Plan, is to provide an overview of the procedures to be followed for:

- Establishment of interior clean zone for project command center, staging and storage;
- Removal of all furniture and construction materials located inside of the Building;
- Dismantling and removal of all interior Building components;
- Cleaning of residual dust accumulated on interior surfaces;
- Removal, packaging, transport and disposal of all Universal Waste, all other regulated waste and all conventional waste;
- Abatement of asbestos containing materials and lead-painted materials from the interior and exterior of the Building.

The information contained in this Work Plan relates to all procedures required to complete the environmental remediation and prepare the structure for deconstruction.

Please note that the remediation is mostly interior work. This Work Plan has been designed with particular attention to personal protection and engineering measures to be implemented to prevent contaminants from migrating into the surrounding environment during remediation activities.

2.0 Related Documents

2.1 Informational Documents

2.1.1 Environmental Characterization Report

Airtek was retained by PCF-P on behalf of DASNY/CUNY to conduct an environmental characterization study of the Fiterman Hall Building. The Environmental Characterization Report is provided under separate cover.

2.1.2 Façade Characterization Report
Airtek was retained by PCF-P on behalf of DASNY/CUNY to conduct a façade characterization study of the Fiterman Hall Building. The Façade Characterization Report is provided under separate cover.

2.2 Regulatory Submittal Part II – Environmental Community Air Monitoring Program

Prior to initiation of any remediation operations, an environmental community air monitoring program (ECAMP) approved by the USEPA, and detailed in the related document, Regulatory Submittal Part II- Environmental Community Air Monitoring Program, will be established and operational. The Program will consist of daily air monitoring at eight points on the perimeter of the project site. Community Monitoring will continue until Building demolition is complete. A Quality Assurance Project Plan (QAPP) is included as Attachment D to the ECAMP.

2.3 Regulatory Submittal Part III(R) – Health & Safety Plan (HASP)

A site-specific HASP has been developed to be applied to the project. The HASP details requirements for access/egress and requirements for Personal Protective Equipment (PPE) for workers at the Site. All subcontractors performing any work on the Site are required to adopt the HASP into their operations and abide by all procedures described therein. The HASP is included as Part III of the submittal package.

2.4 Regulatory Submittal Part IV – Waste Sampling and Management Plan

A site-specific Waste Sampling and Management Plan (WSMP) to be applied to all waste operations for the remediation has been developed. The WSMP provides details on how, and by whom, waste determinations and categorizations will be made, and provides detail on sampling and analysis protocols. The WSMP is included as Part IV of the submittal package. A QAPP for the WSMP is included as Attachment D to the WSMP.

3.0 Environmental Regulatory Notifications

3.1 Asbestos Survey

To comply with New York State Department of Labor (NYS DOL) requirements for building demolition, Airtek has undertaken an asbestos survey intended to coordinate and complete previous survey work that was conducted at the Site. All previous documentation was reviewed and a site survey and bulk sampling were conducted. Based on this survey work, an inventory of in-place asbestos has been
developed. The results of the survey are included in Appendix IV to the Environmental Characterization Report.

3.2 NYS DOL Notification

The New York State Department of Labor (NYS DOL) is the primary jurisdiction for the remediation at Fiterman Hall. Regulatory Submittal Part I shall comply with Industrial Code Rule 56 (ICR56) as amended on January 11, 2006. Procedures requiring variance are outlined in Attachment II – NYS DOL Remediation Variance Petition. The remediation work constitutes a ‘Large Project’ according to the criteria outlined in ICR56, written notification of the entire project will be made to the NYS DOL prior to the commencement of any remediation activities. Notifications will be submitted prior to the commencement of work. Sample notification is included as Attachment I of this plan.

3.3 NYS DOL Variance Applications

The remediation at the Site requires a site specific variance be granted by NYS DOL. Copies of the variance application and petition letter are included as Attachment II of this Work Plan.

3.4 NYC DEP Notification

A copy of the Regulatory Submittal package will be provided and ACP7 notification will be made to the NYC DEP for the remediation operations. However, jurisdiction for work practices and variances is under the NYS DOL guidelines. ACP7 notification is included as Attachment IV of this Work Plan.

3.5 USEPA Notification

The remediation work constitutes a ‘Large Project’ according to the criteria outlined in EPA NESHAP, written notification of the entire project will be made to the US EPA prior to the commencement of any remediation activities. Sample notification is included as Attachment III of this Work Plan.

4.0 Utilities - General:

4.1 Electric

Electrical power will be supplied by the existing Con Edison transformer located on the south side of the Building (Barclay Street). Power will be fed into a Basement level electrical closet and run up floor by floor through the central electrical closet supplying two hundred amps of power to each level. GFCI equipped electric panels will be installed on each floor and attached directly to the electrical closet on that level.
4.2 Plumbing

For the remediation procedure, water will be obtained from the Building pump via a riser pipe that has been installed in the A-Stairwell. This riser pipe runs from the ground level through the Fifteenth Floor of the Building. Decontamination facilities installed for use during remediation activities will be operated off of water fed from an existing hydrant on Greenwich Street. PAL currently holds valid permits from NYC DEP to utilize and operate the hydrant (Permit Nos. 420640 & 420643). Permitting for hydrant usage will be kept current for the duration of the remediation activities.

4.3 HVAC

The HVAC system will not be operated at any time during the remediation procedures. Please refer to Section 6.0 for details on the dismantling of the HVAC system.

4.4 Fire Protection

Prior to the commencement of remediation activities on the Site, the existing fire standpipe will be filled, pressure tested, and repaired (if necessary) to make it ready for use by the FDNY in the event of a fire emergency. The standpipe will be operated as a dry system with hose racks. In the event of an emergency, the FDNY would use a pumper truck connected to a street hydrant to deliver water through the standpipe.

4.5 Elevator Service

It will be necessary to utilize the existing Building elevators for work access to all floor levels and for the removal of waste from all floors. Installed shortly before the Building sustained damage on 9/11, the elevators are new and remain in good operating condition. Prior to commencing remediation activities, power will be restored to the existing passenger and freight elevator cars. It will be necessary to utilize all elevator cars during the remediation phase. Elevator banks have been assigned names in order to clearly identify each one. The elevator banks for the remediation are as follows:

Bank A: North Passenger Lobby (High Rise)
Bank B: South Passenger Lobby (Low Rise)
Bank C: Central Freight Car
Bank D: Basement Freight Car (Not Operational)

Please note that there is an existing elevator shaft adjacent to the high rise cars. This shaft runs from the Second Floor to the Fifteenth Floor. An elevator has not been installed in this shaft. PAL will install a construction hoist in this shaft in order to provide an additional car for upper level access. The hoist will be
properly equipped to securely stop at every level between the Second and Fifteenth Floors. Throughout this Work Plan this car will be referred to as the construction hoist. The construction hoist will be a portable trestle monorail system with a motor attached to a frame scaffold. A counter-weight system will be installed on the monorail system scaffold assembly. The construction hoist will be equipped to handle a two thousand pound load capacity. An engineer retained by PAL will provide any applicable permitting and the required sign off on the trestle monorail hoist system prior to usage. This hoist will be installed during the establishment of the containment of the upper floors.

It will be necessary for all elevators and the construction hoist to run through upper floor containment areas during remediation.

5.0 Monitoring:

5.1 Personal Monitoring:

Personal Exposure Monitoring will be performed during all remediation activities as required by OSHA CFR 1926 and DASNY. Results will be posted at the Site on a daily basis.

5.2 Work Area Monitoring:

Work Area Monitoring and asbestos air sampling will be conducted throughout the Remediation Phase of the Project. Work Area Monitoring will be conducted in strict accordance with ICR 56, subsection 56-4, 56-6, 56-7.1, 56-8.1, 56-9.2 and any provisions set forth in the Variance Application. All sample analyses will be by TEM. Project air monitoring is further detailed in Regulatory Submittal Part II – Environmental Community Air Monitoring Plan.

5.3 Environmental Community Air Monitoring

Community Monitoring will be conducted as detailed in Regulatory Submittal Part II – Environmental Community Air Monitoring Plan.

5.4 Visual Inspection

The purpose of this section is to define the parameters to be followed when performing visual inspection of interior and exterior work areas.

Visual inspection of remediated areas shall be performed in the following manner:

- Initial inspection of the work area involves a thorough inspection of all substrates and surfaces that are the subject of the inspection
- Areas and locations that have not been cleaned to the satisfaction of the inspector will be clearly identified and logged.
• Any areas that are identified during the initial inspection will then be subject to re-cleaning procedures.
• A secondary inspection will be performed on completion of the re-cleaning activities to determine that all areas identified in the initial inspection have been properly cleaned.
• This procedure shall be followed by all parties who hold authority over the release of work areas.

6.0 Remediation Operations

Remediation Operations will not begin on the interior of the Building until the Office of the City Medical Examiner has performed an inspection of the Site and stated that it is clear to begin work.

All personnel entering the Building during remediation operations are required to utilize the proper personal protective equipment (PPE) at all times. No personnel will be allowed to enter the Building without proper PPE. The minimum PPE required for remediation operations is as follows:

• Disposable coverall suits with hoods
• Half-face air purifying respirators (APR) fitted with P100 filter cartridges
• Nitrile gloves
• Safety goggles
• Work boots
• Rubber boot covers
• Hard hats
• Hearing Protection (only if noise will exceed OSHA decibel limits)

The remediation procedure outlined in this Work Plan will be completed in full prior to the commencement of the deconstruction of the Building.

6.1 Establishment of Clean Zone

A Clean Zone will be established on the First Floor of the Building in order to provide interior areas for staging, waste and material storage and project administration. During the establishment of the Clean Zone, the existing administrative trailer located on the northeast side of the Building will be used as a temporary Project Command Center. Additionally, the Clean Zone will extend up a stairwell to provide clean access to all floors. The Clean Zone will be comprised of all areas of the First Floor with the exception of the Building Core (including Elevator Banks A, B, C) and the East Side Lobby. Remediation of the Core will not take place at this time because it will be necessary to utilize the elevators during remediation operations on the upper floors. The Core will be incorporated into the modified full containment of all upper interior floors. Modified full containment refers to a containment consisting of negative pressure ventilation equipment and critical barriers installed on windows and openings or
penetrations leading to the outdoor environment. In order to leave access for either decontamination or disposal as asbestos containing material at a minimum, plastic will not be installed on interior surfaces and other building components which have been deemed contaminated. The East Side lobby will not be cleaned at this time so that access to the upper floors will be available via the elevators. For more details on the upper floor access plan, please refer to Section 6.2. All remediation activities related to the establishment of the Clean Zone will be performed by NYS DOL licensed asbestos handlers.

The Clean Zone shall include:

- Existing Loading Dock
- Entrance Area at the corner of Greenwich Street and Park Place
- The northeast corner
- The West Broadway Lobby Area
- The southeast corner
- C Stairwell (Floors: One through Fifteen)

Drawings demarcating the Clean Zone are included in the Attachment V Remediation Operations Logistics Plans of this Work Plan. Entry to the area will be restricted to allow access only to licensed personnel while decontamination activities are in progress on the First Floor. The established decontamination facility at the northwest entrance to the Building will remain in place and will serve as the personal decontamination facility for the remediation of the Clean Zone. A waste decontamination facility will be constructed outside the building Loading Dock on the western sidewalk (Greenwich Street).

Licensed asbestos handlers will install a modified full containment enclosing the First Floor areas listed above. Prior to the installation of critical barriers, NYS DOL and NYC DEP licensed asbestos handlers will clean the interior surfaces of all windows in the First Floor Clean Zone Work Area by HEPA vacuuming and wet-wiping. Following cleaning, all windows, openings and building penetrations will be sealed with two layers of six-mil poly (poly, poly sheeting or plastic sheeting). In order to clean and decontaminate all building surfaces and components, floor, wall and ceiling surfaces will not be plasticized. Hardwall barriers consisting of two-by-three wooden studs spaced sixteen inches on center and half-inch width plywood panels will be constructed on the west side of the elevator lobbies on the First Floor in order to seal them off during the remediation work. Structural walls will form the remainder of the boundaries of the First Floor Clean Zone work area. The electrical closet adjacent to Stairwell C will be sealed off with a hardwall barrier. Airlocks will be installed at the entrances to all stairwells with the exception of Stairwell C which will be decontaminated in conjunction with the First Floor Clean Zone in order to provided clean access to the upper floors. Stairwells A and B will be incorporated into the modified full containment of the upper floors. The shredder zone will be established on the north side of the First Floor (Park Place). This area will be cleaned and
decontaminated at this time to allow for the installation of an industrial grade shredding machine, the area will not be included in the Clean Zone. The north side of the First Floor is open to the mezzanine tiers of the two floors above (Second & Third Floors). These openings will be sealed off prior to the commencement of remediation activities on the First Floor Clean Zone. The shredder area will be cleaned to its full height. Workers will utilize frame scaffolding to perform the remediation in this area.

Negative pressure ventilation equipment (micro traps) will be installed to establish negative pressure within the First Floor work area and the C Stairwell. Air volume shall be changed four times per hour in the First Floor Clean Zone and C Stairwell work areas. Given the large size of the containment to be installed in these areas, it will not be possible to maintain negative pressure of point zero two inch water column. The Owners Environmental Consultant will perform regular smoke testing inside the First Floor Clean Zone and C Stairwell work areas to ensure that negative pressure is maintained at all times. The calculation to determine the number of micro traps required to achieve four air changes per hour within the First Floor and C Stairwell work areas is (cubic footage x number of air changes per hour/sixty minutes/capacity of negative air ventilation unit = number of negative air ventilation units required). Additionally, one back up negative air filtration unit will be installed for each five units on a floor. The calculation for the First Floor Clean Zone and C Stairwell work areas is: 362,592 x 4 / 60 / 2,000 = 12.08. With two additional negative air units added, the minimum number of micro traps that will be installed in these areas to implement four air volume changes per hour is fifteen units.

### 6.1.1 Non-Fixed Items

All non-fixed items will be removed from the First Floor work area. All non-porous items, including furniture and construction materials will be transported to the wash room of the waste decontamination facility. Asbestos handlers will use wet washing methods to clean all non-porous, non-fixed items. Once these items have been cleaned of all residual dust and debris and visually inspected by the Owner’s Environmental Consultant, they will be transported out of the waste decontamination facility for disposal as conventional waste. Conventional waste shall refer to any non-asbestos containing construction material and/or debris. During the First Floor remediation activities, all conventional waste will be live-loaded into compactor trucks on the Greenwich Street side of the Building. Below is a list of non-fixed items that are capable of being cleaned for disposal as conventional waste:

- Metal Furniture (chairs, filing cabinets, desks)
- Unused Non-Porous Construction Materials (duct work, metal items, piping, rebar)
If attempts to clean the above listed non-fixed items are not successful or possible due to compromised condition, they will be wrapped in two layers of poly, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste.

Any non-fixed items that are porous or otherwise incapable of being cleaned will be wrapped in two layers of poly, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste. During the First Floor remediation, asbestos waste will be live-loaded into waste trucks on the Greenwich Street side of the Building. All trucks transporting asbestos waste will have valid permits to transport this material. Below is a list of non-fixed items that will be wrapped and disposed of as asbestos waste:

- Carpeting
- Chalk Board
- Unused Porous Construction Materials (Sheetrock, Floor Tile)
- Artwork
- Wooden Furniture
- Raised Flooring
- Cubicle Partitions
- Construction Equipment (Hand Tools, Power Tools)
- Radiator covers (with applied ACM mastic)

6.1.2 Exposed Building Components

Any exposed building components will be manually or mechanically dismantled and detached. Once detached, building components, with the exception of light fixtures, will be transported to the wash room of the waste decontamination facility where they will be either steam cleaned or wet washed by NYS DOL and NYC DEP licensed asbestos handlers. Below is a list of items that are capable of being cleaned:

- Duct Work
- Doors
- Radiator Covers (no ACM mastic present)

Once clean of all residual dust and debris, these components will be transported out of the waste decontamination facility and live-loaded into compactor trucks for disposal as conventional waste. If attempts to clean these building components are not successful, they will be wrapped in two layers of poly, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste. Additionally, please note that it is not possible to clean the following items:

- Radiator Coil
• Electrical Conduit
• Piping

These items will be manually or mechanically detached, wrapped in two layers of poly, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste.

Fluorescent light bulbs and ballasts are considered Universal Waste. These materials will be disposed of as such in accordance with all applicable regulations. Bulbs will be removed from fixtures and the light fixtures will be detached manually from wall and ceiling surfaces. Bulbs and ballasts will be cleaned of all surface dust via wet-wiping and HEPA vacuuming, and then containerized in drums for proper disposal as Universal Waste. Full drums will be sealed and processed through the waste decontamination facility. Once they have been decontaminated drums will be removed from the Building to the existing exterior waste storage area that was established during the SEO. When a full truckload of Universal Waste has accumulated the drums of bulbs and ballasts will be live loaded onto trucks for disposal. All vehicles transporting Universal Waste will have valid permits to transport these items.

All exposed building components in the First Floor Clean Zone work area will be removed in accordance with this procedure leaving interior walls and ceiling systems remaining in place.

6.1.3 Interior Walls and Ceiling Systems

Cardboard Gaylord boxes will be brought to the First Floor Work Area. The boxes will range from a half cubic yard to one and a half cubic yards in size. All Gaylord boxes will be encapsulated prior to being delivered to the Site. The purpose of encapsulating boxes is to render their exterior surfaces cleanable so that they may be decontaminated upon removal from remediation work areas. Prior to use, each Gaylord box will be made leak tight by lining the interior with either fitted plastic inserts or two layers of poly. The interior walls throughout the Building are composed of sheetrock that has painted finished surfaces. The ceiling systems are consist of tiles, made from non-asbestos composite materials, suspended from metal grid systems that are attached to the decking. The sheetrock and ceiling tiles are porous materials. The surface of interior walls and ceilings will be HEPA vacuumed and wet wiped to remove all residual dust and debris. The painted sheetrock walls and ceiling tiles throughout the Building are not asbestos containing. Please note that it is not possible to fully saturate painted sheetrock, ceiling systems or other materials that do not absorb water. These items will not be fully saturated with water during removal. Water will be used to as a means of dust control at all times during the removal of interior sheetrock walls, ceiling systems or
other materials do not absorb water. Sheetrock walls will be demolished and ceiling system components will be disassembled using a combination of manual and mechanical means. Sheetrock and ceiling tile debris will be loaded into plasticized Gaylord boxes. Full boxes will be properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste. Metal studs and ceiling grid will be separated from the sheetrock and ceiling tile debris. Studs will be stacked and wrapped in two layers of poly. Wrapped studs will be properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste. Ceiling grid will be transported to the waste decontamination facility wash room where it will be cleaned by wet washing. Once clean of all residual dust and debris and inspected by the Owner’s Environmental Consultant, ceiling grid will be transported out of the waste decontamination facility and loaded into compactor trucks for disposal as conventional waste. If attempts to clean ceiling grid are not successful, it will be wrapped in two layers of poly, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste. Any building components existing behind interior walls or within ceiling systems, such as duct work or sprinkler pipes, will be manually or mechanically dismantled and detached. Detached components and their corresponding supports will be transported to the waste decontamination facility wash room where they will be cleaned of residual dust and debris by wet washing. Once cleaned these remaining components will be transported out of the decontamination facility and loaded into compactor trucks for disposal as conventional waste. Below is a list of building components that are capable of being cleaned and disposed of as conventional waste:

- Duct Work
- Ceiling Grid
- Doors

Please note that if attempts to clean any items or components are not successful, the items will be wrapped in two layers of poly, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste at a minimum. This applies to all materials listed above. Additionally, please note that it is not possible to clean the following items:

- Radiator Coil
- Electrical Conduit
- Piping

These items will be manually or mechanically detached, wrapped in two layers of poly, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste.
6.1.4 Asbestos Containing Materials

There is asbestos containing floor tile present throughout the First Floor and minor quantities of asbestos containing pipe insulation in various locations around this level. Additionally, there is a thin coating of non-friable asbestos containing mastic applied to the surface of block kneewall around the interior perimeter of the First Floor. Once all non-fixed items, interior walls, ceiling systems and building components have been removed, abatement activities will take place. All critical and hardwall barriers previously installed will remain in place. The First Floor work area will be pre-cleaned by HEPA vacuuming and wet wiping to remove any residual dust and debris that may be present.

Licensed asbestos handlers will thoroughly wet down the tile and pipe insulation at each location on the First Floor where it exists with amended water using airless sprayers. Removal of the asbestos tile will be performed by manual methods utilizing hand held scraping tools. Removed tiles will be placed into plasticized Gaylord boxes upon detachment from the floor surface. Removal of asbestos pipe insulation will be performed by manual methods utilizing hand held cutting tools. Removed pipe insulation will be placed into plasticized Gaylord boxes directly upon detachment from the substrate. Asbestos mastic on block kneewall will be thoroughly wet down at each location where it exists. Handlers will use a combination of mechanical and manual means to scrape the mastic from the surface of the block kneewall. Detached mastic and any asbestos contaminated block debris resulting from removal procedures will be placed into plasticized Gaylord boxes upon detachment from the kneewall surface.

Once full, each box will be sealed by placing a fitted lid onto it and securing the lid with duct tape. Sealed boxes will be properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste.

6.1.5 Lead-Painted Item

In the existing loading dock there is one lead painted bumper pole present. This lead abatement will be performed in immediately following the completion of asbestos abatement activities in the First Floor Clean Zone. NYS DOL and NYC DEP licensed asbestos handlers who also hold valid US EPA Lead Certification will remove the paint from the pole utilizing chemical means. Workers will utilize proper PPE for the duration of lead paint abatement activities. Peel-Away chemical will be applied to the painted surface. Adequate time will be allowed for the chemical application to loosen the painted surface. Once prepared, the loosened lead paint will be scraped from the surface of the pole. Removed paint chips
will be containerized in a five gallon drum designed to transport lead waste. The drum will be properly labeled, processed through the waste decontamination facility and moved to the existing exterior waste storage that will be established during SEO. Lead waste will be transported by a properly licensed hauler and disposed of at a properly licensed disposal facility.

6.1.6 Cleaning and Clearance of the First Floor Clean Zone

All surfaces of the First Floor work area, including hardwall barriers, will be subject to HEPA vacuuming and wet wiping upon completion of asbestos abatement. All critical and containment barriers will be encapsulated. One twelve hour settling period will then be observed in order to allow all surfaces to dry. At the end of this settling period, the Owner’s Environmental Consultant and PAL superintendent will perform a visual inspection of the First Floor Clean Zone work area. After the area has passed visual inspection aggressive clearance air sampling will be performed by the Owner’s Environmental Consultant. Once successful clearance is achieved the modified full containment on the First Floor will be broken down leaving in place the barrier walls isolating the Clean Zone from the Elevator Banks. At this time the Shredder Zone will be sealed off from the rest of the First Floor with hardwall barriers and airlocks as it will be incorporated into the containment of the upper floors.

6.1.7 Cleaning and Clearance of Stairwell C

Simultaneous with the cleaning and clearance of the First Floor Clean Zone, PAL will commence the cleaning and clearance of Stairwell C. All openings and penetrations into Stairwell C will be sealed with two layers of poly. Negative pressure will be established within the stairwell. All interior surfaces of the stairwell will be HEPA vacuumed and wet wiped to remove any residual dust and debris. All used cleaning materials generated during the remediation in the C Stairwell will be double bagged, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste. Please note that there are no asbestos containing materials present within Stairwell C. Wall, ceiling and floor surfaces will remain in place within the C Stairwell once remediation activities have been completed. After cleaning activities are completed one twelve hour settling/drying period will then be observed in order to allow all surfaces to dry. At the end of this settling period, the Owner’s Environmental Consultant and PAL superintendent will perform a visual inspection of the C Stairwell work area. After the area has passed visual inspection aggressive clearance air sampling will be performed by the Owner’s Environmental Consultant. Once successful clearance is achieved the modified full containment in the C Stairwell will be broken down. Once Stairwell C has been decontaminated it will be sealed off from the
upper floors from the inside so that there is no access into it from contaminated areas. When decontaminated floors have been cleared the entrances into Stairwell C will be unsealed to provide clean access to clean areas.

6.1.8 First Floor Clean Zone and C Stairwell Clearance Criteria

The clearance criteria to be applied to all Remediation Phase work areas will consist of both visual inspection by the Owner’s Environmental Consultant in accordance with Section 5.4 of this work plan and aggressive air sampling for asbestos and metals as follows:

Upon notification by the Contractor that a Remediation Phase work area is clean and ready for visual inspection, the Owner’s Environmental Consultant will conduct a thorough visual inspection of all surfaces and areas of the subject work area. If the visual inspection reveals that dust and debris remain, these specific areas will be identified by marking and logged for future reference. The Contractor will be required to re-clean the identified areas. When work area conditions are acceptable to the Owner’s Environmental Consultant, aggressive air sampling will be conducted.

The work areas will be considered cleared and can be removed from containment when area air measurements, performed using aggressive air sampling procedures which re-suspend residual settled dusts, are at or below each of the following airborne concentrations in every sample, respectively, for the metals noted below and for asbestos. Air testing for asbestos shall be in accordance with applicable regulations and applicable permits and variances for this project. If any one sample is above any of these limits, then the Remediation Phase will be considered incomplete, and the affected areas shall be re-cleaned and re-tested until the airborne concentrations are at or below the levels noted for asbestos and metals.

Clearance testing for asbestos will be conducted by floor, and will be acceptable when all samples for a given floor area meet the seventy structures per square millimeter TEM standard. Clearance testing for metals will be acceptable when all samples meet the following criteria:

- Antimony: 250 ug/m3
- Barium: 250 ug/m3
- Beryllium: 1.0 ug/m3
- Cadmium: 5.0 ug/m3
- Chromium (III): 250 ug/m3
- Copper: 500 ug/m3
- Lead: 25 ug/m3
- Manganese: 100 ug/m3
- Mercury: 12.5 ug/m3
Nickel  50 ug/m3
Zinc   1,000 ug/m3

Clearance sampling will be conducted in blocks of a maximum of three floors as follows:

Asbestos: Five inside work area (IWA) asbestos samples will be collected from each floor (fifteen total for a block of three floors). Five outside work area (OWA) asbestos samples will be collected for each block of three floors from areas outside the block of floors (roof, scaffold, negative air exhaust, previously cleared areas, etc.).

Metals: Five inside work area (IWA) samples will be collected from each floor (fifteen total for a block of three floors).

All samples will be collected using aggressive sampling techniques in compliance with applicable clearance sampling criteria. All clearance samples for each block of floors will be run on all floors simultaneously. Details on sampling methodologies are included in the ECAMP document (Regulatory Submittal Part II).

With clearance achieved in the Clean Zone it will not be necessary to utilize a decontamination facility or PPE to access this area. After the remediation and abatement work on the First Floor and C Stairwell is completed, the decontamination facility at the northwest corner of the First Floor and the waste decontamination facility at the existing loading dock will be dismantled. The hardwall barriers sealing off the elevator lobbies and the electrical closet will remain in place. The elevator barriers will function as containment barriers for the interior remediation on Floors Two through Fifteen as outlined in Section 6.5.

Once cleaned, the northeast corner (Park Place and West Broadway) of the First Floor will be used as the Project Command Center. All documents, permitting and project records will be stored in this area. Administrative and communications equipment will be located in the Command Center. This area will serve as a security checkpoint. All personnel entering the Building must first check in at the Command Center and present valid identification and licensing (if necessary) before being granted access. A Waste Storage Area will be established on the west side of the First Floor Clean Zone, north of the Secondary Loading Dock. The Waste Storage Area will be enclosed in hardwall barriers and will be equipped with lockable doors. The Waste Storage Area will be segmented into chambers with hardwall barriers in order to store different classifications of waste individually prior to removal from the Building. Different classification of waste will not be stored together in the same chamber. Prior to loading any waste into the Waste Storage Area, the wall and floor surfaces of all chambers will be plasticized and made water tight with two layers of poly. All waste moved to the Waste Storage Facility will first be fully decontaminated. The southeast corner
(West Broadway and Barclay Street) will serve as a staging area. The north side of the First Floor will become the Shredder Zone.

6.2 Upper Level Access

In order to maintain access to the upper floors via the elevators, the East Side Lobby and Elevator Banks A, B and C will not be decontaminated as part of the establishment of the First Floor Clean Zone. This area will be separated from the Clean Zone by structural walls and the hardwall barriers installed to establish the modified full containment of the Clean Zone work area. All openings between the Clean Zone work area and the East Side Lobby/Elevator Banks will be sealed air tight. A personal decontamination facility will be constructed under the overhang at the south entrance to the East Side Lobby on West Broadway. A waste decontamination facility will be constructed at the northern entrance to the East Side Lobby. The upper level access area will be established simultaneously with the commencement of remediation operations on the First Floor Clean Zone. Please note that there is an existing elevator shaft adjacent to the high rise cars. This shaft runs from the Second Floor to the Fifteenth Floor. An elevator has not been installed in this shaft. PAL will install a construction hoist in this shaft in order to provide an additional means to move materials, equipment and waste from the upper levels to the Second Floor. The hoist will be properly equipped to securely stop at every level between the Second and Fifteenth Floors. Throughout this Work Plan this hoist will be referred to as the construction hoist.

6.3 Shredder Installation

In order to facilitate the remediation operation, a one hundred horse power, thirty-five thousand pound, electrically powered, industrial grade shredder manufactured by Protoworks Inc. will be installed on the north side of the Building after final clearance of the First Floor Clean Zone has been achieved. To support the weight of the shredder it will first be necessary to shore the floor underneath the First Floor Shredder Zone. Lolly columns and steel beams will be installed on the Basement Level to shore the floor. Shoring plans will be signed off by an engineer prior to the shredder installation. Once the floor is shored, a sixteen foot wide by twelve foot high segment of the north side curtain wall will be removed. Window stops will be disconnected from the framing. Window panes will be manually detached using suction methods. Removed panes will be sealed in cardboard and disposed of as conventional waste. The exposed framing will be dismantled by mechanical means and the disposed of as conventional waste. The shredder will be moved into position inside the Building directly adjacent to the Second Floor Mezzanine tier by a heavy duty forklift. Once in place the shredder will be extended to its maximum height of twelve feet, six inches. PAL will install a hardwall barrier over the opening made in the curtain wall and sealed airtight with an expanding foam material. The inside of this barrier will be plasticized to its full height with two layers of poly during the installation of the interior containment in the Shredder Zone. After the modified containment is established
on all floors, shreddable materials will be loaded into the top of the shredder hopper from the Second Floor level. At this point, the hardwall barrier sealing off the First Floor Shredder Zone from the Second Floor mezzanine tier will remain in place. The shredder will be equipped with a water misting system to control dust while materials are processed through the hopper. Shredded materials will be loaded into Gaylord boxes. Boxes will be encapsulated, labeled, decontaminated and moved to an asbestos waste container that will be parked in the existing loading dock. Further details regarding the shredding procedure are included below in Section 6.7.1.

Materials that will be shredded during the remediation are as follows:

- Sheetrock
- Duct Work
- Ceiling Tile
- Wood
- Metal Studs
- Black Iron
- Porcelain
- Ceiling Grid

The above list of items will be referred to collectively as shreddable material in this Work Plan. Once the shredder is in place the area will be designated as the First Floor Shredder Zone. It will be sealed off from the First Floor Clean Zone and incorporated into the containment of the upper floors. The shredder will remain under negative pressure for the duration of its usage in the remediation operations. Only NYS DOL and NYC DEP asbestos handlers will have access to the shredder zone. The area from which items will be loaded into the shredder shall be equipped with a guard rail system. Individuals operating the shredder will be properly trained in its usage. OSHA air sampling will be performed as required.

Please note that neither asbestos containing materials, lead-painted items, Universal Waste, nor any regulated waste will be shredded at any time during the remediation operations. Only non-ACM, non-regulated materials will be placed into the shredder. Even though all items within the Building are assumed to be asbestos-contaminated due to the infiltration of WTC dust, they are not considered ACM as defined by law and may be processed through the shredder. Manufactured items with asbestos content of one percent or greater may not be subject to shredding. All waste generated by shredding operations will be disposed of as asbestos at a minimum.

### 6.4 Establishment of Secondary Loading Dock

In order to implement the most efficient waste removal procedure it is necessary to establish a secondary loading dock. The secondary loading dock will be created
in the existing lounge area immediately north of the existing loading dock on the Greenwich Street side of the Building. Once the Clean Zone is established, PAL will remove part of the curtain wall to open the lounge area to the street. The lounge area was formerly a loading dock and will require only the removal of the curtain wall to convert it back. Both the existing loading dock and the secondary loading dock will be located inside the Clean Zone. The existing loading dock will be used as the location for one hundred yard asbestos waste trailers that will be parked on Site for the disposal of waste as asbestos during the remediation and abatement of the upper floors (Two through Fifteen). The secondary loading dock will be used as a docking bay for compactor trucks that will be live-loaded with conventional waste during the remediation of the upper floors (Two through Fifteen). Please note that access to the loading docks from outside will only be allowed once the First Floor Clean Zone has been cleared. All vehicles entering the loading docks will be entering clean areas that will be free of all environmental contaminants and documented in clearance testing results performed by the Owner’s Environmental Consultant. Loading docks will be equipped with lockable wooden gates or chain link fence gates at the perimeter of the high bridge sidewalk shed on the Greenwich Street side of the Building.

6.5 Establishment of Interior Containment (Second Floor through Fifteenth Floor)

The containment of the upper floors will take place simultaneously with the establishment of the Clean Zone. All interior areas on the upper floors will be incorporated into one modified full containment. Modified full containment refers to a containment consisting of negative pressure ventilation equipment and critical barriers installed on windows and openings or penetrations leading to the outdoor environment. Plastic will not be installed on interior surfaces and other building components which have been deemed contaminated and will either be decontaminated or disposed of as asbestos containing material at a minimum.

The barrier walls erected on the west side of the elevator lobbies during the establishment of the First Floor Clean Zone containment will remain in place and function to isolate the East Side Lobby, which shall serve as the means of access to the upper floors. The personal decontamination facility installed at the south entrance to the East Side lobby will be used during the upper floors containment installation until the First Floor Clean Zone and Shredder Zone have been established. The waste decontamination facility installed at the north entrance to the East Side lobby will be utilized during the upper floors containment installation until the First Floor Clean Zone and Shredder Zone have been established. These decontamination facilities will remain in place until the Clean Zone is established, at which time decontamination facilities for upper level access will be established within the Building. Please refer to Attachment V to view the Remediation Operations Logistics Plans which include the decontamination facilities and barrier location layout as well as the boundaries of the Clean Zone.
In the Elevator Machine Rooms throughout the Building there are vents that handle air pushed up shafts during car operation. These vents cannot be sealed since the usage of the elevators is required to perform the remediation operations. Negative air filtration units are currently operating in these Elevator Machine Rooms maintaining negative pressure in order to prevent contaminated air from migrating out of the elevator shafts. Negative pressure will be maintained in the Elevator Machine Rooms during remediation operations.

Negative air filtration units will be installed on each floor of the Building in order to establish negative pressure throughout the containment. Air volume shall be changed four times per hour throughout the entire Building. Given the large size of the containment to be installed within the Building, it will not be possible to maintain negative pressure of point zero two inch water column. The Owner’s Environmental Consultant will perform regular smoke testing inside the containment to ensure that negative pressure is maintained at all times. The calculation to determine the number of micro traps required to achieve four air changes per hour on each floor is (cubic footage x number of air changes per hour/sixty minutes/capacity of negative air ventilation unit = number of negative air ventilation units required). Please note that all calculations will be rounded up. Additionally, one back up negative air filtration unit will be installed for every five units required on a floor. Below is a list of the calculations for each floor as determined by size and the minimum number of negative air units to be installed on each floor:

Basement: 317,904 x 4 / 60 / 2,000 = 10.59 + 2 back up units = 13 units
Second Floor through Fifth Floor: 317,904 x 4 / 60 / 2,000 = 10.59 + 2 back up units = 13 units per floor
Sixth Floor through Fourteenth Floor: 252,732 x 4 / 60 / 2,000 = 8.42 + 1 back up unit = 9 units per floor
Fifteenth Floor: 210,216 x 4 / 60 / 2,000 = 7.01 + 1 back up unit = 9 units
Elevator Machine Room: 18,144 x 4 / 60 / 2,000 = .60 = 1 unit

Negative air ventilation units will be installed at the perimeter of the Building on the north and south side of each floor. The units will be vented at the north and south sides of each floor. Manifolds will be installed over two windows on each side (north and south) of a floor. The windows will be directly adjacent to the north and south stair towers on the exterior scaffolding system in order to provide access to the vent locations for air monitoring to be performed by the Owner’s Environmental Consultant. The Owner’s Environmental Consultant will run one air sample at each manifold exhaust location. Once units are in place on a floor they will be activated. When all units on a floor are operational, air intake bays will be installed to provide adequate make up air.

A total of eight intake bays will be installed on the east and west sides of each floor (four bays per side). At each bay location, intake dampers will be
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constructed of a piece of plywood with an eight inch diameter air hole cut into the center. The plywood damper assembly will be equipped with a flap mechanism that will provide cover to the air hole. The flap will consist of a weighted piece of rubber membrane. The flap mechanism will be attached to the damper assembly with hinges to allow the flap to move in a vertical manner to the interior of the Building. Under negative pressure the flap mechanism will be pulled inward allowing make up air flow to pass through the HEPA equipped damper providing adequate make up air to each floor.

The modified containment of the upper floors shall be established as follows:

- All elevator shafts will be inside of the containment.
- Prior to the installation of critical barriers, NYS DOL and NYC DEP licensed asbestos handlers will clean the interior surfaces of all windows on each floor by HEPA vacuuming and wet-wiping.
- Windows, openings, vents and penetrations will plasticized with two layers of six-mil poly and made air tight.
- Wall, ceiling and floor surfaces will not be plasticized because these surfaces must be cleaned, decontaminated and removed.
- Negative pressure will be established. The Owner’s Environmental Consultant will perform regular smoke tests within the containment to ensure negative pressure is maintained at all times.
- Elevator enclosure sheds will be installed and placed under negative pressure.

6.6 Simultaneous Work Procedures

In order to implement the most efficient work procedures, it will be necessary to perform work on several floors within the Building simultaneously. While work continues on the establishment of the Clean Zone, PAL will proceed with the removal of non-fixed items utilizing the East Side lobby decontamination facilities once the containment of all upper floors has been completed. Remediation operations on the upper floors will be performed simultaneously with the establishment of the Clean Zone work area.

Once the Clean Zone has been cleared and the Shredder Zone and Secondary Loading Dock have been established, the personal decontamination facility at the northwest entrance and the waste decontamination facility at the existing loading dock on Greenwich Street, which was utilized for the remediation of the Clean Zone, will be broken down. Additionally, the personal and waste decontamination facilities on the East Side of the Building for upper floor access will be broken down. With the clearance achieved in the Clean Zone it will not be necessary to utilize a decontamination facility to access this area. A new personal decontamination facility will be constructed inside the Clean Zone in the Southeast corner of the First Floor to be used to access the upper floors for the remainder of the remediation operation. This personal decontamination facility
will be attached directly to the East Side lobby via an existing doorway and will be known as the Primary Personal Decontamination Facility. A waste decontamination facility will be constructed west of Elevator Bank A. The waste decontamination facility will have three entrances. One entrance will be through the existing doorway leading to the Shredder Zone. The second entrance will be established at the western barrier isolating Elevator Bank A from the Clean Zone. The third entrance will be from the existing doorway to the B Stairwell. The waste decontamination facility will be constructed with a large wash room in order to accommodate the large quantity and size of materials to be decontaminated. The dimensions of the waste decontamination facility wash room will be approximately forty feet wide by fifteen feet long. This waste decontamination facility will be known as the Primary Waste Decontamination Facility. Once all openings and penetrations are sealed and both the Primary Personal Decontamination Facility and the Primary Waste Decontamination Facility are operational, the hardwall barrier isolating the Second Floor mezzanine tier will be removed to open it to the First Floor Shredder Zone below. At this time, the First Floor Shredder Zone will become part of the modified containment of the upper floors. The First Shredder Zone will no longer be considered a clean area and will remain separated from the First Floor Clean Zone by barrier walls and airlocks. All access to the Shredder Zone will be from inside of the containment. The Second Floor mezzanine tier loading area will be designated as the Shredder Processing Zone.

Work procedures for the remediation operations on the upper floors are separate operations and are designated as follows:

- First procedure will be the removal of non-fixed items
- Second procedure will be the removal of exposed building components
- Third procedure will be the removal of interior walls and ceiling systems (including the removal of the building components existing within such systems and the opening of ventilation shafts for cleaning and component removal)
- Fourth procedure will be the abatement of asbestos containing materials

Interior work procedures will be performed from the uppermost floor downwards. Remediation operations on the upper floors will be performed in three floor blocks. The above sequence of work procedures will not occur simultaneously on any individual floor. However, the sequence may overlap in different blocks within the containment. For instance, after all non-fixed items have been removed from floors Fifteen, Fourteen and Thirteen, the removal of exposed building components will begin on those floors while the removal of non-fixed items will begin on the next three floor work block (which in this example would be Twelve, Eleven and Ten). These two different procedures will occur simultaneously in different three floor blocks, but not within the same three floor work zone block. More detail on the procedures for the decontamination and abatement of the upper floors is outlined below.
6.7 Removal of Non-Fixed Items

Non-fixed item removal operations will begin on the Fifteenth Floor and proceed downward block by block. On each floor the first procedure to take place will be the removal of all non-fixed items including furniture and construction materials. All personnel performing the cleaning and removal of non-fixed items and building components will have valid NYS DOL asbestos handling licenses and NYC DEP asbestos handling licenses. All personnel will be required to present their license prior to being granted access to the work area.

6.7.1 Shreddable Material

Any non-fixed shreddable materials present on Floors Two through Fifteen will be manually loaded into wheeled carts. The carts will be constructed of a cleanable material such as heavy duty plastic or metal. Full carts will be transported to the Second Floor level via the elevator cars and construction hoist. Once on the Second Floor, carts will be brought to the Shredder Processing Area on the north side of the floor and queued for shredding. Shreddable materials will be wet down with amended water and loaded into the hopper of the shredder. All loading of materials into the shredder will be performed by NYS DOL and NYC DEP licensed asbestos handlers. Once the materials have been fully shredded, these materials will be released from the shredder hopper directly into plasticized Gaylord Boxes. The Gaylord Boxes will be capable of holding a half cubic yard to one and a half cubic yards of shredded waste. The boxes are made of cardboard, encapsulated prior to being brought on Site and made water tight via the insertion of poly liners or two layers of poly. Boxes have fitted tops that will be sealed prior to their decontamination. Decontamination of full boxes will occur immediately after the boxes have been sealed. Full, sealed boxes will be processed through the Primary Waste Decontamination Facility and properly labeled. Once decontaminated, full boxes of shredded waste will be loaded into the asbestos waste trailer parked in the existing loading dock.

6.7.2 Non-Shreddable Material

All non-fixed items on Floors Two through Fifteen that are not shreddable but capable of being cleaned will be transported to the wash room of the waste decontamination facility. These items will be cleaned and decontaminated by either steam cleaning or wet washing. Any items with interior cavities, such as duct work, will be cut open by mechanical means and subject to both interior and exterior decontamination. Once cleaned these items will be moved out of the waste decontamination facility and live-loaded into compactor trucks that will dock in the Secondary Loading Dock for disposal of as conventional waste. If attempts to clean any items
are not successful, they will be wrapped in two layers of poly, properly labeled, processed through the Primary Waste Decontamination Facility and disposed of as asbestos waste.

All porous items that are not shreddable and incapable of being cleaned will be wrapped in two layers of six-mil poly, properly labeled, processed through the waste decontamination facility and loaded into the asbestos waste trailer parked in the existing loading dock for disposal of as asbestos waste. The wrapping of these items will take place on the floor on which they are found. They will be wrapped prior to transportation to the Primary Waste Decontamination Facility via the elevators and/or construction hoist.

6.8 Exposed Building Components (Floors Two through Fifteen)

After all non-fixed items within a three floor block have been removed, any exposed building components (duct work, electrical conduit, doors, light fixtures) will be manually or mechanically dismantled and detached. Once detached, shreddable building components will be transported to the Shredder Processing Area for shredding, boxing, decontamination and disposal as asbestos containing waste.

Please note that fluorescent light bulbs and light ballasts will not be subject to shredding. Bulbs will be removed from fixtures and the light fixtures will be manually detached. Bulbs and ballasts will be containerized in drums for proper disposal as Universal Waste. Full drums will be processed through the Primary Waste Decontamination Facility and moved to the waste storage area on the west side of the First Floor Clean Zone. Drums of Universal Waste will be live loaded onto trucks once they have been decontaminated and a full truckload has been compiled in the waste storage area. Any trucks removing Universal Waste will have the valid permits to transport such materials. Trucks transporting Universal Waste will dock in the Secondary Loading Dock for loading.

Non-shreddable building components that are capable of being cleaned will be manually or mechanically detached and transported to the wash room of the waste decontamination facility where they will be cleaned and decontaminated by steam cleaning or wet washing. Once clean of all residual dust and debris and inspected by the Owner’s Environmental Consultant, these components will be transported out of the waste decontamination facility and live-loaded into compactor trucks docked at the Secondary Loading Dock for disposal as conventional waste. If attempts to clean building components are not successful, they will be wrapped in two layers of poly, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste.
All exposed building components will be removed in accordance with this procedure leaving interior walls and ceiling systems remaining on the upper floors.

6.9 Interior Walls and Ceiling Systems (Floors Two through Fifteen)

Gaylord boxes will be brought to the Upper Floor work areas. The interior walls on the upper floors are composed of painted sheetrock. The ceiling systems are composed of tiles, made from composite material, suspended from metal grid systems that are attached to the structural decking. The sheetrock and ceiling tiles are considered porous materials. The surface of interior walls and ceilings will be HEPA vacuumed and wet wiped to remove all residual dust and debris. Please note that it is not possible to fully saturate painted sheetrock, ceiling systems and other materials that do not absorb water. These items will not be fully saturated with water during removal. Water will be used to as a means of dust control at all times during the removal of interior sheetrock walls and ceiling systems. Sheetrock walls will be demolished and ceiling system components will be disassembled using a combination of manual and mechanical means.

Two methods will be employed during the removal of interior walls and ceiling systems on the upper floors. In the first method, sheetrock and ceiling tile debris will be loaded into plasticized Gaylord boxes. Full boxes will be properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste. In the second method, sheetrock and ceiling tile debris will be loaded into carts and transported to the Shredder Processing Area. The debris will be shredded and loaded into plasticized Gaylord boxes. Full boxes will be properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste. In both of the methods for disposal of sheetrock and ceiling tile debris, metal materials will be removed in the same manner. Metal studs and ceiling grid will be separated from the sheetrock and ceiling tile debris. Studs will be stacked and wrapped in two layers of poly. Wrapped studs will be properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste. Ceiling grid will be transported to the waste decontamination facility wash room where it will be cleaned by wet washing. Once clean of all residual dust and debris, ceiling grid will be transported out of the waste decontamination facility and loaded into compactor trucks for disposal as conventional waste. If attempts to clean ceiling grid are not successful, it will be wrapped in two layers of poly, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste.

Any Building components existing behind interior walls or within ceiling systems, such as duct work, radiator covers and piping will be dismantled and detached. Detached components will be transported to the waste decontamination facility wash room where they will be cleaned of residual dust and debris by a combination of steam cleaning and wet washing. Once cleaned these remaining components will be visually inspected by the Owner’s Environmental Consultant.
and then transported out of the decontamination facility and loaded into compactor trucks for disposal as conventional waste. If attempts to clean any components are not successful, they will be wrapped in two layers of poly, properly labeled, processed through the Primary Waste Decontamination Facility and disposed of as asbestos waste. Additionally, please note that it is not possible to clean the following items:

- Radiator Coil
- Electrical Conduit
- Piping

These items will be manually or mechanically detached, wrapped in two layers of poly, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste.

### 6.10 Ventilation Shafts

There are several ventilation shafts present within the Building. Concurrent with the removal of interior walls and ceiling systems, licensed asbestos handlers will also demolish openings into the ventilation shafts on each floor. Debris from the demo of openings will be processed through the shredder and disposed of as asbestos waste. Any Building components existing within ventilation shafts, such as duct work, piping and electrical conduit will be dismantled and detached. Detached duct work components will be transported to the waste decontamination facility wash room where they will be cleaned of residual dust and debris by a combination of steam cleaning and wet washing. Once cleaned duct work will be visually inspected by the Owner’s Environmental Consultant and then transported out of the decontamination facility and loaded into compactor trucks for disposal as conventional waste. If attempts to clean duct work are not successful, they will be wrapped in two layers of poly, properly labeled, processed through the Primary Waste Decontamination Facility and disposed of as asbestos waste. Additionally, please note that it is not possible to clean the following components that may be present in ventilation shafts:

- Electrical Conduit
- Piping

These items will be manually or mechanically detached, wrapped in two layers of poly, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste.

Ventilation shafts will be cleaned and decontaminated from the top down on each block of floors. Hardwood barriers will be installed in each vent shaft at three floor intervals (top of third floor in a block and bottom first floor in a block) in order to segment the vent shafts. Workers performing the decontamination of interior shaft surfaces will utilize proper fall protection as defined in Part III(R).
Remediation Operations HASP. All interior shaft surfaces will be subject to wet cleaning methods in order to remove all residual debris. Run off water will be collected in basins at the bottom level of each shaft work area. Collected water will be absorbed utilizing mops and rags. All used water collection materials will be loaded into plasticized Gaylord boxes, properly labeled, processed through waste decontamination facility and disposed of as asbestos containing waste. Barriers will remain in place until the remediation activities inside the entire span of all vent shafts have been completed.

Please note that at no time and under no circumstances will any material, equipment, debris or items be dropped down or allowed to fall down any ventilation shaft for any distance.

6.11 Asbestos Abatement

There is asbestos containing floor tile present throughout the upper levels of the Building. Additionally, there is a thin coating of non-friable asbestos containing mastic applied to the surface of block kneewall around the interior perimeter of the all floors. Once all non-fixed items and building components have been removed, abatement of the asbestos containing materials will take place. The upper floor work areas will be pre-cleaned by HEPA vacuuming and wet wiping to remove any residual dust and debris that may be present.

Licensed asbestos handlers will thoroughly wet down ACM at each location where it exists with amended water using airless sprayers. Removal of the asbestos tile, ACM pipe insulation and caulking will be performed by manual methods utilizing hand held scraping tools. Removed ACM will be placed into plasticized Gaylord boxes upon detachment from the substrate. Asbestos mastic on block kneewall will be thoroughly wet down with amended water at each location where it exists. Handlers will use a combination of mechanical and manual means to scrape the mastic from the surface of the block kneewall. Detached mastic and any asbestos contaminated block debris resulting from removal procedures will be placed into plasticized Gaylord boxes upon detachment from the kneewall surface.

Once full, each box will be sealed by placing a fitted lid onto it and securing the lid with duct tape. Sealed boxes will be clearly labeled, processed through the waste decontamination facility and disposed of as asbestos waste in a one hundred yard asbestos trailer docked in the existing loading dock.

Clearance testing on the upper floors will not be performed at this time. It will first be necessary to decontaminate the elevator shafts and A & B Stairwells before any clearance sampling can be run.
6.12 Gash Area Abatement Procedures

Please note that all surfaces within the Gash Area will be cleaned during the SEO by the procedure detailed in Regulatory Submittal Part I(S) – Scaffold Erection Operation Work Plan. Abatement work in the Gash Area will be performed during the Remediation Operation. The survey conducted by the Owner’s Environmental Consultant has indicated that there is asbestos containing floor tile present in the south side Gash Area outside of the existing hardwall containment barriers on Floors: Eleven, Twelve and Fourteen. During the installation of the modified full containment on these floors, licensed asbestos handlers will install additional hardwall containment barriers on the Gash Area façade in order to enclose this VAT within the interior of the Building. These additional hardwall barriers will be installed from the exterior scaffolding platforms on the affected floors. The barriers will be sealed air tight with expanding foam so that there is no air transfer between the interior of the Building and the outside environment. Once the additional barriers on Floors Eleven, Twelve and Fourteen are in place, licensed asbestos handlers working on the installation of the modified containment inside the Building will remove the existing hardwall containment barriers (which at this point will be interior to the Building) on these floors. Once the existing barriers are down, the Gash Area on Eleven, Twelve and Fourteen will be placed under modified full containment by the same procedures as outlined in Section 6.5. The abatement of VAT in the Gash Area on Floors Eleven, Twelve, and Fourteen will be performed by the same procedure as the rest of the ACM tile within the Building. This abatement procedure is outlined above in Section 6.9.

6.13 Remediation of Roof Levels

The Building Roof Levels consist of the following:

- Cooling Tower Roof
- Main Roof
- Fourteenth Floor Set Back
- Sixth Floor Set Back

Access to all roof levels will be provided to the Office of the City Medical Examiner (OCME) prior to the commencement of remediation activities on these areas. Remediation on the Roof Levels will be performed after the interior remediation and abatement is complete allowing for a five month period for the OCME to perform inspections at the Site. PAL will maintain open communication with the OCME so that any necessary roof level inspections can be performed within the five month interior remediation procedure.

Remediation operations on the Roof levels shall be performed from the uppermost roof down to the lowest level roof. Workers will access the Cooling Tower Roof, Main Roof and Fourteenth Floor Set Back Roof levels through the C Stairwell. A
personal decontamination facility will be installed on the Main Roof at the entrance into the C Stairwell. Once on the Main Roof, workers will access the upper Cooling Tower roof via the mechanical room stairway located west of the C Stairwell. Workers will access the Fourteenth Floor Set Back Roof via an extension ladder from the north side of the Main Roof. Access to the Sixth Floor Set Back Roof will be gained from a doorway on the west side of the Seventh Floor. Workers will take the elevator cars up to the Seventh Floor. Critical barriers will be installed over all roof drains on each roof level prior to the commencement of decontamination activities on that level.

6.13.1 Loose Stone (Ballast) Removal

There is a layer of quarry stone ballast on the surface of all roof levels. The cleaning of this stone will be the first procedure performed on any roof level. This material will be cleaned and left for disposal as conventional waste during deconstruction. Access to the roof levels will be obtained by utilizing the exterior scaffold system and the interior clean C Stairwell. Personal decontamination facilities will be constructed on each Roof Level at the entrances to the C Stairwell and scaffolding platforms. The remediation of the stone will be performed by NYS DOL and NYC DEP licensed asbestos handlers. Stone from a section on a roof level will first be wet down with water then moved onto another section of that roof level (onto the existing stone of the roof), thereby exposing the underlying rubber roof membrane. Once the stone on a roof level has been moved from that section, licensed asbestos handlers will clean the surface of the membrane of all residual dust and debris by HEPA vacuuming and wet wiping. A wooden retaining barrier, two feet in height, will be installed to separate the cleaned section of roof from the section containing the remaining loose stone. This barrier will be plasticized with two layers of poly.

The cleaned section of roof adjacent to the barrier will become the stone ballast cleaning area. The dimensions of the cleaning area will be at a minimum eight foot by eight foot. The surface of the roof in the cleaning area will be plasticized with two layers of poly. A screen filtration system consisting of a heavy duty rectangular screen laid flat over four cinder blocks leaving space of one foot to the surface of the roof will be installed in the cleaning area. Workers will shovel stone ballast from the roof onto the screen, where it will be washed with water. Run off water will be collected in basins set up below the screening area. Collected water will be absorbed on a regular basis utilizing mops and rags. All used water collection materials will be double bagged, properly labeled, processed through waste decontamination facility and removed from each roof level via the exterior pipe scaffolding system. Once at ground level, bags of water collection materials will be live-loaded into asbestos waste trucks waiting at the site and disposed of as asbestos containing waste. Cleaned
stone ballast will be moved from the screen to the cleaned area of the roof. The section of roof used to store the stone ballast before cleaning will then be decontaminated by HEPA vacuuming and wet wiping. The cleaning area will also be decontaminated by these methods. The filtration screen and retaining barrier wall will be wrapped in two layers of poly, properly labeled and disposed of as asbestos waste. The poly will be removed from the surface of the roof, bagged and disposed of as asbestos waste. The surface of the roof under the cleaning area will then be HEPA vacuumed and wet wiped.

6.13.2 Sixth Floor Set Back Roof

There is no asbestos material present on the Sixth Floor Set Back Roof. The remediation procedures on this roof will be the loose stone removal and decontamination of the underlying roof membrane surface. These activities will be performed as outlined in Section 6.13.1. Once decontaminated, the surface of the Sixth Floor Set Back Roof will be left intact for removal during the structural deconstruction phase.

6.13.3 Cooling Tower

The cooling tower is located on the uppermost roof level of the Building. The tower contains non-asbestos plastic fill material. A waste decontamination facility will be established in an area directly adjacent to the cooling tower unit. Panels will be removed from the tower in order to gain access to the plastic fill. The fill material will be manually loaded into asbestos waste bags, double bagged, properly labeled and disposed of as asbestos waste since it is not possible to effectively clean. The interior and exterior surfaces of the cooling tower will be decontaminated by HEPA vacuuming and wet wiping. Once cleaned, the tower structure will be left in place, to be removed during the structural deconstruction phase with other heavy machinery and equipment. If it is not possible to effectively clean the cooling tower unit while it is intact, licensed asbestos handlers will dismantle the tower and clean all the components which will be left where the tower was located for removal during the deconstruction phase. Any components that cannot be cleaned will be removed from the tower, wrapped in two layers of poly, processed through the waste decontamination facility and disposed of as asbestos waste.

6.13.4 Main Roof

The first remediation procedures on this roof will be the loose stone removal and decontamination of the underlying roof membrane surface. These activities will be performed as outlined in Section 6.13.1. Once decontaminated, the surface of the Main Roof Level will be left intact for removal during the structural deconstruction phase.
There is asbestos containing window caulking on one window to the Elevator Machine Room bulkhead on the Main Roof Level. NYS DOL & NYC DEP licensed asbestos handlers will install two layers of poly on the surface of the Main Roof directly underneath the affected window opening. The asbestos caulking material will be wet down with amended water and manually removed with handheld scraping tools. Caulking material will be placed into asbestos bags directly upon detachment from the window frame. Once full, bags will be placed inside a second bag, sealed and properly labeled. The exterior of the bags will be decontaminated and removed from the area via the exterior pipe scaffolding system. Once at ground level, bags of ACM caulking will be live-loaded into asbestos waste trucks waiting at the site.

6.13.5 Fourteenth Floor Set Back Roof

The first remediation procedures on this roof will be the loose stone removal and decontamination of the underlying roof membrane surface. These activities will be performed as outlined in Section 6.13.1. Once decontaminated, the non-ACM surface on the west side of the Fourteenth Floor Set Back Roof Level will be left intact on this for removal during the structural deconstruction phase.

There is asbestos containing roof membrane on the north side of the Fourteenth Floor Set Back Roof. Upon the completion of loose stone removal and roof surface decontamination on this level, workers will begin the removal of the asbestos containing roofing. A waste decontamination facility will be installed on the Fourteenth Floor Set Back Roof level adjacent to the section of ACM roofing membrane. Critical barriers installed during interior remediation operations on all openings within twenty feet of the Fourteenth Floor Set Back Roof will remain in place. The surface of ACM roofing membrane will be wetted down with amended water. NYS DOL and NYC DEP licensed asbestos handlers will utilize manual scraping tools to perform the removal. ACM roofing material will be bagged on detachment from the roof surface. Once full, bags will be placed inside a second bag, sealed and properly labeled. The exterior of the bags will be decontaminated and removed from the area via the exterior pipe scaffolding system. Once at ground level, bags of ACM roofing will be live-loaded into asbestos waste trucks waiting at the site.

6.14 Elevator Shafts

After all remediation activities have been completed on the interior floors above the Basement Level, the decontamination of all elevator shafts within the Building will be performed. Elevator Machine Rooms shall remain under negative pressure during the remediation of the elevator shafts. Prior to the start of decontamination
activities, all elevator cars will be brought to the bottom of the shafts and secured in the elevator pits. Elevator cars will no longer be used for the duration of the project and they will be dismantled at this time. NYS DOL & NYC DEP licensed asbestos handlers will employ mechanical means to dismantle the cars. Elevator car components will be wrapped in two layers of poly, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste. The construction hoist will be taken to the Second Floor level and manually dismantled. Hoist components will be transported to the wash room of the waste decontamination facility. These items will be cleaned and decontaminated by either steam cleaning or wet washing. At this time access to all floors will be obtained through the A & B Stairwells.

Elevators shafts will be cleaned and decontaminated from the top down in three floor blocks. The elevator shafts will be sealed off in three floor intervals (top of the third floor in a block and the bottom of the first floor in a block) corresponding with the segmentation of the floors during the remediation and abatement. Temporary support beams will be installed across existing structural supports at each floor level within each elevator shaft. Supports will be made of a durable material that will be capable of sustaining the load of workers decontaminating the interior of the elevator shafts. Wooden work platforms will be secured to the support beams in the elevator shafts on each floor in order to provide access to the interiors to perform decontamination. Workers performing the decontamination of interior shaft surfaces will utilize proper fall protection as defined in Regulatory Submittal Part III(R) - Remediation HASP when working off of the platforms within the elevator shafts.

Please note that there are no asbestos containing materials present within the elevator shafts. All interior shaft surfaces, including elevator cables will be subject to a combination of steam and wet cleaning methods in order to remove all residual grease, dust and debris. Run off water will be collected in basins at the bottom level of each shaft work area. Collected water will be absorbed utilizing mops and rags. All used water collection materials will be loaded into plasticized Gaylord boxes, properly labeled, processed through waste decontamination facility and disposed of as asbestos containing waste. Once the decontamination of all shafts is complete, the working platforms will be removed leaving only the three floor barriers in place.

Please note that at no time and under no circumstances will any material, equipment, debris or items be dropped down or allowed to fall down any elevator shaft for any distance.

6.15 Electrical Closets

The Building electrical system is equipped with the capability to shut down the electricity on each floor individually. Barriers will be removed from all electrical closets. Once all interior levels from the Second Floor through the Fifteenth Floor
and have been remediated, power will be shut down on a given floor as PAL commences decontamination of the electrical closets from the top floor downwards floor by floor. Electrical power required to complete the remediation of each closet will be run up from the floor below through the clean C Stairwell. All electrical panels, components and conduits will be removed by manual methods. All waste generated during the remediation of electrical closets will be double bagged, properly labeled, processed through the decontamination facility and disposed of as asbestos waste. After all electrical components have been removed from within a closet, all of the interior surfaces will HEPA vacuumed and wet wiped to remove all residual dust and debris.

6.16 Remediation of the First Floor East Side Lobby & Elevator Banks

Once the electrical closets have been decontaminated and the work areas decontaminated on all floors above the Basement Level, work will commence on the decontamination of the First Floor East Side Lobby and Elevator Banks. The personal and waste decontamination facilities used for the remediation of the upper floors will remain in place and be utilized during this operation. The removal of Building components will be performed in the same manner as detailed above in Sections 6.7 through 6.11. All surfaces will be cleaned by HEPA vacuuming and wet wiping.

6.17 Remediation of Basement Level

The final area to be cleaned during the remediation operation will be the Basement Level. Once all upper floors, stairwells, shafts and electrical closets have been decontaminated, work will begin on the Basement Level. A personal decontamination facility will be established at the existing west side stairwell between the First Floor and the Basement. The existing waste decontamination facility will be utilized for the Basement remediation. Workers will access the waste decontamination facility through the B Stairwell. Prior to the commencement of the Basement remediation, the B Stairwell will be sealed off from the upper floors at the first floor level. The removal of Building components and abatement of asbestos containing materials will be performed in the same manner as detailed above in Sections 6.7 through 6.11.

6.17.1 Lead Containing Item

In the Basement Level there is one porcelain sink that contains lead. The entire sink will be removed and disposed of as lead containing material. This lead removal will be performed in immediately following the completion of asbestos abatement activities on the Basement Level. NYS DOL and NYC DEP licensed asbestos handlers who also hold valid US EPA Lead Certification will remove the sink from its mounting utilizing manual means. Workers will utilize proper PPE for the duration of lead removal activities. Removed paint chips will be containerized in a large
drum designed to transport lead waste. The drum will be properly labeled, processed through the Primary Waste Decontamination Facility and moved to the lead waste chamber of the Waste Storage Area in the Clean Zone. Lead waste will be transported by a properly licensed hauler and disposed of at a properly licensed disposal facility.

6.18 Heavy Machinery & Equipment Removal

Heavy machinery and equipment such as generators, air handling units, elevator motors and cooling tower components that cannot be decontaminated will be removed during the deconstruction phase. These items will require that some structural demolition be performed prior to their removal. The items will be wrapped in two layers of poly during the Remediation Phase so that air clearances can be obtained. This procedure will be detailed in full in Regulatory Submittal Part I (D) – Deconstruction Operation to be submitted under separate cover.

6.19 Spandrel Mastic Removal

In order to access spandrel beam mastic, it will be necessary to deconstruct certain structural components prior to its abatement. This procedure will be detailed in full in Regulatory Submittal Part I (D) – Deconstruction Operation to be submitted under separate cover.

6.20 Final Cleaning & Clearance

Although the interior of the Building will be one large containment area, PAL will clear floors in blocks of three at a time. It is our belief that this measure of clearance is more stringent than clearing the entire containment at once.

Once remediation operations have been completed on all floors, roof levels, stairwells, final cleaning activities will begin. All access throughout the Building will be via the Stairwells A & B. Cleaning activities will begin on the uppermost floor and progress downward in three floor block intervals. All surfaces and all barriers will be subject to HEPA vacuuming and wet wiping including all surfaces within Stairwells A & B as the cleaning activities progress downward. All residual dust and debris that remains on all floor, including the Basement and Stairwells A & B will be cleaned by these methods. All used cleaning materials generated during the final cleaning throughout the entire Building will be double bagged, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste.

At the conclusion of all remediation operations, the shredder will be cleaned of all residual dust and debris that may accumulate during its operation. NYS DOL and NYC DEP licensed asbestos handlers will HEPA vacuum and wet-wipe the shredder. This cleaning will coincide with the cleaning activities in the First Floor Shredder Zone. Please note that the engine unit on the shredder is fully sealed.
The shoring system in the Basement will be cleaned by this same methodology simultaneous with the final cleaning activities on that level. Once the shredder has been cleaned, the Owner’s Environmental Consultant will perform a visual inspection of the machine to ensure all residual dust and debris has been removed. The machine will remain in place until the Shredder Zone has passed final air clearance at which time it will be removed by the same rigging operation used for installation. Once the shredder has been removed from the Building, the shoring system will be dismantled and removed.

Upon completion of final cleaning activities in each three floor block, lockdown encapsulant will be applied to all critical barriers and one twelve hour settling period shall be observed. Negative air ventilation units will continue to operate in all locations until successful air clearance is achieved. At the end of the settling period, a visual inspection of the subject block of floors shall be performed by the Owner’s Environmental Consultant in conjunction with a Contractor representative. To review the visual inspection procedure, please refer to Section 5.4. Once a three floor block has passed visual inspection, final aggressive air clearance will be run. After successful clearance is achieved the modified full containment on the subject three floor block will be broken down. This procedure will be repeated until all floors have passed visual inspection, successful air clearance has been achieved on all floors and all critical barriers and barrier walls have been removed. Upon completion of the final clearance of all floors the Primary Personal Decontamination Facility and the Primary Waste Decontamination Facility will be dismantled.

6.21 Work Area Clearance Criteria

The clearance criteria to be applied to all Remediation Phase work areas will consist of both visual inspection by the Owner’s Environmental Consultant in accordance with Section 5.4 of this work plan and aggressive air sampling for asbestos and metals as follows:

Upon notification by the Contractor that a Remediation Phase work area is clean and ready for visual inspection, the Owner’s Environmental Consultant will conduct a thorough visual inspection of all surfaces and areas of the subject work area. If the visual inspection reveals that dust and debris remain, these specific areas will be identified by marking and logged for future reference. The Contractor will be required to re-clean the identified areas. When work area conditions are acceptable to the Owner’s Environmental Consultant, aggressive air sampling will be conducted.

The work areas will be considered cleared and can be removed from containment when area air measurements, performed using aggressive air sampling procedures which re-suspend residual settled dusts, are at or below each of the following airborne concentrations in every sample, respectively, for the metals noted below and for asbestos. Air testing for asbestos shall be in accordance with applicable
regulations and applicable permits and variances for this project. If any one sample is above any of these limits, then the Remediation Phase will be considered incomplete, and the effected areas shall be re-cleaned and re-tested until the airborne concentrations are at or below the levels noted for asbestos and metals.

Clearance testing for asbestos will be conducted by floor, and will be acceptable when all samples for a given floor area meet the seventy structures per square millimeter TEM standard. Clearance testing for metals will be acceptable when all samples meet the following criteria:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony</td>
<td>250 ug/m3</td>
</tr>
<tr>
<td>Barium</td>
<td>250 ug/m3</td>
</tr>
<tr>
<td>Beryllium</td>
<td>1.0 ug/m3</td>
</tr>
<tr>
<td>Cadmium</td>
<td>5.0 ug/m3</td>
</tr>
<tr>
<td>Chromium (III)</td>
<td>250 ug/m3</td>
</tr>
<tr>
<td>Copper</td>
<td>500 ug/m3</td>
</tr>
<tr>
<td>Lead</td>
<td>25 ug/m3</td>
</tr>
<tr>
<td>Manganese</td>
<td>100 ug/m3</td>
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<tr>
<td>Mercury</td>
<td>12.5 ug/m3</td>
</tr>
<tr>
<td>Nickel</td>
<td>50 ug/m3</td>
</tr>
<tr>
<td>Zinc</td>
<td>1,000 ug/m3</td>
</tr>
</tbody>
</table>

Clearance sampling will be conducted in blocks of a maximum of three floors as follows:

**Asbestos:** Five inside work area (IWA) asbestos samples will be collected from each floor (fifteen total for a block of three floors). Five outside work area (OWA) asbestos samples will be collected for each block of three floors from areas outside the block of floors (roof, scaffold, negative air exhaust, previously cleared areas, etc.).

**Metals:** Five inside work area (IWA) samples will be collected from each floor (fifteen total for a block of three floors).

All samples will be collected using aggressive sampling techniques in compliance with applicable clearance sampling criteria. All clearance samples for each block of floors will be run on all floors simultaneously. Details on sampling methodologies are included in the ECAMP document (Regulatory Submittal Part II).

**7.0 Anticipated Waste Generation**

It is anticipated that remediation operations will generate six thousand cubic yards of conventional waste, seven thousand cubic yards of asbestos waste, two drums of lead waste and two hundred fifty drums of Universal Waste. Where
uncharacterized or unanticipated waste streams require RCRA characteristic testing, the waste will be characterized according to any exceedances of RCRA parameters.

After asbestos waste has been decontaminated, it will be brought directly to one hundred yard asbestos waste trailers parked in the Existing Loading Dock.

When an asbestos waste trailer is either full or not present in the Existing Loading Dock, asbestos waste will be loaded into the asbestos chamber of the Waste Storage Area and then moved on wheeled carts to the Existing Loading Dock once an asbestos waste trailer becomes available.

After conventional waste has been cleaned it will be brought directly to the conventional waste chamber of the Waste Storage Area. Once enough conventional waste is accumulated, compactor trucks will be docked in the Secondary Loading Dock. Conventional waste will be moved on wheeled carts to the Secondary Loading Dock and live-loaded into the compactor trucks.

After lead waste has been decontaminated it will be brought directly to the lead the existing exterior waste storage area (during establishment of Clean Zone only) or to the lead waste chamber of the Waste Storage Area. Once lead waste is prepared for transport, trucks will be docked in the Secondary Loading Dock. Lead waste will be moved on wheeled carts to the Secondary Loading Dock and loaded onto the transport trucks.

After universal waste has been decontaminated it will be brought directly to the universal waste chamber of the Waste Storage Area. Once enough universal waste is accumulated, transport trucks will be docked in the Secondary Loading Dock. Universal waste will be moved on wheeled carts to the Secondary Loading Dock and loaded onto the transport trucks.

8.0 Site Work:

PAL Environmental will perform proper dust control at all times during the remediation and abatement work. The procedures to be followed with regards to visible emissions are specified in the ECAMP.

PAL Environmental will comply with all federal and local laws regarding noise control.

All work will be done by appropriately qualified labor. PAL Environmental will be responsible for employing qualified tradesmen for the duration of the PAL’s contract work on this project.

Once the remediation operation is completed, the contractor will leave a clean site with the scaffolding fully in place.
All work is to be performed in accordance with the latest standards as established by OSHA.
ATTACHMENT I

NEW YORK STATE DOL
REGULATORY NOTIFICATION
Asbestos Project Notification

Project Reference Number: 25434
Type: Amended
Status: Complete

Notification Date: 12/06/2006

Contractor Information
FEIN: 11-3167874

PAL ENVIRONMENTAL SAFETY CORPORATION
11-02 QUEENS PLAZA SOUTH
LONG ISLAND CTY, NY 11101 -0000

Duly Authorized Representative
SALVATORE J. DILORENZO, PRESIDENT
Phone Number: (718) 349-0900
Email:

Asbestos License Number: 99-0690

Mailing Address

Project Location
County: New York
Building Name: Fiterman Hall
Room/Location: entire bldg.
Address: 30 West Broadway
City: NY
State: New York
Zip: -

Building Information
Current Use: Unoccupied
Building Age (yrs): 46
Prior Use: Classroom Building
Building Size (sq ft): 361000

Site Contact
Name: Rich Dalessio
Phone Number: (212) 273 - 5098

Work to be Performed for
Name: DASNY
Address: 515 Broadway

City: Albany
State / Province: New York
Postal Code: 12207 -
Contract Amount: $ 16,313.00

Project Details
Start Date: 12/15/2006
Completion Date: 11/01/2007
Do you anticipate doing any of the following? Yes
Night Work
✓ Shift Work
Weekend Work
Details: 8am - 5pm. New Start Date 12/15/2006.
Is work being done under a variance? No
Equipment & Ventilation Systems

- Hepa Vacuums
- Negative Air Ventilation Machines
- Airless Sprayers
- Collapsible Showers
- Respirators

Monitoring & Testing

- Air monitoring firm: Airtek Environmental
- Asbestos License Number: 99-0589
- Lab performing the analysis: Airtek
- ELAP Registration Number: 11040

Type of Asbestos Work

- Pipe related
- Roofing/flashings
- Caulking/mastic
- VAT
- Other (specify)
  - WTC Dust, Spandrel Mastic, Knee Wall Tar

Type and Amount of Material Containing Asbestos

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friable Linear Feet</td>
<td>636</td>
</tr>
<tr>
<td>Non-friable Linear Feet</td>
<td>0</td>
</tr>
<tr>
<td>Total linear feet</td>
<td>636</td>
</tr>
<tr>
<td>Friable Square Feet</td>
<td>48,780</td>
</tr>
<tr>
<td>Non-friable Square Feet</td>
<td>0</td>
</tr>
<tr>
<td>Total square feet</td>
<td>48,780</td>
</tr>
</tbody>
</table>

Fee Schedule

- Linear Feet Fee: $200.00
- Square Feet Fee: $1,000.00

Remarks

PAL Project No. 06-6500. New Start Date 12/15/2006. Please note that the DOL online form cannot accept certain amounts related to this project because the fields will not support large enough numbers. Please see below for actual figures for fields where this occurs: 1) Actual contract amount is $16,313,000.00 2) Total quantity of Friable Square Feet is 48,780,800

Phases

<table>
<thead>
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<th>Start Date</th>
<th>End Date</th>
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<th>Scope</th>
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<tbody>
<tr>
<td>12/15/2006</td>
<td>04/01/2007</td>
<td>Building Exterior</td>
<td>Scaffold Erection</td>
</tr>
<tr>
<td>04/02/2007</td>
<td>11/01/2007</td>
<td>Entire Building</td>
<td>Remediation &amp; Decontamination</td>
</tr>
</tbody>
</table>

Subcontractors

This project is not using subcontractors

ATTACHMENT II

NEW YORK STATE DOL
VARIANCE PETITION
Please note that the drafting of the New York State DOL Variance Petition will be contingent upon prior DOL review of Regulatory Submittal Part I(R) – Remediation Operations Work Plan. After DOL has had an opportunity to review this Work Plan a formal Variance Petition will be drafted.
ATTACHMENT III

UNITED STATES EPA
REGULATORY NOTIFICATION
## USEPA
290 BROADWAY
NY, NY
NOTIFICATION OF DEMOLITION AND RENOVATION
PAL JOB # 06-6500

<table>
<thead>
<tr>
<th>Operator Project #</th>
<th>Postmark</th>
<th>Date Received</th>
<th>Notification #</th>
</tr>
</thead>
</table>

**TYPE OF NOTIFICATION (O-Original, R-Received, C-Cancelled):** O

**FACILITY INFORMATION (Identify Owner, Removal Contractor and Other Operator):**

**OWNER NAME:** Dormitory Authority of the State of New York (D.A.S.N.Y.)
- **Address:** 515 Broadway
- **City:** Albany
- **State:** NY
- **Zip:** 12207
- **Contact Name:** Rich Dalessio
- **Telephone:** 212-273-5098

**REMOVAL CONTRACTOR:** PAL Environmental Safety Corp.
- **Address:** 11-02 Queens Plaza South
- **City:** Long Island City
- **State:** NY
- **Zip:** 11101
- **Contact Name:** Aric Domozick
- **Telephone:** 718-349-0900

**OTHER CONTRACTOR:** Tishman Construction Corp.
- **Address:** 666 5th Avenue
- **City:** New York City
- **State:** NY
- **Zip:** 10013
- **Contact Name:** Ken Molloy
- **Telephone:** 212-399-3600

**TYPE OF OPERATION (D-Demo, O-Ordered Demo, R-Renovation, E-Emergency Renovation):** D

**IS ASBESTOS PRESENT? (YES NO) YES**

**FACILITY DESCRIPTION (Include Building Name, Number and Floor or Room Number):**

**Building Name:** Fiterman Hall
- **Address:** 30 West Broadway
- **City:** New York City
- **State:** NY
- **Zip:** 10007

**Site Location:** Entire Building

**Building Size:** 361,000
- **# of Floors:** 15
- **Age in Years:** 46

**Present Use:** Unoccupied
- **Prior Use:** Educational Facility

**Procedure, Including Analytical Method, If Appropriate, Used to Detect the Presence of Asbestos Material:**
- PLM – Polarized Light Microscopy

<table>
<thead>
<tr>
<th>Approximate amount of asbestos, Including</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Regulated ACM to be removed</td>
</tr>
<tr>
<td>2. Category I ACM not removed</td>
</tr>
<tr>
<td>3. Category II ACM not removed</td>
</tr>
<tr>
<td>R. ACM to be removed</td>
</tr>
<tr>
<td>CAT I</td>
</tr>
</tbody>
</table>

**Pipe Insulation, Caulking:** 636
- **Linear Feet:** X
- **Length:** Ln M:

**Surface Area (WTC Dust, VAT, Kneewall Tar, Spandrel Mastic, Roofing):** 48,780,800
- **Square Feet:** X
- **Square Meter:**
- **Cu Ft:**
- **Cu M:**

**Volume RACM off Facility Component**

**Scheduled Dates Asbestos Removal (mm/dd/yyyy):**
- **Start:** 12/15/2006
- **Complete:** 10/01/2007

**Scheduled Dates Demo/Renovation (mm/dd/yyyy):**
- **Start:**
- **Complete:**
**DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED:**

**DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATION SITE:**
HEPA Vacs, Micro Traps (Negative Air Pressure) and amended water will be utilized for emissions control.

**WASTE TRANSPORTER #1**
Name: Tri State Transfer Associates  
Address: 1199 Randall Avenue  
City: Bronx  
State: NY  
Zip: 10474  
Contact Name: Jimmy Byrne  
Telephone: 718-617-0771

**WASTE TRANSPORTER #2**
Name: ATC  
Address: 2 Moriches Middle Island Road  
City: Shirley  
State: NY  
Zip: 11967  
Contact Name: Kenny Smith  
Telephone: 631-924-5050

**Disposal Facility #1**
Name: Minerva Enterprises  
Location:  
City: Waynesburg  
State: OH  
Zip:  
Telephone: 

**Disposal Facility #2**
Name:  
Location:  
City:  
State:  

**FOR EMERGENCY RENOVATIONS**
Date and Hour of Emergency (mm/dd/yy)  
Description of the Sudden, Unexpected Event:  
Explanation of how the event caused unsafe conditions or would cause equipment damage or an unreasonable financial burden:

**DESCRIPTION OF PROCEDURE TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NONFRIABLE ASBESTOS MATERIAL BECOMES CRUMBLED, PULVERIZED OR REDUCED TO POWDER.** Any ACM, which is discovered unexpectedly, or non-friable ACM, which becomes crumbled, will be immediately wet with amended water and cleaned up with HEPA Vacs, to be put in 6 mil poly bags for proper disposal.

I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THIS REGULATION (40 C.F.R. PART 61, SUBPART M), WILL BE ON-SITE DURING THE DEMOLITION OR RENOVATION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS (required 1 year after promulgation)

Signature of Owner/Operator:  
Date: 10/03/2006

I certify that the above information is correct  
Signature of Owner/Operator:  
Date: 10/03/2006
ATTACHMENT IV

NEW YORK CITY DEP REGULATORY NOTIFICATION
NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION
Asbestos Control Program
59-17 Junction Boulevard, 8th Floor, Flushing, NY 11373-5108

ASBESTOS PROJECT NOTIFICATION
(ASBESTOS INSPECTION REPORT)

When submitting this form at the NYC Department of Buildings, the original form and three (3) copies with original signatures are required. Submittal at the NYCDEP requires one copy of the form with original signatures. This form must be submitted to the NYC DEP not less than one week in advance of the start of abatement activities.

I. FACILITY

2. Address 30 West Broadway

Borough Manhattan Zip _________

Premise # Prefix Street Name

3. Block 4. Lot

5. Type of Facility Former Classroom Building

6. Name of Building Fiterman Hall

II. BUILDING OWNER

7. Name Dormitory Authority State of New York (DASNY)

8. Contact Person Richard Dalessio

9. Tel. # (212) 273-5098

Fax # (212) 273-5121

10. Address 515 Broadway

City Albany State NY Zip _________

III. GENERAL CONTRACTOR

11. Name ___________________________ Tel. # ___________________________

IV. ASBESTOS ABATEMENT CONTRACTOR

12. Name PAL Environmental Safety Corp.

13. Contact Person Aric Domozick

14. Federal Employer Id. # 11-3167874

15. Tel. # (718) 349-0900

Fax # (718) 349-2800

16. Address 11-02 Queens Plaza South

City Long Island City State NY Zip 11101

V. THIRD PARTY AIR MONITOR

17. Name Airtek Environmental

18. Contact Person Benn Lewis

19. Federal Employer Id. # 11-2963986

20. Tel. # (212) 768-0516

Fax # (212) 768-0759

21. Address 39 West 38th Street

City New York State NY Zip 10018

22. Sample Analysis Laboratory Airtek

23. NYS DOH ELAP # 11040

VI. PROJECT INFORMATION

24. Starting date for this portion of work 12/15/06

Projected completion date 12/1/07

Asbestos work schedule: ☑ Monday ☑ Tuesday ☑ Wednesday ☑ Thursday ☑ Friday ☑ Saturday ☑ Sunday

Shift From: 8:00 am to 5:00 pm

Access to inspect the premises must be provided during the work schedule indicated in this item.

25. Total amount of asbestos-containing material to be abated during this work

48,780,800 Square Feet, and/or 636 Linear Feet

ACF 7 12/20/02
26. Asbestos Hauler: TST/ATC
Disposal Site(s): Minerva Enterprises - Waynesburg, OH
NYS DEC Permit #: 2A456/1A287
Tel.: (718) 617-0771

27. This asbestos abatement is part of a (Item a through e requires filing of this form with the NYC Department of Buildings)
   a) ☑ Demolition  b) ☐ Boiler Replacement
   e) ☐ Fireproofing Replacement  f) ☑ Other (Describe): Environmental Remediation

28. TYPE OF ABATEMENT (Check all appropriate boxes)
   ☑ Removal  ☐ Enclosure  ☐ Encapsulation  ☐ Repair  ☐ Clean up

29. ABATEMENT PROCEDURE (Check all appropriate boxes)
   ☐ Full Containment  ☐ Glovebag  ☐ Tent  ☐ DEP Variance Application

30. LOCATIONS OF ABATEMENT

<table>
<thead>
<tr>
<th>Floor(s)</th>
<th>SECTION OF FLOOR (e.g., entire, east wing, room #, boiler room, lobby, etc.)</th>
<th>AFFECTED SURFACES CONTAINING ACM (e.g., pipe lagging, ceiling, plenum ducts, storage tanks, decking, etc.)</th>
<th>AMOUNT OF ACM</th>
<th>DESCRIPTION OF WORK BEING PERFORMED (e.g., running cable, installing fire sprinklers, removing and replacing boilers, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bsmt</td>
<td>Entire</td>
<td>VAT</td>
<td>20,300</td>
<td>Asbestos Abatement</td>
</tr>
<tr>
<td>1</td>
<td>Entire</td>
<td>VAT</td>
<td>20,300</td>
<td>Asbestos Abatement</td>
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<tr>
<td>1</td>
<td>Various</td>
<td>Pipe Insulation</td>
<td>24</td>
<td>Asbestos Abatement</td>
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<tr>
<td>1</td>
<td>East Side</td>
<td>Window Caulking</td>
<td>600</td>
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<td>2</td>
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<td>20,300</td>
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<td>3</td>
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<td>4</td>
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<td>VAT</td>
<td>20,300</td>
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<td>5</td>
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<tr>
<td>6</td>
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<td>VAT</td>
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<tr>
<td>6</td>
<td>Set Back Roof</td>
<td>Roofing Ballast</td>
<td>5,000</td>
<td>Decontamination</td>
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</table>

31. I hereby declare that the information provided herein is true and complete to the best of my knowledge. I am familiar with Federal, State and NYC laws and regulations applicable to asbestos related work.

Airstek Environmental
Print Name of Air Monitor
Signature
12/6/06
Date

PAL Environmental Safety
Print Name of Asbestos Contractor
Signature
12/6/06
Date

PAL Environmental Safety
Print Name of Applicant
Signature
12/6/06
Date

32. I understand that as the owner of a building where asbestos abatement activity occurs, I am responsible for the performance of the asbestos abatement activities in accordance with the Asbestos Control Program Rules. I have contracted the third party air monitor who is completely independent of all parties involved in the asbestos project. I hereby declare that I have authorized the filing of this notification for the work specified herein.

Print Name of Owner
Signature
Date

A STAMPED COPY OF THIS FORM INCLUDING AMENDMENTS MUST BE AVAILABLE AT THE WORK SITE.

Any modification of information provided on this form must be reported immediately in writing directly to the NYC DEP ACP.

The requirements of the Asbestos Control Program Rules may not be lawfully avoided or lessened through the performance of work in incremental or piecemeal fashion.
<table>
<thead>
<tr>
<th>Floor(s)</th>
<th>SECTION OF FLOOR</th>
<th>AFFECTED SURFACES CONTAINING ACM</th>
<th>AMOUNT OF ACM SQUARE FEET</th>
<th>LINEAR FEET</th>
<th>DESCRIPTION OF WORK BEING PERFORMED</th>
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<td>VAT</td>
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<td>14</td>
<td>Set Back Roof</td>
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<td>Asbestos Abatement</td>
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<td>Main Roof</td>
<td>Roofing Ballast</td>
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<td>Decontamination</td>
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<td>Roof</td>
<td>15th Fl. Bulkhead</td>
<td>Window Caulking</td>
<td>12</td>
<td>12</td>
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<tr>
<td>Roof</td>
<td>Cooling Tower Roof</td>
<td>WTC Dust</td>
<td>1,000</td>
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<td>Remediation</td>
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<tr>
<td>All</td>
<td>Perimeter Kneewall</td>
<td>ACM Tar</td>
<td>28,755</td>
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<tr>
<td>All</td>
<td>Spandrel Beams</td>
<td>ACM Mastic</td>
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<td>Asbestos Abatement</td>
</tr>
<tr>
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<td>Entire Interior</td>
<td>WTC Dust</td>
<td>48,402,</td>
<td></td>
<td>Remediation</td>
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</table>
ATTACHMENT V

REMEDIATION OPERATIONS
LOGISTICS PLANS
Decontamination of the Clean Zone and Upper Level Access

Refer to Remediation Operations Work Plan Section 6.1 and 6.2
Configuration of the Clean Zone
Refer to Remediation Operations Work Plan Section 6.3, 6.4 and 6.6
Typical Upper Floor Work Area
Refer to Remediation Operations Work Plan Section 6.5
WASTE STORAGE AREA
PRIMARY WASTE DECONTAMINATION FACILITY
SECONDARY LOADING DOCK
EXISTING LOADING DOCK
PERSONAL DECONTAMINATION UNIT
BASEMENT ACCESS

Configuration of First Floor for Basement Remediation
Refer to Remediation Operations Work Plan Section 6.17
6th Floor
Set Back Roof
Refer to Remediation Operations Work Plan
Section 6.13.2
14th Floor
Set Back Roof
Refer to Remediation Operations Work Plan
Section 6.13.5
Main Roof

Refer to Remediation Operations Work Plan
Section 6.13.4
Cooling Tower Roof

Refer to Remediation Operations Work Plan
Section 6.13.3
ATTACHMENT VI

ASBESTOS CONTAINING MATERIAL LOCATION DIAGRAMS
ATTACHMENT VII

SHREDDER MANUFACTURER SPECIFICATIONS
7 SPECIFICATIONS
Fig 70 Schred Max™ Options

SCHREDMAX SPECS MODEL 56 SD

<table>
<thead>
<tr>
<th>Type</th>
<th>Diesel</th>
<th>Electric</th>
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<tr>
<td>Power</td>
<td>50 HP or 100 HP</td>
<td>50 HP or 100 HP</td>
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<tr>
<td>Method</td>
<td>CAT Diesel</td>
<td>Electric Motor</td>
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<td>Roll Off Container Size Range</td>
<td>12 cu.yd.</td>
<td>12 cu.yd.</td>
</tr>
<tr>
<td>Length</td>
<td>12' 0&quot;</td>
<td>12' 0&quot;</td>
</tr>
<tr>
<td>Width</td>
<td>5' 6&quot;</td>
<td>5' 6&quot;</td>
</tr>
<tr>
<td>Height</td>
<td>5' 7&quot;</td>
<td>5' 7&quot;</td>
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<tr>
<td>Weight</td>
<td>18,000 lbs.</td>
<td>18,000 lbs.</td>
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<td>Legal Load</td>
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<td>Yes</td>
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<tr>
<td>Easily Transportable</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Mainframe Tubes</td>
<td>12&quot; x 12&quot;</td>
<td>12&quot; x 12&quot;</td>
</tr>
<tr>
<td>Hopper Loading Height Range</td>
<td>32&quot; and up</td>
<td>32&quot; and up</td>
</tr>
<tr>
<td>Hopper Width</td>
<td>4' 8&quot;</td>
<td>4' 8&quot;</td>
</tr>
<tr>
<td>Hopper Length</td>
<td>5' 6&quot;</td>
<td>5' 6&quot;</td>
</tr>
<tr>
<td>Hopper Depth</td>
<td>4' 2&quot;</td>
<td>4' 2&quot;</td>
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<tr>
<td>Level Hopper Capacity</td>
<td>4 cu.yd</td>
<td>4 cu.yd</td>
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<tr>
<td>Removable Loading Door</td>
<td>1 end</td>
<td>1 end</td>
</tr>
<tr>
<td>Shredder Shafts</td>
<td>1 - bi-rotational</td>
<td>1 - bi-rotational</td>
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<tr>
<td>Shredder Shaft Diameter</td>
<td>9' Solid Hardfaced</td>
<td>9' Solid Hardfaced</td>
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<tr>
<td>Number of Cutters</td>
<td>5</td>
<td>5</td>
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<tr>
<td>Exposed Shredder Area</td>
<td>23 sq.ft.</td>
<td>23 sq.ft.</td>
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<tr>
<td>Under Shredder Discharge Height</td>
<td>Level</td>
<td>Level</td>
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<tr>
<td>Hydraulic System</td>
<td>Load Sensing</td>
<td>Load Sensing</td>
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<tr>
<td>Hydraulic Pump</td>
<td>Axial Piston</td>
<td>Axial Piston</td>
</tr>
<tr>
<td>Hydraulic Shaft Drive</td>
<td>1 Variable</td>
<td>1 Variable</td>
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<tr>
<td>Piston Motor</td>
<td>Piston Motor</td>
<td>Standard</td>
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<tr>
<td>Harsh Environmental Controls</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>Control Panel</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>Anti-Jamming / Auto-Reversing</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>Auto overload protection</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>Remote Control</td>
<td>Standard</td>
<td>Standard</td>
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<tr>
<td>Audio / Visual Troubleshooting</td>
<td>Standard</td>
<td>Standard</td>
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<tr>
<td>Diesel Auto Shutdown System</td>
<td>Standard</td>
<td>Standard</td>
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<tr>
<td>Electric Motor Starter Panel</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>HD Wear Package</td>
<td>Liner Plates</td>
<td>Liner Plates</td>
</tr>
<tr>
<td>Ostrigger Legs to Elevate</td>
<td>Optional</td>
<td>Optional</td>
</tr>
<tr>
<td>Mobile Running Gear</td>
<td>Optional</td>
<td>Optional</td>
</tr>
</tbody>
</table>

The Multi-Material Primary Reducer

Small Footprint Elevated To Height
- Low loading height facilitates skid steerers/multi-excavators
- 5' x 6' x 4' hopper - 4 cubic yards
- 50 HP CAT diesel or electric motor standard, 100 HP optional
- Skid frame with optional legs or towable running gear

Easy Service
- Excellent access and serviceability
- Severe duty construction, vandal resistant
- Simple design, K.I.S.S.
- Remote control and auto-operation

Mobile or Stationary

Simple, Reliable, Efficient
- Severe duty alloy steel
- Rebuildable cutter table
- Reversible cracker jaw plate
- Variable geometry shear point action
- Open grid design
- Low operating costs
- Oil filled bearing

Aggressive Durable
Severe Duty
- Solid 9" severe duty alloy cutter shaft
- High torque / Slow speed
- Bi-rotational hydraulic drive
- 3 1/2" thick alloy steel long life replaceable cutters
- Auto-reverse and anti-jamming
ENGINE DATA

Electrical service information for the 56 Schred Max installation, we offer the following:

Motor Spec: 100 HP, 460 VAC, 3 phase, 60 Hz
  Full load current  118.0 Amps

Suggested Electrical Service: 460 VAC, 3 phase, 60 Hz

Circuit Breaker: 225 Amp

Fuses:
  250 Amp if non time delay
  225 Amp if time delay

Minimum Conductor Ampacity: 150 Amp

Conductor Type: Copper in a raceway

Conductor Insulation: 75° C or 90° C

Conductor Size:
  -470 ft run or less, max 3 conductors in a single raceway, Size #1/0
  -471 ft. to 594 ft., maximum 3 conductors in a single raceway, Size #2/0

Ground Wire: Size #4

Shutoffs are set at critical levels for the following items: operating temperature and oil pressure. The reset button will need to be pushed before motor will re-start if a failure is detected or indicated.

7.1 BOLT TORQUE

CHECKING BOLT TORQUE

The tables shown below give correct torque values for various bolts and cap screws. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

*Torque figures indicated below are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or cap screws unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

IMPORTANT
  Anti-seize compound must be applied to the threads, on cracker jaw plates.
ENGLISH TORQUE SPECIFICATIONS (NATIONAL COARSE)

<table>
<thead>
<tr>
<th>Bolt Diameter</th>
<th>Bolt Torque* SAE 8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N·m</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>17</td>
</tr>
<tr>
<td>5/16&quot;</td>
<td>36</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>63</td>
</tr>
<tr>
<td>7/16&quot;</td>
<td>100</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>155</td>
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<tr>
<td>9/16&quot;</td>
<td>220</td>
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<tr>
<td>5/8&quot;</td>
<td>305</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>540</td>
</tr>
<tr>
<td>7/8&quot;</td>
<td>880</td>
</tr>
<tr>
<td>1&quot;</td>
<td>1320</td>
</tr>
</tbody>
</table>

7.2 KEY MACHINE TORQUE SPECIFICATIONS

1. Wedge Block Torque

Inside Wedge Block
100 ft lbs

Bottom Wedge Block
200 ft lbs

2. Torque Arm/Torque Pin

Torque Arm
300 ft lbs

Torque Pins
300 ft lbs

3. Shrink Disk
See Section 3.6 for Torque procedure

Shrink Disk
175 ft lbs

4. Motor Mount Bolts

Motor Mount Bolts
300 ft lbs

5. Cracker Jaw Bolts

Cracker Jaw Bolts
150 ft lbs