130 LIBERTY STREET
ASBESTOS ABATEMENT PLAN

Prepared for:

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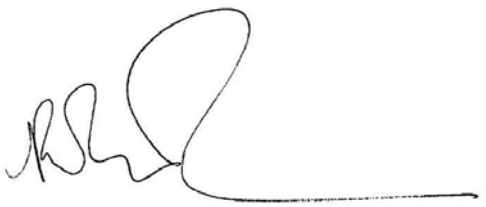

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PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. 130 Liberty Street ("the Building"), formerly the Deutsche Bank Building, is a forty story office building, with 2 sub-floors, scheduled for cleaning and de-construction. The building is located one block south of the World Trade Center (WTC) site. This cleaning and de-construction was scheduled as a result of damages incurred by the events of September 11, 2001. The massive debris generated from the collapse of the WTC South Tower broke approximately 1,500 windows and opened a gash ("Gash Area") in the Building's exterior thereby exposing portions of the interior of the north side of the building. Subsequent to September 11, 2001, operations were undertaken to clear debris from the plaza in front of the Building, lobby and interior spaces in the Gash Area. Porous geosynthetic mesh, or "netting", was hung on the outside of the Building. The immediate Gash Areas (Floors 7-24) were cleaned in accordance with New York City Department of Environmental Protection (NYCDEP) and New York City Department of Health (NYCDOH) protocols to permit the construction of columns, beams, and floor decks to stabilize the Gash Area. Once the initial cleaning and stabilization measures were in place, office furniture, equipment, and other non-attached items in the Building were removed and disposed of by Deutsche Bank. Since the Gash Area, Cellar "A" and the loading dock area have been previously cleaned and have been treated as unrestricted spaces since that time, no cleaning or abatement work is necessary in these areas of the building as part of this Phase I Deconstruction scope.

Lower Manhattan Development Corporation (LMDC) retained Louis Berger Group, Inc. (Berger) to conduct an Initial Building Characterization Study for the Building. These results were subsequently presented and discussed in Berger's report entitled *130 Liberty Street Initial Building Characterization Study Report Volume I, September 14, 2004 (Initial Building Characterization)*. The dust was sampled throughout the Building and analyzed for five of the six contaminants of potential concern (COPCs). These COPCs were determined by the United States Environmental Protection Agency (USEPA) as being associated with the WTC dust (i.e., asbestos, dioxin, lead, polycyclic aromatic hydrocarbons [PAHs], crystalline silica, and Man-Made Vitreous Fibers [MMVF]) as well as other contaminants suspected of being present in the Building including polychlorinated biphenyls (PCBs) and heavy metals (barium, beryllium, cadmium, copper, manganese, mercury, nickel and zinc).

A total of 815 bulk samples of the settled dust were collected and analyzed to determine asbestos content. Samples were analyzed by polarized light microscopy (PLM) analysis. The PLM analysis is specified by the USEPA, the NYCDEP and the New York State Department of Labor (NYSDOL) for quantifying asbestos in bulk dust samples. Although trace amounts of asbestos were identified in some of the samples, there were no samples that contained greater than one percent asbestos via PLM. Asbestos Material is defined within the current USEPA and NYSDOL regulations as "any material containing more than one percent by weight of asbestos".

The Berger Initial Building Characterization Study states that settled dust with visible accumulations of less than one quarter of an inch high was identified throughout the Building in locations such as the top of radiator covers, carpets, concrete floors,

horizontal surfaces on door frames, reception desks and heating, ventilation, and air conditioning (HVAC) units. Above the suspended ceiling (plenum), visible dust was identified on top of ceiling tiles, ceiling grids, HVAC ductwork, electrical lighting fixtures and sheetrock ceilings.

The initial investigation did not include access to previously inaccessible surfaces and interstitial spaces in areas that include the curtain wall, interior walls, the exterior of the Building and cell systems and raceways within the concrete slabs. As such, these areas were excluded from the initial Building Characterization Study and, therefore, from this Phase IA Plan.

The building has been surveyed for asbestos containing building materials as reported in Louis Berger Group Inc.'s (Berger) Initial Building Characterization Study Report, Volume II Appendix B, dated 14 September 2004. Subsequent to the initial building survey by Berger, TRC conducted confirmatory surveys on 26 October, 29 October, 2 November, and 3 November 2004 of the asbestos containing building materials. Those TRC findings were used to supplement the initial Berger report. The TRC scope included confirming both the locations and quantities of asbestos containing building materials previously identified by Berger. The Environmental Consultant Project Monitor was retained by the Gilbane Building Company ("Contractor") to generate an asbestos abatement plan that will determine the procedures and phasing of asbestos abatement within the subject building.

This Abatement Plan has been designed to address the WTC dust above and below the plenum (but not in HVAC or other Building systems or in interstitial spaces) as an asbestos material, while allowing for certain building materials to be disposed of as non-hazardous construction and demolition waste if permitted by law. This Initial phase of deconstruction (Phase I) includes the necessary interior, non-structural deconstruction and related work and will occur in two sub-phases referred to as Phase IA and Phase IB. Phase IA consists of dust cleaning (above and below the plenum but not in HVAC or other Building systems or in interstitial spaces), abatement of identified asbestos-containing building materials (ACBMs) and removal of interior building components as necessary to complete the cleaning and abatement. Phase IB will then include the removal of the most of the remaining interior, non-structural building elements – gypsum wall board (GWB), small scale mechanical, electrical and plumbing (MEP) and sprayed-on fireproofing. Excluded from Phase IB is the GWB and MEP associated with the exterior walls throughout the building as these will be handled as an initial step in Phase II deconstruction work.

Phase II will then include the exterior wall associated GWB, MEP and sprayed on fireproofing as stated above systematic deconstruction and removal of the remaining building (system and structural) components (large scale MEP, roofing, exterior skin and all structural components). At present, the Owner (through certified representatives) is still evaluating the conditions of dust in certain areas of the building. The areas being investigated include the interiors of HVAC ducts, between interior gypsum wall board (GWB) partitions, in elevator shafts and in interior pipe chases within the cell system and curtain wall cavity areas. Since the Contractor has very limited verbal or no information at the time of development of this plan regarding the existence of dust in those areas, necessary assumptions have been made to allow for completion of this Abatement Plan. These assumptions include that the interior of HVAC duct will be considered to contain WTC dust requiring cleaning. However, all other "interstitial spaces" still under

investigation are considered (under this Plan at present) to be free of appreciable WTC dust. If the Building Owner's representative identifies significant dust in those areas, they will need to be handled by the Abatement Subcontractor by the applicable procedures detailed herein. If the absence of WTC dust is confirmed in those locations, the exposed surfaces of those components and/or areas will be cleaned as detailed herein and the materials shall be left in place for the Demolition Subcontractor to remove as part of Phase IB and II activities.

Phase I Deconstruction Activities

This plan will address materials covered in Phase IA as described above. The specific procedures to address the items covered under Phase IA are discussed in other sections of the Abatement Plan. All Phase IA activities shall be conducted by a licensed Asbestos Abatement Contractor under controlled conditions and all resultant debris, materials and components removed must either be cleaned (if possible and efficient to do so) or treated as ACM contaminated or Hazardous Waste and packaged, labeled, handled, transported and disposed of in accordance with all applicable local, state and federal regulations.

B. The Abatement Subcontractor shall perform abatement of all the ACBM as specified within the previously identified TRC survey reports, the Louis Berger Building Characterization Report and this plan. All asbestos materials are to be disposed of as ACBM waste. This plan has been written under the assumptions that the entire building (with the exception of the previously cleaned gash area and the Cellar "A" clean areas of the basement utilized for security, access log in, temporary offices, equipment storage and personnel protective gear donning) is considered contaminated by WTC dust. The cleaning of WTC dust is also addressed in this plan. As such, removal of all ACBM and WTC dust shall be conducted under negative pressure utilizing removal techniques consistent with pre-demolition requirements of New York State Industrial Code Rule (NYS ICR) 56 and applicable variances. All work shall be done while the building is unoccupied.

C. Summary of Work: The Abatement Subcontractor shall furnish all labor, materials, services, permits, and equipment, necessary to carry out the abatement of ACBM and associated tasks (cleaning of dust, stripping the building interiors of contaminated materials, etc.), which includes removal, handling, storing, transporting, and disposing of asbestos, in accordance with all applicable EPA, OSHA Regulations, NYS ICR 56, and these specifications. It shall be the Abatement Subcontractor's responsibility to verify exact quantities and locations of all ACBM. The quantities shown are for informational purposes only.

1. The areas of the building scheduled for abatement shall be **unoccupied** for the duration of the asbestos abatement work performed therein.

2. All plastic and rigid barriers shall be flame resistant.

D. Responsibilities of the Environmental Consultant Project Monitor

1. All asbestos abatement activities will be subject to inspection and monitoring by the Environmental Consultant Project Monitor. The Environmental Consultant Project Monitor will act as the Contractor's Representative on this project.

2. The Environmental Consultant Project Monitor's responsibilities are to assure the project is in full compliance with this asbestos abatement plan, and all Federal, NYS ICR 56 asbestos regulations, and any other requirements as identified by the Contractor.

3. The Environmental Consultant Project Monitor shall conduct air monitoring (background, during abatement and final clearance air testing), and conduct visual inspections prior to, during and after abatement activities. The Environmental Consultant Asbestos Project Monitor shall ensure that air monitoring is conducted both inside, adjacent to and outside the removal areas throughout the abatement process.

4. The Environmental Consultant Project Monitor shall keep the Contractor fully informed on a daily basis of the progress of all Phase I work activities. In turn, the Contractor shall inform the Building Owner through their designated representative.

E. Responsibilities of the Abatement Subcontractor

1. The Abatement Subcontractor will familiarize him/herself with the complete work, study all contract documents and relevant regulations, and notify the Contractor in writing before the commencement of the work, or of any error, inconsistency or omission that may exist. Except for defined situations requiring specific direction from the Contractor and/or the Environmental Consultant Project Monitor, the Abatement Subcontractor will be solely responsible for all construction means, methods, techniques, sequences, and procedures and will pay for all labor, materials, equipment, tools, permit fees, re-inspection fees and all other facilities and services necessary for the proper completion of the work. The Abatement Subcontractor will warrant to the Contractor and/or the Environmental Consultant Project Monitor, that all materials are new and in good condition, free of all defects, and will proceed with the work to completion in a lawful, responsible, timely and competent manner.

1.02 **PHASING OF WORK**: The Asbestos Abatement Subcontractor shall perform and complete the abatement activities during regular hours from 7:00 am to 4:00 pm. It is the Abatement Subcontractor's responsibility to ensure that all work is accomplished in a timely manner. The basic flow of the abatement shall be conducted starting at the top of the building and working its way down. The goal is to complete the work in 11 sequences beginning with the isolation of the top 4 floors and continuing downward in 4 floor sections towards the basement. This sequencing and schedule is provided for informational purposes only and shall be adjusted in the field as deemed appropriate or necessary by the Abatement Subcontractor. After negative air pressure has been achieved, areas of significant dust accumulations may be cleaned/collected utilizing plastic shovels and dust pans and placed into waste bags for disposal. The Abatement Subcontractor shall then perform HEPA vacuuming and/or wet wiping and limited soft strip (e.g., ceiling tiles and support grid, loose wiring and conduit, carpeting and interior partitions only as necessary to access VAT that might run underneath) to create an open work area, followed by removal of asbestos containing building materials (ACBM) and lastly a thorough final cleaning to remove any fibers that may have been released during the abatement of ACBMs and to remove the existing settled WTC dust. The stairwells, elevator shafts and all other vertical connections between floors shall be sealed properly so as not to allow dust to re-enter spaces/floors already cleaned and cleared. These vertical connections (stairwells and shafts) shall be cleaned last after

all floors of the building have been cleaned. Porous items shall be HEPA vacuumed and/or wet wiped and disposed of based on waste characterization and testing. Alternatively, the Abatement Subcontractor may forego testing and opt to dispose of waste as ACM or Hazardous Waste as appropriate.

There are three exceptions to the general sequencing of Phase IA work overviewed above. It will be necessary for the Abatement Subcontractor to clean some limited, designated exterior surfaces and to create several limited clean containments to facilitate the erection of the man-hoist and the crane – this work will occur as necessary and not necessarily in the "top/down" sequence presented above. Also, the Abatement Subcontractor may need to clean areas of the basements out of sequence to facilitate some Phase IB and/or Phase II work. Lastly, the Abatement Subcontractor must remove any existing ACBM from and clean the one HVAC duct shaft identified to be used for movement of Phase IB generated non-hazardous waste. In addition, the Abatement Subcontractor must clean access areas required for Phase IB activities as including emergency egresses and stairways. The requirements for this work are further detailed within this Abatement Plan.

1.03 **AUTHORITY TO STOP WORK**: The Contractor and the Environmental Consultant Project Monitor shall have the authority to stop the abatement work at any time a determination is made that conditions are not in accordance with the abatement plan and applicable regulations. If the Building Owner and/or their authorized representatives make a determination that, in their estimation, work should be stopped they shall immediately notify the Contractor's on site Superintendent (or, in his absence, the Contractor's Environmental Consultant Project Monitor) who will then take appropriate action. The stoppage of work shall continue until conditions have been corrected to the satisfaction of the Environmental Consultant Project Monitor. Standby time to resolve the problems shall be at the Abatement Subcontractor's expense. If the Asbestos Project Monitor presents a written stop asbestos removal order, the Abatement Subcontractor shall immediately stop all asbestos removal and initiate fiber reduction activities. The Abatement Subcontractor shall not resume asbestos removal until authorized in writing by the Environmental Consultant Project Monitor or designated agent. The occurrence of any or all of the following events will be reported in writing to the Environmental Consultant Project Monitor and will require the Abatement Subcontractor to automatically stop asbestos removal and initiate fiber reduction activities:

A. Excessive airborne fibers outside containment area (0.01 f/cc or greater).
B. Break in Containment Barriers.
C. Loss of negative air pressure (at or below 0.02 inches of water column)
D. Serious injury within the containment area.
E. Fire and Safety Emergency due to abatement.
F. Respiratory Protection failure.
G. Power failure affecting the abatement process.

1.04 **UTILITIES AND SITE REQUIREMENTS**:

A. Wastewater: All water used by the Abatement Subcontractor during asbestos abatement activities shall be collected and passed through a water filtration system capable of filtering particles down to 5 microns prior to being discharged into the sanitary sewer. Water will be used from a 2-inch water riser that will be installed by the Contractor. The Abatement Subcontractor shall be responsible for connection to the sanitary sewer and for providing piping, pumps, water filtration systems and other items necessary to collect, transport, filter and dispose of the wastewater.

B. Fire Extinguishers - As per Section 3 of the Emergency Action Plan for Phase 1 of Deconstruction Operations at 130 Liberty Street, Section 4.1.1, portable fire extinguishers will be strategically positioned throughout the Building. If necessary, temporary fire suppression systems may be utilized to supplement any identified building system deficiencies.

C. Job Site Postings - The Abatement Subcontractor shall Post, in the Cellar "A" decon area, all applicable regulations, these specifications and other applicable documents including but not limited to the following:

1. A copy of the U.S. Environmental Protection Agency Regulations for Asbestos, 40 CFR 61 Subparts A and M; a copy of OSHA Asbestos Regulations, 29 CFR 1926.1101; and a copy of NYS ICR 56.

2. A copy of NYCDEP permits and conditions

3. A copy of: Worker's NYS DOL and NYCDEP Asbestos Handler Licenses/Certificates for each worker on the site

4. A copy of all applicable US EPA, NYS DOL and NYC DEP Notifications and Approved Variances.

5. A copy of Deconstruction Plan Section 3 - Emergency Action Plan – with the list of emergency contacts and telephone numbers, location of nearest hospital and emergency response agencies.

6. A copy of all Material Safety Data Sheets (MSDS) for hazardous chemicals used during the asbestos project.

7. A copy of Deconstruction Plan Section 5 – HASP.

8. A copy of waste hauler information, including but not limited to the location of the waste site, permits and licenses.

9. A copy of Abatement Subcontractor's NYS DOL and NYCDEP Asbestos Contractor licenses

10. The Abatement Subcontractor's OSHA personal monitoring results.

11. The Environmental Consultant Project Monitor's daily air sampling results.

12. A copy of the 130 Liberty Street Phase I Deconstruction Plan Section 3 (EAP).

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1.05 HEALTH AND SAFETY:

The Health and Safety requirements are referred to in the 130 Liberty Deconstruction Plan Health and Safety Plan (HASP), Section 5. Additional requirements are listed below.

A. Toxic Effects: The Abatement Subcontractor shall assume all responsibility for any toxic effects to workers from the air supplied to respirators, or from toxic or damaging vapors or residues resulting from the use of encapsulant and/or wetting agents or other substances used by the Abatement Subcontractor during abatement activities.

B. Chemical/Biological Hazards: The known chemical/biological hazards on site include asbestos-containing material and other Contaminants of Potential Concern (COPCs.) The USEPA has determined COPCs as consisting of asbestos, dioxin, lead, polycyclic aromatic hydrocarbons [PAHs], crystalline silica, and Man-Made Vitreous Fibers [MMVF]) as well as other contaminants suspected of being present in the Building including polychlorinated biphenyls (PCBs) and heavy metals (barium, beryllium, cadmium, copper, manganese, mercury, nickel and zinc. The Abatement Subcontractor shall provide materials, equipment and training to its workers to ensure their protection from these and any other chemical/biological hazards, which may be identified during the course of this work.

C. Physical Hazards: The Abatement Subcontractor shall provide safety equipment and training to his workers to ensure their protection from any physical hazards including but not limited to trip/fall hazards, working at elevation, heat stress, contact with energized (hot) active equipment, noise, overhead bump hazards and electrical shock that may be present during the Work.

D. Safety Act: The Williams-Steiger Occupational and Safety Health Act (OSHA) of 1970, as amended, shall be strictly complied with during the course of this project. This Act shall govern the conduct of the Abatement Subcontractor's workmen, tradesmen, materialmen and subcontractors and of visitors to the project site.

E. Accident Prevention: In order to protect the lives and health of his employees, the Abatement Subcontractor shall comply with all pertinent provisions of the latest edition of the "Manual of Accident Prevention in Construction" issued by the Associated General Contractors of America, Inc. and shall maintain an accurate record of all accidents which occur during the project. The Abatement Subcontractor must immediately report an injury or loss of life to the Contractor and their on site New York City Site Safety Manager (NYCSSM) and a copy of the Abatement Subcontractor's report to his insurer of an accident must be provided to the Contractor.

F. Emergency Response: The requirements of Emergency Response are found in Section 3 of the 130 Liberty Deconstruction Plan. In addition, the Abatement Subcontractor shall establish an Emergency Response Team made up of members of his work force. Team members shall be trained, organized and capable of responding in the event of an accident, fire or other emergency. The Abatement Subcontractor shall designate a site safety coordinator to train team members regarding the location and use of site-specific fire/life safety equipment. As a minimum requirement, members of the Emergency Response Team shall be knowledgeable in standard first aid and CPR techniques, fire extinguisher use and evacuation procedures.

G. Workmen Protection: The Abatement Subcontractor shall provide and maintain all safety measures necessary to properly protect workmen.

H. Emergency Actions: In an emergency affecting the safety of life, the work or adjoining property, the Abatement Subcontractor is hereby permitted to act at his discretion to

prevent such threatened loss or injury without special instruction or authorization from the Contractor or the Environmental Consultant Project Monitor.

I. Hazard Communication Act: The Abatement Subcontractor shall comply with the Hazard Communication Standard promulgated by the Occupational Safety and Health Administration (OSHA No. 29 CFR 1910.1200). This program ensures that all employers provide the information they need to inform and train employees properly and to design and put in place employee protection program. It also provides necessary hazard information to employees so they can participate in, and support, the protective measures needed at their work place. The Abatement Subcontractor shall ensure that labels or other forms of warning are legible and in English. Employer having employees who speak other languages may add the information in their languages. See OSHA 29 CFR 1910.1200 for more details.

1.06 WORK SUPERVISION AND COORDINATION:

A. Abatement Subcontractor's Supervisor: From the start of work through the project completion the Abatement Subcontractor shall have on-site one responsible and competent supervisor who possesses valid NYSDOL and NYCDEP Supervisor certifications for each active work area. At a minimum, the Abatement Subcontractor's Supervisor(s) shall be on site during all working hours. If the Supervisor(s) must leave site during work, qualified temporary Supervisor(s) shall be appointed.

B. Quality of Work: The Abatement Subcontractor's Supervisor(s) shall supervise, inspect and direct the Work competently and efficiently, devoting such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents and applicable regulations. The Supervisor(s) shall be responsible to see that the Work complies accurately with the Contract Documents and is of good quality and workmanship.

1.07 SUBMITTAL: Unless otherwise noted, the Abatement Subcontractor shall submit three (3) copies of each submittal to the Contractor for review and/or approval. The Abatement Subcontractor shall provide the following:

A. Pre-Project Submittal:

1. Certificates of Insurance naming the Contractor and Building Owner as additional insured.

2. All required bonds. All bonds shall be underwritten by a United States based, New York State A or B rated bonding company.

3. List of Subcontractors

4. Proof of written notifications to the EPA, NYSDOL and NYCDEP as required by Paragraph "Permits, State Licenses and Notifications" of this Section. Proof that all required permits and variances have been obtained.

5. Proof of written notification to the local police department and fire department that asbestos abatement work is being conducted. As a minimum, the

notification letter shall include the address of the Facility, dates work is to be performed and sketches indicating the areas to undergo abatement.

6. Documentation of compliance with all requirements of paragraph "Requirements and Qualifications" of this Section. Submittal shall include:

   a. Proof that the job supervisors, foremen, and asbestos abatement workers meet New York State and New York City certification and license requirements.

   b. Proof of a current medical surveillance program for all Abatement Subcontractors' personnel to work on this project.

   c. Completed and notarized Certificate of Worker's Release for each asbestos abatement worker, workers of other trades or supervisory personnel who enter the work area or otherwise contact ACBM.

7. Proof of a respiratory protection program. Submit level of respiratory protection intended for each operation required by the project as determined in Section 5 of the HASP.

8. Proof that a landfill site has been located and arrangements for transport and disposal of asbestos-containing or asbestos-contaminated materials have been made. Provide the name and location of the landfill and waste Transport Company. The Owner must approve all landfills and waste transporters in advance of usage of the same.

9. Manufacturer's literature on all proposed job related equipment and products to be used on this project. Include Material Safety Data Sheets (MSDS) for encapsulant, fire retardant plastics, and other chemicals to be used on this project.

10. Copy of the daily log proposed for use. Minimally, the log should include the date(s) and time(s) when all personnel enter and leave the work area(s).

B. During Work Submittal:

1. Schedule of Work Changes: Any changes in the Schedule of Work proposed by the Abatement Subcontractor shall be submitted to the Contractor for approval no later than five days prior to the commencement date of the proposed change. A revised Schedule shall be submitted at the end of each week.

2. A "Request for Inspection" form shall be submitted at least 24 hours in advance of required air monitoring tests and inspections to be performed by the Asbestos Project Monitor.

3. Results of all personal air monitoring performed by the Abatement Subcontractor shall be posted within 24 hours after collection for all workers to observe. A copy of the results shall be given to the Contractor and Environmental Consultant Project Monitor at the same time.

4. A certified, signed and completed copy of each "Waste Shipment Record" form used, and receipts from the landfill operator which acknowledge the Abatement Subcontractor's delivery(s) of material, shall be submitted to the Contractor and the Environmental Consultant Project Monitor within thirty days following removal of ACBM from building.

C. Post Project Submittals to the Contractor:

1. A notarized "Release of Liens" in a form acceptable to the Contractor shall be provided. Use the standard AIA form unless otherwise directed by the Contractor. Such notarized release of all liens shall certify that all subcontractors, labor suppliers, etc., have been paid their pro rata share of all payments to date, that the Abatement Subcontractor has no basis for further claim and will not make further claim for payment in any account after the first payment is made to him.

2. Copies of the daily log showing the date(s) and time(s) of entrance to and exit from the work area(s) for all persons.

3. Compilation in chronological order of all air monitoring records pertaining to this project.

4. Compilation of all completed and signed Waste Shipment Record forms, bills of lading or disposal receipts pertaining to this project.

5. Copies of notifications and checks to applicable agencies (see Subparagraph "Pre-Project Submittal Information" of this Section) that the asbestos abatement project has been completed.

6. Copies of the workers' and supervisors' licenses.

7. The Abatement Subcontractor will submit two copies of a final project report to Contractor and The Environmental Consultant Project Monitor. The following is an index for the Abatement Subcontractor's final closeout submittal. Not more than thirty (30) days after project completion and prior to final payment.

   The close out package will include the following:

   - Permit Application, Approved Construction Permit, Amendments, Variances (if applicable)
   - Notifications to the Federal, State and Local agencies
   - Daily Employee Checklist
   - OSHA Personal Air Sample Results
   - Special Reports
   - Daily Project Logs
   - Written requests for inspections
   - Disposal Manifests signed by the Operator of the Licensed Landfill

1.08 **FIRE PROTECTION, AND EMERGENCY EGRESS**: The Abatement Subcontractor shall be responsible for the security and safeguarding of all areas turned over by Contractor to the

Abatement Subcontractor. The Abatement Subcontractor shall designate to his workers the means of egress in case of emergency.

A. The Abatement Subcontractor shall establish emergency and fire exits from the work area. This information is found in Section 3 (Emergency Action Plan) of the 130 Liberty Street Phase I Deconstruction Plan. First aid kit(s), a minimum of 6 full sets of protective clothing and 6 Powered Air Purifying Respirators (PAPRs) shall be provided for use by qualified emergency personnel in the clean room of the decontamination facility.

B. The Abatement Subcontractor shall provide a fire watch and a entry and exit logbook throughout the entire term of the project to protect against fire and unauthorized entry into and around the work area. Any intrusion or incident shall be documented in the logbook. Fire watch personnel shall be present during off-hours shift such as night shift, weekends and holidays when abatement work is not in progress. Fire watch shall be a certified asbestos handler by New York State Department of Labor (NYSDOL).

1.09 CLEAN-UP:

A. Asbestos Related Clean-up: Clean-up work related to asbestos abatement and dust above and below the plenum (with the exceptions mentioned in Section 1.02 of this plan) shall be in general accordance with NYS ICR 56 and general technical requirements. Areas of significant dust accumulations may be cleaned/collected utilizing plastic shovels and dust pans and placed into waste bags for disposal. Afterwards, all non-porous surfaces including walls, windows, doors and floors shall be wet cleaned after HEPA vacuuming. Porous building materials, at the Abatement Subcontractor's option, shall be removed and disposed of as ACBM (e.g.., ceiling tile and carpeting) or cleaned and tested for possible disposal as non-ACBM or non-hazardous material.

Storage of Cleaned Materials: For expediency, the Abatement Subcontractor may opt to dispose of non-porous materials (especially components like loose wiring/cabling, ceiling support grids, etc.) generated by Phase IA work as asbestos contaminated (at a minimum but perhaps as a more stringently regulated waste depending upon the results of dust RCRA characterization to be performed) or elect to properly clean and test the non-porous materials prior to disposal as C&D waste. Any non-porous materials that are tested and found clean must then be moved to a designated cleaned area prior to the collection of clearance air samples. At no time can stored materials exceed a total of thirty cubic yards for the site. Given the size of the building and the likely generation rate of waste, this will greatly restrict the ability to store/stockpile and necessitate a continual movement of waste through and out of the building/off site for proper disposal.

All designated asbestos containing or contaminated waste generated during this cleaning process shall be placed in bags with a minimum of 6 mil in thickness. The bags shall be transported to the waste decontamination unit, washed and then transported to a storage area within the basement awaiting loading for proper transport and disposal as asbestos waste. Disposal of other building materials generated during this process shall be consistent with the results of the waste characterization test results and as provided in the Waste Sampling and Management Plan (Section 1 of the overall Phase I Deconstruction Plan). The Abatement Subcontractor shall utilize:

1. Fully enclosed and lockable waste dumpsters, trailers, or roll-offs, with the interior walls and floors lines with one layer of 6-mil fire retardant polyethylene.

2. Leak-tight containers, and transportation labels conforming to 29 CFR 1926.1101(K), and 40 CFR Part 61, Section 61.1 (a).
3. Spare containers and labels shall be maintained at the "Work Site" and on the waste transport vehicle for use in case of accidental loss or breakage.

Following the dust collection, cleaning, waste packaging and materials removal activities outlined above, the Environmental Consultant Project Monitor shall perform a visual inspection of the cleaned space to determine whether adequate cleaning has been performed. Once the Environmental Consultant Project Monitor deems the area to be adequately cleaned, the Environmental Consultant Project Monitor shall collect clearance air samples.

B. Final Site Cleaning: Upon completion of the work, the Abatement Subcontractor shall remove all temporary construction, decontamination facilities and unused materials placed on site by the Abatement Subcontractor and return the premises in a neat and clean condition.

1.10 CODES, PERMITS, AND STANDARDS:

A. The Abatement Subcontractor shall assume full responsibility and liability for the compliance with all applicable Federal, State and local regulations pertaining to work practices, hauling, disposal and protection of workers, visitors to the site, persons occupying areas adjacent to the site and properties/facilities adjacent to the site. The Abatement Subcontractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations. The Abatement Subcontractor shall hold the Contractor and the Environmental Consultant Project Monitor harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of the Abatement Subcontractor, the Abatement Subcontractor's employees or subcontractors.

B. Before starting the work, the Abatement Subcontractor shall examine this Technical Specification for compliance with codes and regulations applicable to the work and shall immediately report any discrepancy to the Environmental Consultant.

C. When there is conflict among existing standards or with these Abatement Procedures, the more stringent requirements shall apply.

D. Permits, State Licenses and Notifications: The Abatement Subcontractor shall be responsible for obtaining necessary permits, variances, state licenses and certifications of personnel in conjunction with asbestos removal, hauling and disposition and shall provide timely notification of such actions as may be required by federal, state, regional and local authorities. Fees and/or charges for these licenses, permits, and notifications shall be paid by the Abatement Subcontractor. The Abatement Subcontractor shall use all notification forms where applicable.

E. General Applicability of Codes, Regulations and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, all applicable codes and regulations have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the Contract Documents or as if published copies are bound herewith.

F. Federal Requirements: This section sets forth governmental regulations which are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits which are known to the Environmental Consultant Project Monitor and which either must be applied for and received or which must be given to governmental agencies before start of work. Requirements include adherence to work practices and procedures set forth in applicable codes, regulations and standards. Federal requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

1. OSHA: U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA), including but not limited to:

   a. Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final Rules
   Title 29, Part 1910, Section 1001 of the Code of Federal Regulations Final Rules
   Title 29, Part 1926, Section 1101 of the Code of Federal Regulations

   b. Respiratory Protection
   Title 29, Part 1910, Section 134 of the Code of Federal Regulations
   Title 29, Part 1926, Section 103 of the Code of Federal Regulations

   c. Personal Protective Equipment for General Industry
   Title 29, Part 1910, Section 132 of the Code of Federal Regulations
   Title 29, Part 1926, Sections 95 - 107 of the Code of Federal Regulations

   d. Access to Employee Exposure and Medical Records
   Title 29, Part 1926, Section 33 of the Code of Federal Regulations

   e. Hazard Communication
   Title 29, Part 1926, Section 59 of the Code of Federal Regulations

   f. Specifications for Accident Prevention Signs and Tags
   Title 29, Part 1910, Section 145 of the Code of Federal Regulations

   g. Permit Required Confined Space
   Title 29, Part 1910, Section 146 of the Code of Federal Regulations

   h. Construction Industry
   Title 29, Part 1910, Section 1001 of the Code of Federal Regulations – Asbestos
   Title 29, Part 1926, Section 1101 of the Code of Federal Regulations – Asbestos

   i. Construction Industry - General Duty Standards
   Title 29, Part 1926, Sections 20 through 35 of the Code of Federal Regulations – Subpart C – General Safety and Health Provisions

2. DOT: U. S. Department of Transportation, including but not limited to:

a. Hazardous Substances
Title 49, Part 171 - 180 of the Code of Federal Regulations

b. Hazardous Material Regulations
General Awareness and Training Requirements for Handlers, Loaders and Drivers
Title 49, Parts 171-180 of the Code of Federal Regulations

c. Hazardous Material Regulations
Editorial and Technical Revisions
Title 49, Parts 171-180 of the Code of Federal Regulations

3. EPA: U.S. Environmental Protection Agency (EPA), including but not limited to:

a. Asbestos Abatement Projects; Worker Protection Rule Title 40 Part 763, Sub-part G of the Code of Federal Regulations

b. Asbestos Hazard Emergency Response Act (AHERA) Regulation Title 40, Part 763, Sub-part E of the Code of Federal Regulations

c. National Emission Standard for Hazardous Air Pollutants (NESHAP) National Emission Standard for Asbestos Title 40, Part 61, Sub-part A, and Sub-part M (Revised Sub-part B) of the Code of Federal Regulations.

4. State of New York Requirements: which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

a. New York State Department of Labor Industrial Code Rule 56.

b. All dust which may result in release of asbestos fibers in the Building shall be assumed to be an "asbestos material" per the direction of the NYSDOL. The building materials covered with dust shall be handled on a material-specific basis as described elsewhere in this abatement plan.

5. New York City Requirements

a. New York City Department of Environmental Protection Title 15 Chapter 1.

Notification: At least 10 working days (10 working days for EPA, 10 calendar days for NYS and 7 calendar days for NYCDEP) prior to commencement of any asbestos removal, the Abatement Subcontractor shall prepare written notification to the above agencies. Notification for NYCDEP shall be done on DEP's form ACP-7.

1.11 REQUIREMENTS AND QUALIFICATIONS:

A. Minimum Experience: The Abatement Subcontractor shall have experience with asbestos abatement and interior demolition, as evidenced through participation in at least five projects of complexity comparable to this project.

B. Experience and Training: The Abatement Subcontractor's job supervisors, foremen and workers shall be adequately trained and knowledgeable in the field of asbestos abatement and interior demolition. All personnel engaged in asbestos abatement or related activities shall have the NYSDOL and NYCDEP certification. Skilled craftsmen experienced in each respective trade shall execute all phases of the work. Proof of such experience shall be submitted upon request by the Owner. Improperly trained, untrained or inexperienced personnel shall not be allowed in the work area(s). Personnel shall meet minimum training and experience requirements outlined in this Section.

1. The Abatement Subcontractor's on-site job Supervisor(s) shall have successfully completed, within the last twelve months, the NYSDOH-approved course "Supervision of Asbestos Abatement Projects" and be NYSDOL-certified contractor/supervisor(s). Course must be provided by an NYSDOH-approved training provider. The Supervisor(s) shall have experience with abatement work, as evidenced through participation in at least three asbestos abatement projects of complexity comparable to this project.

2. The job Supervisor(s) and foremen shall be thoroughly familiar with and experienced in asbestos removal, interior demolition and related work and shall meet the requirements of a Competent Person set down in OSHA Standard 29 CFR 1926.1101.

3. All asbestos abatement workers shall be knowledgeable, qualified and trained in the removal, handling, and disposal of asbestos material and in subsequent cleaning of the affected environment as well as interior demolition methodologies. All asbestos abatement workers shall be certified as having attended and satisfactorily completed asbestos worker training in accordance with OSHA Standard 29 CFR 1926.1101(k)(3). Course must be provided by an NYS DOH-approved training provider.

4. The Abatement Subcontractor's job Supervisor(s), foremen, and asbestos abatement workers shall be certified and licensed as required by the NYSDOL and NYCDEP.

5. Prior to commencement of work, all personnel who are to enter the work area shall be instructed in and shall be knowledgeable of the appropriate procedures for personnel protection and asbestos abatement. On-site training in the use of equipment and facilities unique to this job site shall be performed. Emergency evacuation procedures from the work area shall also be included in worker training.

C. Supervision Requirements: The Abatement Subcontractor shall provide adequate job supervision for all phases of the asbestos abatement work.

1. The Abatement Subcontractor shall have a NYSDOL and NYCDEP job Supervisor present on site in each active work area whenever work described in this Section is in progress. If the job Supervisor leaves the work area and/or the site for any reason a qualified and certified temporary Supervisor, who meets the requirements of this Section and is familiar with the current status of the work, shall be designated.

2. Worker Medical Examinations: The Abatement Subcontractor shall provide medical examinations for all employees engaged in asbestos removal and disposal operations, in accordance with OSHA Standards 29 CFR 1910.134(b), 1926.1101, and applicable state regulations. The Abatement Subcontractor shall ensure that all employee examination results are on file in his office and available for review and are maintained in accordance with OSHA Standard 29 CFR 1926.1101 (n)(3).

3. Certificate of Worker's Release: Each asbestos abatement worker, workers of other trades or any supervisory personnel who enter the work area or otherwise contact ACBM shall submit a Certificate of Worker's Release, as required in the Section "Submittal".

1.12 **TESTING AND INSPECTION REQUIREMENTS AND RESPONSIBILITIES**: Visual inspections and air monitoring will be performed before, during, and after asbestos abatement to document airborne asbestos fiber concentrations as defined in this specification.

A. The Environmental Consultant Project Monitor's Responsibilities:

1. The Environmental Consultant Project Monitor shall perform the duties of Asbestos Project Monitoring, air monitoring and clearance testing.

2. Area air samples will be collected and analyzed using NIOSH Method 7400. Air samples will be collected during each shift from the work area as required at the decontamination enclosure clean room and in adjacent non-work areas and, to the extent feasible, in other areas as required by NYS ICR 56-17.

3. Clearance testing by Phase Contrast Microscopy (PCM) will be collected to demonstrate final air clearance for work areas within the building. The fiber concentrations of each sample must comply with the requirements of NYS ICR 56-17.8 prior to performing work area breakdown procedures.

4. The Environmental Consultant Project Monitor will perform testing and inspections of the work area, as specified, upon written request of the Abatement Subcontractor.

B. Abatement Subcontractor's Responsibilities:

1. The Abatement Subcontractor shall employ an IH testing laboratory, other than the Environmental Consultant Project Monitor, for analysis of (OSHA) personal air monitoring samples. The laboratory used for air sample analysis shall be successfully participating in the "Proficiency Analytical Testing (PAT) Program for Laboratory Quality Control for Asbestos, and be certified under New York State's ELAP program."

2. The Abatement Subcontractor, under their supervision, shall collect and analyze (OSHA) personal air monitoring samples from each work area. Sampling shall be repeated during each different work activity. Sample collection and analysis shall be performed using the OSHA Reference Method as outlined in 29 CFR 1926.1101, Appendix A.

3. The Abatement Subcontractor shall be advised whenever questions arise concerning compliance with standards of quality and completeness of the work and shall use his best efforts to resolve any such questions to the satisfaction of the Environmental Consultant Project Monitor.

4. The Abatement Subcontractor must notify the Environmental Consultant Project Monitor and the Contractor, in writing, requesting required clearance sampling and/or inspections.

5. The Abatement Subcontractor is responsible for ensuring the Work is complete to the level that meets the criteria of the inspection. The Abatement Subcontractor shall perform an inspection of the Work to evaluate completeness prior to requesting an inspection by the Environmental Consultant Project Monitor.

C. Time Requirements for the Environmental Consultant Project Monitor's Inspections and Testing: Where visual inspections or air testing is required to be performed by the Environmental Consultant Project Monitor, the Abatement Subcontractor shall allow for the following response/analytical time for completion of the inspection/test.

1. Where visual inspections or testing are required, allow 24 hours beginning from the time the Abatement Subcontractor's written request is received by the Environmental Consultant Project Monitor, for the performance of the inspection.

1.13 TERMINOLOGY: The following commonly-used terms are defined in the context of this Plan:

A. "Abatement" shall mean procedures to control fiber release from asbestos material. This includes removal, encapsulation, enclosure and repair.

B. "Abatement Subcontractor" shall mean the company, firm, partnership or corporation which is contracted to perform asbestos abatement and related activities outlined in this plan.

C. "AIHA" shall mean the American Industrial Hygiene Association, 475 Wolf Ledges Parkway, Akron, OH 44311.

D. "Airlock" shall mean a system for permitting entrance and exit while restricting air movement between the contaminated and uncontaminated area. It consists of two curtained doorways separated by a distance of at least three feet such that one passes through a doorway into the airlock, allowing the doorway sheeting to overlap and close off the opening before proceeding through the second doorway, thereby preventing flow-through contamination.

E. "Air Sampling" shall mean the process of measuring the fiber content of a known volume of air collected during a specified period of time. The procedure utilized for asbestos follows the NIOSH Standard Analytical Method 7400 or the Transmission Electron Microscopy Method - AHERA 40 CFR Part 763.

F. "Amended Water" shall mean water to which a surfactant has been added.

G. "ANSI" shall mean the American National Standards Institute, 1430 Broadway, New York 10018.

H. "Area Air Sampling" shall mean any form of air sampling or monitoring where the sampling device is placed at some stationary location.

I. "Asbestos" shall mean any hydrated mineral silicate separable into commercially usable fibers, including but not limited to chrysotile (serpentine), amosite (cumingtonite-grunerite), crocidolite (riebeckite), tremolite, anthophyllite and actinolite.

J. "Asbestos-Containing Building Material (ACBM)" shall mean asbestos or any material containing more than one percent asbestos by weight.

K. "Asbestos Project" shall mean any form of work performed in connection with the alteration, renovation, modification or demolition of a building or structure which shall disturb (e.g., remove, enclose, encapsulate, repair) an asbestos-containing material.

L. "ASTM" shall mean the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

M. "Authorized Visitor" shall mean the Asbestos Project Monitor and any representative of a regulatory or other agency having jurisdiction over the project.

N. "Building Owner" shall mean the Entity to whom legal title to the premises is deemed vested unless the premises are held in land trust, in which instance Building Owner means the person in whom beneficial title is vested. The Lower Manhattan Development Corporation is the Building Owner for this project.

O. "Clean Room" shall mean any uncontaminated area or room, which is a part of worker decontamination enclosure system with provisions for storage of workers' street clothes and protective equipment.

P. "Clearance Air Monitoring" shall mean the employment of aggressive sampling techniques with a volume of air collected to determine the airborne concentration of residual fibers upon conclusion of an asbestos abatement activity.

Q. "Contractor" shall mean the firm, partnership, or corporation contracted by the Owner to oversee and direct the entire 130 Liberty Street Deconstruction project. Gilbane Building Company is the Contractor for this project.

R. "Conventional Waste" shall mean non porous, non asbestos waste that can be cleaned, removed from the work area and disposed of as non asbestos waste.

S. "Curtained Doorway" shall mean a device, which consists of at least three overlapping sheets of plastic over an existing or temporarily framed doorway. One sheet shall be secured at the top and left side, the second sheet at the top and right side, and the third sheet at the top and left side. All sheets shall have weights attached to the bottom to ensure that the sheets hang straight and maintain a seal over the doorway when not in use.

T. "Decontamination Enclosure System (decon)" shall mean a series of connected rooms,

separated from the work area and from each other by air locks for the decontamination of workers, materials, waste containers and equipment.

U. "Dust" shall mean the COPC contaminated material that coated portions of the Building as a result of the events of September 11, 2001.

V. "Encapsulant (sealant) or Encapsulating Agent" shall mean a liquid material which can be applied to asbestos-containing material and which controls the possible release of asbestos fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant). This may also be used to seal surfaces from which ACBM has been removed.

W. "Encapsulation" shall mean the coating or spraying of asbestos-containing material with an encapsulant.

X. "Enclosure" shall mean the construction of an airtight separation between contaminated and clean/cleaned portions of the facility or any other appropriate procedure which prevents the release of asbestos fibers.

Y. "Environmental Consultant Project Monitor" shall mean a business entity authorized pursuant to NYS ICR 56-2.2(c)(8).

Z. "EPA" shall mean the Environmental Protection Agency, 401 M Street, S.W., Washington, DC 20460.

AA. "Equipment Room" shall mean a contaminated area or room which is part of the worker decontamination enclosure system with provisions for the storage of contaminated clothing and equipment.

BB. "Fixed Object" shall mean a unit of equipment or building component in the work area which cannot be removed from the work area.

CC. "Friable Asbestos Material" shall mean that condition of crumbled, pulverized, powdered, crushed, or exposed asbestos which is capable of being released into the air by hand pressure.

DD. "Friable Material Containment" shall mean the encapsulation or enclosure of any friable ACBM in a facility.

EE. "Glove-bag Technique" shall mean a method for removing asbestos-containing material from piping runs, valves, joints, elbows and other non-planar surfaces by using a glove-bag.

FF. "Glove-bag" assembly is a manufactured device consisting of a glove-bag (constructed of at least 6-mil transparent plastic), two or more inward-projecting long sleeve gloves, one inward-projecting water wand sleeve, an internal tool pouch and an attached, labeled receptacle for asbestos waste. The glove-bag is constructed and installed in such a manner that it surrounds the object or area to be decontaminated and contains all asbestos fibers released during the removal process.

GG. "HEPA Filter" shall mean a high efficiency particulate air filter capable of trapping and retaining 99.97 percent of particles (asbestos fibers) greater than 0.3 micrometers in mass median aerodynamic equivalent diameter.

HH. "HEPA Vacuum equipment" shall mean vacuuming equipment with a high efficiency particulate air filter capable of trapping and retaining 99.97 percent of particles (asbestos fibers) greater than 0.3 micrometers in mass median aerodynamic equivalent diameter.

II. "Large Asbestos Project" shall mean an asbestos project involving the disturbance (e.g., removal, enclosure, encapsulation, repair) of more than 260 linear feet of friable asbestos-containing material or more than one hundred sixty square feet of asbestos-containing material.

JJ. "Manifest" is a Chain of Custody document duly authorized by parties attesting to the quantities, travel route and deposition of the asbestos waste materials.

KK. "Minor Asbestos Project" shall mean an asbestos project involving the disturbance (removal, enclosure, encapsulation, and repair) of less than 25 linear feet or less than 10 square feet of asbestos-containing material.

LL. "MSHA" shall mean the Mine Safety and Health Administration, Approval and Certification Center, P.O. Box 251, Route 1, Triadelphia, WV 26059.

MM. "Negative Air Pressure equipment" shall mean a portable local exhaust system equipped with HEPA filtration. The system shall be capable of creating a negative pressure differential between the outside and inside of the work area.

NN. "NESHAPS" shall mean the National Emission Standards for Hazardous Air Pollutants (40CFR Part 61).

OO. "NYS ICR" shall mean New York State Industrial Code Rule.

PP. "PCM" shall mean phase contrast microscopy.

QQ. "OSHA" shall mean the Occupational Safety and Health Administration, 200 Constitution Avenue N.W., Washington, DC 20210.

RR. "Personal Air Monitoring" shall mean a method used to determine employees' exposure to airborne fibers. The sample is collected outside the respirator in the worker's breathing zone. Personal Air Monitoring shall be the responsibility of the Asbestos Abatement Subcontractor.

SS. "Personal Protective equipment" (PPE) shall mean appropriate protective clothing, gloves, eye protection, footwear; head gear and approved respiratory protection.

TT. "Plasticize" shall mean to cover surfaces with plastic sheeting.

UU. "PLM" shall mean polarized light microscopy.

VV. "Removal" shall mean the stripping of any asbestos-containing materials from surfaces or components of a facility or taking out structural components.

WW. "Shower Room" shall mean a room between the clean room and the equipment room in the worker decontamination enclosure with hot and cold running water controllable at the tap and arranged for complete showering during decontamination.

XX. "Soft Strip and Interior Gut" shall mean the demolition and removal of most non-structural interior building materials and components.

YY. "Strip" shall mean to remove asbestos materials from any part of the facility.

ZZ. "Surfactant" shall mean a chemical wetting agent added to water to improve penetration.

AAA. "TEM" shall mean Transmission Electron Microscopy.

BBB. "Waste Decontamination Enclosure System (waste decon)" shall mean that portion of a decontamination enclosure system designed for controlled passage of materials, waste containers and equipment, consisting of a washroom and a holding area separated from each other and the work area by airlocks and curtained doorways.

CCC. "Wet Cleaning" shall mean the removal of asbestos fibers from building surfaces and objects by using cloths, mops or other cleaning tools which have been dampened with water.

DDD. "Work Area" shall mean designated rooms, spaces or areas of the building or structure where asbestos abatement, dust removal, soft strip and interior gut take place.

EEE. "Worker" shall mean asbestos handler and/or supervisor.

FFF. "Worker Decontamination Enclosure System" shall mean that portion of a decontamination enclosure system designed for controlled passage of workers, and other individuals and authorized visitors, consisting of a clean room, a shower room, and an equipment room separated from each other and from the work area by airlocks and curtained doorways.

GGG. "Work Site" shall mean premises where asbestos abatement and related activities is taking place.

PART 2 - PRODUCTS

2.01 **MATERIALS**: Materials provided under this section shall be standard products of manufacturers regularly engaged in the production of the items and shall conform to OSHA Standard 29 CFR 1926.1101; EPA Standard 40 CFR 61, Subpart M; Department of Transportation Standards 49 CFR 171, 172, and 173; applicable state regulations and requirements specified herein. Materials listed under this section "or equal" shall be provided for work under contract.

A. Polyethylene: Provide fire retardant polyethylene of 6-mil thickness shall be provided in rolls of sizes which will minimize the frequency of joints. Fire retardant polyethylene sheet may be used for plasticizing the enclosed work area, for preparation of the decontamination enclosure system and for waste packaging.

B. Duct Tape: Duct tape shall be capable of sealing joints of adjacent sheets of plastic and of attaching plastic sheeting to finished surfaces without damage to existing finish and shall be capable of adhering under both dry and wet conditions, including use of amended water. When used on windows the tape shall be ultra violet light stable and shall not leave residue when removed. Nashua 357 Black Duct Tape or equivalent shall be used for all window applications. This tape can be used for all applications relative to this project.

C. Surfactant: Surfactant (Wetting Agent) shall consist of resin materials in a water base which has been tested to ensure materials are non-toxic and non-hazardous. Surfactants shall be installed according to the manufacturer's written instructions.

D. Caulking Sealant: Caulking sealant shall be single component, non-sag elastomer with 1600% elongation capacity. Sealant shall meet the requirements of Federal Specification TT-S-00230C, Class A Type II. Sealant may be used to form an airtight seal around plywood barriers or temporary partitions, to seal along the seams of the decontamination enclosure system's plywood sheathing and to seal around piping or other small penetrations of the work area. Sealant application shall be according to the manufactures written instructions

E. Encapsulant: A liquid material which can be applied to a surface in order to "lock down" any materials on that surface by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant).

F. Foam Sealant: Foam Sealant shall be expanding urethane Class 1 foam sealant with a Underwriters Laboratories, Inc. (U.L. 723) flame spread index of 25 or less, smoke developed index of 0, and a minimum operating temperature range between -30^{o}F and 250^{o}F.

G. Plywood: Plywood used for temporary partitions, decontamination enclosure systems and tunnels shall be an exterior grade and a minimum 3/8-inch thick.

H. Spray Adhesive: Spray Aerosol Adhesive shall be specially formulated to stick to sheet polyethylene (3M 76, 3M 77, or equivalent).

I. Other Materials: All other materials such as lumber, plywood, tools, scrapers, brushes, cleaning materials, adhesive, nails, hardware, etc. which are required to perform the work described in this Section shall be provided. Materials and equipment shall be new or used, uncontaminated by asbestos, in serviceable condition and appropriate for the intended purpose.

J. Disposal Bags: Plastic Disposal Bags shall be a minimum of six mils in thickness. Bags shall be labeled in accordance with this Section.

K. Shipping Containers: Impermeable Containers shall be suitable to receive and retain any asbestos-containing or asbestos-contaminated materials until they are disposed of at an approved landfill. The containers shall be labeled in accordance with this Section. Containers shall be both airtight and watertight and conform to DOT Standard 49 CFR 178.224. Each container shall be constructed of fiber, hard plastic or metal with locking, airtight lids.

L. Markings and Labels: Disposal bags and shipping containers shall bear danger labels, transportation packaging labels and generator identification information. Labels shall be permanently affixed to all bags and shipping containers containing ACBM, in accordance with OSHA Standard 29 CFR 1926.1101(k)(2), DOT Standard 49 CFR Part 171 and 172 and EPA Standard 40 CFR Part 61.150(a)(1)(v).

1. Danger label format and color shall conform to OSHA Standard 29 CFR 1926.200. Danger labels shall display the following legend/information:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG
DISEASE HAZARD

2. DOT Marking and Labels: Markings and labels shall be permanently affixed to all bags and containers containing ACBM in accordance with DOT 49 CFR 172.304 and 172.407.

a. Markings shall display the following text:

RQ, ASBESTOS, NA 2212

b. Labels shall be diamond shape and shall be located near the Marking text. Labels will consist of a diamond a minimum of 100 millimeters (mm) on each side with each side having a solid line inner boarder 5.0 to 6.3 mm from the edge. The label shall be white with seven black vertical stripes on the top half. Black stripes and white spaces shall be equally spaced. The lower half of the label shall be white with the class number "9" underlined and centered at the bottom. Refer to DOT 40 172.446 for label format.

3. Generator identification information shall be affixed to each DOT label format and color shall conform to DOT Standard 49 CFR 172.304. Generator identification information labels shall display the following legend/information:

GENERATOR'S NAME
GENERATOR'S 24 HOUR PHONE
GENERATOR'S FACILITY ADDRESS

M. Reuse of Containers: If impermeable containers used to transport bagged asbestos waste to the landfill are to be reused, the empty containers shall display the following label:

RESIDUE:
LAST CONTAINED ASBESTOS RQ

N. Warning Signs: Warning Signs shall be posted at the perimeter of the work area and every potential entry point into the work area prior to abatement operations in accordance with OSHA Standard 29 CFR 1926.1101. Danger sign format and color shall conform to OSHA Standard 29 CFR 1926.200. The signs shall display the legend indicated below:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE
CLOTHING ARE REQUIRED IN THIS AREA

O. Acceptable Foam or Viscous Liquid:

1. Shall be non-toxic and not require special respiratory protection for handling.

2. Shall coat and maintained a stable blanket (minimum 1" thickness) for the duration of the removal process.

3. Shall wet the ACBM and remain wet through the bagging process.

4. Shall leave an identifiable colored residue when it dissipates.

5. Shall not require special disposal.

2.02 **EQUIPMENT**: Equipment provided under this section shall conform to applicable federal and state regulations, local codes and the requirements specified herein.

A The Abatement Subcontractor shall maintain on site an emergency generator capable of powering all active work areas and areas services the Personnel and Waste Decontamination Units for use to maintain required negative pressure in the event of a power failure.

B. Communication Equipment: Devices suitable for inter-room communications such as "walkie-talkies" or "radio band" communicators shall be provided.

C. Spraying Equipment: Equipment used to apply amended water or removal encapsulant shall be of a low pressure type to prevent disturbance of the asbestos prior to physical controlled removal. Airless spray equipment shall be provided for the application of asbestos encapsulant.

D. Vehicles: Trucks or Vans used for the transportation of asbestos waste shall be enclosed and suitable for loading, temporary storage, transit and unloading of asbestos-contaminated waste without exposure to persons or property.

E. Fall Protection Equipment: Certified and approved equipment to be used by trained personnel when working at elevation to protect against falling from an elevated work area.

F. Water Filtration System: A system capable of filtering and retaining particles larger than 5.0 microns in size shall be provided.

G. Carts: Provide water tight wheeled carts with tight fitting lids suitable for movement of non-contaminated waste or bagged asbestos waste from the decontamination enclosure system to the waste storage container or transport vehicle.

H. No diesel or gasoline powered equipment shall be permitted inside the work area.

2.03 WORKER PROTECTIVE CLOTHING AND EQUIPMENT: Protective clothing and equipment shall conform to OSHA Standard 29 CFR 1926.1101

A. Protective Clothing: Workers shall be provided with sufficient sets of properly fitting, full-body, disposable coveralls, head covers, gloves and 18-inch high boot-type foot covers. Disposable coveralls, head covers and 18-inch high boot-type foot covers shall be constructed of material equal to DuPont "TYVEK-Type 14" or Kimberly-Clark "Kleenguard" as a minimum requirement.

1. The Abatement Subcontractor shall provide authorized visitors and the Environmental Consultant Project Monitor suitable properly fitting protective disposable clothing, headgear, hard hats, eye protection and footwear (up to four sets per 8-hour shift) whenever they are required to enter the work area.

B. Equipment: Eye protection and hard hats shall be utilized at all times on this project everywhere within the established site perimeter in accordance with the HASP.

C. Respiratory Protection: The Abatement Subcontractor shall be solely responsible for providing adequate respiratory protection at all times for all individuals in the work area. Types of respirators used shall be approved by MSHA/NIOSH for asbestos in accordance with OSHA Standard 29 CFR 1926.1101 and 29 CFR 1910.134. The Abatement Subcontractor shall provide a level of respiratory protection which supplies an airborne fiber level inside the respirator below 0.01 fibers per cubic centimeter (f/cc) as the minimum level of protection allowed. Determine the proper level of protection by dividing the actual airborne fiber count in the work area by the "protection factors" given below for each respirator type:

Respirator Type	Protection Factor

Air purifying: Negative-pressure respirator, High efficiency HEPA filter, Half-facepiece	10
Air purifying: Negative-pressure respirator, High efficiency HEPA filter, Full-facepiece	50 (quantitative) 10 (qualitative)
Powered air purifying (PAPR): Positive-pressure respirator High efficiency HEPA filter, Full-facepiece	100
Type C supplied air: Positive-pressure respirator, Pressure-demand, Full-facepiece HEPA escape	1000
Type C supplied air: Pressure-demand, Full-facepiece equipped with an auxiliary SCBA	1000

1. The Abatement Subcontractor shall provide workers with individually issued and marked respiratory equipment. Respiratory equipment shall be suitable for the asbestos exposure level(s) in the work area(s), as specified in OSHA Standard 29 CFR 1926.1101.

2. Where respirators with disposable filter parts are employed the Abatement Subcontractor will provide sufficient filter parts for replacement as necessary or as required by the applicable regulation.

2.04 NEGATIVE PRESSURE FILTRATION SYSTEMS

The Abatement Subcontractor will provide enough HEPA filtered negative air units to completely change the work area air volume four (4) times/hour and maintain negative pressure drop of at least -0.02 inches water column as verified by continuous recording digital manometers located throughout the work area.. The Abatement Subcontractor will demonstrate the number of units needed per Work Area for four (4) room air changes by calculating the volume flow rate (cfm) delivered by each unit under a 2-inch pressure drop across filters. The Abatement Subcontractor shall further determine the best placements for all HEPA filtered negative air units on any given floor given its configuration and the focus of the Work activities at any given time as well as other pertinent factors to ensure the optimum air filtration is achieved. Provide at least one standby unit for every fifteen units in use in the event of a machine failure or emergency such as contamination in surrounding non-work area. All units shall be equipped with an operating audible alarm to signal a loss of filtration below the requisite level.

Preliminary calculations indicate a need for twenty-two (22), 1,500 cfm negative air units per floor plus two back-ups to achieve this pressure differential. This is determined by utilizing the formula (CF/(CFM * 15M) = # of units needed) wherein CF represents the volume of the enclosure, CFM represents the capacity of the filtration unit and 15M represents the number of minutes required for a complete air change. The average volume of air space per floor is 480,000 cubic feet. The exact number of units on each floor shall be field verified based on the cubic footage per floor. On the fifth floor mechanical space where the height of the ceiling deck is twice that of the other floors, twice as many negative air units shall be utilized to achieve the required pressure differential.

The Environmental Consultant Project Monitor may reject any HEPA filtered negative air units that are deemed to be unacceptable or performing marginally based on visible inspection or performance.

The HEPA filtration ventilation units will be exhausted to the exterior of the building by use of flexible duct connection and existing window portals or the Abatement Subcontractor shall create additional portals sufficient for the number of negative air units. The flex duct will not extend outside the window and window portal more than one (1) foot.

A. Abatement Subcontractor will provide:

1. Manufacturer's product data on the HEPA units.

2. Methods of supplying adequate power to the units and designation of panels supplying power.

3. Description of testing methods for correct airflow and pressure differential and manufacturer's product data on a pressure differential monitor.

B. Negative Air Machines (HEPA Units):

1. Cabinet: Will be constructed of steel or other durable materials able to withstand damage from rough handling and transportation. Width of the cabinet should be less than thirty (30) inches to fit through standard-size doorways. The cabinet will be factory sealed to prevent asbestos-containing dusts from being released during use, transport or maintenance. Access to and replacement of all filters will be from an intake end. The unit will be mounted on casters or wheels.

2. Fans: Rate capacity of fan according to usable air-moving capacity under actual operating conditions. Use a centrifugal-type fan.

3. Final Filters: The final filter will be the HEPA type. The filter media (folded into closely pleated panels) must be completely sealed on all edges with a structurally rigid frame:

a. Locate a continuous rubber gasket between the filter and the filter housing to form a tight seal.

b. Each filter will be individually tested and certified by the manufacturer to have an efficiency of not less than 99.97 percent when challenged with 0.03 um diotcylphthalate (DOP) particles. Testing will be according to

Military Standard MIL-STD-282 and Army Instruction Manual 136-300-175A. Each filter will bear a UL586 label to show ability to perform under specified conditions.

c. Each filter will be marked with: the name of the manufacturer, serial number, air-flow rating, efficiency and resistance and the direction of test air flow.

4. Pre filters: To protect the final filter by removing the larger particles, pre filters are required to prolong the operating life of the HEPA filter. Two (2) stages of pre filtration are required. The first-stage pre filter will be a low-efficiency type (e.g., for particles 10 um and larger). The second-stage pre filter will have a medium efficiency (e.g., effective for particles down to 5 um). Pre filters will be installed either on or in the intake grid of the unit and held in place with special housings or clamps.

5. Instrumentation: Each unit will be equipped with a Magnetic gauge or manometer to measure the pressure drop across filters and to show when filters have become loaded and need to be changed. A table showing the useable air-handling capacity for various static pressure readings on the Magnetic gauge will be affixed near the gauge for reference or the Magnetic reading indicating at what point the filters should be changed, noting cubic feet per minute (CFM) air delivery calibration at that point. Provide units equipped with an elapsed time meter to show the total accumulated hours of operation. Units shall also be equipped with an audible alarm indicating that the pressure drop across the filters has dropped below requisite levels.

6. Safety and Warning Devices: Provide an electrical (or mechanical) lockout to prevent the fan from operating without a HEPA filter. Units will be equipped with automatic shutdown system to stop the fan in case of major rupture in the HEPA filter or blocked air discharge. Warning lights are required to show normal operation, too high a pressure drop across the filters (i.e., filter overloading), and too low a pressure drop (i.e., major rupture in HEPA filters or obstructed discharge).

7. Electrical components will be approved by the National Electrical Manufacturers Association (NEMA) and Underwriter's Laboratories (UL). Each unit will be equipped with overload protection sized for the equipment. The motor, fan, fan housing and cabinet will be grounded.

C. Use of System During Abatement Operations

1. Start exhaust units before beginning work (before any ACBM or asbestos contaminated material is disturbed). After abatement work has begun, run units continuously to maintain a constant negative pressure until decontamination of the Work Area is complete. Do not turn off units at the end of the work shift or when abatement operations temporarily stop.

2. Do not shut down negative air system during abatement operations procedures unless authorized by the Environmental Consultant Project Monitor.

3. Start abatement work at a location further from the exhaust units and proceed toward them. If an electric power failure occurs, immediately stop all removal work and do not resume until power is restored and all exhaust units are operating again. The Personnel and Waste Decontamination Units shall be immediately sealed so as to avoid the release of asbestos fibers for the duration of any power loss event and remain sealed until power and negative pressure has been adequately re-established.

4. At completion of abatement work, allow exhaust units to run as specified under this section to remove airborne filters that may have been generated during abatement work and cleanup and to purge the Work Area with clean makeup air. Units will be required to run after decontamination and during final air sampling until final air clearance testing and inspections are completed.

D. Dismantling the System: When a final inspection and the results of the final air tests show that the area meets the requirements for clearance, exhaust units may be removed from the Work Area. Before removal from the Work Area, remove and properly dispose of prefilters and seal intakes to the machine with 6 mil polyethylene to prevent environmental contamination.

PART 3 - EXECUTION

3.01 DECONTAMINATION ENCLOSURE SYSTEMS:

A. Personnel & Waste Decontamination Facility: The pre-existing Personnel and Waste Decontamination Facilities located in Cellar "A" and the 1st floor shall be utilized for the duration of this project. Since the majority of the building interior has been designated as "contaminated" (with the exceptions of the Gash area and the southern portions of Cellar A) due to the existence of WTC dust and since the Phase IA work will proceed from the top down the building, Abatement Subcontractor workers leaving any given work area will necessarily traverse through remaining "contaminated" spaces on their way down and out of the building so the establishment of a personnel decontamination unit adjacent to each work area serves no purpose. Therefore, the Abatement Subcontractor shall obtain a site specific variance for a remote decontamination facility. The personnel decontamination unit shall be utilized by all asbestos abatement personnel and authorized visitors for entrance to and exit from the work areas. Access to the upper floors of the building shall be via the elevators outside the equipment room of the personal decon unit (See Fig. 1). Decontamination procedures shall be conducted in accordance with the HASP, Section 5 of the Phase I Deconstruction Plan.

Personnel Entrance and Decontamination Procedures for Removal Operations: The following entry/exit procedures shall be used for removal work areas. Entry/exit procedures shall be consistent with the 130 Liberty Street HASP (Section 5, 130 Liberty Street Phase 1 Deconstruction Plan HASP) developed for all trades working within the subject building.

1. All individuals who enter the Work Area shall legibly sign the entry/exit log located in the clean room upon each entry and exit. The log shall be permanently bound and shall identify fully the facility, agents, contractor(s), the project, each Work Area and worker respiratory protection employed. The job supervisor shall be responsible for the maintenance of the log during the abatement activity.

2. Each worker shall remove street clothes in the clean room; wear two disposable suits, including gloves, hoods and non-skid footwear and put on a clean respirator (with new filters) before entering the work area.

3. Each worker shall, before leaving the work area or tent, shall clean the outside of the respirators and outer protective clothing by wet cleaning and/or HEPA-vacuuming. The outer disposable suit shall be removed in the work area and the worker shall then proceed to the designated elevator for transport to the decontamination facility. The inner disposable suit shall be wet wiped and HEPA vacuumed thoroughly before removing and prior to an aggressive shower. The respirator shall be removed and rinsed in the shower.

4. Following showering and drying off, each worker or authorized visitor shall proceed directly to the clean room, dress in street clothes and exit the decontamination enclosure system immediately. Personnel should also sign out of log book.

3.02 PERSONNEL PROTECTION AND DECONTAMINATION PROCEDURES:

A. General: The Abatement Subcontractor shall take all safety measures and precautions necessary to protect his employees and building occupants in accordance with OSHA Standard 29 CFR 1926, EPA Standard 40 CFR, Part 61, Subpart M, and applicable state regulations. The Abatement Subcontractor shall be solely responsible for enforcing personnel protection requirements for its employees and authorized visitors. Table 3.1 summarizes the minimum levels of personnel protection required during work of this Section.

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

2. Workers or authorized visitors shall not eat, smoke, drink or chew gum or other substances while in the work area(s) or decontamination area(s).

3. Contaminated worker footwear, eye protection and hard hats shall be stored in the equipment room when not in use in the work area and, upon completion of asbestos abatement, disposed of as asbestos-contaminated waste or decontaminated for reuse.

4. Except for government inspectors with jurisdiction, no visitors except those authorized by Contractor shall be allowed in work area.

5. Asbestos workers shall not wear any jewelry (e.g. watch, necklace, etc.) while in the work area or decontamination area.

TABLE 3.1
MINIMUM PERSONAL PROTECTION REQUIREMENTS

Activity	Respiratory Protection	Disposable Clothing	Shower required after work	Decontamination Unit
1. Removal of "loose items" prior to Phase IA work - potential asbestos exposure	HMR	Yes	Yes	Yes
2. Sealing openings prior to Phase IA work - potential asbestos exposure	HMR	Yes	Yes	Yes
3. Plasticizing prior to Phase IA work - potential asbestos exposure	HMR	Yes	Yes	Yes
4. Performing limited "Soft Strip" to open up the work area	HMR	Yes	Yes	Yes
5. Removing porous dust-contaminated materials	HMR	Yes	Yes	Yes
6. Cleaning and removal of non-porous materials and packaging or cleaning of those materials/components	HMR	Yes	Yes	Yes
7. Gross ACBM removal	HMR	Yes	Yes	Yes
8. Cleaning (after gross removal)	HMR	Yes	Yes	Yes
9. Encapsulation of fireproofing	HMR	Yes	Yes	Yes
10. Activities after final clearance	None	No	No	No
11. Loading waste on truck	HMR	Yes	No	No

a. These are minimum requirements only. The Abatement Subcontractor is fully responsible for the personal protection of all of their workers at the site. Where conflict or interpretational differences arise, the text of the Specification applies.

HMR – Half face respirator with P100 cartridges.

B. Worker Respiratory Protection: With approval from the Environmental Consultant Project Monitor, historical airborne fiber level data may serve as the basis for selection of the level of respiratory protection to be used for the time interval prior to the Abatement Subcontractor establishing the eight-hour time weighted average (TWA) for an abatement task. Historical data provided by the Abatement Subcontractor shall be based on personal air monitoring of the "breathing zone" of his employees for other asbestos abatement projects and the data were obtained during work operations conducted under work place conditions closely resembling the processes, type of material, control methods, work practices and environmental conditions used and prevailing in the Abatement Subcontractor's current operations. Documentation of aforementioned results shall be presented to the Environmental Consultant Project Monitor for review of applicability. (See "Submittal, Pre-Project Information.") This will not relieve the Abatement Subcontractor in providing personal air monitoring to determine the TWA for the work under contract. The TWA shall be determined in accordance with 29 CFR 1926.1101. After the TWA is established, the Abatement Subcontractor may provide respirators as presented in the Specification.

1. Review Material Safety Data Sheets (MSDS) for products to be used during the work. Follow the recommendations as given by the product manufacturer for personnel protection required to be worn during product application.

2. Personal Air Monitoring Requirements: The Abatement Subcontractor's CIH or qualified Industrial Hygienist (IH) shall be responsible for development and implementation of a personal air-monitoring program in accordance with OSHA Standard 29 CFR 1926.1101, good industrial hygiene practices and the requirements herein for gross removal. Personal air monitoring may be performed by the Abatement Subcontractor's "competent person" supervised by the Abatement Subcontractor's CIH or qualified IH. Documentation of air sampling shall include as a minimum, calculations of minimum sample volume to achieve necessary detection limits; sampling time; sampling location (or subject); evidence of periodic inspection of sampling equipment; documentation of daily pre- and post-calibration of sampling equipment; detailed description of worker protective devices; description of any typical environmental conditions and a description of work practices, procedures and controls in operation during the sampling period. Documentation of sample analysis shall include, as a minimum, sample identification, total sample duration, sample flow rate, the "Limit of Reliable Quantitation", total air volume, total fibers counted (with work sheets), total fields counted, blank filter analysis, and reticule field area. Airborne fiber concentrations in fibers per cubic centimeter (f/cc) shall be calculated and reported at the 95 percent confidence level.

3. Full-shift personal exposure air sampling of workers shall be performed to establish the 8-hour (TLV-TWA) exposure. Such sampling shall be conducted for each employee (or representative group of employees, at least one sample pre eight man crew) with the highest exposure potential in each work area for each type of activity. Similarly, 30-minute personal exposure air sampling shall be conducted during activities anticipated to produce the highest airborne concentrations to determine the Excursion Limit. Personal exposure sampling shall be repeated everyday as per protocol requirements where removal and

cleanup operations are conducted for the duration of the project or at any time that conditions indicate to the Abatement Subcontractor CIH or qualified IH that the most recent personal sampling results are no longer indicative of employee exposure. PCM personal samples shall be collected and analyzed according to the OSHA Reference Method in OSHA Standard 29 CFR 1926.1101, Appendix B.

C. Sequence of Work shall be as follows:

Overview

The basic flow of the abatement shall be conducted starting at the top of the building and working its way down. The goal is to complete the work in 11 sequences beginning with the isolation of the top 4 floors and continuing downward in 4 floor sections towards the basement. Additionally, the Abatement Subcontractor shall coordinate with all involved parties to assure that a minimum one (1) floor buffer zone is maintained between the Phase IA work activities of the Abatement Subcontractor and any investigative or actual Phase IB work activities of the Demolition Subcontractor. Under no circumstances can any Phase IB work activities create the potential for negative impact to the control measures required for the safe execution of Phase IA work activities. The Environmental Consultant Project Monitor shall conduct regular progress inspections to assure that the work is conducted in accordance with this section.

This sequencing and schedule is provided for informational purposes only and shall be adjusted in the field as deemed appropriate or necessary by the Abatement Subcontractor. After negative air pressure has been achieved, the Abatement Subcontractor shall perform limited soft strip (i.e., ceiling tiles and support grid, loose wiring and conduit, fiberglass pipe insulation, carpeting and interior partitions only as necessary to access VAT that might run underneath) to create an open work area, followed by removal of asbestos containing building materials (ACBM) and lastly a thorough final cleaning to remove any fibers that may have been released during the abatement of ACBMs and to remove the existing settled WTC dust. The stairwells, elevator shafts and all other vertical connections between floors shall be sealed properly so as not to allow dust to re-enter spaces/floors already cleaned and cleared. These vertical connections (stairwells and shafts) shall be cleaned last after all floors of the building have been cleaned,

There are three exceptions to the general sequencing of Phase IA work overviewed above. It will be necessary for the Abatement Subcontractor to clean some limited, designated exterior surfaces and to create several limited clean containments to facilitate the erection of the man-hoist and the crane – this work will occur as necessary and not necessarily in the “top/down” sequence presented above. Also, the Abatement Subcontractor may need to clean areas of the basements out of sequence to facilitate some Phase IB and/or Phase II work. Lastly, the Abatement Subcontractor must remove any existing ACBM from and clean the HVAC duct shaft identified to be used for movement of Phase IB generated non-hazardous waste. The requirements for this work are further detailed within this Abatement Plan.

The sequence at work shall be as follows:

1. The Contractor shall isolate electric and install temporary Ground Fault Circuit Interrupter (GFCI) panels and lighting which will be provided by the Abatement Subcontractor.

2. The Abatement Subcontractor will restrict access to areas where abatement is to take place from remainder of the building. This shall be accomplished by pre-cleaning and constructing a rigid barrier in stairwells and walkways where unauthorized personnel can gain access to the work area. Entrance to the floors being abated and cleaned shall further be restricted by notifying the elevator operator in writing of the abatement schedules and floors that shall be "off limits" to unauthorized personnel. In addition, the Abatement Subcontractor's on site supervisor shall supply to the elevator operator a list of names of authorized personnel. Further, the elevator operator shall be instructed that all cleaned and cleared floors above the current work (floor) area are off-limits for the duration of the Phase IA activities and may no longer be accessed by anyone.

3. The Abatement Subcontractor shall check critical barriers on a daily basis to ensure that the integrity of the barriers has not been compromised.

4. Access to the restricted work areas shall be through airlocks as defined by ICR 56-1.4(e) made of three alternating and overlapping plastic flaps and weighted at the bottom.

5. The Abatement Subcontractor shall construct critical barriers and seals over all openings and shafts where there is communication between floors and in any openings to the building exterior. Areas where critical barriers are installed shall be pre-cleaned by HEPA vacuuming and wet wiping. All Openings greater than 32 square feet shall be closed off with a rigid plywood barrier of at least 3/8-inch thickness and covered with two layers of 6-mil polyethylene sheeting and establish negative pressure. If the negative pressure monitoring systems indicate a loss of negative pressure, the Abatement Subcontractor shall immediately check for breaches of the critical barriers and make any necessary corrections.

6. As all surfaces in the building (with the exception of those in previously cleaned areas) have been designated as having been contaminated with WTC dust and will be cleaned or removed/properly disposed as part of the abatement, no general pre-cleaning of the work area shall be required. The Abatement Subcontractor shall ensure that a variance for forgoing the requirements for installation of polyethylene sheeting on the walls, ceiling and floors of the work area as indicated in NYS ICR 56-8.1(k)(5) has been approved.

7. The Abatement Subcontractor shall give the Environmental Consultant Project Monitor 24 hours written notice requesting a pre-commencement inspection. Gross removal may begin immediately following the Environmental Consultant Project Monitor's approval. Approval shall be based on monometer readings indicating pressure differential of 0.02 inches water column and visual inspection of engineering controls. The Abatement Subcontractor shall confirm that a variance for forgoing the 12-hour pre-abatement settling period per NYS IRC 56-11.1(b) has been approved.

8. Starting near the entrance to the work area, the Abatement Subcontractor shall work towards the negative filtration units. The Abatement Subcontractor shall perform limited removal of items such as ceiling tiles and support grid, loose wiring and conduit, fiberglass pipe insulation, carpeting and interior partitions (only as necessary to access VAT that might run underneath) to create an open work area.

9. Fiberglass insulation (provided it has a semi or non-porous outer wrap), loose cabling/wiring and ceiling support grid may either be HEPA vacuumed/wiped to remove any gross dust, or not cleaned and directly packaged for disposal as an asbestos contaminated material if the Abatement Subcontractor deems it to be more expeditious to do so.

10. Other non-porous items shall be HEPA vacuumed and wet-wiped. These items include window glass, GWB, MEP components, doors, floors and raised flooring. The doors, raised flooring, HVAC duct shall then be disposed of in a manner consistent with the 130 Liberty Street Deconstruction Plan Section 1 (Waste Management Plan) by the Abatement Subcontractor. GWB partitions (and potentially HVAC if the interior can be cleaned until visibly free of dust, with the duct remaining in place) shall then be left in place after Phase IA activities for removal by the Demolition Subcontractor as part of Phase IB.

11. After the work area has been adequately opened, the abatement of all identified ACBMs within that area shall occur. In general, all materials shall remain wet and in tact to the extent possible and directly placed into acceptable, labeled disposal bags or containers for movement through and out of the building for proper disposal.

12. Following the completion of limited soft strip, and asbestos abatement, the Asbestos Subcontractor should thoroughly clean the work area of any visible dust and observe waiting periods consistent with NYS ICR 56-5 and/or all applicable approved variances indicated in Section 3.06 of this plan..

13. Following the cleaning and waiting periods, the Environmental Consultant Project Monitor shall visually inspect the work area to assure that the work area is free of visible debris. Given that the remaining spray-applied fireproofing cannot be adequately visually assessed, the Environmental Consultant Project Monitor can not certify as part of the visual inspection process that the fireproofing material is free of dust.

14. After the visual inspection is completed, the Environmental Consultant Project Monitor shall perform clearance air sampling on each floor. Clearance Air Sampling will be performed using “aggressive sampling” techniques, specifically a leaf blower or other equipment to agitate the air in the work area. Final clearance sampling shall be performed in accordance with NIOSH Method 7400 with PCM. Clearance will be allowed only if all of the samples are below 0.01 f/cc. If there are exceedances of 0.01 f/cc, TEM analysis will be performed in accordance with NIOSH Method 7402 and clearance will be achieved if sample is less than 70 structures per millimeter-squared by TEM. The Environmental Consultant Project Monitor shall make an initial attempt to clear the work area via aggressive means; however, if the laboratory designates that set of clearance air samples “too overloaded to analyze”, the second round of clearance air

samples shall be collected with out aggressive means after the work area has been re-cleaned.

15. Once the air testing results meet the established clearance criterion, the Abatement Subcontractor will remove all critical barriers and separation barriers inside the abatement area with the exception of those providing a barrier to any floor beneath which is yet to be cleaned. Critical barriers leading to the Building exterior shall remain in place. The Environmental Consultant Project Monitor shall conduct a final visual inspection following these activities to identify any suspect material that might have been lodged beneath the critical barriers.

16. The Abatement Subcontractor shall then take appropriate steps to isolate the cleaned and cleared floor(s) from the next work area to be established below including establishing barriers at all points of vertical communication between those floors and ensuring that re-entry into the cleaned and cleared spaces through the stairwells and elevators is not possible as they will be cleaned last.

3.03 PREPARATION OF WORK AREA:

A. Before any work begins on the containment barriers, the Contractor in coordination with the Abatement Subcontractor shall:

1. Shutdown and seal off all heating, cooling, ventilating or other air handling systems serving the Work Area. The environment of the Work Area will be completely isolated from all other air flows in the building.

2. Shut down all electrical circuits which pose a potential hazard on the job. Exact electrical arrangements will be tailored to the particular space and systems involved. All electrical circuits will be turned off at the box outside the removal area not just the wall switch. Potential for electrical shock is a major threat to life in a Work Area where large amounts of water will be sprayed on ceilings, conduits, lighting fixtures and other electrical items. Electrical lines that are used to power work lights and equipment will conform to all electrical safety standards and will be protected by a ground fault interrupter.

B. Electrical Service

1. General: Provide a weather proof, grounded temporary electric power service and distribution system of sufficient size, capacity and power characteristics to accommodate performance of work during the construction period. Install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of work. All electrical work will be performed by a licensed electrician.

2. Power Distribution System: Provide circuits of adequate size and proper characteristics for each use. In general, run wiring overhead and rise vertically where wiring will be at least exposed to damage from construction operations.

3. Temporary Wiring: Type UF nonmetallic sheathed cable located overhead and exposed for surveillance will be used in the work area. Do not wire temporary lighting with plain, exposed (insulated) electrical conductors. Provide liquid tight enclosures or boxes for wiring devices.

4. Provide Ground Fault Interrupt (GFI), overload-protected disconnect switches for each temporary circuit located at the power distribution center.

5. For power hand tools and task lighting, provide a temporary 4-gang outlet for each decontamination unit, located in equipment room. Provide a separate 110-220 volt, 20 amp circuits for each 4-gang outlet (four outlets per circuit).

6. Provide the following where natural lighting or existing building lighting does not meet the required light level: One 200-watt incandescent lamp per 1,000 square feet of floor area uniformly distributed for general construction lighting or equivalent illumination of the similar nature. In corridors and similar traffic areas provide one 100-watt incandescent lamp per every 50 feet. In stairways and in ladder runs provide one lamp minimum per story located in illuminate each landing and flight. Provide sufficient temporary lighting to ensure proper workmanship everywhere by combined use of daylight, general lighting and portable plug-in task lighting.

7. Identify electrical circuits providing electricity to operate lights and air compressors providing breathing air to workers in contaminated work areas. Tag circuit breakers to reduce possibilities of them being accidentally thrown.

8. Provide electrical power to work areas for use by Testing Laboratory to run testing equipment.

C. Temporary Water Supply

1. General: The Contractor's plumbing subcontractor will obtain permits to install dedicated water service to the site per Code and erect temporary standpipes to serve both asbestos abatement operations performed by the Contractor's Abatement Subcontractor and demolition/dismantling operations performed by the Demolition Subcontractor and its sub-subcontractors. The Contractor will provide water for construction purposes. The Abatement Subcontractor will connect to the Contractor's provided system. No hot water will be supplied by the building. However, if additional water hookups are required, it is the responsibility of the Abatement Subcontractor. The existing internal plumbing will not be used for any purpose due to biological contamination concerns.

2. The Abatement Subcontractor will provide for and maintain in operation all existing water and electrical services intended to remain after the asbestos abatement and restore all such services, if damaged to normal standard operating condition.

D. Containment Construction Activities

1. Non-porous movable objects shall either be packaged for disposal as (minimally) an asbestos-contaminated material or wet wiped and HEPA vacuumed and

removed for proper disposal as C&D waste.

2. The Abatement Subcontractor shall pre-clean and construct isolation barriers to separate the floor work areas from the rest of the Building at shafts and all areas that will allow migration of dust from the isolated area. The Abatement Subcontractor shall secure all areas of the containment that have an opening to the exterior of the building by installing a rigid plywood barrier (unless a suitable rigid barrier such as an intact window already exists) and covering it with two layers of at least 6 mil thickness polyethylene sheeting. Make-up air will be allowed through existing louvers or louvers shall be created by the Abatement Subcontractor to allow air-flow into the isolated area. The louvers should be covered by 3 alternating curtains, weighted at the bottom to prevent migration of dust in case of negative pressure loss.

3. The Abatement Subcontractor shall install and continuously operate a minimum of twenty-two (22) 1,500 cfm negative pressure exhaust machines (AFDs) and two back ups per floor in order to maintain the required four air changes per hour. Calculations can be referenced in Section 2.04 of this Abatement Plan. In general, these AFDs shall be placed in locations that are farthest away from the work area curtained doorway entrance and close to the building perimeter to achieve –0.02 inches of water column (WC) taking into consideration work area/floor configuration as well as work activity focus at any given time. The AFDs shall be equipped with HEPA filters and shall be exhausted through existing louvers or louvers created by the Abatement Subcontractor. The exterior of the existing louvers shall be pre-cleaned prior to use. If the amount of existing louvers is insufficient to accommodate the required amount of AFDs, the Abatement Subcontractor shall create additional louvers to accommodate all the AFDs.

4. Curtained doorways constructed with three layers alternating polyethylene sheeting, weighted at the bottom, shall be constructed at a minimum of two locations per floor and shall demarcate the border of the asbestos abatement activities on each floor. Curtained doorways shall be constructed close to the stairway that will be utilized during the asbestos abatement process for access to the floor.

5. Digital manometers with continuous printout shall be utilized to measure and document that the required differential air pressure is achieved and maintained throughout the cleaning operation. Workers shall access the work area via the designated elevator and shall pass through a curtained doorway prior to entering the abatement work areas.

A typical layout of 130 Liberty Street Building office floor containment area with air lock and approximate placement of negative air machines is provided as Figure 3.

Special considerations: The Abatement Subcontractor should be aware that there are energized equipment, batteries and hazardous materials stored within the 40th and 41st floor mechanical spaces. Due to the large amounts of water used on abatement projects, these items should be de-energized and removed from the work area prior to any asbestos abatement activities.

Background air sampling: The Environmental Consultant Project Monitor shall perform area monitoring and establish a background count prior to the preparatory operations for each removal area, as applicable per ICR 56 17.2. Background air sampling shall be conducted at various locations throughout the Building.

Pre-abatement sampling: The Environmental Consultant Project Monitor shall perform pre-abatement area monitoring during preparatory activities as required by ICR 56-17.2 during each abatement sequence.

Fire safety: The Abatement Subcontractor shall maintain emergency and fire exits from the work areas or establish alternative exits satisfactory to the local fire officials. Emergency exits and routes shall be established and clearly marked with florescent paint or other effective designations to permit easy location from anywhere within the work area. Emergency exits shall be secured to prevent access from uncontaminated areas and yet permit emergency exiting. Exits shall be checked daily against exterior blockage or impediments to exiting.

3.04 PRE-COMMENCEMENT INSPECTIONS:

Prior to the disturbance of any asbestos-contaminated or containing materials the Abatement Subcontractor shall notify the Environmental Consultant Asbestos Project Monitor and the Contractor, in writing 24 hours in advance and request a pre-removal inspection. Posting of warning signs, establishment of required barriers, building of decontamination enclosure systems and all other preparatory steps shall have been taken prior to notification of the Asbestos Project Monitor. The Abatement Subcontractor shall not begin soft strip, interior gut, asbestos removal or cleaning until the Asbestos Project Monitor approves the work area preparations.

3.05 MAINTENANCE OF CONTAINED WORK AREA AND DECONTAMINATION ENCLOSURE SYSTEMS:

A. The Abatement Subcontractor shall ensure that barriers and plastic linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon their discovery. Visually inspect enclosures at the beginning and end of each work period.

B. The Abatement Subcontractor shall visually inspect non-work areas and the decontamination enclosure system for water leakage. Check the floor below, ceiling and walls and view beneath/or around the decontamination enclosure system for signs of leakage. Perform the visual inspection a minimum of twice each 8-hour work shift.

3.06 REMOVAL OF ASBESTOS-CONTAINING BUILDING MATERIAL:

A. General: The Abatement Subcontractor shall be responsible for the proper removal of ACBM and contaminated materials from the work area using standard abatement industry removal techniques. In general, all identified ACBMs and asbestos-contaminated material shall be adequately wet prior to its disturbance to control dust generation, then the materials shall be removed in a manner that results in the least disruption and breakage. The Abatement Subcontractor shall conduct removal activities in a manner that will allow immediate bagging of generated waste material and all materials shall be properly wet within the waste-bags.

Mastics shall be removed utilizing mechanical and/or approved chemical means at the

discretion of the Abatement Subcontractor. Baseboard mastics shall be removed by scraping and proper wetting and/or the application of an approved chemical stripper.

Roof Level Exterior Window Caulking: All windows and other openings within 20 feet of the affected ACBM caulking material shall be fully closed or otherwise sealed with two layers of 6 mil polyethylene sheeting. This includes openings on the same floor and also openings to immediate adjacent floors above and below. Any scaffolding erected shall be constructed, maintained and operated in accordance with Section 4, Project Safety Plan for the 130 Liberty Deconstruction Project. Any elevated platform shall be at least one (1) foot below the surface or joint to be abated. The Abatement Subcontractor shall be equipped with appropriate tools, rags, a portable supply of amended water, and a HEPA vacuum. After the asbestos containing caulking is adequately wetted, it shall be stripped using hand tools, with the asbestos containing caulking material being caught in a flexible catch basin directly underneath the work area being stripped and promptly bagged. The stripped joints shall then be HEPA vacuumed, and wet wiped to remove any loose debris still in place. Where impractical to separate caulking from other components or to remove the caulking completely, the entire component or the portion to which the caulking is adhered may be disposed as an asbestos-containing/contaminated waste.

Tower Crane Installation refer to Section 3.06.1.

Floor Tile and Linoleum: Floor tile and linoleum shall be carefully removed from surfaces with care taken to keep them intact in so far as possible. Tiles shall be adequately wetted before removed and misted for the duration of the removal process. No grinding or cutting tools shall be permitted in the removal of asbestos floor tiles.

Transite Piping in Cellar B shall be removed in sections by a wrap and cut procedure. Piping shall be wetted and wrapped with two layers of 6 mil plastic and cut in maximum of six foot sections (or other lengths as determined most suitable by the Abatement Subcontractor).

Sealants at cable entrances shall be removed under the proposed contained areas. Care should be taken not to make the sealants friable. A HEPA vacuum should be utilized during this process and material should be adequately wetted at all times.

Transite Wall Boards shall be removed in intact condition in so far as possible. The Abatement Subcontractor should first attempt to remove the boards by removing screws and fasteners from each panel and removing the boards in whole. The material should be constantly wetted and wrapped immediately with 2 layers of 6 mil polyethylene after removal. One layer of 6 mil polyethylene sheeting shall be placed below all areas during abatement procedure.

Wall/Floor Joint Tar Paper shall be wet prior to removal. This should be conducted after the floor tiles have been removed and the flooring partially removed.

Duct Caulking and Caulking at Fan Units shall be abated by hand scraping tools after being adequately wetted.

The Black Ceiling and Wall Fan Room Insulation shall be dismantled in sections by removal of the fasteners. The material should be wet in sections and the removal should only take place in the wetted sections. The wet insulation sections should be folded and

placed into the appropriate asbestos approved bags for proper disposal.

All thermal system insulation within the building shall be abated utilizing wrap and cut procedures. The Abatement Subcontractor shall verify that piping is drained prior to the commencement of wrap and cut procedures. After the section of pipe to be abated has been wetted with amended water, the contractor shall wrap the pipe in two layers of six-mil polyethylene sheeting and seal airtight. The Abatement Subcontractor shall utilize glovebags to remove a minimum 6 inch section of pipe insulation at a maximum of six foot intervals (or other lengths as determined most suitable by the Abatement Subcontractor) so that the pipe may be cut into sections to facilitate removal from the work area. There are three areas that were identified in the survey by the Louis Berger report and verified in a report issued by TRC to have asbestos containing TSI present: Basement "A", 5th floor (upper level of Maintenance Shop) and 20th floor (large hall – west and vending machine room).
In addition there is a pipe listed in the TRC confirmatory ACBM report within the Cellar Pipe shaft that runs vertically towards the upper floors of the building. This pipe shaft is located approximately 20 feet north and west of the freight elevators and located behind sheetrock walls on the upper floors. TRC report has estimated that this piping is approximately 300 vertical linear feet in length. The shaft housing this material is approximately 6 feet by 20 feet in dimensions. The piping within these spaces is covered with insulation approximately 30" in diameter. The Abatement Subcontractor shall access this piping through sheetrock walls on each floor. See figure 3 for approximate location of this material.

Where necessary and in order to access pipe insulation at elevation, scaffolding and/or temporary flooring shall be constructed in accordance with OSHA guidelines and Section 4, Project Safety Plan for 130 Liberty Street Deconstruction Project. The design of the temporary flooring and/or scaffolding should be reviewed and approved by a NYS Certified Professional Engineer. The constructed flooring shall be covered with two layers of 6 mil re-enforced polyethylene sheeting and sealed at the edges with foam. The pipe shaft shall become a part of the work area of the current sequence. The Abatement Subcontractor shall utilize fall protection harnesses whenever working within any shafts during this abatement. If the Demolition Subcontractor wishes to utilize the shaft that contains the above ACBM insulation for chuting of the Phase IB generated non hazardous waste, then the sequencing of the abatement can be altered to address the removal of the piping within the entire shaftway as the first part of the abatement sequence. The ACBM insulation along with the pipes shall be removed and the shaftway isolation barriers shall remain in place. After the areas within the shaftway achieve clearance by NYSDOL ICR 56 standards, the chute can be constructed in accordance with New York City Department of Building Code and approved BEST Squad Plan. The location of the proposed chute is indicated by a shaded area on Figure 1.

The Environmental Consultant Project Monitor shall observe the performed work. Approval of the Abatement Subcontractor's abatement techniques is required by the Environmental Consultant Project Monitor to allow for the continuance of work. The Abatement Subcontractor shall prepare the worksite in accordance with the requirements of petitioned variances referenced in this plan and other applicable procedures. All porous materials that the Abatement Subcontractor chooses not to clean (with the exception of the sprayed on fireproofing), shall be removed and disposed of as asbestos contaminated (at a minimum or in accordance with the results of waste characterization to be performed). The perimeter building walls shall define the containment barriers. A

copy of all variances and this Abatement Plan shall be posted on site at the Cellar "A" Floor Decon Area, and be available during all phases of the abatement for reference.

Site specific Variance Petition: A petition for a site specific variance shall be submitted to NYSDOL for approval and use in the abatement of the interior portions of the building. In addition, the site specific variance shall cover the abatement and cleaning of all WTC dust covered building materials that cannot be cleaned by wet wiping and HEPA vacuuming and ACBM within the interior of the building and shall include but not limited to:

- Relief from ICR 56 requirements for an attached decontamination unit.
- Relief from ICR 56 requirements for a 12 hour pre-abatement settling period
- Relief from ICR 56 requirements to plasticize walls, ceilings and floors.
- Perform one air sample per each group of negative air filtration devices.
- Allowing building deconstruction (Phase I & II) to commence prior to completion of asbestos abatement (see Attachment 4).

The following table identifies the known asbestos containing building materials by floor and references the applicable procedures to be implemented during the abatement.

B. TABLE 1: MATERIAL SPECIFIC ABATEMENT PROCEDURES:

LOCATION	MATERIAL DESCRIPTION	ESTIMATED QUANTITY		MATERIAL SPECIFIC ASBESTOS ABATEMENT PROCEDURES
		Ft^2	LF	
CELLAR B				
Small Room (Drawing Coordinate ED-45)	12"x12" Black Floor Tile and Mastic	30	---	NYSDOL ICR 56 Site Specific Variance
Entire Vault area: AH-13, and Storage Room FH-56	12"x12" Beige (2 layers) and Mastic VAT	9,250	---	NYSDOL ICR 56 Site Specific Variance
Main Lobby ED-57	Transite Piping	---	200	NYSDOL ICR 56 Site Specific Variance
CELLAR A				
Mid Section of the Entire Floor (Drawing Coordinate AH-37)	12"x12" Floor Tile/3rd Layer (Black) & Mastic 12"x12" Floor Tile/3rd Layer (Light Brown) & Mastic 12"x12" floor Tile/2nd Layer (Dark Grey) & Mastic 12"x12" Black Floor Tile	15,500	---	NYSDOL ICR 56 Site Specific Variance
Electrical Small Rooms (Drawing Coordinate AB-45)	Sealant at Cable Entrances	50	---	NYSDOL ICR 56 Site Specific Variance
Pipe Shaft by Service Elevator: Basement to Upper Floors	24" Pipe Insulation	---	300	NYSDOL ICR 56 Wrap and cut within containment. Site Specific Variance
Security Areas (Drawing Coordinate BE-12)	12"x 12" White Floor Tile	720		NYSDOL ICR 56 Site Specific Variance
Above Ceiling Tiles (Drawing Coordinate BC-45)	Pipe Insulation 30"	---	400	NYSDOL ICR 56 Wrap and cut within containment. Site Specific Variance

LOCATION	MATERIAL DESCRIPTION	ESTIMATED QUANTITY		MATERIAL SPECIFIC ASBESTOS ABATEMENT PROCEDURES
		Ft^2	LF	
FLOOR 1				
South Section AH-14, Corridors CH-46, and NW section AD-68	12”x12” Floor Tiles (2 layers)	13,500	---	NYSDOL ICR 56 Site Specific Variance
MEZZANINE LEVEL				
Corridor: FE-36	12”x12” Beige Floor Tiles	800		NYSDOL ICR 56 Site Specific Variance
FLOOR 2				
Small Office GH-56	12” x 12” Floor Tile and Mastic	200	---	NYSDOL ICR 56 Site Specific Variance
FLOOR 3				
SE Section and Corridors: CG-16	12”x12” Floor Tile& Mastic	4,500		NYSDOL ICR 56 Site Specific Variance
FLOOR 4				
Small offices GH-34, DG-13	12” by 12” Beige Floor Tile & Mastic	300	---	NYSDOL ICR 56 Site Specific Variance
FLOOR 5 and 6				
Along Perimeter South, East, North, and West Wall	Transite Board Wall	7,000	---	NYSDOL Applicable Variance 89
Upper Level of Maint. Shop (Drawing Coordinate BC-56)	Pipe Insulation, Greater Than 12”	---	1,200	NYSDOL ICR 56 Wrap and cut within containment. Site Specific Variance
Entire North Section AH-68, AB-18, Interior Corridor GC-36	12”x12” Grey and Beige Floor Tiles & Mastic	11,600		NYSDOL ICR 56 Site Specific Variance
FLOOR 7				
SW Section AD-14, Hallway ED-34, ED-34 Small Office, FE-23 Small Offices	12”x12” Floor Tiles	6,000	---	NYSDOL ICR 56 Site Specific Variance
Gash: South Wall Base, West (Drawing Coordinate AB-67)	Wall/Floor Joint Tar Paper	250		NYSDOL ICR 56 Site Specific Variance
Freight Elevator Hallway (Drawing Coordinate ED-34)	Associated Mastic on Baseboard (Brown)	500	---	NYSDOL ICR 56 Site Specific Variance
FLOOR 8				
SE Corner:FH-23, GF-34	12” by 12” Grey/Black VAT and Mastic	350	---	NYSDOL ICR 56 Site Specific Variance
Gash: South Wall Base, West (Drawing Coordinate AB-67)	Wall/Floor Joint Tar Paper	250		NYSDOL ICR 56 Site Specific Variance
FLOOR 9				
Entire South West Section: Column locations AE-16	12”x12” Beige Floor Tiles &Mastic 12”x12” Grey/Composite Floor Tile (2 Layers) & Mastic	9,000		NYSDOL ICR 56 Site Specific Variance
Gash: South Wall Base, Middle (Drawing Coordinate ED-67)	Wall/Floor Joint Tar Paper	250	---	NYSDOL ICR 56 Site Specific Variance
FLOOR 10				
Column locations FG-34, FE-23, BC-23, BC-34,	12”x12” Beige Floor Tiles	600		NYSDOL ICR 56 Site Specific Variance
Storage by Main Corr. EF-34	12”x12”Black Floor Tiles	200		NYSDOL ICR 56 Site Specific Variance
Gash: South Wall Base, West (Drawing Coordinate AB-67)	Wall/Floor Joint Tar Paper	250		NYSDOL ICR 56 Site Specific Variance

LOCATION	MATERIAL DESCRIPTION	ESTIMATED QUANTITY		MATERIAL SPECIFIC ASBESTOS ABATEMENT PROCEDURES
		Ft^2	LF	
FLOOR 11				
Small Office W. Side/ AB-45 Large Office W. Side/ AB-34 West Corridor / AB-34 Large Office W. By Open Area / GF-34 SE in Fr. Of Corner Room / CB-23 SE Small Storage Room/ GF-34 West Side Large Office/ GH-34 West Side Small Office/ GH-45 West Side Small Office/ GH-45 West Side Small Office/ GH-45 West Side Small Office/ GH-45 West Side Small Office/ GH-45 Large Office Adj. To Small Office's / GF-45 Large Office Adj. To Small Office's / GF-45 Large Office Adj. To Small Office's / GF-56 Large Office Adj. To Small Office's / GF-56	12”x12” Black Floor Tiles 2nd Layer & Mastic	6,000		NYSDOL ICR 56 Site Specific Variance
Gash: South Wall Base, West (Drawing Coordinate AB-67)	Wall/Floor Joint Tar Paper	250		NYSDOL ICR 56 Site Specific Variance
FLOOR 12				
Gash: South Wall Base, West (Drawing Coordinate AB-67)	Wall/Floor Joint Tar Paper	250		NYSDOL ICR 56 Site Specific Variance
Men’s Bathroom & Women’s Bathroom	Brown Linoleum and associated Mastic	500	---	NYSDOL ICR 56 Site Specific Variance
West Corridor Storage room/ FE-34	Associated Mastic on Brown Baseboard	50	---	NYSDOL ICR 56 Site Specific Variance
FLOOR 14				
S. Small Office Adj To Large Hallway /FE-23 E. Side Room / Middle / GF-23	12”x12”Beige Floor Tiles (2 Layers)	500	---	NYSDOL ICR 56 Site Specific Variance
East Corridor Storage Room / GF-34 East Open Area / GF-45	12”x12” Black Floor Tile	1,250	---	NYSDOL ICR 56 Site Specific Variance
West Small Office / CB-34 West Small Kitchen / CB-34 S. Room Adj. To Large Hallway/ FE-12 Room South To Hallway At Stair A / FE-34 S. Room Adj. To Hallway Small Office/ FE-12	12”x12” Grey Floor Tile(2 Layers)	1,250		NYSDOL ICR 56 Site Specific Variance
FLOOR 15				
Room In front of Stair A (Drawing Coordinate GF-34)	12”x12” Floor Tiles 2nd Layer (Black)	150		NYSDOL ICR 56 Site Specific Variance
Gash: South Wall Base, Middle (Drawing Coordinate ED-67)	Wall/Floor Joint Tar Paper	250		NYSDOL ICR 56 Site Specific Variance
FLOOR 16				
Gash: South Wall Base, Middle (Drawing Coordinate ED-67)	Wall/Floor Joint Tar Paper	250	---	NYSDOL ICR 56 Site Specific Variance

LOCATION	MATERIAL DESCRIPTION	ESTIMATED QUANTITY		MATERIAL SPECIFIC ASBESTOS ABATEMENT PROCEDURES
		Ft^2	LF	
Men's and Women's Bathroom	Associated Mastic on Brown Baseboard	500	---	NYSDOL ICR 56 Site Specific Variance
FLOOR 17				
SE From Hallway At Stair A/ FE-34 Room At NE Gash/ GH-56	12"x12" Black Floor Tile & Mastic	300		NYSDOL ICR 56 Site Specific Variance
Gash: South Wall Base, West (Drawing Coordinate AB-67)	Wall/Floor Joint Tar	250		NYSDOL ICR 56 Site Specific Variance
FLOOR 18				
Room in Front of Stair A (Drawing Coordinate GF-23)	12"x12" Black Floor Tile (2nd Layer)	200		NYSDOL ICR 56 Site Specific Variance
West Side Small Storage Room/GF-34 South Side Men's Room/CD-34	Linoleum sheeting and associated Mastic	100	---	NYSDOL ICR 56 Site Specific Variance
FLOOR 19				
Storage Room Adjacent to Stair 3 (Drawing Coordinate GF-23)	12"x12" Beige Floor Tile (1st Layer)	350		NYSDOL ICR 56 Site Specific Variance
Vending Machine Room, Stair 3, Closet Adj. To Vending Machine Room	12"x12" Black Floor Tile(2nd Layer)	600		NYSDOL ICR 56 Site Specific Variance
FLOOR 20				
Large South Hall West / ED-12 Large South Hall Middle / FE-12 Large South Hall East / FE-12	Pipe Insulation at 6"-12" Pipe		500	NYSDOL ICR 56 Wrap and cut within containment Site Specific Variance
Vending Machine Room / GF-34 South Corridor / DC-34	Pipe joint Insulation at 1" Pipe	---	50	NYSDOL ICR 56 Wrap and cut within containment Site Specific Variance
West Small Office / GF-34 Stairwell at South Corridor / GF-23	12"x12" Black Floor Tile	300		NYSDOL ICR 56 Site Specific Variance
FLOOR 21	**NONE**			
FLOOR 22				
Hallway 2254 SE Side / GF-23 Hallway 2253 / FE-23 SW Corner Room / AB-12	12"x12"Grey Floor (Tiles 2 Layers)	400		NYSDOL ICR 56 Site Specific Variance
FLOOR 23				
South Corridor Conveyor hall/ ED-34 South Corridor Women's Room/ FE-34 South Side Corridor/ DC-34	12"x12" Black Floor Tile (2nd Layer) & Mastic	500		NYSDOL ICR 56 Site Specific Variance
Vending Machine Room/DC-34 East Hall / Room 2304 / CB-34 East Hall / Open Area / AB-34 Office 2307 W. Side / AB-56	12"x12" Grey Floor Tile	900		NYSDOL ICR 56 Site Specific Variance
East Hall/South (Drawing Coordinate GH-34)	HVAC Duct Caulking (Joint)		1,500	NYSDOL ICR 56 Site Specific Variance
West Open Area / AB-34 South Open Area / DC-23 East Open Area / GF-34	Associated Mastic on Brown Baseboard	300		NYSDOL ICR 56 Site Specific Variance
FLOOR 24				
Room Adjacent to Women's Bathroom/North (Drawing Coordinate DC-34)	12"x12" Grey Floor Tile & Mastic	120		NYSDOL ICR 56 Site Specific Variance
FLOOR 25				
South Hall/Open Area/Middle/FE-23 South Hall/Small Office/Middle/FE-34 Room Adj. To Men's Room/West/CD-56	12"x12" Black Floor Tile	2,000		NYSDOL ICR 56 Site Specific Variance
FLOOR 26				

LOCATION	MATERIAL DESCRIPTION	ESTIMATED QUANTITY		MATERIAL SPECIFIC ASBESTOS ABATEMENT PROCEDURES
		Ft^2	LF	
N/E Side Office/GF-67 Room Adjacent to Men's Room E./DC-56 Room Adjacent to Men's Room W./DC-56	12"x12"Beige Floor Tile & Mastic	750		NYSDOL ICR 56 Site Specific Variance
FLOOR 27	**NONE**			
FLOOR 28				
North Open Hall/Middle (Drawing Coordinate CB-78)	12"x12" Grey Floor Tile	1,500		NYSDOL ICR 56 Site Specific Variance
Mechanical Space (Drawing Coordinate AB-34)	12"x12" Light Brown Floor Tile	120		NYSDOL ICR 56 Site Specific Variance
FLOOR 29				
East Side Room/ GF-34 East Side Room/ GF-45 North East Side Small Office/ GF-56 North East Side Small Office Storage/ GF-56 Kitchen N. Side Room/Middle/ DE-67 N. Side Room/Middle/ ED-78 N. Corridor Storage Room/ DC-56 N. Corridor Small Room/ CB-56 S/W Side Small Room/ BC-34 S/W Side Small Room/ BC-34	12"x12" Grey Floor Tile & Mastic	2200	---	NYSDOL ICR 56 Site Specific Variance
FLOOR 30				
S. Corridor Electrical Panel Room/ DC-34 S. Small Room By Stairway A/ FE-34 N. Corridor Small A/C Room/ FE-56 Conveyor Room North/ DC-56	12"x12" Pink Floor Tiles Mastic associated with 12"x12" Pink Floor Tiles	500		NYSDOL ICR 56 Site Specific Variance
Open Area North/East/ GF-67 North Side Small Office/ FE-67 North Side Small Office/ FE-67 North Side Small Office/ ED-67 North Side Small Office/ GF-78 North Side Small Office/ GF-78 North Side Small Office/ FE-78 North Side Small Office/ FE-78 North Side Small Office/ FE-78 North Side Small Office/ ED-78 North Side Stairwell B / ED-56 South Side Telecom Room/ ED-34 South Open Area by Stairs/ DC-23	12"x12" Black Floor Tiles Mastic associated with 12"x12" Black Floor Tiles	3,600		NYSDOL ICR 56 Site Specific Variance
FLOOR 31				
E. Side Small Office/ HG-45 E. Hallway Into Open Area/ HG-45 Conference Room E.Side/ GF-45 East Side Small Office N./ GF-56 East Side Small Office S./ GF-56 EP. Room N.Corridor/ FE-56 Middle Elevator Room/ ED-45 N. Corridor Small Stor. Rm/ ED-56 Conveyor Room North/ DC-56 West Side Small Office/ CB-34 West Side Small Office/ CB-45	12"x12" Black and Beige Floor Tiles & Mastic	4,200		NYSDOL ICR 56 Site Specific Variance
FLOOR 32				

LOCATION	MATERIAL DESCRIPTION	ESTIMATED QUANTITY		MATERIAL SPECIFIC ASBESTOS ABATEMENT PROCEDURES
		Ft^2	LF	
S/E. Small Room/ FE-34 Conference Room E.Side/ GF-45 N/E Small Room/ FE-56 Stairwell B / ED-56 N.Corridor Sm. Storage Rm/ DC-56	12”x12” Black/Beige Floor Tiles & Mastic	850		NYSDOL ICR 56 Site Specific Variance
FLOOR 33				
East Hallway Electrical Room/ ED-34 Electrical Room/ N. Middle/ ED-56 Large Office/ N.Side/ ED-56 S.Hallway Electrical Room/ ED-34 W.Side A\V Room/ AB-34 Room Adj To Frate Elevator/ ED-23	12”x12” Black Floor Tiles & Mastic	1,000	---	NYSDOL ICR 56 Site Specific Variance
Small Office S.Side/ GF-12 Small Office S.Side/ GF-23 Large Office S/E Side/ FE-23 East Hallway Small Office/ ED-23 S. Corridor Frate Elevator/ DC-34 N/E Small Storage Room/ GF-78 N.Side Small Office/ ED-78 W.Side Small Storage Room/ CB-34 W.Side Small Storage Room/ AB-34 S/W Small Storage Room/ CB-23	12”x12” Floor Tiles (2-layer composite) & Mastic	1,500	---	NYSDOL ICR 56 Site Specific Variance
N. Corridor Small Storage Room/DC-56	12”x12” Grey Floor Tiles	200	---	NYSDOL ICR 56 Site Specific Variance
FLOOR 34				
Small Office at E.Side/ED-23 Room in the Middle/ED-34 Room in the Middle/ED-45 North Corridor Storage Room/ED-56 North Corridor Storage Room/DC-56 Office in The Middle/ ED-34 North Hallway E.Side/ CB-78	12”x12” Grey Floor Tile & Mastic (2-layer composite)	1,500	---	NYSDOL ICR 56 Site Specific Variance
Office West Side/AB-56	12”x12” Black Floor Tile (1 layer)	3,500	---	NYSDOL ICR 56 Site Specific Variance
FLOOR 35				
Storage Room North/ED-56 North Corridor/DC-67	12”x12” Beige Floor Tiles (2 Layers)	800	---	NYSDOL ICR 56 Site Specific Variance
FLOOR 36				
Small Storage at West Side /BC-45 Elevator Base	12”x12” Black Floor Tile & Mastic	170	---	NYSDOL ICR 56 Site Specific Variance
FLOOR 37				
North Corridor/DC-67 North Corridor Storage Room/ED-56 North Corridor Storage Room/DC-56 Elevator Hallway/CD-45 South Corridor/DC-34 Storage Room North/CB-56	12”x12” Brown/Beige/Blue Floor Tile & Mastic	2,550	---	NYSDOL ICR 56 Site Specific Variance
FLOOR 38				
South Corridor/BC-34 North Corridor/DC-34 South Corridor/Middle/DC-67	12”x12” Grey Floor Tile & Mastic	3,000	---	NYSDOL ICR 56 Site Specific Variance
Floor 38/South Corridor/West Side (Drawing Coordinate BC-34)	12”x12” Blue Floor Tiles Composite (3 Layers)	120	---	NYSDOL ICR 56 Site Specific Variance
FLOOR 39				

LOCATION	MATERIAL DESCRIPTION	ESTIMATED QUANTITY		MATERIAL SPECIFIC ASBESTOS ABATEMENT PROCEDURES
		Ft^2	LF	
South Corridor/East/ED-34 South Corridor/Middle/ED-34 Vending Machine Room/CB-34 North Corridor/West/CD-67	12”x12” Floor Tiles 2 Layers (Pink and Tan) & Mastic	400	---	NYSDOL ICR 56 Site Specific Variance
South Corridor/East/CD-67 South Corridor/Middle/CD-34	12”x12” Grey Floor Tiles & Mastic	2,300	---	NYSDOL ICR 56 Site Specific Variance
FLOORS 40 AND 41				
Mechanical Room/CD-56 Elevator Machine Room/CD-34 Equipment Room/CD-45 N./Area of the Exp. Steel Deck/GF-56	12”x12”Black Floor Tile &Mastic	3,700		NYSDOL ICR 56 Site Specific Variance
E./Area of the Ex. Steel Deck/GF-56 Room Next to Louvers/EF-34 Basin of Cooling Tower Wall/West (Drawing Coordinate CD-23)	12”x12” Grey Floor Tile & Mastic	1,000		NYSDOL ICR 56 Site Specific Variance
HVAC Units at North Side of Bldg/BC-78)	Transite Wall	20,000		NYSDOL Applicable Variance 89
	Fan Room Walls Insulation (Black)	11,600		NYSDOL ICR 56 Site Specific Variance
Mechanical Space/BC-56)	HVAC Duct Joint Caulking		10	NYSDOL ICR 56 Site Specific Variance
ROOF				
Exhaust Fans @ West side/BC-45)	Caulking at Fans		50	NYSDOL ICR 56 Site Specific Variance
Tank Bulkhead Window/ED-45)	Window Caulking		40	NYSDOL ICR 56 Site Specific Variance

Note: All information presented in the above table was provided by Louis Berger and verified by TRC on 3 November 2004.

General requirements for material specific abatement procedures:

1. At the completion of preparation activities, the Abatement Subcontractor shall request an inspection of the work area preparation. The Environmental Consultant Project Monitor shall perform the inspection and determine that the work area preparation is satisfactory prior to commencement of Phase IA work activities.

2. Prior to and during removal, all ACBMs shall be wetted with an amended water solution using equipment capable of providing a fine spray mist in order to reduce airborne fiber concentrations when the material is disturbed. A high humidity in the work area shall be maintained by misting or spraying to assist in fiber settling and to reduce airborne concentrations. The material shall be saturated to the substrate, .

3. Remove the saturated asbestos material in small sections. As it is removed, pack the material in sealable plastic bags, which shall be placed in labeled drums for transport. Remove insulation materials carefully from equipment directly into disposal bags; do not permit them to fall to the floor.

4. After completion of all stripping work, surfaces from which ACBM have been removed shall be wet brushed and sponged or cleaned by some equivalent method to remove all visible residue.

5. A pressure differential of 0.02" water column (w.c), recorded on a digital manometer with a continuous printout must be maintained for the duration of the soft strip, interior gut, abatement and cleaning work.

6. Asbestos material shall be removed and directly bagged whenever possible. Asbestos-containing waste materials with sharp-edged components (e.g. nails, screws, metal lath, tin sheeting) which may tear the polyethylene bags or sheeting shall be placed into drums for disposal and sealed airtight. After completion of all stripped work, surfaces within the work (with the exception of the sprayed on fireproofing) shall be HEPA vacuumed and/or wet cleaned to remove all visible debris.

7. After the ACBM and dust removal and bagging, the bags of waste shall be HEPA-vacuumed then wet cleaned and transferred into the washroom/cleanup room of the Waste Decontamination Unit for double bagging. The goose-necked and double-bagged waste shall be transferred outside the clean room for its final transfer for storage in an enclosed waste container.

8. No dry removal or disturbances of asbestos materials shall be permitted.

9. The Abatement Subcontractor shall apply a light coating of encapsulant to the surface of all exposed and remaining sprayed-on fireproofing.

10. The Environmental Consultant Project Monitor will perform a final visual inspection to certify that all designated ACBMs have been removed and that required cleaning has been performed. However, given that the remaining sprayed on fireproofing cannot be adequately visually assessed, the licensed Asbestos Project Monitor cannot certify as part of the Final Visual Inspection process that the

material is free of dust.

10. The Environmental Consultant Project Monitor will perform clearance sampling in accordance ICR 56-17 requirements. Final air clearance samples will be collected via aggressive means; however, if the laboratory indicates that the sample cassettes are too overloaded to analyze, the subsequent round(s) of clearance air sampling will be performed without aggressive means. Following receipt of satisfactory clearance air sample results, critical barriers shall be removed (except for those isolating the cleaned and cleared floor from the floors yet to be cleaned below and areas where plywood walls have been constructed to replace missing or broken window panes.), placed in independently sealed asbestos waste bags and disposed of as asbestos waste.

11. Final Worksite Inspection. After the breakdown of the worksite the Environmental Consultant Project Monitor shall perform a final inspection of the work area and issue a certificate of completion for same.

C. Additional Removal Requirements:

1. The Environmental Consultant Project Monitor shall issue a stop work order if visible emissions are detected outside the work areas and/or should the fiber count in adjacent non-work areas exceed 0.01 f/cc of air or the background count (use the greater of these two values as the reference). Work shall not resume until the condition(s) causing the increase are corrected, surfaces outside of the work area are decontaminated using HEPA vacuums or wet cleaning techniques and the Abatement Subcontractor receives written notice from the Environmental Consultant Project Monitor.

2. Wetting Materials

a. Use amended water for wetting of ACBM prior to removal. A removal encapsulant may be used instead of amended water with the written approval from the Environmental Consultant Project Monitor.

b. Amended Water: Provide water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the ACBM and retardation of fiber release during disturbance of the material equal to or greater than that provided by the use of one ounce of a surfactant consisting of 50% polyoxethylene ester and 50% polyethylene ether mixed with five (5) gallons of water.

4. Wet Removal of ACBM

a. Thoroughly wet ACBM to be removed prior to stripping and/or tooling to reduce fiber dispersal into the air. Use a fine spray (mist) of amended water or removal encapsulant. Saturate material sufficiently to wet to the substrate without causing excess dripping. Allow time for water or removal encapsulant to penetrate material thoroughly. If amended water is used, spray material repeatedly during the work process to maintain a continuously wet condition. If a removal encapsulant is used, apply in

strict accordance with manufacturer's written instructions. Perforate outer covering of any installation that has been painted and/or jacketed in order to allow penetration of amended water or removal encapsulant or, where necessary, carefully strip away while simultaneously spraying amended water or removal encapsulant on the installation to reduce dispersal of asbestos fibers into the air.

b. If ACBM does not wet well with amended water because it is coated or thick, remove as follows:

i. Mist Work Area continuously with amended water whenever necessary to reduce airborne fiber levels.

ii. Remove saturated ACBM in small sections from all areas. Do not allow material to dry out. As it is removed, simultaneously pack material while still wet into disposal bags. Twist necks of bags, bend over and seal with a minimum of three (3) wraps of duct tape. Clean outside and move to wash down station next to material decontamination facility.

CLEANING OF EXTERIOR GLASS, INTERIOR ATTACHMENT POINTS AND BUILDING FAÇADE IN ORDER TO FACILITATE INSTALLATION OF MAN HOIST AND TOWER CRANE

In order to facilitate the installation of a Man Hoist on the southside of the building and a Tower Crane at the northside of 130 Liberty Street, portions of the building exterior and interior need to be cleaned of WTC dust and limited, select exterior ACBMs removed. For each installation, the Abatement Subcontractor shall access the building exterior where the cleaning is to occur by means of a hanging scaffold. The scaffolding shall be utilized in accordance with applicable regulatory requirements. The cleaning shall be completed by the Abatement Subcontractor and shall be performed utilizing HEPA vacuuming and wet wiping of all horizontal and vertical surfaces within the desired areas. Appropriate PPE as outlined in the site specific Health and Safety Plan (HASP), shall be utilized during this process.

The Man Hoist will be erected on the southside of the building and to facilitate this installation, one to two glass panes on every other floor between column lines C and D will be removed. Upon determination of the specific floor locations of the attachment points, the Abatement Subcontractor shall clean the glass panes scheduled for removal. The entire glass and associated window frame shall be HEPA vacuumed and wet wiped until free of visible debris. The Contractor shall ensure that there is a scaffold bridge on the south sidewalk.

The attachment points for the Tower Crane have been identified by the Demolition Subcontractor as the exterior and interior of the 6^{th} , 14^{th}, 24^{th} and 34^{th} floors at column grids 6 through 8 and A through B.5. Floor 14 is within the previously cleaned "gash area" so no additional cleaning need be performed there. Cleaning of dust on floors 6, 24 and 34 will be required. In addition, the column covers on the 34^{th} floor may be breached in the process of this installation and therefore care should be taken in the removal of the sheetmetal covering. The Abatement Subcontractor shall identify the joints located on these column covers and inspect for the presence of asbestos containing caulking material. If caulking is present, the Abatement Subcontractor shall utilize tin snips to cut the required portion of the sheetmetal covering while wetting the material with

amended water. Any dust generated in this process shall be immediately HEPA vacuumed. The removed sheetmetal covering shall be placed in an appropriate asbestos waste bag for proper disposal.

On the interior for these attachment points, the Abatement Subcontractor shall establish an enclosure using one layer of 6 mil polyethylene and appropriate support structures. This enclosure shall be attached and sealed to the exterior wall inside the building at the location where windows will be removed and/or other openings to the exterior environment must be created. Once the enclosure is established, the Abatement Subcontractor shall clean all dust and surfaces within the area via HEPA vacuuming and wet wiping. The Environmental Consultant Project Monitor shall then perform the required Visual Inspection and Clearance Air Sampling with the enclosure prior to allowing the opening to the exterior to be established. Once the opening has been established and the necessary connections are made for the erection of the man-hoist and tower crane, the Abatement Subcontractor shall temporarily re-seal the opening with a rigid plywood barrier covered with 6 mil polyethylene sheeting with appropriate supports to ensure the barrier will remain in place until full Phase IA activities on that floor have been completed.

3.07 **ACBM WASTE PACKAGING AND LOAD OUT PROCEDURES**: Packaging of ACBMs and dust shall conform to OSHA Standard 29 CFR 1926.1101, US DOT 49 CFR 171,172, and 173, EPA Standard 40 CFR Part 61, New York State DOT (in relation to transport, storage, and disposal of ACBM) and the requirement as heretofore specified. ACBM waste shall be placed in a wet condition into properly labeled disposal bags or sealed in two layers of 6-mil polyethylene sheeting wrapped airtight and properly labeled. Materials to be transported to the designated waste container through a non-work area building space shall be placed in hard wall shipping containers for handling. Specific requirements for decontamination of waste containers and load out through decontamination enclosure systems are outlined below:

A. Decontamination of Impermeable Containers and Plastic Disposal Bags: The following procedure shall be used when removing ACBM from the work area for load out through the waste decontamination enclosure system:

1. Waste removal shall not occur during worker shift changes or when workers are showering or changing.

2. Place asbestos waste in disposal bags. Large items not able to fit into disposal bags shall be wrapped in two layers of 6-mil thick plastic sheeting. Clean outer covering of asbestos waste package by wet cleaning and/or HEPA vacuuming in the work area before transferring such items into the decontamination enclosure system.

3. Sealed objects shall be taken to the staging area and then completely plasticized with an additional layer of 6-mil polyethylene sealed with tape. Place materials in hard wall containers, if required.

   The clean containerized items or wrapped transite panels shall be moved into a lockable waste container. Waste shall be transported from the upper floors via the designated elevator and taken to the waste decontamination facility on the first floor as shown in Fig 2. The waste shall then be transported by the use of plastic dolly to the temporary on site storage container.

B. Waste Load-out Through Equipment Decontamination Enclosure: The following waste packaging and decontamination procedures shall be used when removing ACBM from the work area by load out through the equipment decontamination enclosure system:

1. Place asbestos waste in disposal bags. Large items not able to fit into disposal bags like transite wall panels, shall be wrapped in one layer of 6-mil thick plastic sheeting. Clean outer covering of asbestos waste package by wet cleaning and/or HEPA vacuuming in a designated part of the work area. The generated bagged waste shall then be transported to the designated freight elevator in the 130 Liberty Street building in plastic dollies and transported to the first floor. Upon exiting the elevator the waste material shall be transported to the waste decon unit as shown in Figure 1. Move wrapped asbestos waste to the equipment washroom, wet clean each bag or object and place it inside a second disposal bag, or a second layer of 6-mil polyethylene sheeting as the item's physical characteristics demand. Air volume shall be minimized and the bags or sheeting shall be sealed airtight with tape.

2. The clean containerized items shall be moved to the equipment decontamination enclosure holding area pending load-out to temporary on-site storage container or disposal facilities.

3. Load-out of containers from the decontamination enclosure holding area shall be performed by workers who have entered the equipment decontamination enclosure system from the uncontaminated non-work area. Transportation from the waste decon shall be down the freight entrance ramp towards the temporary storage container. Workers moving asbestos waste to storage or disposal facilities in overalls of a color different than from that of those being used in the work area. Ensure that workers do not enter from uncontaminated areas into the equipment washroom or the work area. Ensure that contaminated workers do not exit the work area through the equipment decontamination enclosure system.

4. Thoroughly clean the equipment decontamination enclosure system immediately upon completion of the waste load-out activities, and at the completion of each work shift.

5. Labeled ACBM waste containers or bags shall not be used for non-ACBM debris or trash. Any materials placed in labeled containers or bags, whether turned inside out or not, shall be handled and disposed of as ACBM waste. The waste container shall be picked up and replaced whenever the capacity is reached.

3.08 CLEANUP, VISUAL INSPECTIONS AND CLEARANCE TESTING OF WORK AREAS

A. Clearance procedure for areas completed utilizing isolation enclosures is described in the following three step method:

1. Step 1: Post gross removal visual Inspection

a. Remove any visible ACBMs, miscellaneous building materials as necessary to open the work area, dust and debris.

b. Upon request of the Abatement Subcontractor the Asbestos Project Monitor will perform a visual inspection. Evidence of remaining materials in the work area during the inspection will necessitate further cleaning as heretofore specified.

c. If the Environmental Consultal Project Monitor passes the inspection, the Abatement Subcontractor shall begin final cleaning.

2. Step 2: Final Cleaning and Final Visual Inspection:

a. The Abatement Subcontractor shall wet-clean and HEPA vacuum all surfaces inside the work area.

b. All containerized waste shall be removed from the work area to the elevator, through the decontamination enclosures and the holding area.

c. All tools and equipment shall be removed from the work area and decontaminated in the waste decontamination enclosure system.

d. A light coating of encapsulant has been applied to all exposed surfaces of sprayed-on fireproofing and remaining fiberglass insulation.

e. Upon request of the Abatement Subcontractor the Environmental Consultant Project Monitor will perform a Final Visual Inspection. Given that the remaining sprayed-on fireproofing cannot be adequately visually assessed, the licensed Environmental Consultant Project Monitor cannot certify as part of the Final Visual Inspection process that the fireproofing material is free of dust. Visual evidence of any remaining dust or debris during the inspection will necessitate further cleaning as heretofore specified.

f. If the Environmental Consultant Project Monitor passes the inspection, the final air clearance process may begin.

3. Step 3: Final Air Clearance Testing and Re-establishment of area.

a. It should be noted that the remaining sprayed-on fireproofing could pose a problem in overloading the clearance air cassettes given that final air clearance samples will be collected via aggressive means. As such, the Environmental Consultant Project Monitor will make an initial attempt to clear the work area via aggressive air sample collection, however, if the laboratory designates that set of clearance air samples “too overloaded to analyze”, the second round of clearance air samples will be collected without aggressive means.

b. When the work area passes the final air clearance tests (fiber count of air of 0.01 f/cc of air using PCM analysis procedures, or less than 70 structures per mm^2 by TEM), all controls and seals established shall be removed with the exception the areas specified in the above.

c. Finally, if the Environmental Consultant Project Monitor determines that the visual inspection for removed critical barriers has passed, a Certificate of Completion shall be issued.

3.09 DISPOSAL AND TRANSPORTATION OF ASBESTOS-CONTAMINATED WASTE:

A. General

All ACBM waste material, collected dust, debris and other materials that the Abatement Subcontractor chooses to designate as asbestos-contaminated for expediency that are packaged according to these specifications and applicable regulation will be disposed of at the approved landfill used to accept ACM.

B. Procedures

1. Routines

a. All ACBM waste will be transported in sealed containers, (bags and specified secondary containment) whose exterior surfaces have been properly cleaned and labeled in accordance with NYS ICR 56.

b. All ACBM waste will be bagged and stored in the temporary storage area at the end of each work shift. Never will there be undocumented removal of ACBM waste from the work site. The Environmental Consultant Project Monitor shall document the amount of containered waste removed from the site.

c. All waste containers will be a type that can be kept locked and secure during the project.

d. The cleaned containers of ACBM waste and equipment will be placed in double, uncontaminated, leak-tight 6-mil polyethylene bags or sheeting as the item's physical characteristics demand. Air volume will be reduced and the bags or sheeting will be sealed. Items that may puncture or tear the plastic bags or sheeting will be placed in a hard wall container and sealed.

e. Primary containers/bags will be labeled with all required information pursuant to OSHA and NESHAP requirements (40 CFR 61.150) including the name of waste generator and location where waste was generated. The Environmental Consultant Project Monitor will inspect labeling process.

f. All primary containers will then be placed in leak-proof secondary containers such as trailers. Secondary containment containers will then be sealed and kept locked. Containers will be held in a secure area pending loading into appropriate waste disposal transport conveyance.

g. All properly sealed and locked secondary containment areas will be staged in the

designated holding area of the work site in a clean and secure area. The storage area shall be secured by padlock.

h. The staging of stored asbestos wastes will be in a secure secondary containment, separate from any other waste and the containment must be under negative pressure.

i. Inspections will be performed on the storage areas at least once every 24 hours to ensure that there are no signs of visible emissions or breaks in any of the other containers.

j. Any secondary containers exhibiting any defect will be immediately HEPA vacuumed, wet wiped and re evacuated or its contents repackaged into another secondary container.

k. The Abatement Subcontractor will maintain an adequate supply of spare, unused leak-tight secondary containment containers for repackaging purposes.

2. Storage of Containerized ACBM: As the work progresses, remove sealed and labeled bags of ACBM from the work area and place in a lockable trailer, dumpster, or other container approved for storage or transport of asbestos waste. The waste container shall be lined with two layers of fire retardant polyethylene. Asbestos-containing waste shall remain under the positive control of the Abatement Subcontractor and must never be left unattended in an area or on a vehicle where unauthorized persons could gain access. Stored waste on the site cannot exceed a total of 30 cubic yards. Given the size of the building and the likely rate of waste generation for both Phase IA and Phase IB work, continual waste transport for disposal will likely be necessary.

Sealed and labeled disposal bags or waste wrapped in two layers of polyethylene sheeting sealed airtight shall be used to transport asbestos-contaminated waste to the landfill. Procedures for hauling and disposal shall comply with 40 CFR, Part 61, 49 CFR, Part 171 and 172, and other applicable state, regional, and local government regulations having jurisdiction over waste transport routes. Procedures for removal from the work area and disposal of waste are outlined below:

a. A properly completed and original “Waste Shipment Record” form shall accompany asbestos waste that is transported to a disposal site. This form shall be signed and dated by each party who has control over the asbestos waste, and a copy retained by each party as responsibility for the waste is transferred to the next party. All original manifest forms and waste receipts shall be provided to the Contractor with copies to the Environmental Consultant Project Monitor (see Paragraph “Submittal”).

b. Trucks hauling asbestos waste shall be totally enclosed to prevent loss or damage to waste containers en route to approved landfill. The interior of the vehicles shall be lined with two layers of 6-mil polyethylene.

c. Mark with a visible warning sign during the loading and unloading of asbestos-containing waste all vehicles used to transport the waste material. Danger sign legend, text size, style and arrangement shall conform to the requirements of EPA Standard 40 CFR Part 61.149 (d)(1).

d. Only sealed 6-mil polyethylene bags are permitted to be deposited in landfill. Damaged, broken seal or leaking plastic bags shall re-sealed prior to being deposited in the landfill. Workers shall place asbestos waste in the landfill. Throwing or dumping of containers shall not be allowed. Workers unloading and handling the sealed bags/drums at the disposal site shall wear appropriate personnel protective equipment including respirators and protective clothing.

4. Transporting ACBM Waste

a. All asbestos materials, wastes, shower water, plastic, disposable equipment and supplies will be disposed of as contaminated waste according to EPA regulation (40 CFR, Section 61.152-61.156) and any other applicable federal, state and local regulations pertaining to waste transportation. Shower water can be disposed of in the sewer system provided it has been filtered through a 5 micron filter.

b. The Abatement Subcontractor will be responsible for providing fail-safe packaging of bagged ACBM waste in secondary solid waste containers during transport. Waste will be transported only in an enclosed vehicle. The cargo area of the enclosed vehicle will be free from debris and lined with 6-mil polyethylene sheeting. There will be no visible emission of asbestos dust during the transport of asbestos waste.

c. There will be no transfer from the disposal vehicle anytime in the transportation process until arrival at the disposal landfill destination.

d. The Abatement Subcontractor will insure that the transporter chosen to haul the waste does so in a way that insures the integrity of the ACBM waste during shipment. The Abatement Subcontractor will make appropriate inquiry to verify that:

i. No batching, commingling or transferring of ACBM waste will take place prior to delivery to the landfill.

ii. All handling of ACBM waste will be done by trained workers properly protected in the loading and unloading procedures.

iii. No compaction of ACBM waste will take place during transport of the waste generated in this project.

iv. No mechanical handling of ACBM packaged waste will take place.

5. Disposal. The following requirements are recommendations for the procedures at the approved landfill. These items may not be enforceable by the Environmental Consultant Project Monitor.

a. Disposal manifest will be submitted to the Contractor for information verification. The Abatement Subcontractor will make appropriate inquiry to verify that:

i. Offloading is done by trained personnel with appropriate personal protective equipment (PPE).

ii. The Abatement Subcontractor shall ensure that OSHA personal sampling is performed and OSHA required records kept.

b. The Abatement Subcontractor will 1) maintain the copies of each ACBMs waste manifest during project period; 2) at the completion of the project, provide a transporter manifest, a bill of lading or landfill receipt ticket duly executed by the Abatement Subcontractor, transporter and disposal facility within 30 days of shipment. In addition, a final project report shall be submitted by the Abatement Subcontractor within the same time frame. The documents will be all inclusive describing:

i. Volume of Materials in Cubic Yards

ii. Dates of Transport, Name of Transporter, Driver and Vehicle Number

iii. Date of Receipt and Disposal

iv. All Required Notes and Verifications Entered from the Abatement Subcontractor's field logs.

c. The intent is to provide a complete and unbroken chain of a custody and disposal record for the Owner's permanent record.

d. The Abatement Subcontractor will then submit a certification letter, in a form acceptable to the Contractor and Environmental Consultant Project Monitor, verifying that the waste disposal documentation tendered is a true and complete copy and that all ACBM waste generated at this work site has been transported and disposed of according to applicable regulation and pursuant to law.

e. Upon review of the documents and certification by the Abatement Subcontractor that all ACBM waste has been disposed of pursuant to applicable law, the Environmental Consultant Project Monitor will approve the project close out.

f. The landfill operator will inspect containers as they are unloaded at the disposal site. Material in damaged containers will be replaced in empty containers as necessary.

g. Personnel engaged in unloading of the containers at the waste site will wear protective clothing. The disposable clothing will include head, body and foot protection.

h. Minimum respiratory protection will be a half-face, dual cartridge, air purifying respirators with P-100 filters. Workers will remove their protective clothing at the disposal site, place it in labeled disposal bags and leave them with the deposited ACBM waste shipment.

i. The registered asbestos waste hauler will transport Asbestos-Containing Waste

Material from the abatement site directly to the approved disposal site. Travel routes as proposed within Section 1 (Waste Management Plan) of the 130 Liberty Street Phase I Deconstruction Plan shall be strictly followed. The Abatement Subcontractor or his waste hauler will not accept material from any other site when transporting Asbestos-Containing Waste material from the abatement site. The Environmental Consultant Project Monitor reserves the right to follow the Abatement Subcontractor's waste hauler to the waste disposal site. No intermediate storage of waste material (i.e., Abatement Subcontractor's warehouse) will be permitted.

3.10 ENVIRONMENTAL CONSULTANT PROJECT MONITOR:

A. General

1. The Environmental Consultant Project Monitor shall be independent of the firm performing the asbestos abatement and removal work. The Environmental Consultant Project Monitor shall provide all manpower, equipment and materials necessary to perform the supervision, air monitoring and support services described in this specification. The Environmental Consultant Project Monitor shall act as the on site representative for the Contractor and will have the authority to direct the actions of the Abatement Subcontractor as necessary. The Environmental Consultant Project Monitor shall be on site at all times during the asbestos removal work from the initial preparation of the work area, during the abatement operation, through final clean-up, demobilization and acceptance of the work.

2. The Environmental Consultant Project Monitor is responsible for ensuring that the asbestos abatement work is performed in compliance with applicable Federal, State and local regulations and this specification. In addition, the Environmental Consultant Project Monitor shall provide progress and final clearance air sampling services, as required by the regulations and these specifications.

3. The Environmental Consultant Project Monitor shall provide the Contractor's on site Superintendent with a daily verbal briefing regarding the general status of the Work including but not limited to:

   a. the Abatement Subcontractor's manpower for the day
   b. the locations and description of all Abatement Subcontractor work efforts for the day including setup, cleaning, abatement, soft strip and interior gut
   c. whether any key inspections, reviews or approvals are scheduled or anticipated for the day
   d. whether any waste loading and/or hauling is scheduled or anticipated for the day
   e. any deficiencies or problems with the execution of the work including but not limited to loss of negative pressure, breaches in barriers, injuries, near misses, unprofessional behavior or workmanship, lack of proper means/methods or techniques, non-compliance situations, lack of Abatement Subcontractor response to Environmental Consultant Project Monitor requests
   f. status for the work as compared to the established schedule for progress

The Environmental Consultant Project Monitor shall maintain a written daily log of this type of information and shall submit a copy of the written daily log to the Contractor's Superintendent at the conclusion of each work shift or day. This will allow the Contractor to keep the LMDC properly informed regarding the general progress and key interim steps of the work. The Environmantal Consultant Project Monitor shall inspect each truck before leaving the site and inspect driver licenses and shipping papers.

B. Air Sampling

1. The Environmental Consultant Project Monitor is responsible for the project area Air Monitoring. Monthly records will be sent to the Contractor for record keeping purposes. The Environmental Consultant Project Monitor is to provide for all air monitoring and related activities, separate and independent of that being performed by or for the Abatement Subcontractor, as required and specified in the regulations.

2. All background, progress, and final clearance air monitoring will be done in accordance with NYSDOL ICR 56 requirements and these specifications.

3. All air sample data will obtained within 24 hours from the time of sampling and must be posted at the entrance of the work area except when a faster turn-around is required by the Environmental Consultant Project Monitor. A six-hour turnaround shall be required for final clearance samples to minimize downtime between abatement sequences.

4. Progress air sampling data will be evaluated by the Environmental Consultant Project Monitor on a daily basis. Any progress air samples noted to be equal to or greater than 0.01 fibers per cubic centimeter of air (fiber/cc) or the background level, whichever is greater, must be brought to the immediate attention of the Environmental Consultant Project Monitor. Work will be stopped immediately and barriers inspected and repaired as necessary. Abatement methods will be altered to reduce airborne fiber concentration(s) to the aforementioned level and work will not resume until that level is attained. Surfaces outside the work area are to be HEPA vacuumed or wet cleaned prior to resuming removal work.

5. In addition to the minimum number of samples required by NYS ICR 56, additional samples deemed necessary by the Environmental Consultant Project Monitor will be the collected. Additional samples shall be collected if multiple entrances are utilized in an abatement sequence or if the numbers of AFDs are increased based on change in the containment layout.

6. Clearance air sample data will be evaluated by the Environmental Consultant Project Monitor upon receipt. If clearance samples are above applicable criteria, the Abatement Subcontractor will be directed to re-clean the work site(s) and a new round of sampling will be performed.

7. The Environmental Consultant Project Monitor will provide continuous monitoring of the Abatement Subcontractor's activities. Any regulatory

violations or unsafe work conditions noted are to be brought to the immediate attention of the Contractor. Where the Environmental Consultant Project Monitor identifies any violations or conditions and determines that a work stoppage is required, the Environmental Consultant Project Monitor will have the authority and the responsibility to stop the work until the conditions are corrected.

8. The Environmental Consultant Project Monitor will maintain a daily log of the Abatement Subcontractor's activities. The log is to include the name, NYSDOL and NYCDEP Certification Number and Social Security Number for all personnel who enter the site. The log is to be made available to the Abatement Subcontractor and the Owners/Owners' Representatives at his/her request.

9. The Environmental Consultant Project Monitor will ensure the Abatement Subcontractors' employees follow proper procedures for entering and leaving the work area.

10. The Environmental Consultant Project Monitor will review the Abatement Subcontractors' activities to ensure that:

    a. Asbestos is removed and bagged or containerized in accordance with applicable Federal and State regulations.

    b. All surfaces are cleaned of any visible residues following the removal of asbestos and cleaning of dust.

    c. During work, all accumulations of asbestos-containing and contaminated materials will be cleaned up at least once per day or more frequently if material has accumulated to such an extent that clean-up is warranted. All clean-up is to be conducted in accordance with NYS ICR 56 requirements.

    d. Equipment, containers or bags of waste are removed from the work area in accordance with NYS ICR 56 and as specified elsewhere herein.

    e. The worker decontamination system is wet cleaned and where necessary HEPA vacuumed after each shift change and meal break.

    f. When the work has been performed in accordance with the regulations and the specifications and all asbestos has been removed, the Environmental Consultant Project Monitor is to grant approval for the Abatement Contractor to commence final clean up. If the Environmental Consultant Project Monitor identified additional asbestos removal work to be done, this work is to be brought to the attention of the Abatement Subcontractor. Clean up activities will not commence until this work is performed and approved by the Environmental Consultant Project Monitor.

    g. Following Asbestos Removal, the Environmental Consultant Project Monitor will be responsible for the following:

i. During final clean up the Environmental Consultant Project Monitor will be responsible for ensuring that the Abatement Subcontractor conducts the following activities in accordance with the contract and regulatory requirement.

- Performing a visual inspection of the area is to be conducted to verify the absence of asbestos-containing waste materials and completion of the scope of work.

- Ensuring that all asbestos waste is being removed from the work site in bags that are labeled with the name of the generator and the location at which the waste was generated, per NESHAP Section 61.150(a)(4)(v).

3.11 FINAL ACCEPTANCE:

A. Final Project Acceptance

Final acceptance of the work area will occur upon completion of the specified asbestos abatement work and the following:

1. Submission of test results for post-abatement (clearance) air monitoring shall indicate airborne concentration of 0.01 f/cc or less by PCM analysis or 70 s/mm^2 TEM.

2. Final inspection of the work area and issuance of a Certificate of Completion by the Environmental Consultant Project Monitor indicating that all work has been performed in accordance with applicable Federal and State regulations and these specifications.

LIST OF SUBMITTAL

	SUBMITTAL APPROVED	DATE SUBMITTED	DATE
Pre-Project Submittal:			
1.	Insurance	_____	_____
2.	All required bonds	_____	_____
3.	List of Subcontractors	_____	_____
4.	Proof that all required permits and variances have been obtained.	_____	_____
5.	Proof of notification to Fire Department of the start of Asbestos abatement project	_____	_____
6.	Documentation of Required Qualifications of Workers	_____	_____
7.	Completed and notarized Certificate of Worker's Release	_____	_____
8.	Proof of a respiratory protection program.	_____	_____
9.	Transporter Requires Proof that a landfill site has been located and is in compliance.	_____	_____
10.	MSDS of chemicals to be used on this project from all Subcontractors	_____	_____
11.	Copy of Daily Log proposed for use	_____	_____
During Work Submittal:			
1.	Schedule of Work Changes	_____	_____
2.	A "Request for Inspection" form.	_____	_____
3.	Results of all air monitoring performed		

	by the Abatement Subcontractor (OSHA)	_____	_____
4.	Truck and Driver Inspections	_____	_____
5.	A certified, signed, and completed copy of each" Waste Shipment Record" form	_____	_____

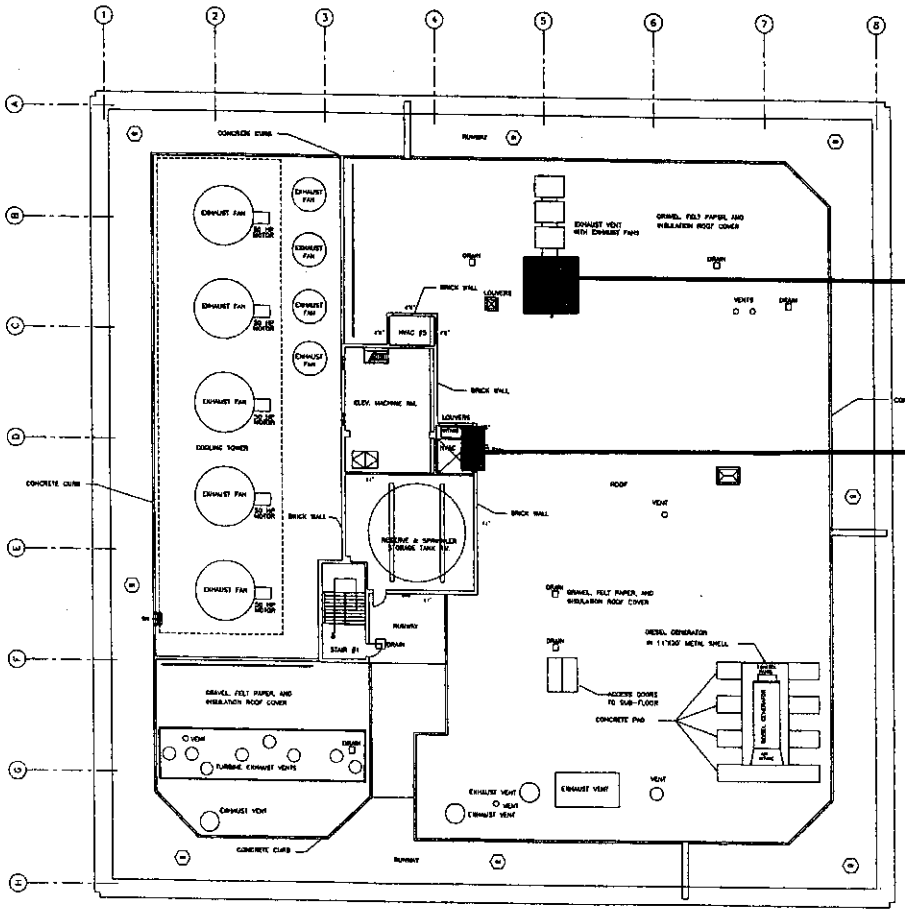
Post Project Submittal:

1.	A notarized "Release of Liens"	_____	_____
2.	A copy of the complete bound log book with all daily logs	_____	_____
3.	Compilation in chronological order of all air monitoring records pertaining to this project.	_____	_____
4.	Compilation of all completed and signed Waste Shipment Record forms.	_____	_____
5.	Copies of notifications and checks to applicable agencies That the work has been completed	_____	_____
6.	Final Report	_____	_____

Attachment 1

Annotated drawing of ACM identified by Louis Berger and confirmed by TRC showing locations and quantities of visible asbestos containing materials (43 pages)

ROOF



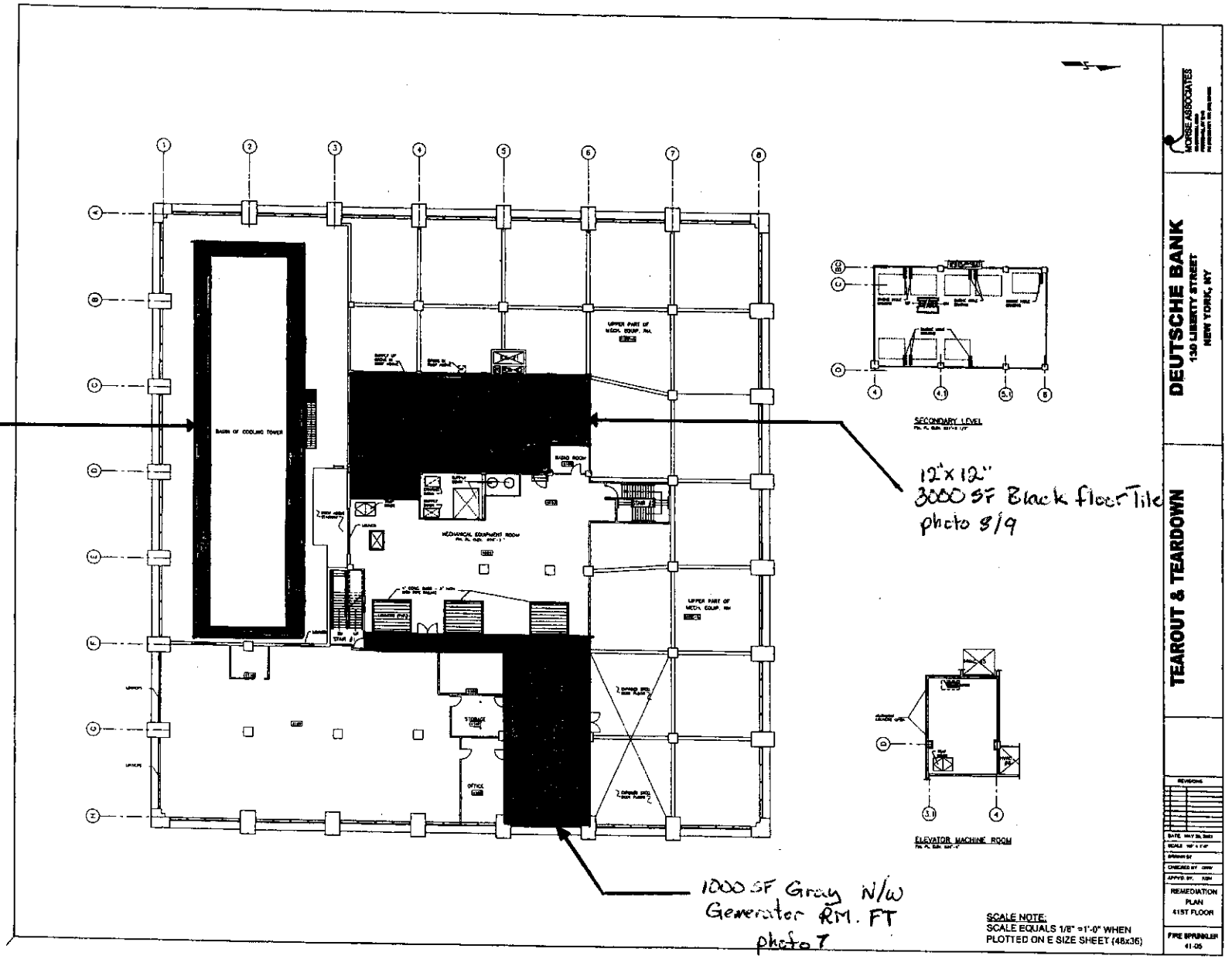
SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

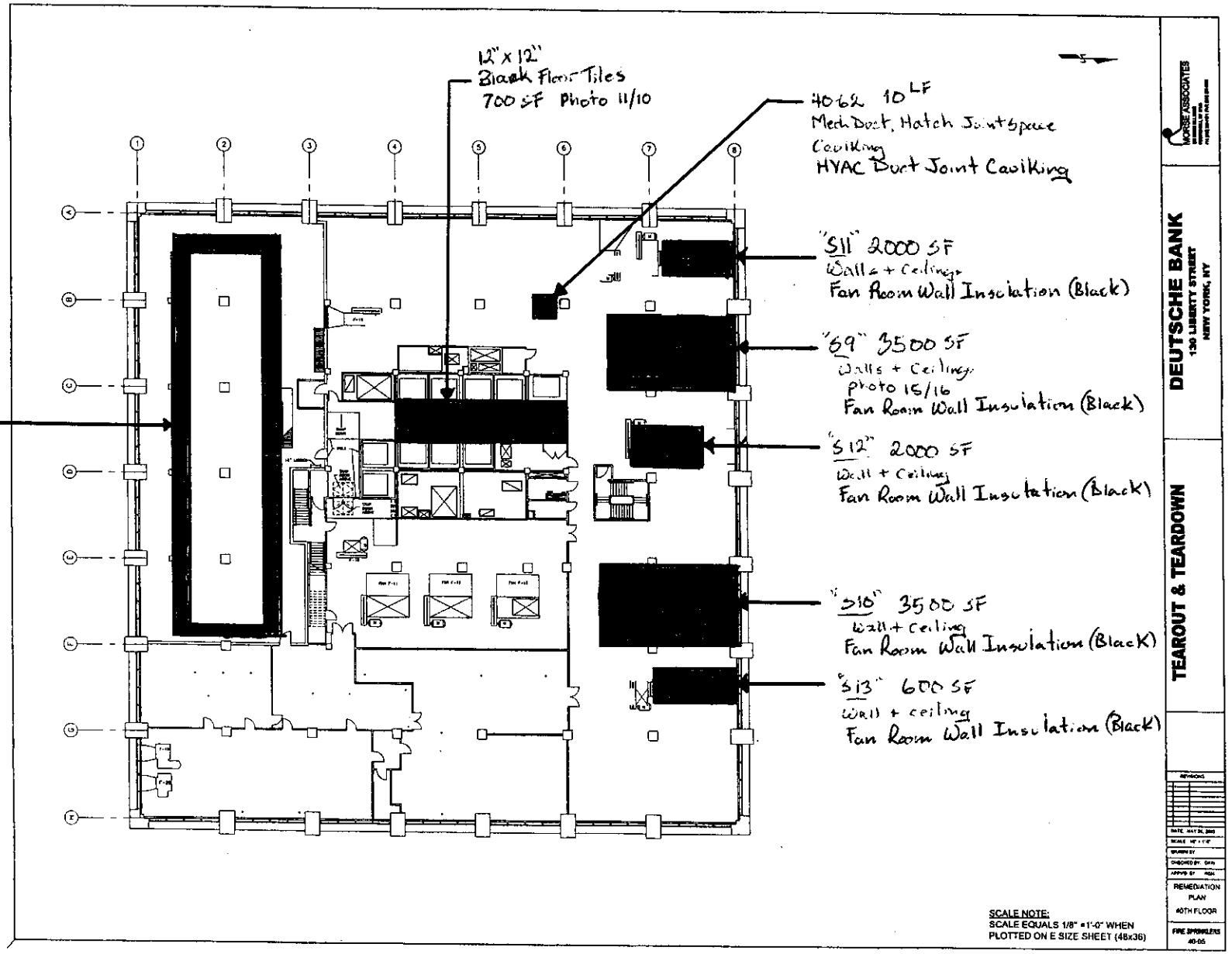
DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

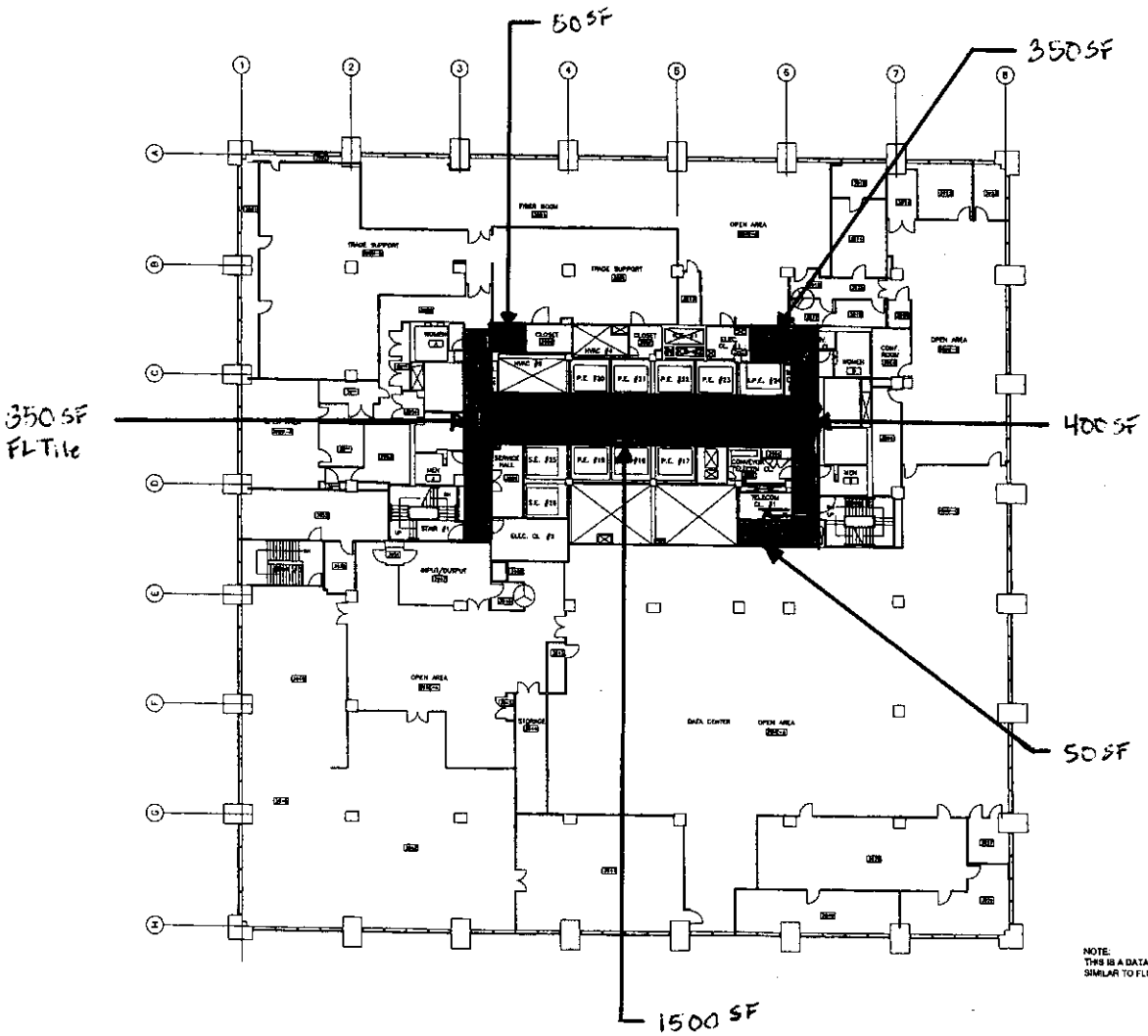
TEAROUT & TEARDOWN

REMEDIATION PLAN
ROOF
FLOOR PLAN


Transite Wall
20,000 SF
Transite Panels
Cooling Tower
photo 12/13/14
12"x12"
3000 SF Black floor Tile
photo 8/9
1000 SF Gray N/W
Generator RM. FT
photo 7
SECONDARY LEVEL
ELEVATOR MACHINE ROOM
SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)
DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY
TEAROUT & TEARDOWN
REMEDIATION
PLAN
41ST FLOOR
FIRE SPRINKLER
41-05

41st


12" x 12"
Black Floor Tiles
700 SF Photo 11/10
4062 10 LF
Mech Duct, Hatch Joint Space
Caulking
HVAC Duct Joint Caulking
"S11" 2000 SF
Walls + Ceilings
Fan Room Wall Insulation (Black)
"S9" 3500 SF
Walls + Ceilings
Photo 15/16
Fan Room Wall Insulation (Black)
"S12" 2000 SF
Wall + Ceiling
Fan Room Wall Insulation (Black)
"S10" 3500 SF
Wall + Ceiling
Fan Room Wall Insulation (Black)
"S13" 600 SF
Wall + ceiling
Fan Room Wall Insulation (Black)
Same As FL 41st
40th FL
DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY
TEAROUT & TEARDOWN
REMEDIATION PLAN
40TH FLOOR
SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN PLOTTED ON E SIZE SHEET (48x36)



Total 2700 SF
Pink - Tan - Gray floor Tile

SCALE NOTE:
SCALE EQUALS 1/8" = 1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

HORSE ASSOCIATES

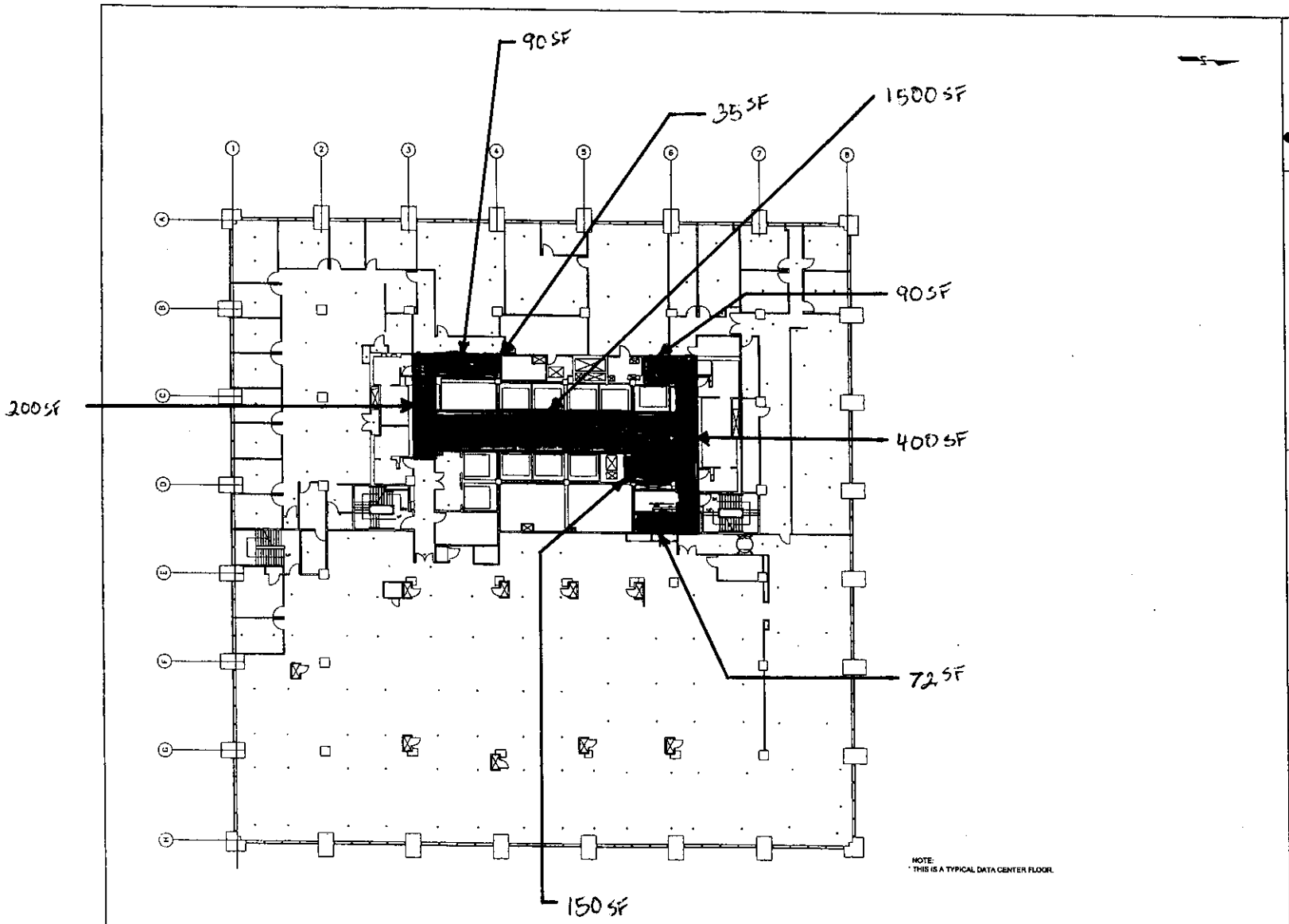
DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REMEDIATION PLAN
39TH FLOOR

FLOOR PLAN
39-01

39 FL



Total: 3120 SF Gray/Blue Floor Tile Mastic

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN PLOTTED ON E SIZE SHEET (48x36)

HORSE ASSOCIATES

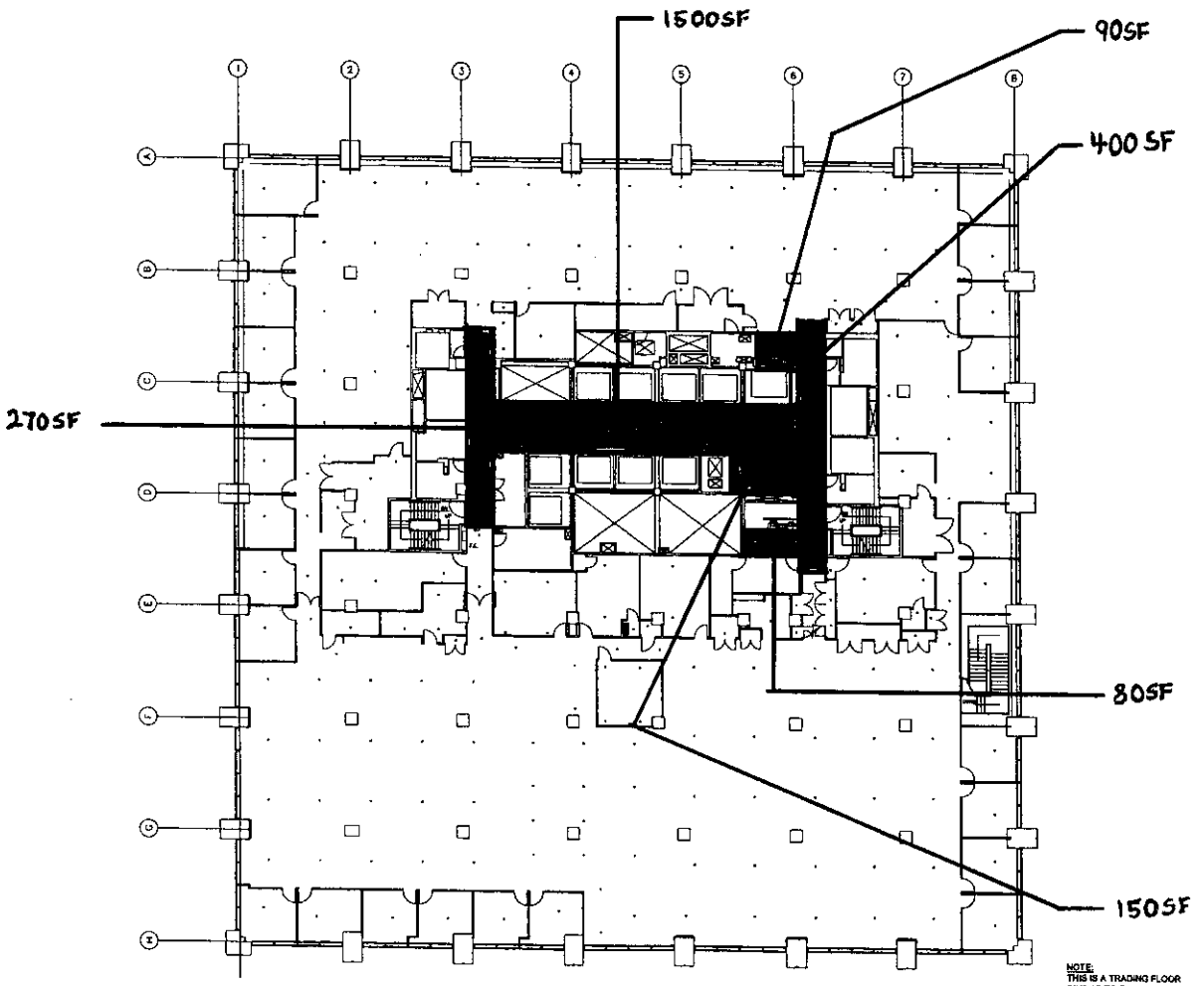
DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REMEDIATION PLAN
38TH FLOOR

FIRE SPRINKLERS
38-05

38th FL



MORSE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

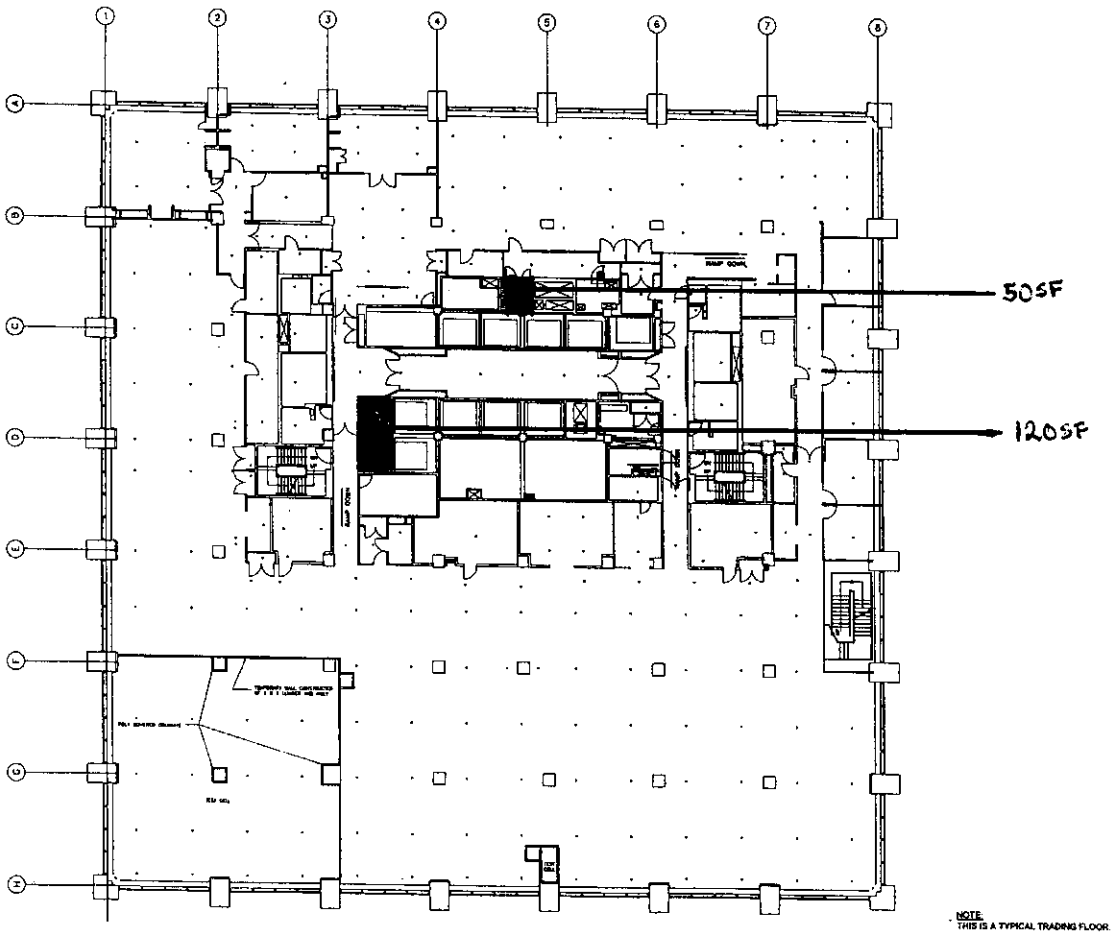
TEAROUT & TEARDOWN

REMEDIATION PLAN
37TH FLOOR
SPRINKLER
37-05

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN PLOTTED ON E SIZE SHEET (48x36)

37FL

Total: 12"x12" Brown/Beige floor Tile + Mastic.



NOTE:
THIS IS A TYPICAL TRADING FLOOR.

Total 170 SF 12"x12" Black floor Tile.

SCALE NOTE:
SCALE EQUALS 1/8" = 1'-0" WHEN PLOTTED ON E SIZE SHEET (48x36)

MOSSE ASSOCIATES

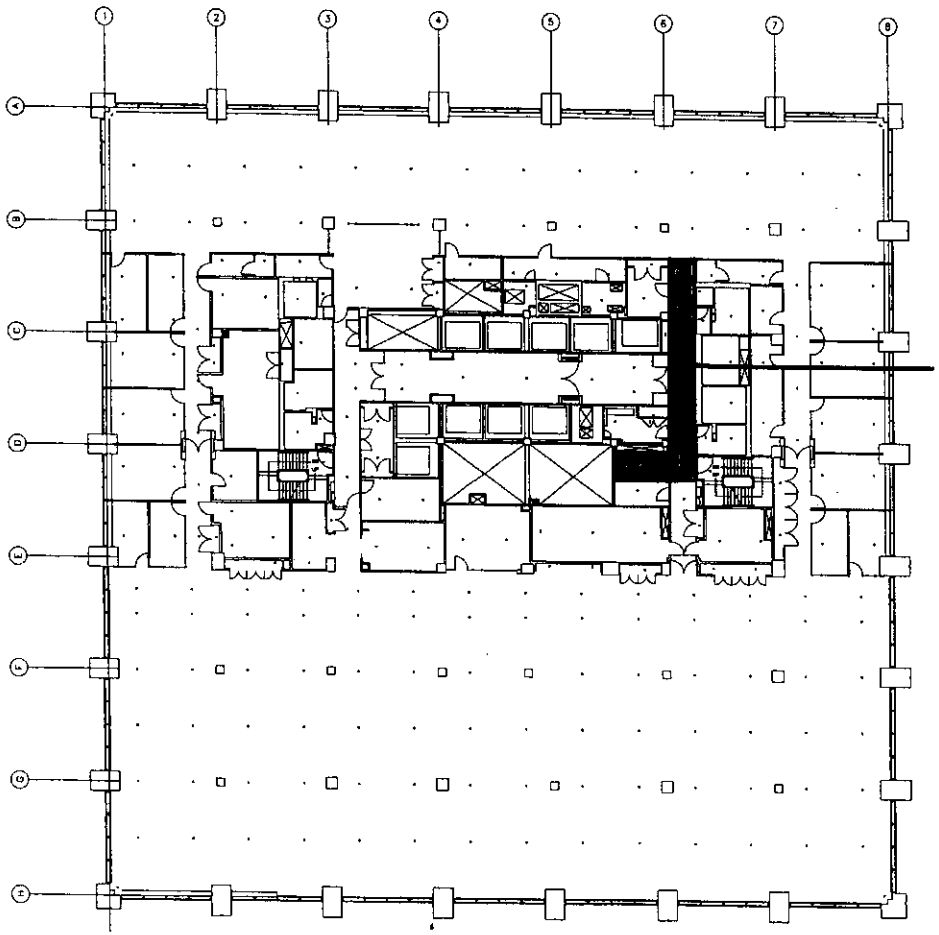
DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REMEDIATION PLAN
36TH FLOOR

FIRE SPRINKLERS
36-05

36 FL



NOTE:
THIS IS A TRADING FLOOR
SIMILAR TO FLOOR 36.

Total: 800 SF 12" x 12" Beige floor Tile.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

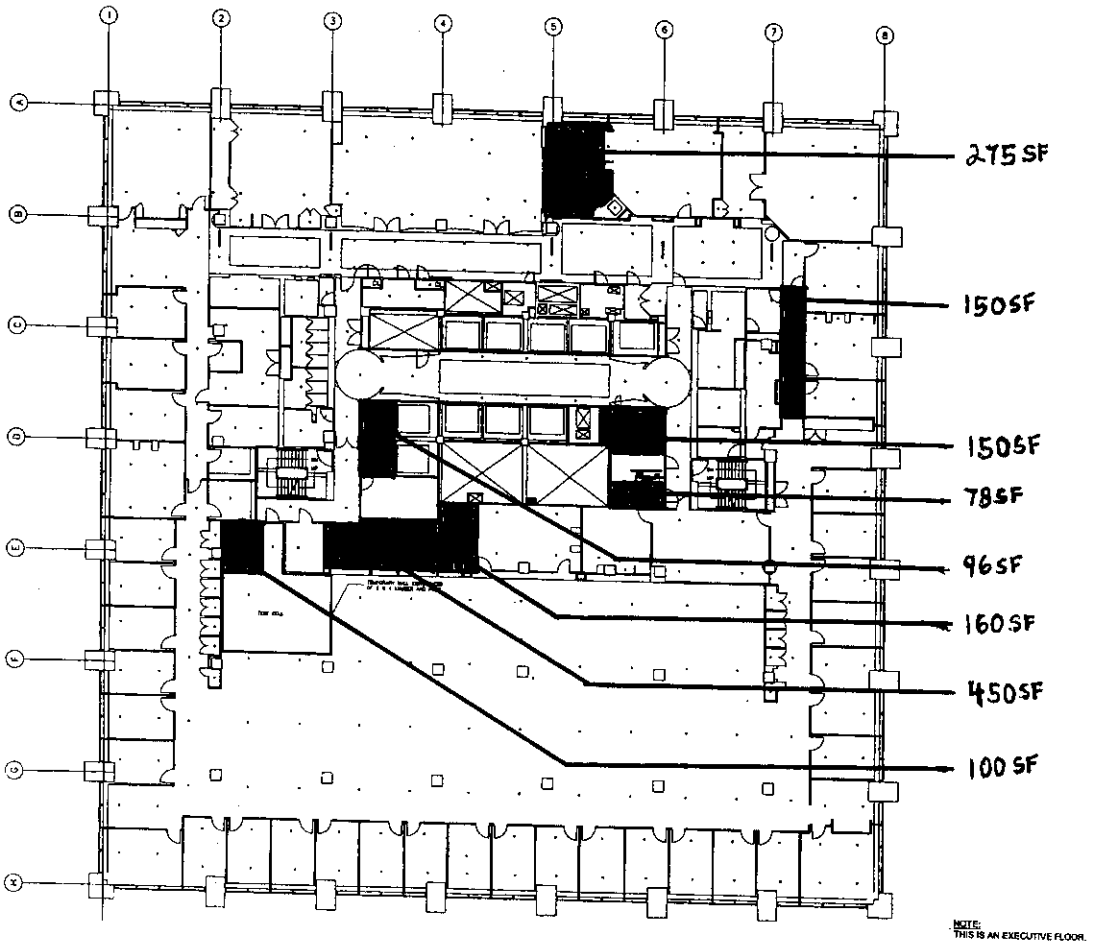
DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REMEDIATION
PLAN
35TH FLOOR

SPRINKLER
35-05

35 FL



NOTE:
THIS IS AN EXECUTIVE FLOOR.

Total: 1500 SF - Black/Gray/Tan floor Tiles + Mastic

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

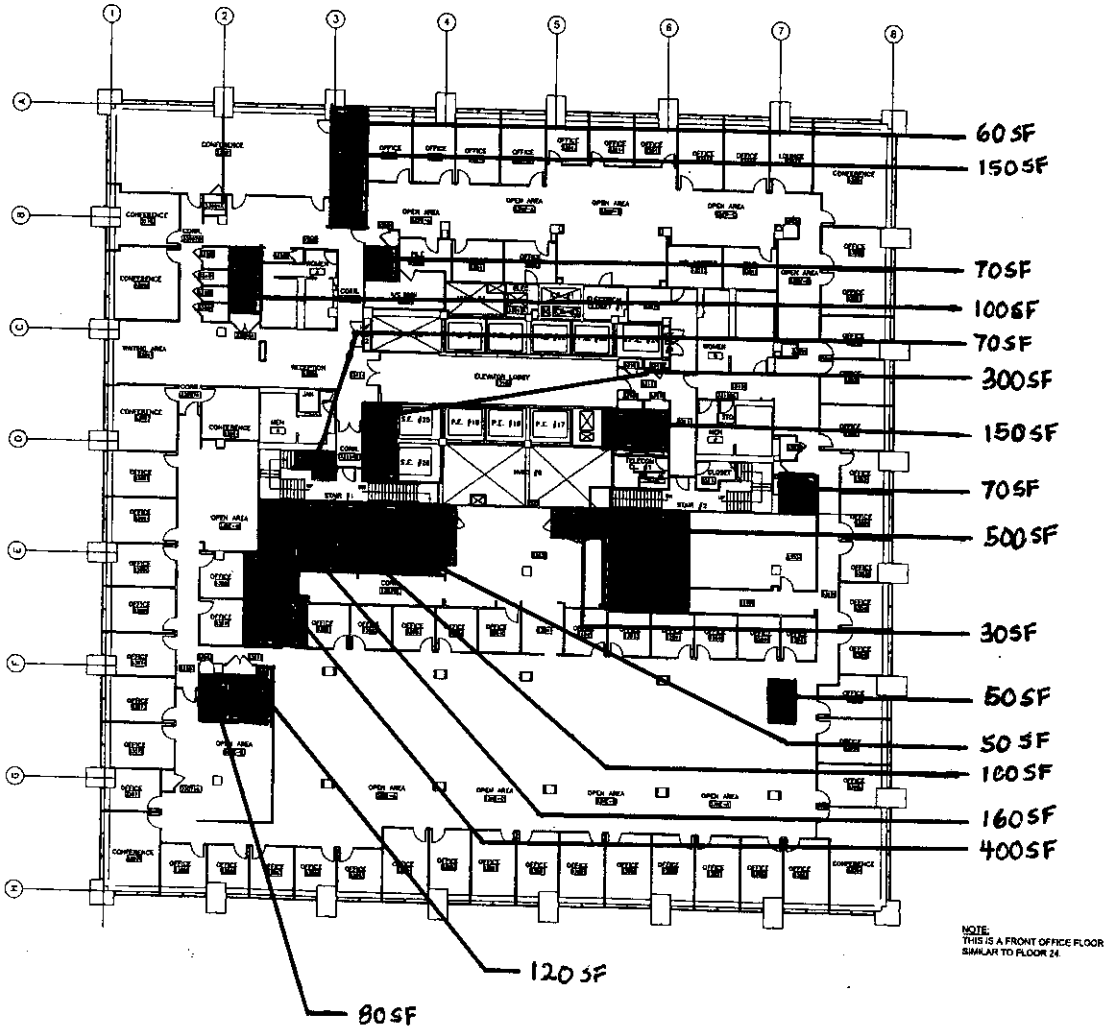
DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REMEDIATION PLAN
34TH FLOOR

FIRE SPRINKLERS
34-05

34FL



NOTE:
THIS IS A FRONT OFFICE FLOOR
SIMILAR TO FLOOR 24

33FL

Total: 2700 SF floor Tile Black/Gray/Tan + Mastic.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

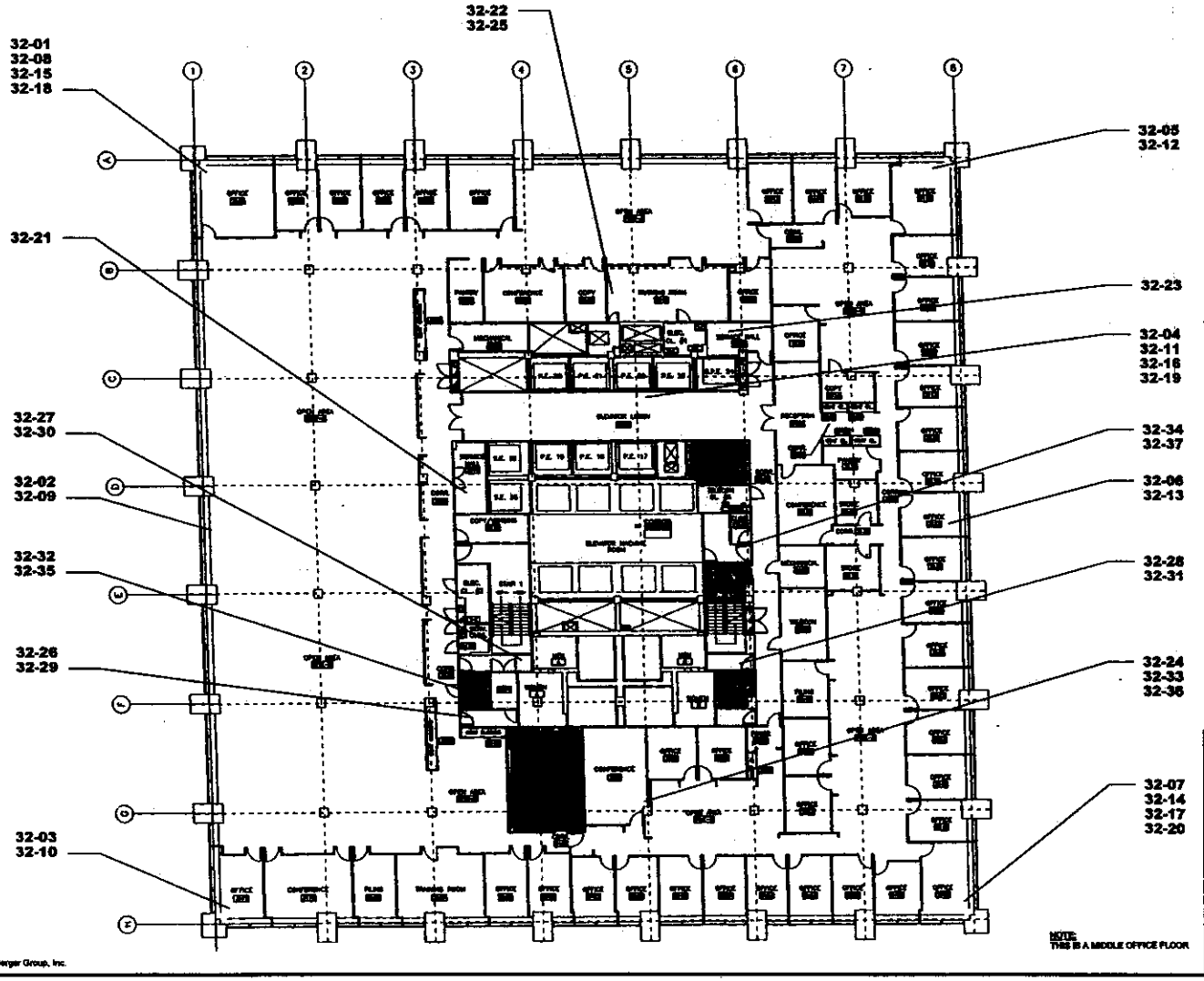
DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REVISIONS

REMEDIATION PLAN
33RD FLOOR
FLOOR PLAN
33-01

Total: 850 SF Black/Beige Floor Tiles + Mastic

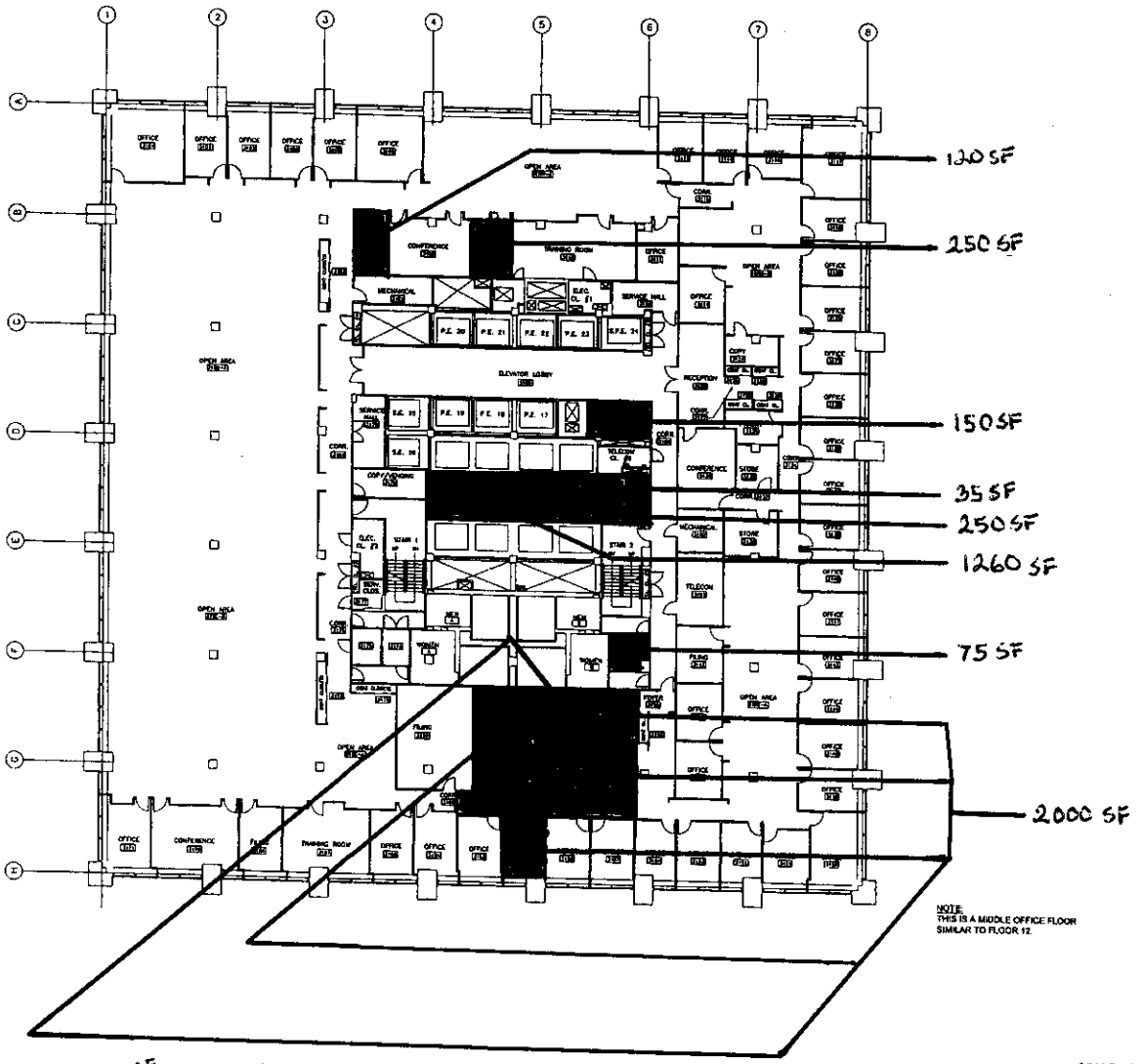


CITY OF NEW YORK
LEONID PEVZNER
CERTIFIED ASBESTOS INVESTIGATOR

Pevzner

32 FL

LMDC	
Project:	130 Liberty Street, New York NY
Scope/Task:	Asbestos Building Inspection and WTC Dust Characterization Study- Task: #2
Floor:	32nd Floor
Date:	June 4, 2004
Prepared by:	Leonid Pevzner
Approved by:	Stephen Pharai



Total: 4,200 SF Black/Beige floor Tiles + Mastic

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

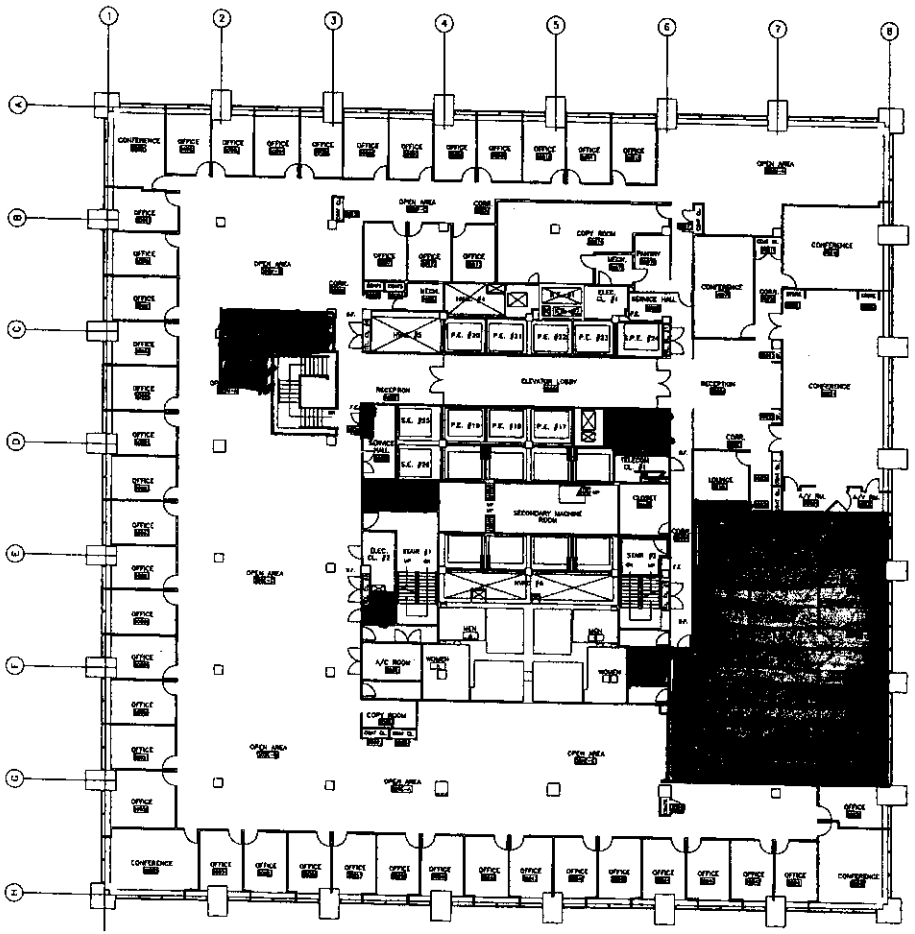
DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REMEDIATION PLAN
31ST FLOOR

FLOOR PLAN
31-01

31 FL



NOTE:
THIS IS A FRONT OFFICE FLOOR
SIMILAR TO FLOOR 24.

Pink floor Tiles 500 SF + Mastic

Total: Black floor Tiles 3600 SF + Mastic

■ — Pink Floor Tile

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

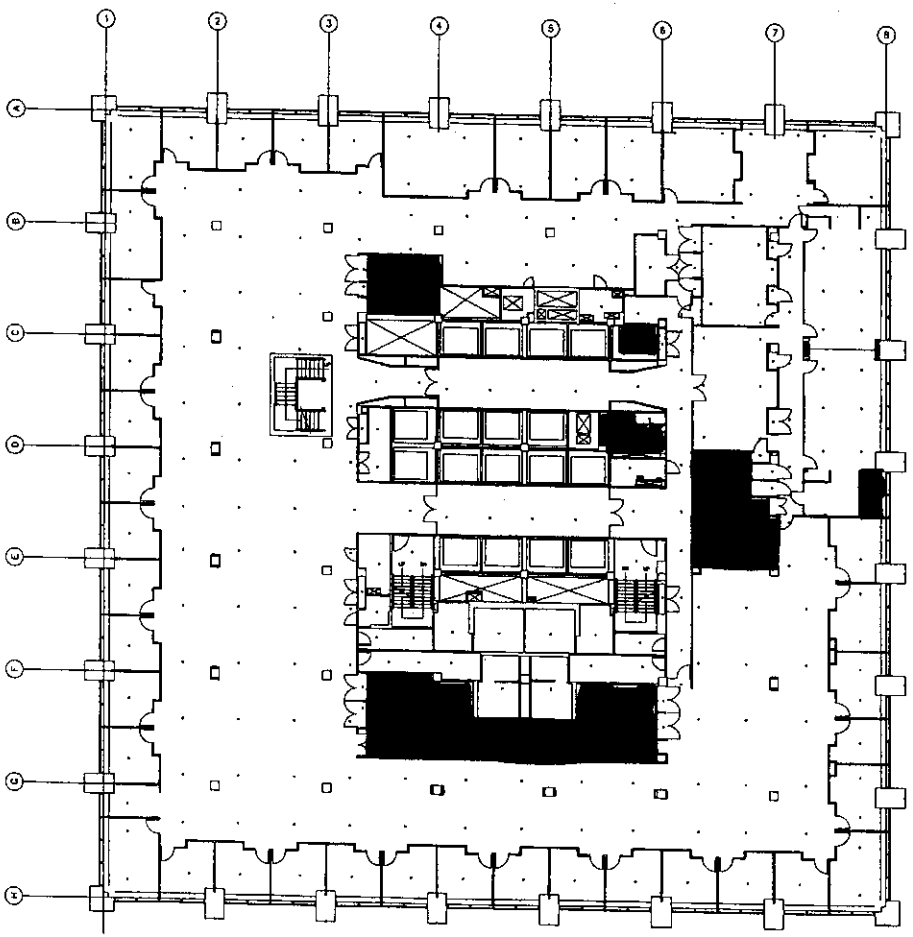
DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REMEDIATION PLAN
30TH FLOOR

FLOOR PLAN
30-01

30FL



NOTE.
THIS IS A FRONT OFFICE FLOOR
SIMILAR TO FLOOR 24.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

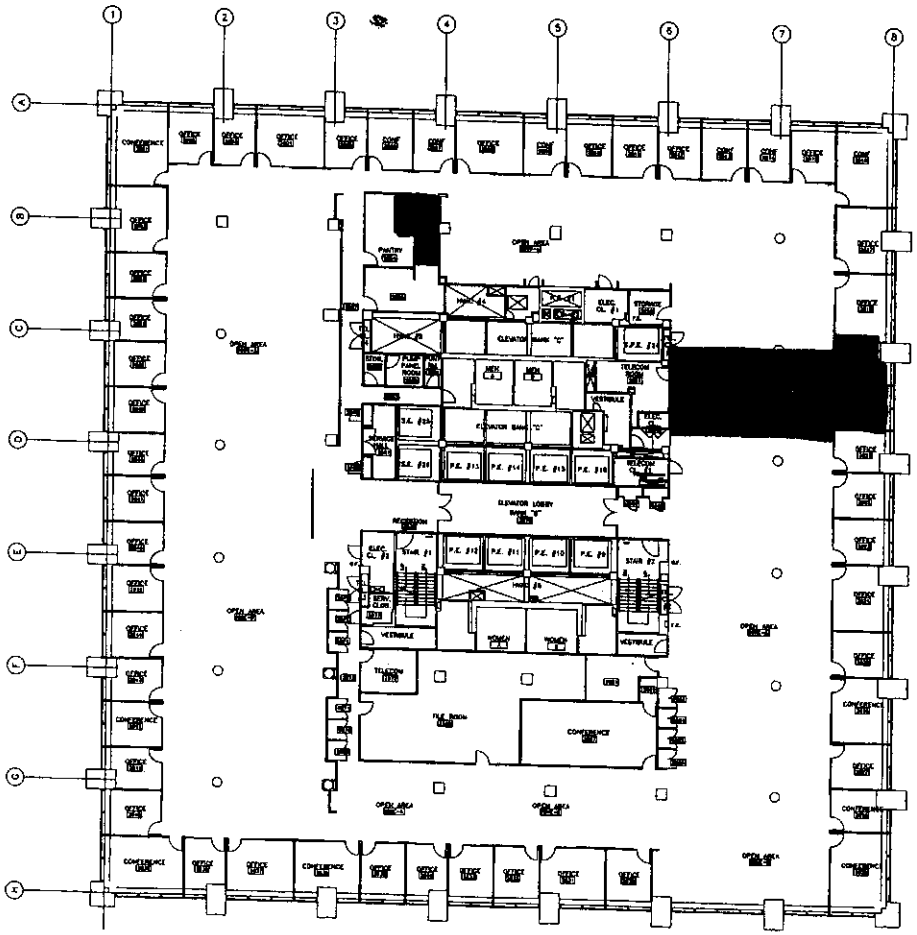
DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REMEDIATION
PLAN
29TH FLOOR
FIRE SPRINKLER
29-05

29 FL

Total: 2200 SF Gray floor Tiles + Mastic



NOTE:
THIS IS A MIDDLE OFFICE FLOOR
SIMILAR TO FLOOR 12.

Total: Gray / Light Brown Floor Tile 1,620 SF

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

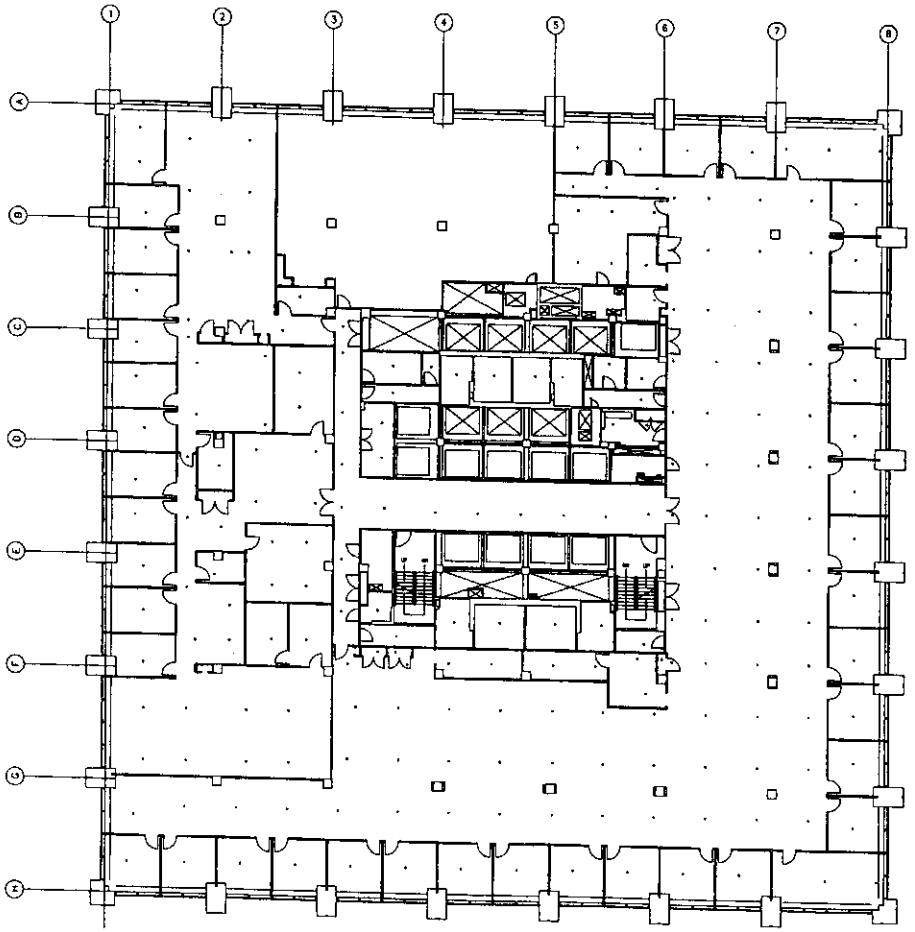
HOQUE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REMEDIATION PLAN
28TH FLOOR
FLOOR PLAN 28-01

28 FL



NOTE:
THIS IS A FRONT OFFICE FLOOR
SIMILAR TO FLOOR 24.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

27FL

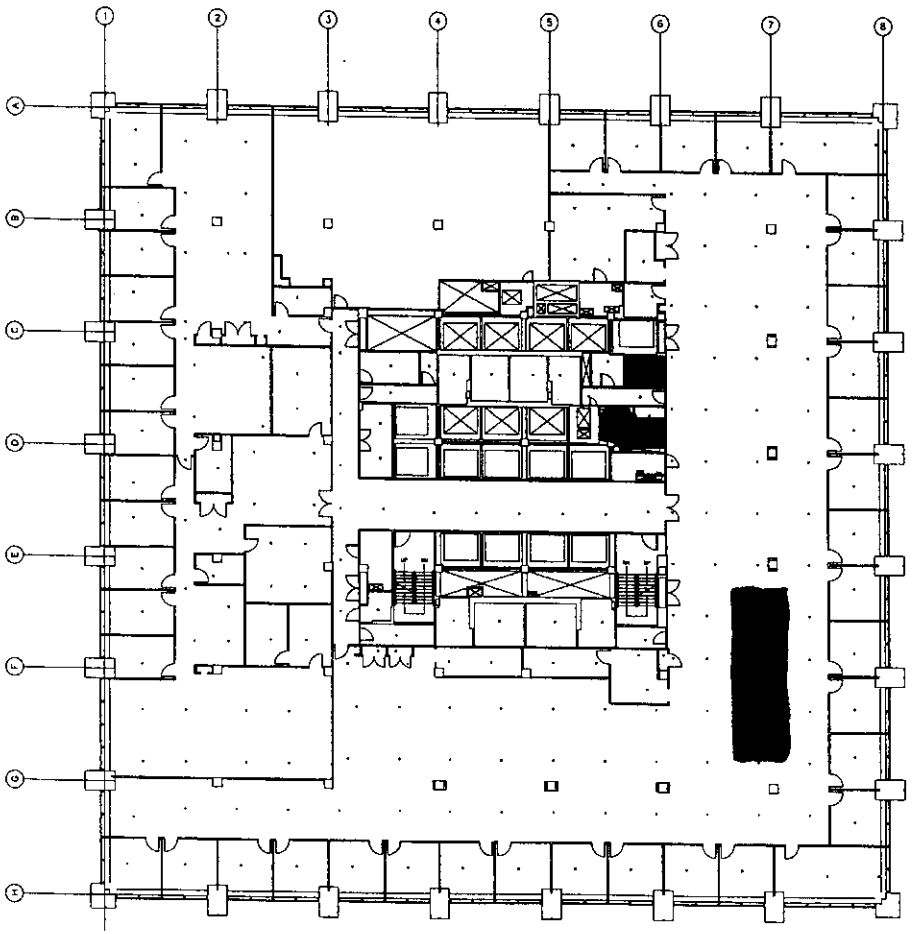
WORSE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REMEDIATION
PLAN
27TH FLOOR

FIRE SPRINKLER
27-05



NOTE:
THIS IS A BACK OFFICE FLOOR SIMILAR TO FLOOR 15.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REVISIONS

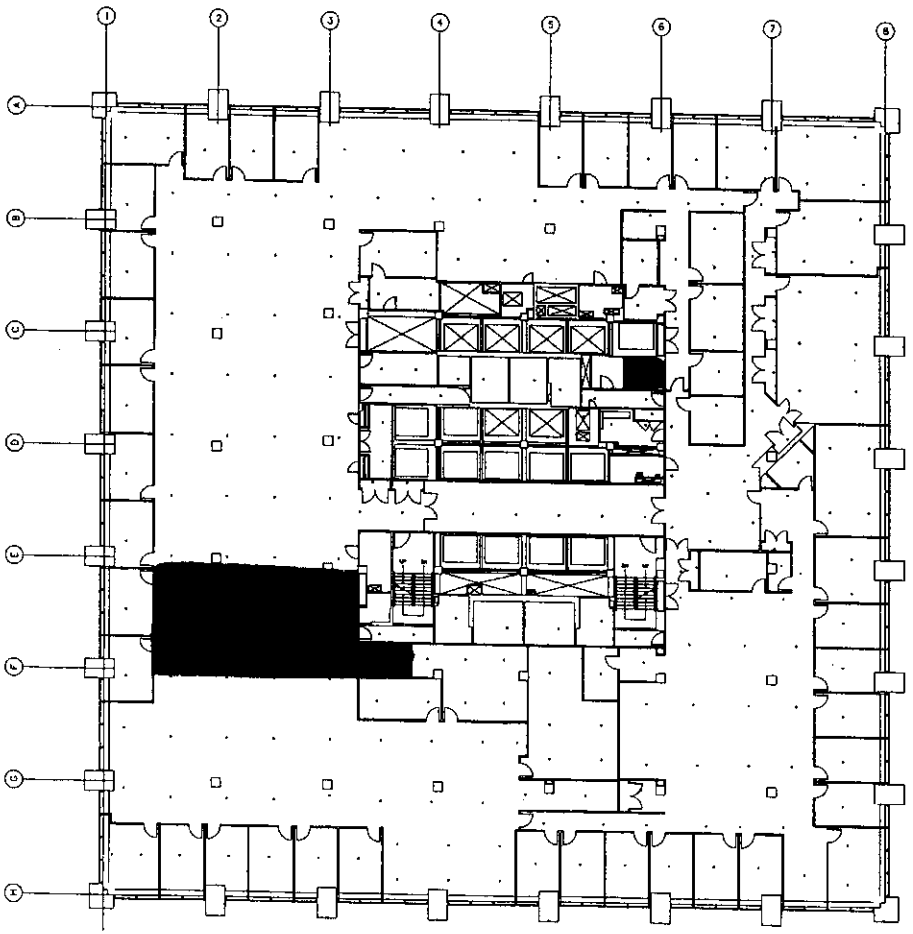
DATE: MAY 30, 2007
SCALE: 1/8" = 1'-0"
DRAWN BY:
CHECKED BY: DRW
UPDTD BY: RMH

REMEDIATION PLAN
26TH FLOOR

FIRE SPRINKLER
26-05

26FL

Total: 750 SF Beige floor Tile + Mastic



NOTE:
THIS IS A FRONT OFFICE FLOOR
SIMILAR TO FLOOR 24.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

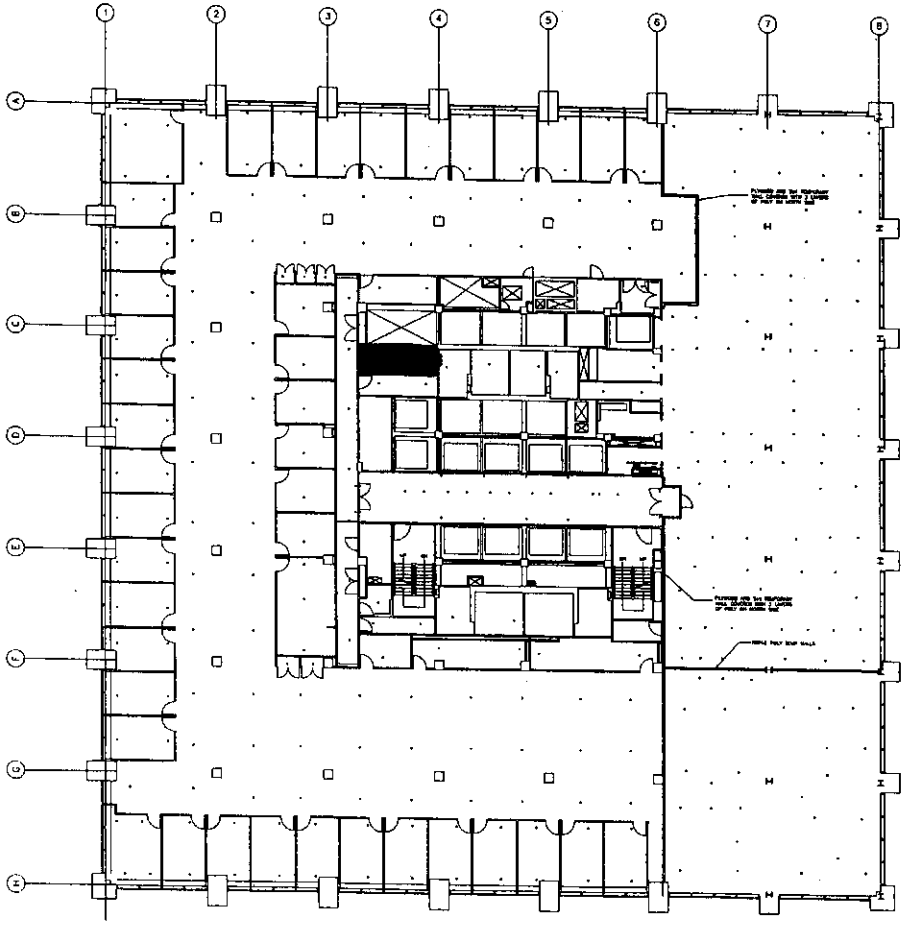
TEAROUT & TEARDOWN

REMEDIATION
PLAN
25TH FLOOR

FIRE SPRINKLER
25-05

Total: 2000 SF 12" x 12" Black Floor Tile

25FL



NOTE:
- THIS IS A TYPICAL FRONT OFFICE FLOOR.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

DEUTSCHE BANK
120 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REVISIONS

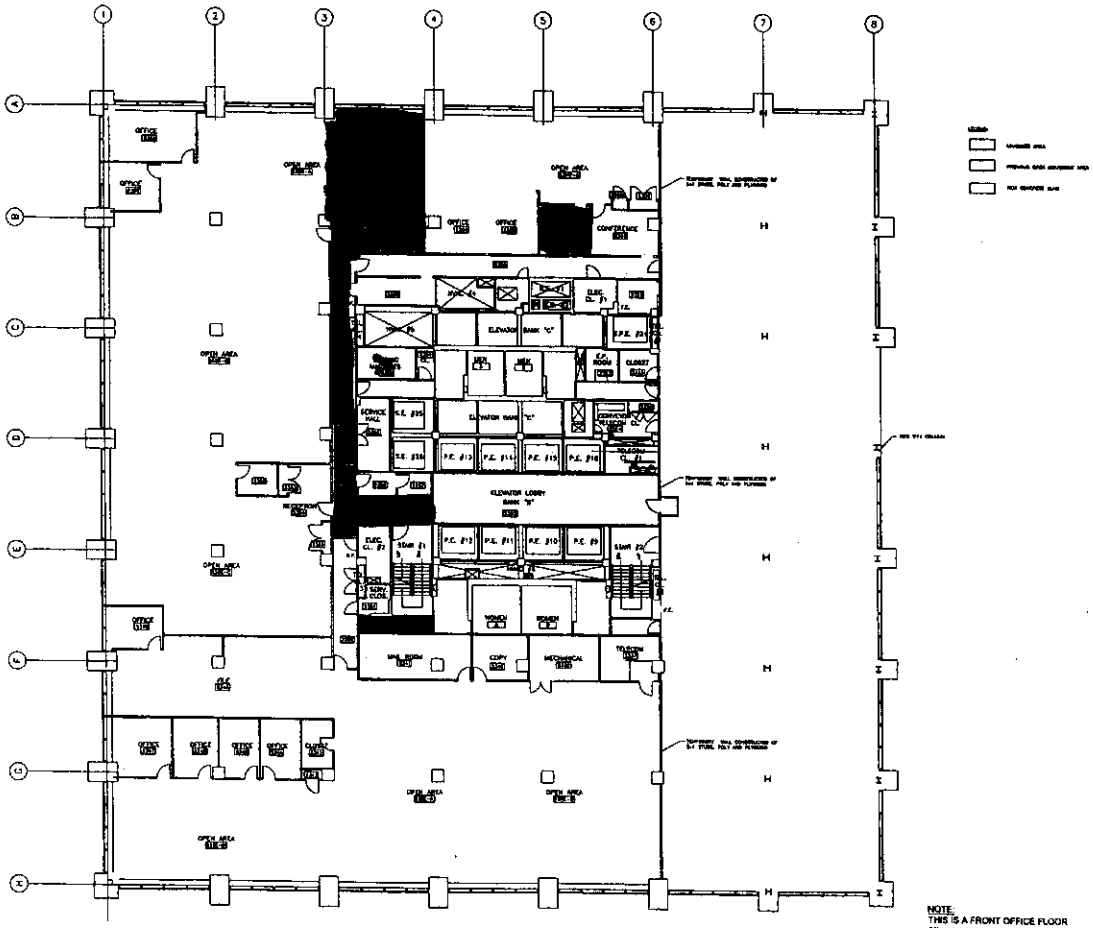
DATE: MAY 30, 2003
SCALE: 1/8" = 1'-0"
DRAWN BY:
CHECKED BY: DRN
APPR'D. BY: ROM

REMEDIATION PLAN
24TH FLOOR

FIRE SPRINKLERS
24-05

24 FL

Total: 120 SF 12" x 12" Gray floor Tile + Mastic



NOTE:
THIS IS A FRONT OFFICE FLOOR SIMILAR TO FLOOR 24.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

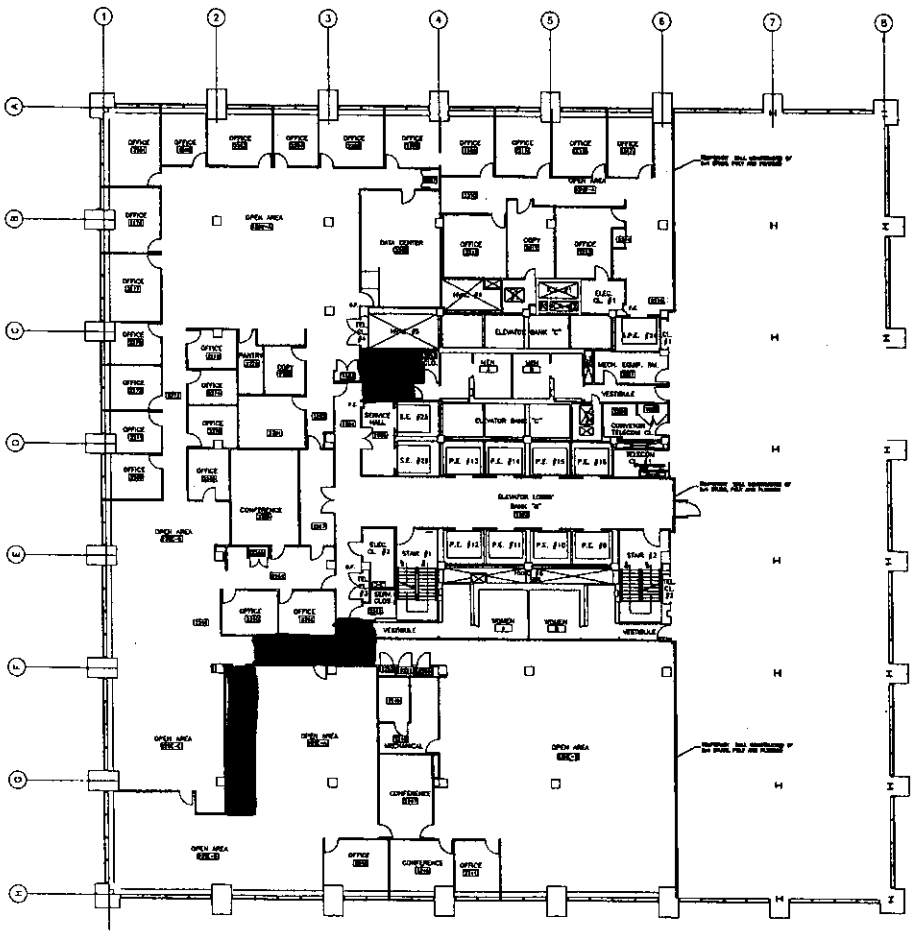
TEAROUT & TEARDOWN

REMEDIATION PLAN
23RD FLOOR

FLOOR PLAN
23-01

23FL

500 SF Black floor tile + Mastic
Total: 1000 SF Gray floor Tile.



NOTE:
THIS IS A BACK OFFICE FLOOR
SIMILAR TO FLOOR 15.

SCALE NOTE:
SCALE EQUALS 1/8" = 1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

MOORE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

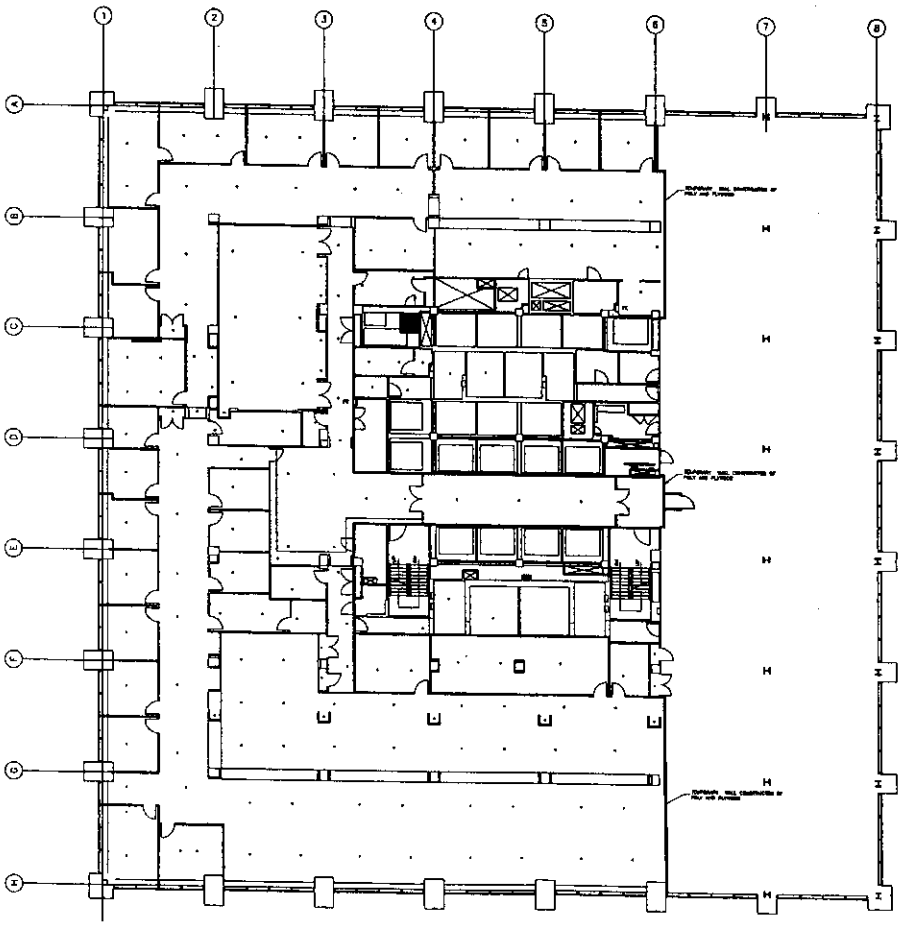
TEAROUT & TEARDOWN

REMEDIATION PLAN
22ND FLOOR

FLOOR PLAN
22-01

Total: 400SF 12" x 12" Gray floor Tile + Mastic

22 FL



NOTE:
THIS IS A FRONT OFFICE FLOOR
SIMILAR TO FLOOR 24.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

21 FL

HORSE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

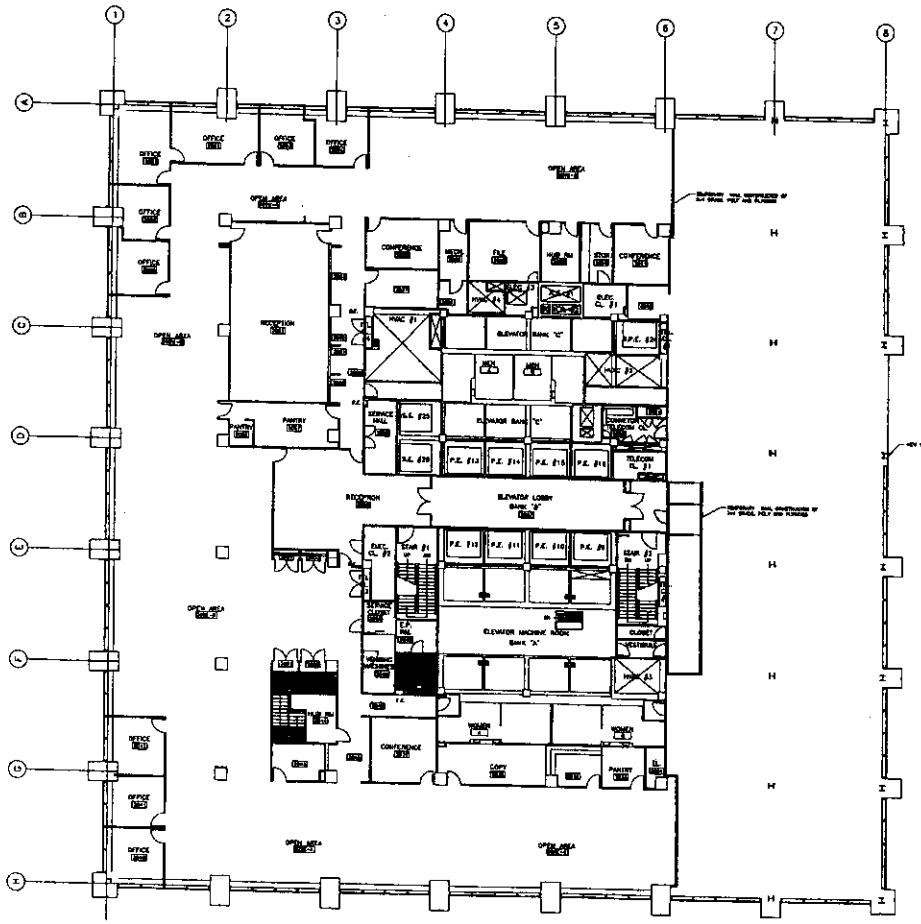
TEAROUT & TEARDOWN

REVISIONS

DATE: MAY 30, 2003
SCALE: 1/8" = 1'-0"
DRAWN BY:
CHECKED BY: MRA
APPROVED BY: RGM

REMEDIATION
PLAN
21ST FLOOR

SPRINKLER
21-05



NOTE:
THIS IS A MIDDLE OFFICE FLOOR
SIMILAR TO FLOOR 12.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

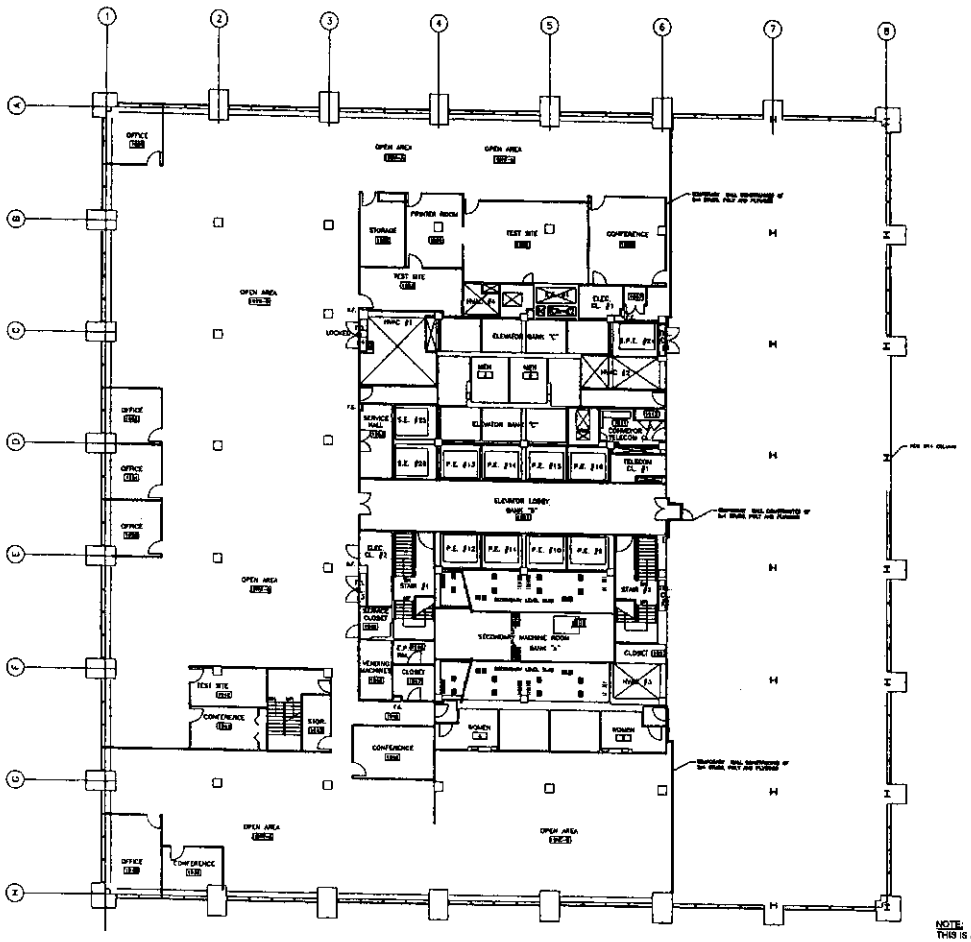
TEAROUT & TEARDOWN

REMEDIATION PLAN
20TH FLOOR

FLOOR PLAN
20-01

20 FL

Total: 300 SF Black 12" x 12" Floor Tiles.



NOTE:
THIS IS A BACK OFFICE FLOOR
SIMILAR TO FLOOR 15.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

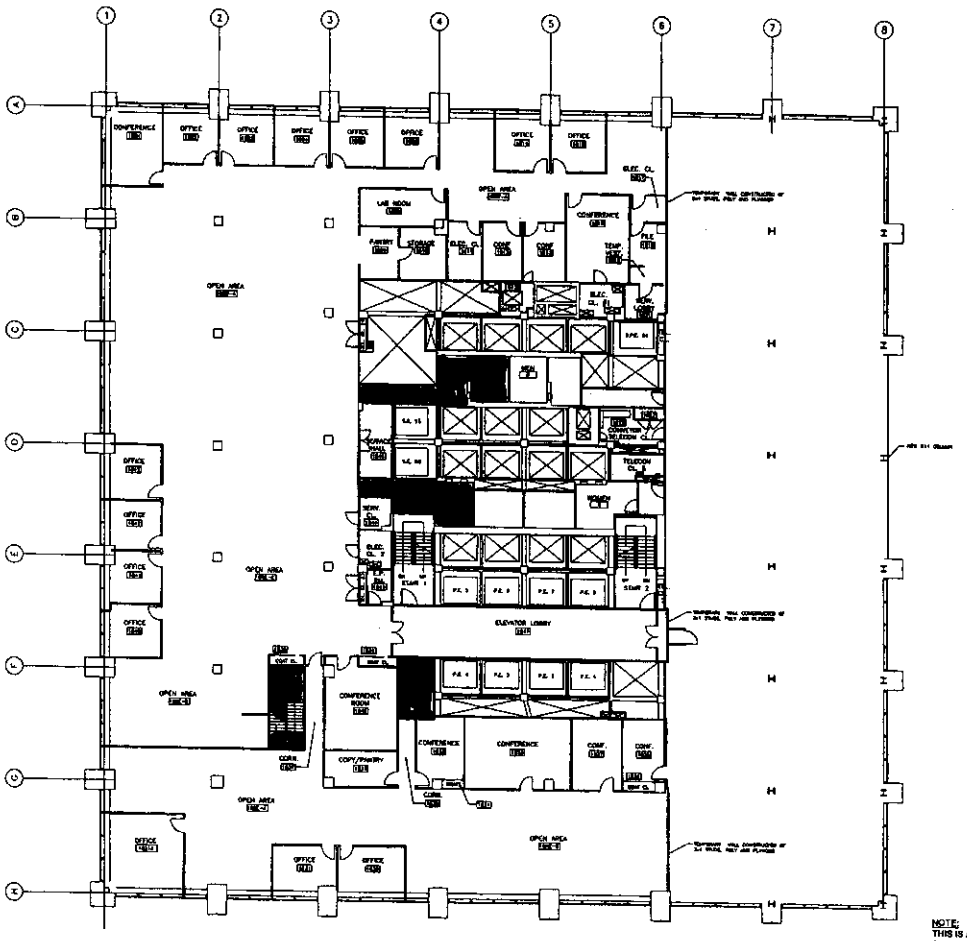
TEAROUT & TEARDOWN

DATE: MAY 24, 2002
SCALE: 1/8" = 1'-0"
DRAWN BY:
CHECKED BY: JOHN
APPVD. BY:

REMEDIATION
PLAN
19TH FLOOR

FLOOR PLAN
19-01

19 FL



NOTE:
THIS IS A BACK OFFICE FLOOR
SIMILAR TO FLOOR 15.

SCALE NOTE:
SCALE EQUALS 1/8" = 1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

HORNER ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

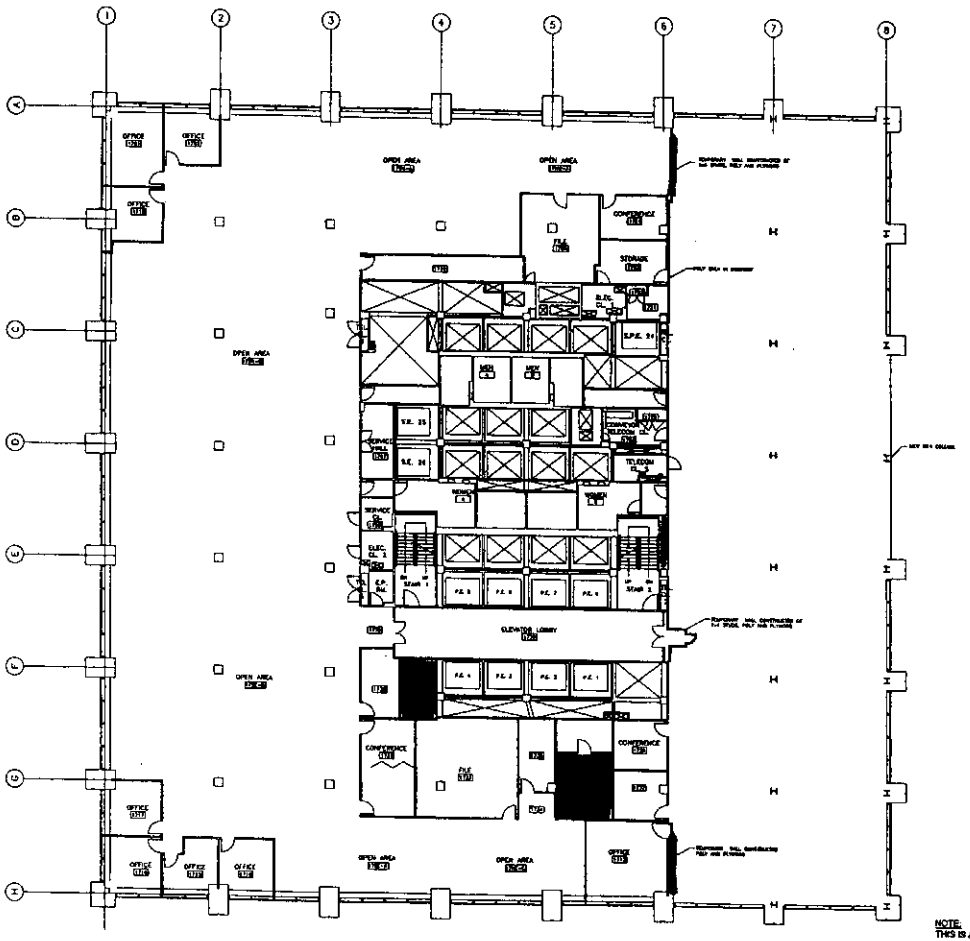
REVISIONS

REMEDIATION PLAN
18TH FLOOR

FLOOR PLAN
18-01

18 FL

Total: 100 SF Linoleum Sheeting + Mastic
200 SF 12" x 12 Black floor Tiles.



NOTE:
THIS IS A BACK OFFICE FLOOR
SIMILAR TO FLOOR 15.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REVISIONS

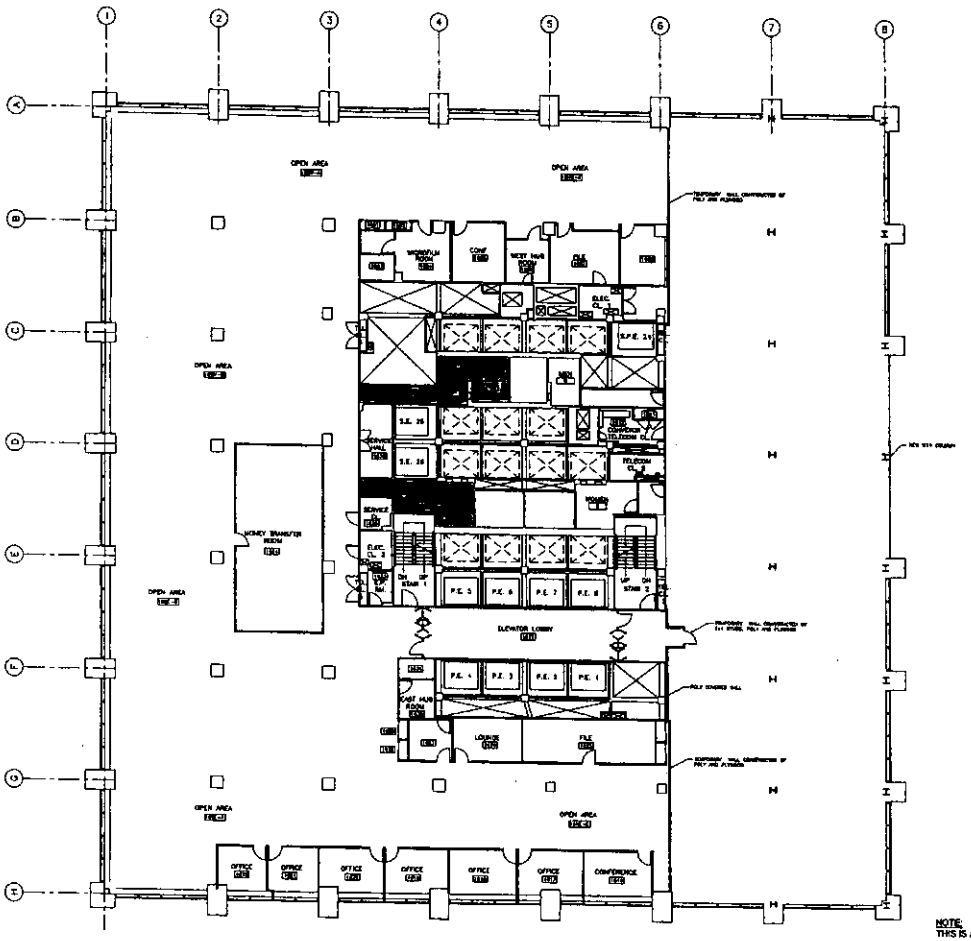
DATE: MAY 30, 2000
SCALE: 1/8" = 1'-0"
DRAWN BY:
CHECKED BY: John
APPVD BY: Mark

REMEDIATION PLAN
17TH FLOOR

FLOOR PLAN
17-01

Total: 300SF 12" x 12" Black Floor Tiles + Mastic.

17 FL



NOTE:
THIS IS A BACK OFFICE FLOOR SIMILAR TO FLOOR 15.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

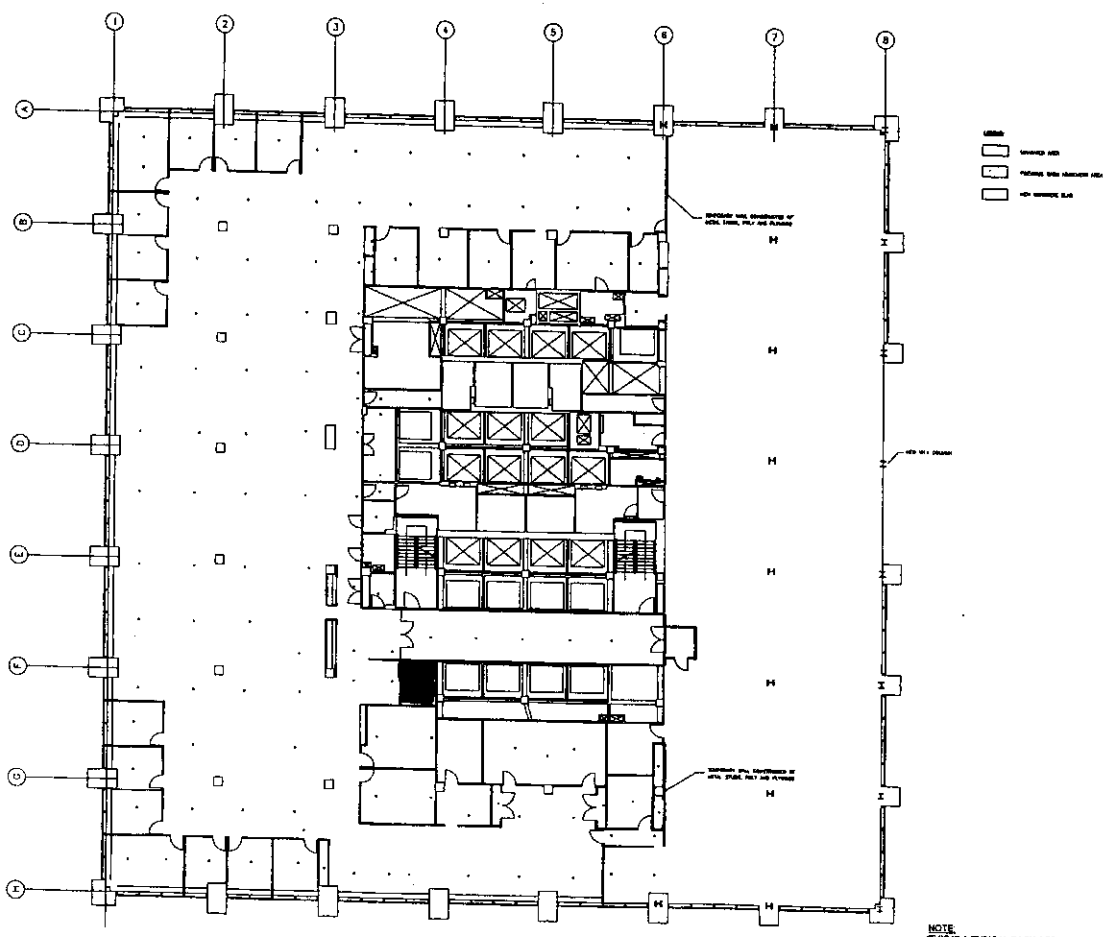
TEAROUT & TEARDOWN

REMEDIATION PLAN
16TH FLOOR

FLOOR PLAN
16-01

16 FL

Total = 500 SF Linoleum Sheeting + Mastic



NOTE:
THIS IS A TYPICAL BACK OFFICE FLOOR.

Total: 150 SF 12" x 12" Black floor Tiles.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

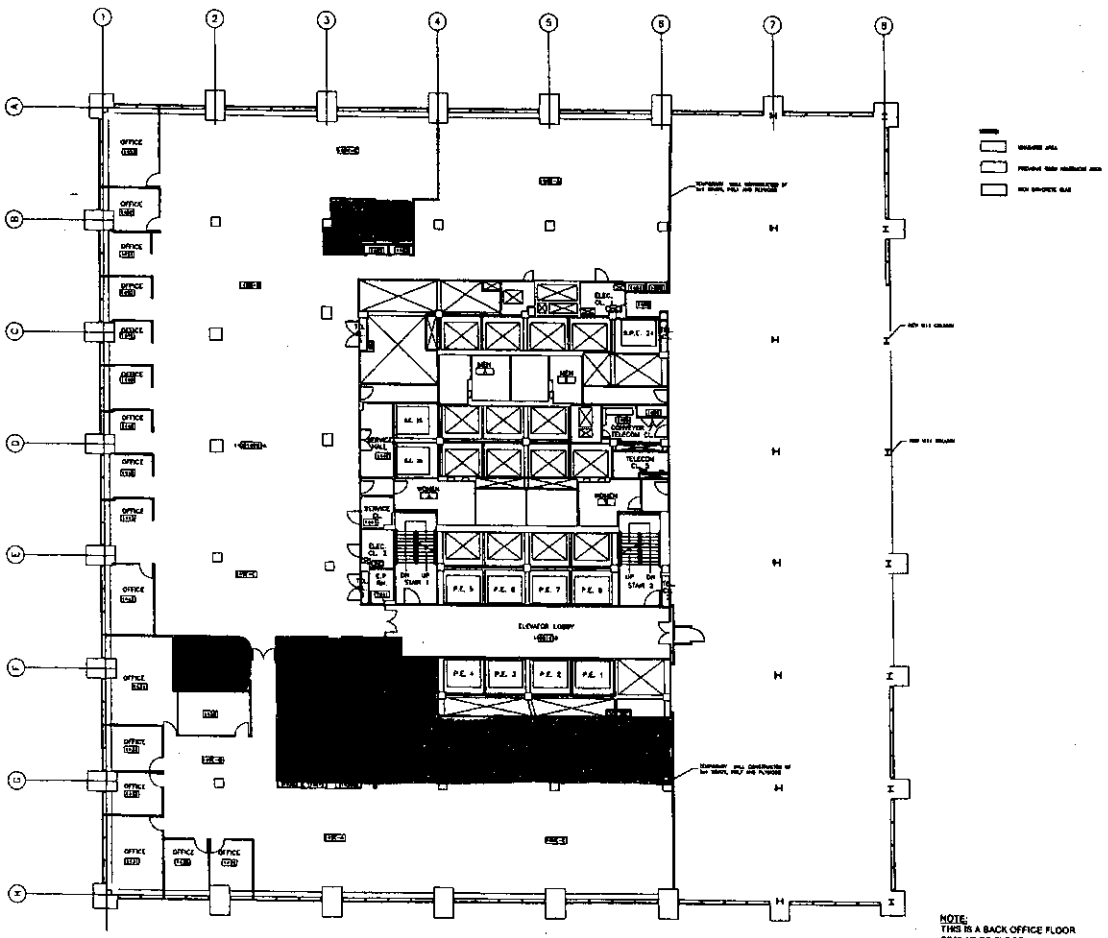
DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REMEDIATION
PLAN
15TH FLOOR

FIRE SPRINKLERS
19-05

15 FL



NOTE:
THIS IS A BACK OFFICE FLOOR
SIMILAR TO FLOOR 15.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

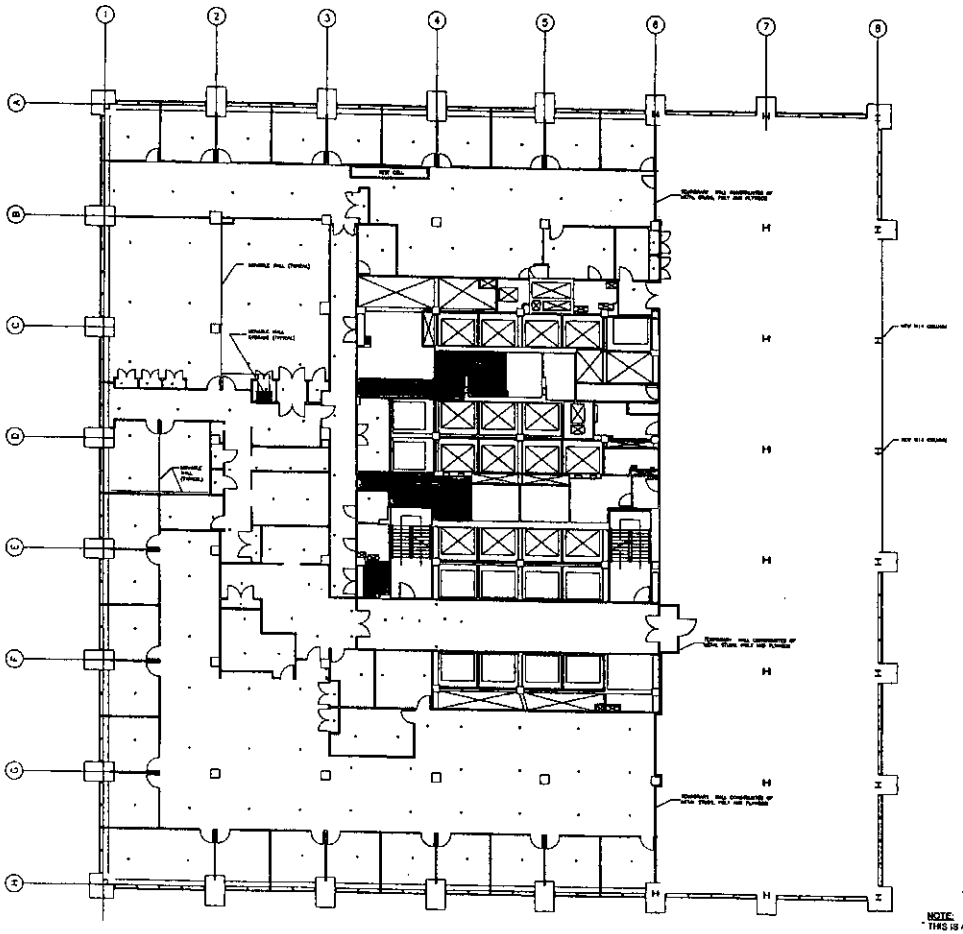
TEAROUT & TEARDOWN

REMEDIATION
PLAN
14TH FLOOR

FLOOR PLAN
14-01

14 FL

Total: 3,000 SF Black / Beige / Gray Floor Tile.



NOTE:
THIS IS A TYPICAL MIDDLE OFFICE FLOOR.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

DEUTSCHE BANK
120 LIBERTY STREET
NEW YORK, NY

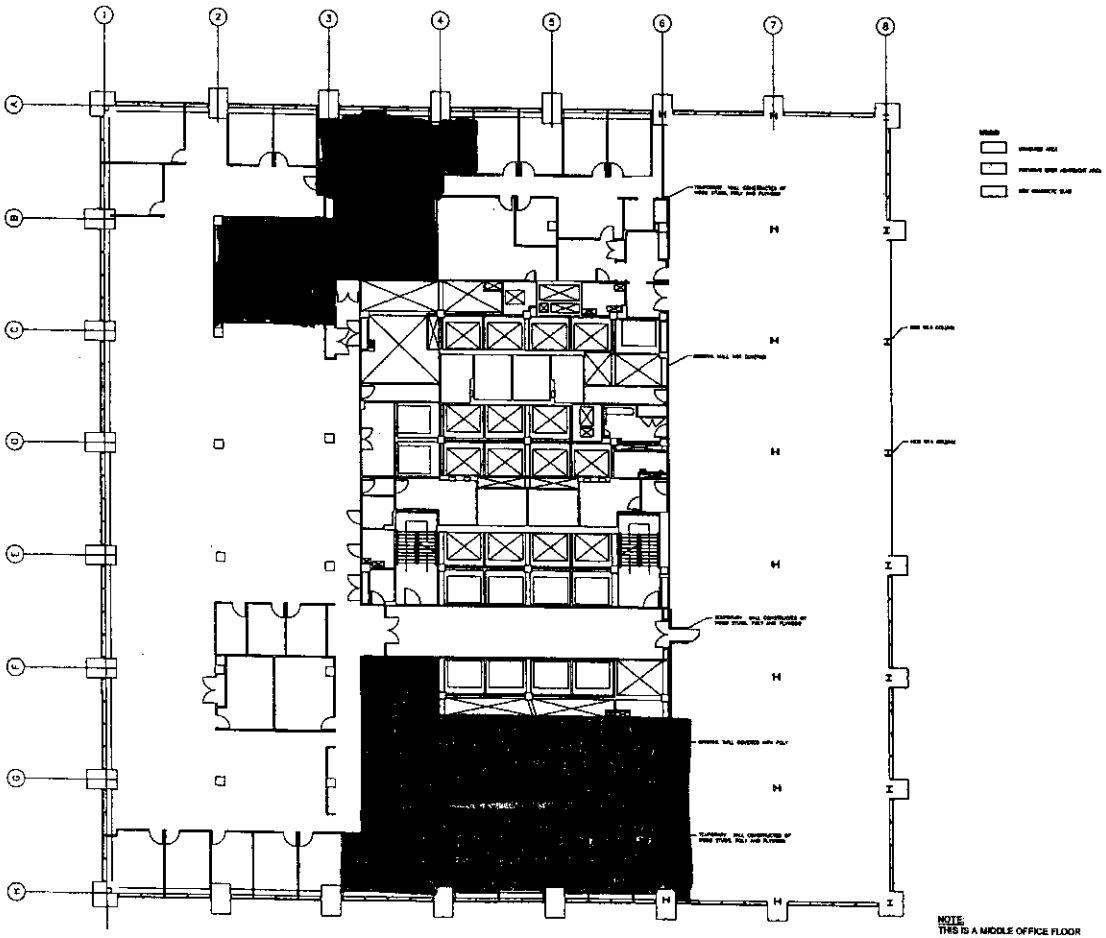
TEAROUT & TEARDOWN

REMEDIATION PLAN
12TH FLOOR

FIRE SPRINKLERS
12-05

12 FL

Total 50 SF Black Floor Tile
500 SF Linoleum Sheeting + Mastic



NOTE:
THIS IS A MIDDLE OFFICE FLOOR
SIMILAR TO FLOOR 12.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

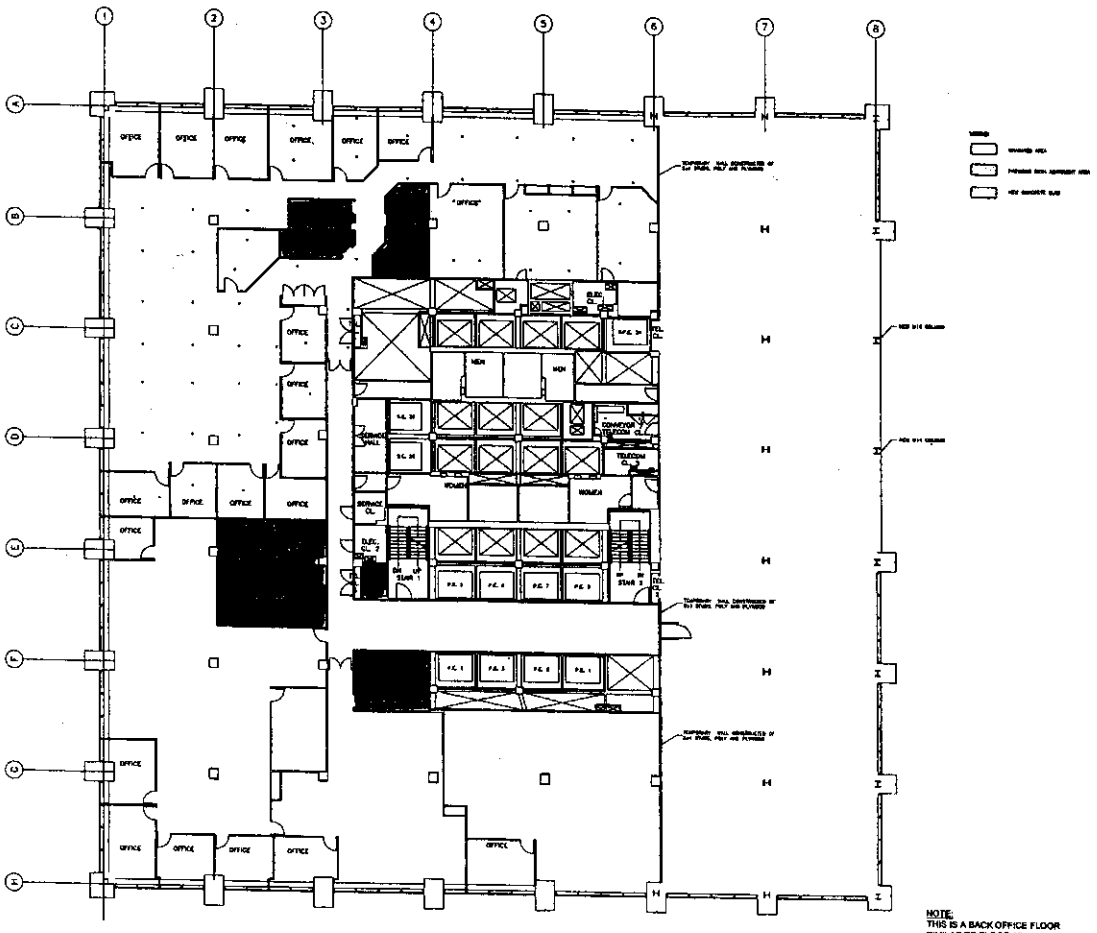
TEAROUT & TEARDOWN

REMEDIATION
PLAN
11TH FLOOR

SPRINKLER
11-05

11 FL

Total: 12" x 12" Black Floor Tile + Mastic 6000 SF



NOTE:
THIS IS A BACK OFFICE FLOOR
SIMILAR TO FLOOR 15.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

HORSE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

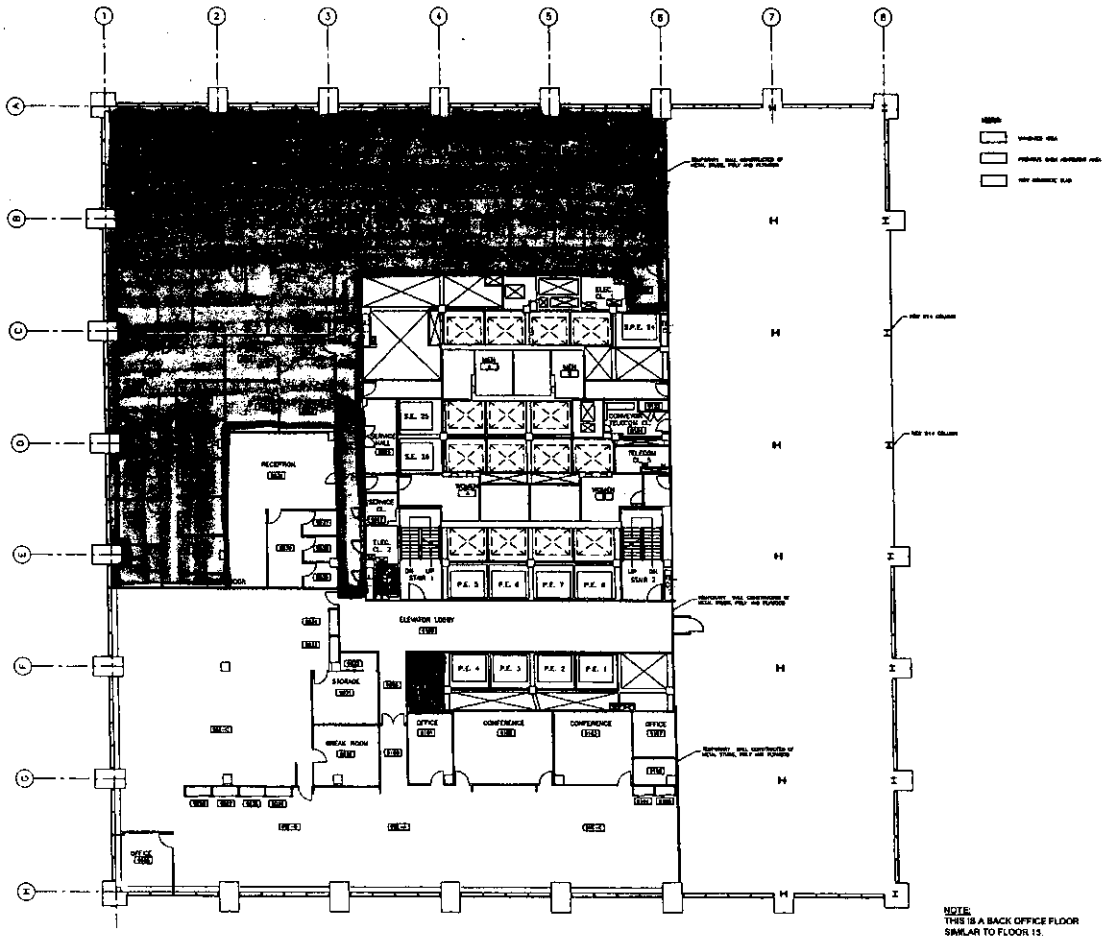
TEAROUT & TEARDOWN

REMEDIATION PLAN
10TH FLOOR

SPRINKLER
10-06

10FL

Total: 200 SF Black 12" x 12" floor Tile + Mastic
600 SF Beige 12" x 12" floor Tile + Mastic



NOTE:
THIS IS A BACK OFFICE FLOOR
SIMILAR TO FLOOR 15.

SCALE NOTE:
SCALE EQUALS 1/8" = 1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

HORIG ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REVISIONS

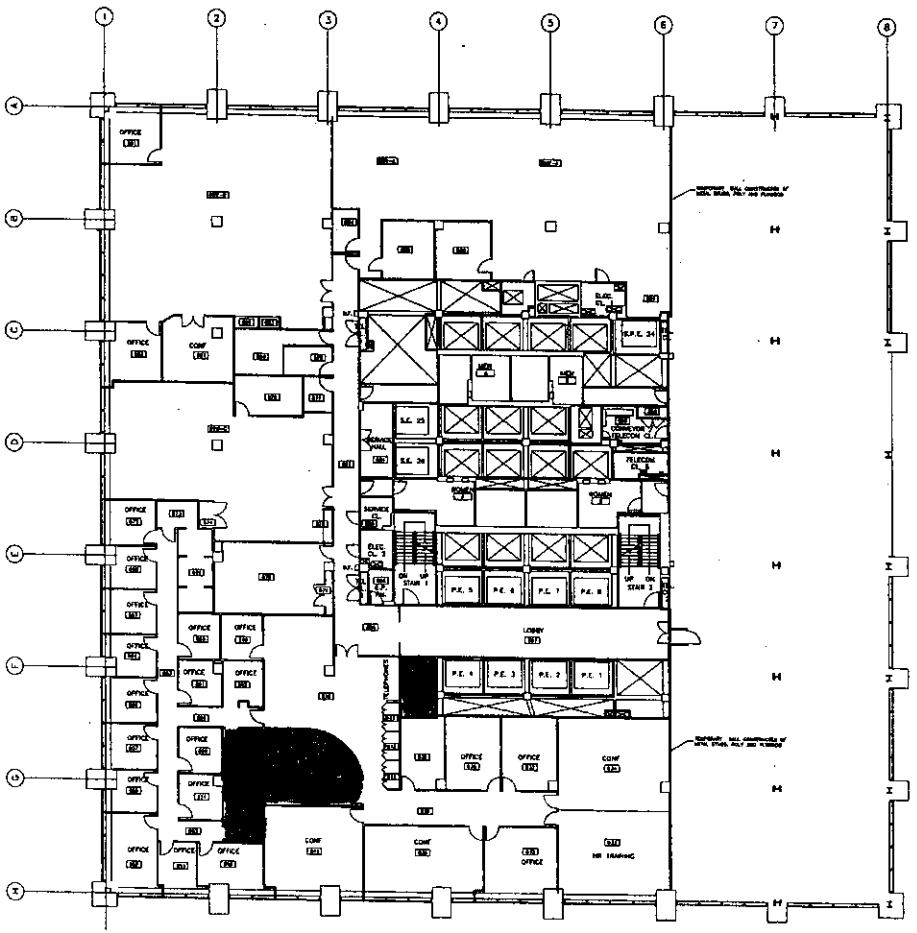
DATE: MAY 30, 2003
SCALE: 1/8" = 1'-0"
DRAWN BY:
CHECKED BY: GRP
APPVD. BY: RDM

REMEDIATION PLAN
09TH FLOOR

FLOOR PLAN
9-01

9 FL

Total: 9000 SF Beige/Gray floor Tile + Mastic



NOTE:
THIS IS A BACK OFFICE FLOOR
SIMILAR TO FLOOR 16.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

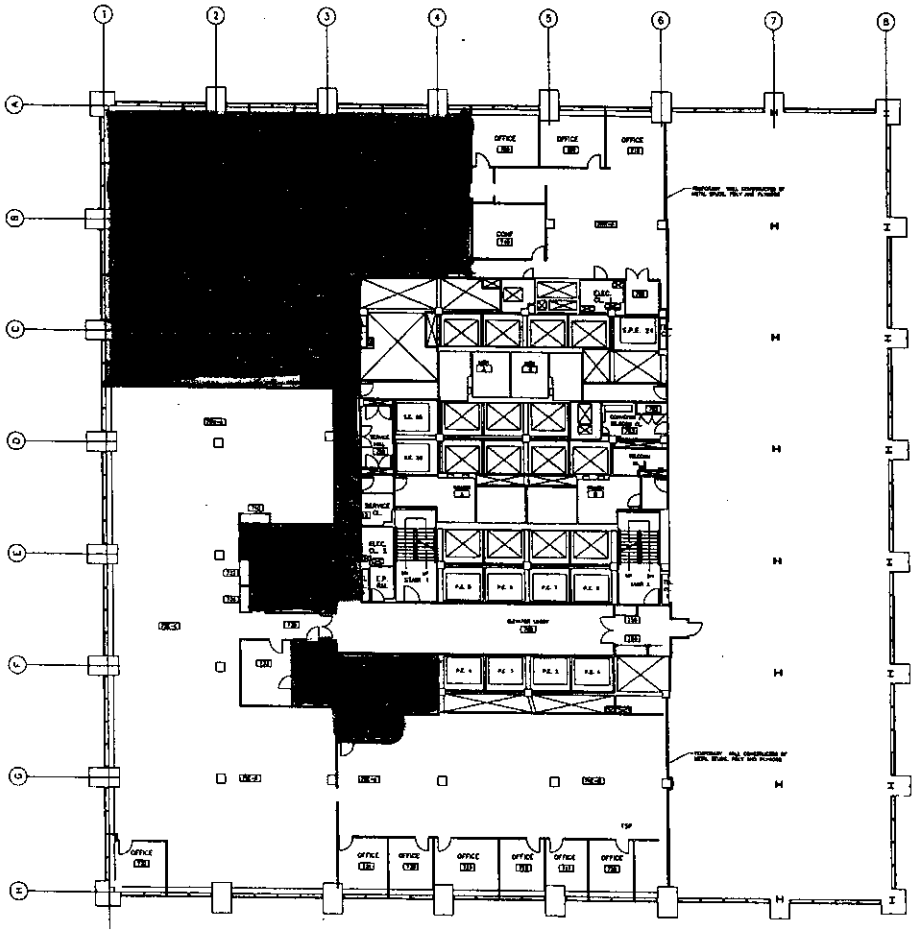
TEAROUT & TEARDOWN

REMEDIATION PLAN
8TH FLOOR

FLOOR PLAN
8-01

8 FL

Total: 350 SF Black/Beige floor Tile + Mastic



NOTE:
THIS IS A BACK OFFICE FLOOR
SIMILAR TO FLOOR 15.

SCALE NOTE:
SCALE EQUALS 1/8" = 1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REVISIONS

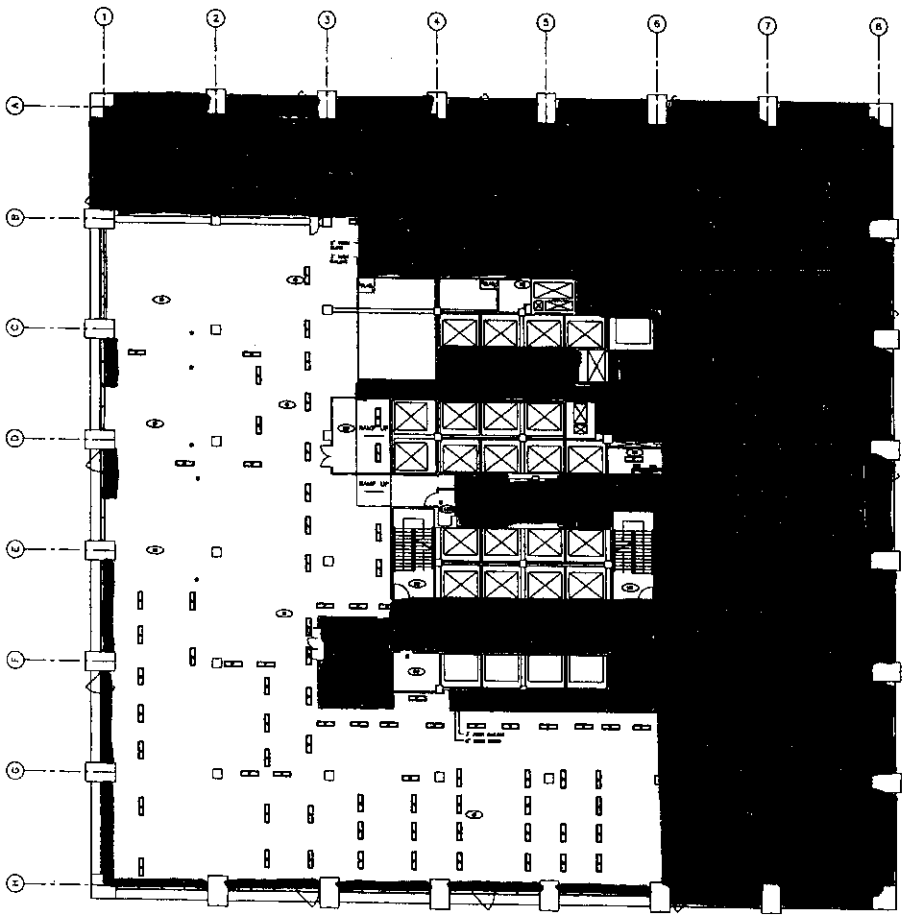
DATE: MAY 29, 2003
SCALE: 1/8" = 1'-0"
Drawn by:
CHECKED BY:
APPVD. BY:

REMEDIATION PLAN
7TH FLOOR

FLOOR PLAN
7-01

7 FL

Total: 6000 SF Gray/Black Floor Tiles + Mastic



Total: 7000 SF Transite Wall Board
16,600 SF 12" x 12" Gray/Beige floor Tile + Mastic

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN PLOTTED ON E SIZE SHEET (48x36)

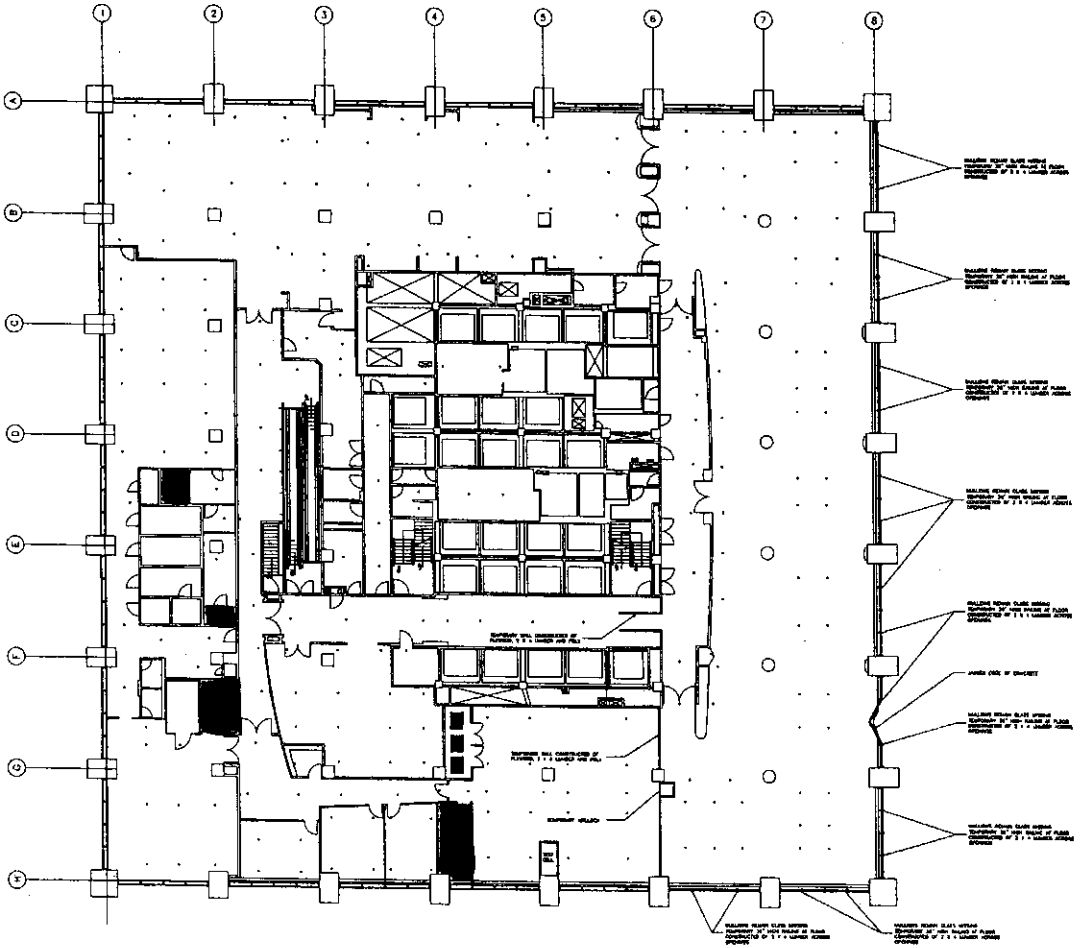
MORSE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REMEDIATION PLAN
5TH FLOOR
REFLECTIVE AND LIGHTING CEILING
S-02

5th & 6th Floor



Total: 300SF Beige floor Tiles + Mastic

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

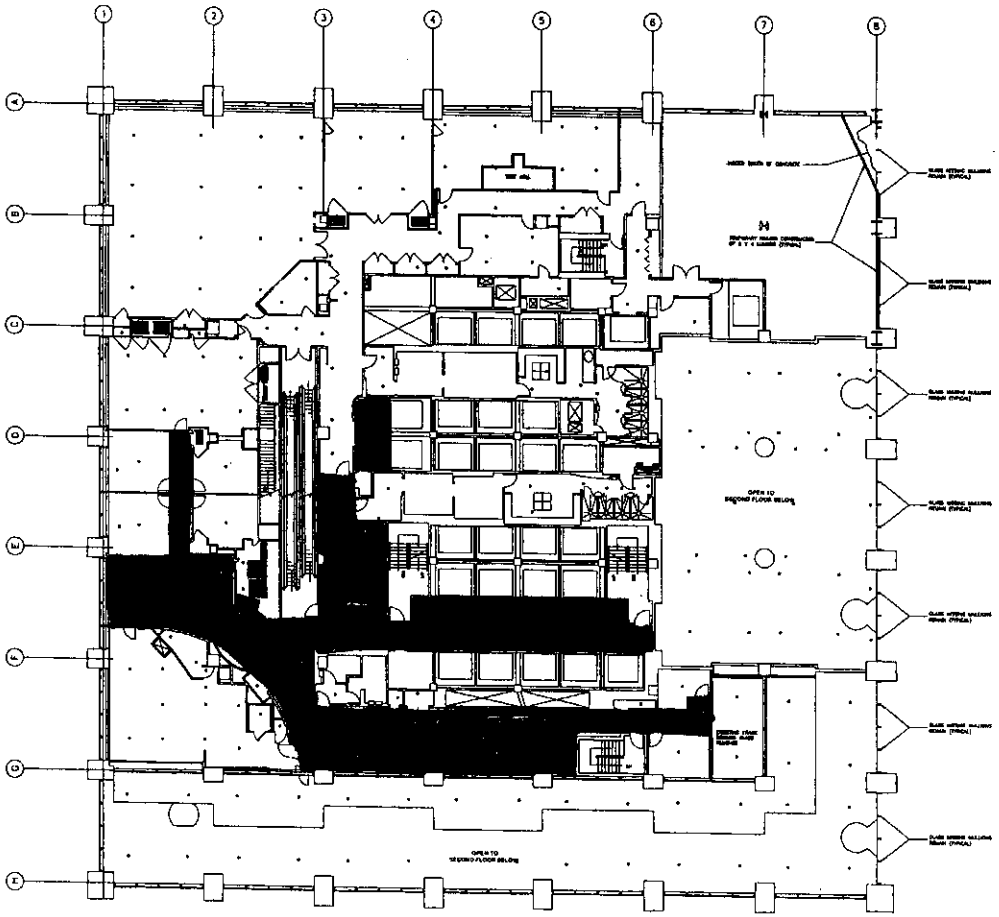
REVISIONS

DATE:
SCALE:
DRAWN BY:
CHECKED BY
APPVD. BY:

REMEDIATION
PLAN
4TH FLOOR

FIRE SPRINKLERS
4-05

4th Floor



Total: 4500 SF 12" x 12" floor Tile + Mastic

SCALE NOTE:
SCALE EQUALS 1/8" = 1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

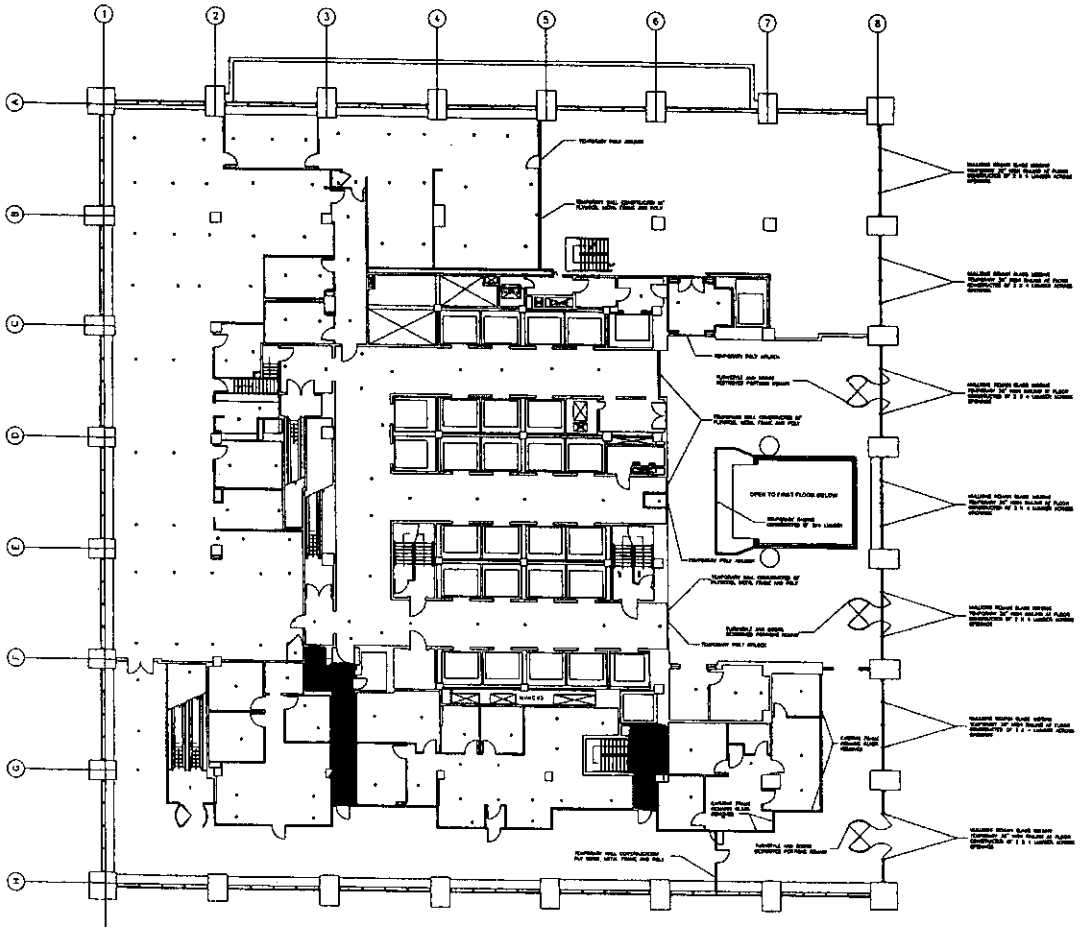
REVISIONS

DATE: MAY 30, 2003
SCALE: 1/8" = 1'-0"
DRAWN BY:
CHECKED BY: DRH
APPVD BY: RDH

REMEDIATION PLAN
3RD FLOOR

FIRE SPRINKLERS
3-05

3rd Floor



Total: 200 SF 12" x 12" floor Tile + Mastic

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

NORSE ASSOCIATES

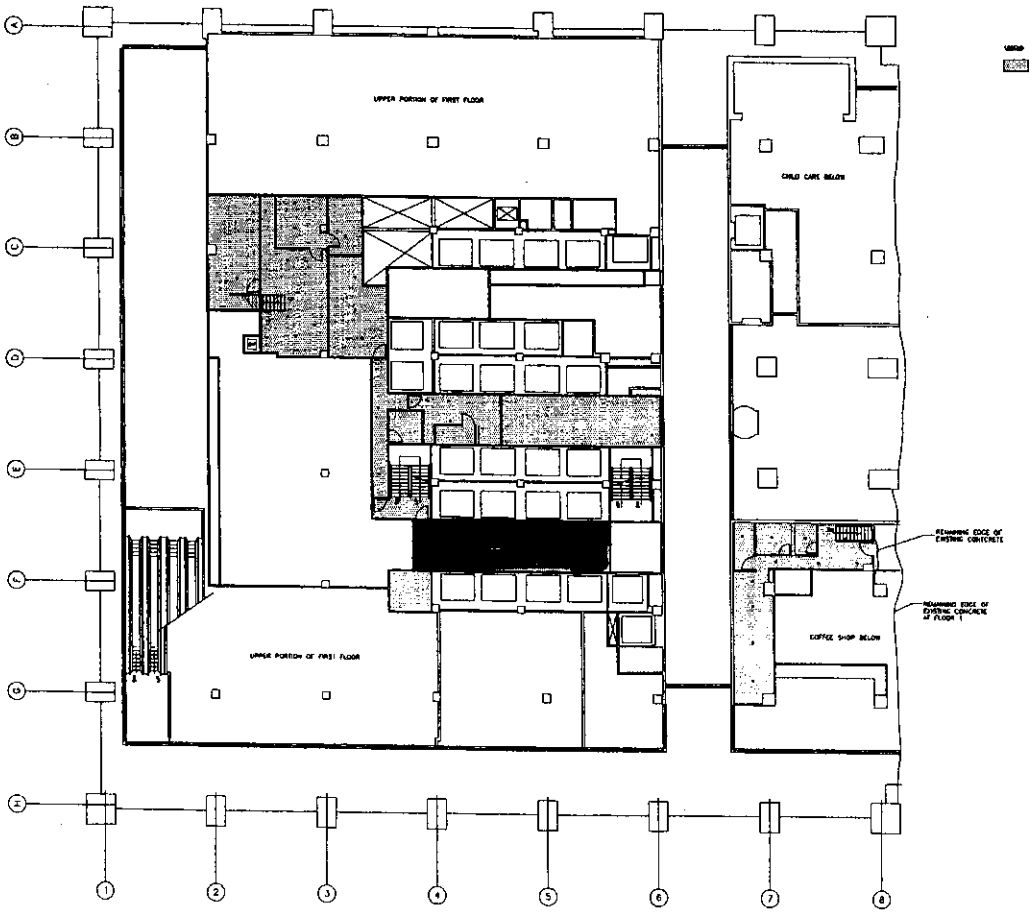
DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REMEDIATION
PLAN
2ND FLOOR

FIRE SPRINKLERS
2-05

2nd Floor



Total: 800 SF 12" x 12" floor Tiles.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

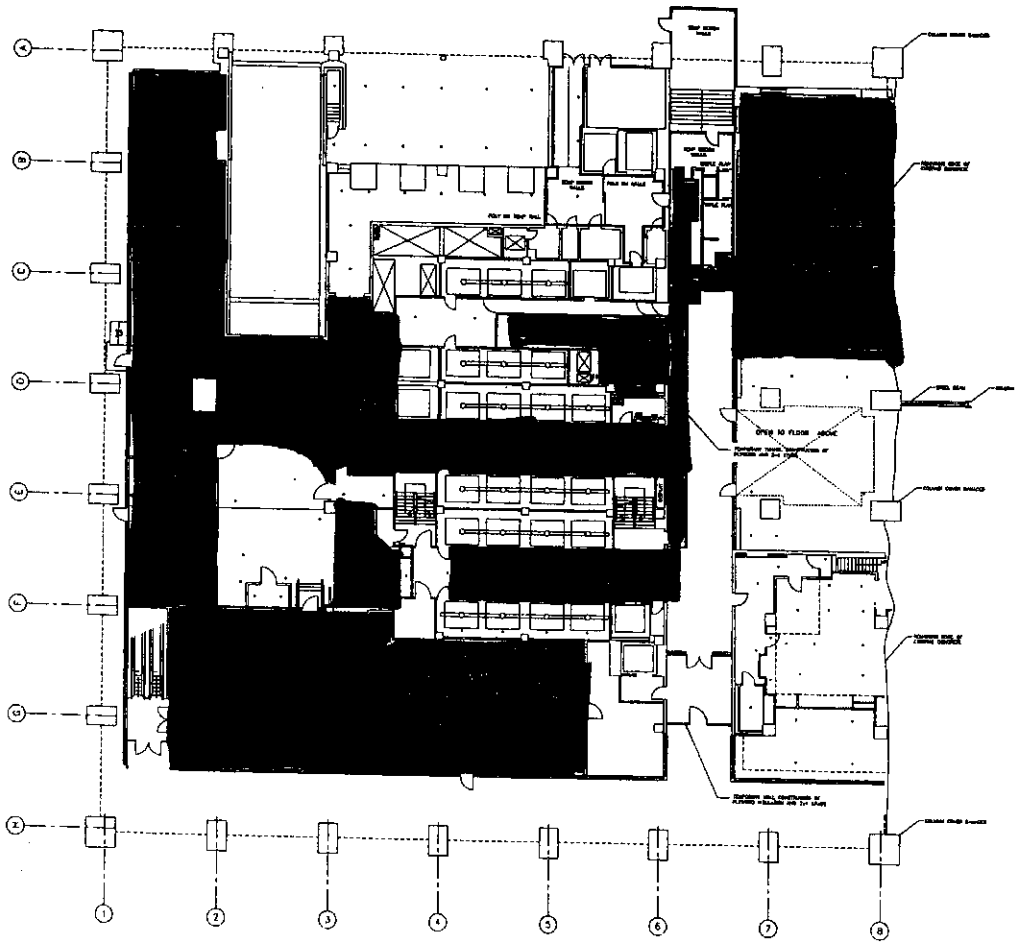
DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REMEDIATION PLAN
MEZZANINE

FIRE SPRINKLERS
MZ-05

Mezzanine Floor



13,500 SF 12" x 12" floor Tiles.

SCALE NOTE:
SCALE EQUALS 1/8" =1'-0" WHEN
PLOTTED ON E SIZE SHEET (48x36)

MORSE ASSOCIATES

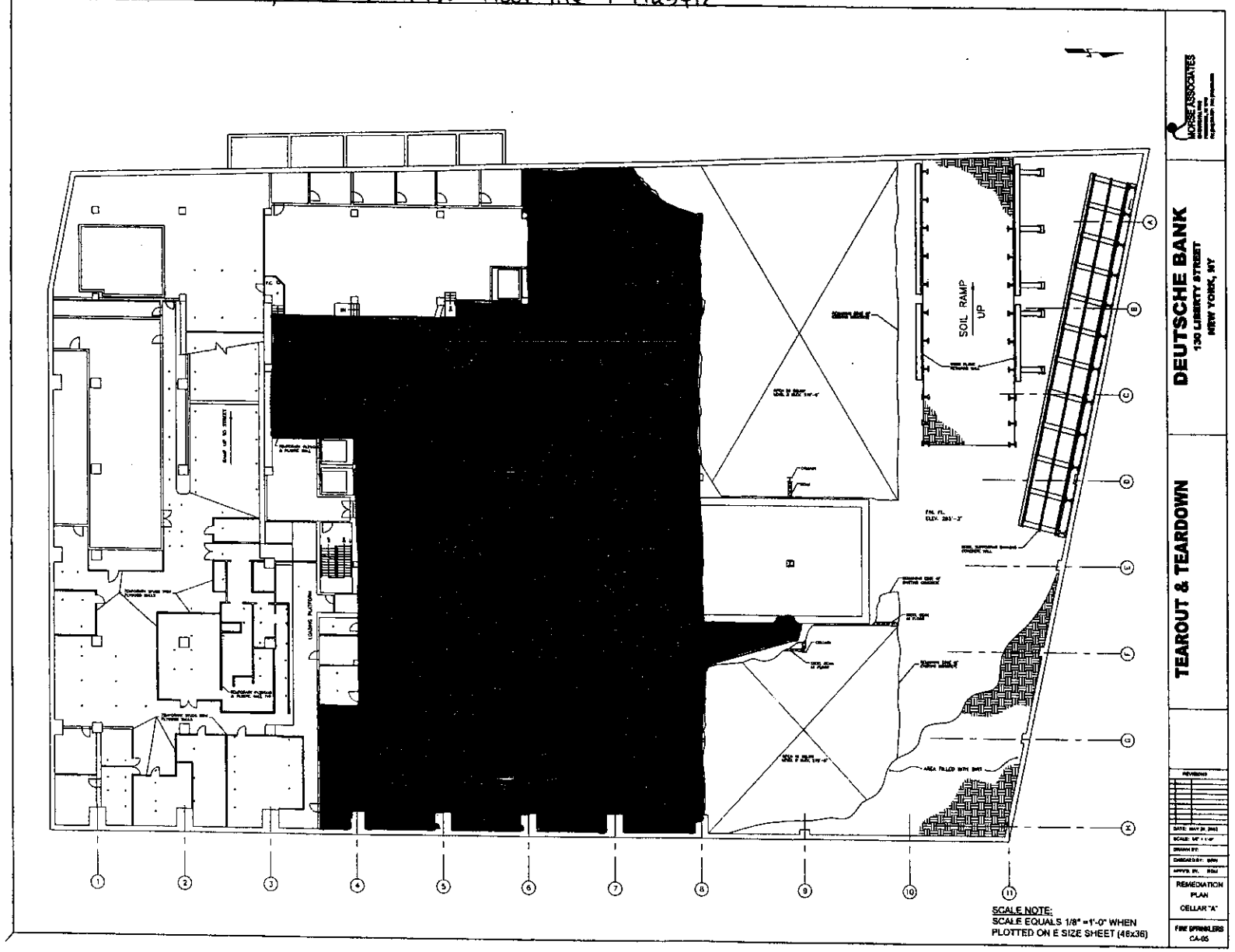
DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REMEDIATION PLAN
1ST FLOOR
FIRE SPRINKLERS

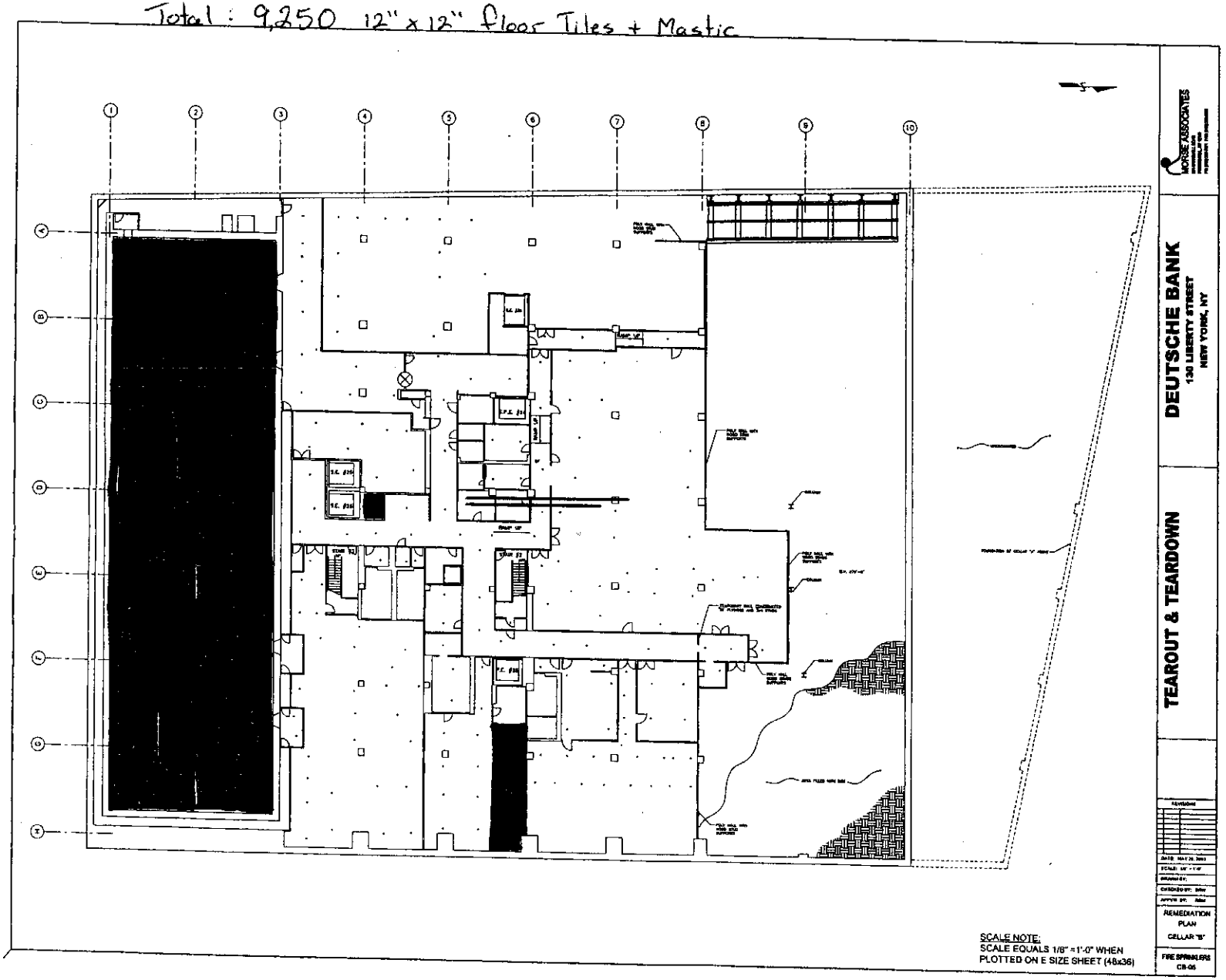
1st Floor

Total: 15,500 12" x 12" Floor Tile + Mastic



Cellar "A"

Total: 9,250 12" x 12" floor Tiles + Mastic



MORSE ASSOCIATES

DEUTSCHE BANK
130 LIBERTY STREET
NEW YORK, NY

TEAROUT & TEARDOWN

REMEDIATION PLAN
CELLAR "B"

FIRE SPRINKLERS
CB-05

Cellar "B"

Attachment 2

ACBM Waste Chart
provided by TRC on 3 November 2004
(8 pages)

DRAFT REVISED TABLE 6

SUMMARY OF INSPECTION RESULTS FOR ASBESTOS BY FLOOR (11/02/04)

FLOOR	LOCATION	CONFIRMED ACM	TRC REVISED QUANTITY		APPROXIMATE QUANTITY	
			SF	LF	SF	LF
ROOF						
	Exhaust Fans & West Side/ BC-45	Caulking at Fans				50
	Tank Bulkhead Window/ED-45	Window Caulking				40
40TH AND 41ST FLOORS MECHANICAL ROOM						
	Mechanical Room/CD-56	12" x 12" Floor Tile (Black) and Associated Mastic on Floor Tiles	3,700		5,000	
	Elevator Machine Room/CD-34					
	Equipment Room/CD-45					
	North/Area of the Exposed Steel Deck/GF-56	12" x 12" Floor Tile (Grey) and Associated Mastic on Floor Tiles	1,000		4,500	
	East/Area of the Exposed Steel Deck/GF-56					
	Room Next to Louvers/EF-34					
	Base of Cooling Tower Wall/CD-23	Transite Wall			20,000	
	HVAC Units at North Side of Bldg./BC-78	Fan Room Walls Insulation (Black)	11,600		3,000	
	Mechanical Space/BC-56	HVAC Duct Joint Caulking				10
39TH FLOOR						
	South Corridor/East/ED-34	12" x 12" Floor Tiles 2 Layers (Pink and Tan) and Associated Mastic on Floor Tiles	400		1,500	
	South Corridor/Middle/ED-34					
	Vending Machine Room/CB-34					
	North Corridor/West/CD-67	12" x 12" Floor Tiles (Grey) and Associated Mastic on Floor Tiles	2,300		4,000	
	South Corridor/East/CD-67					
	South Corridor/Middle/CD-34					
38TH FLOOR						
	South Corridor/BC-34	12" x 12" Floor Tiles (Grey) and Associated Mastic on Floor Tiles			3,000	
	North Corridor/DC-34					
	South Corridor/Middle/DC-67					
	Room by S.Corridor/W.Side/BC-34	12" x 12" Floor Tiles Composite 3 Layers (Blue) and Mastic			120	
	Room by S.Corridor/W.Side/BC-34					
37TH FLOOR						
	North Corridor/DC-67	12" x 12" Floor Tiles (Brown/Beige/Blue) and Mastic			2,550	
	North Corridor Storage Room/ED-56					
	North Corridor Storage Room/DC-56					
	Elevator Hallway/CD-45					
	South Corridor/DC-34					
	Storage Room North/CB-56					

DRAFT REVISED TABLE 6

SUMMARY OF INSPECTION RESULTS FOR ASBESTOS BY FLOOR (11/02/04)

FLOOR	LOCATION	CONFIRMED ACM	TRC REVISED QUANTITY		APPROXIMATE QUANTITY	
			SF	LF	SF	LF
36TH FLOOR						
	Small Storage at W.Side/BC-45	12" x 12" Floor Tiles (Black) and Mastic	170		50	
	Elevator Base					
35TH FLOOR						
	Storage Room North/ED-56	12" x 12" Floor Tiles 2 Layers (Beige)			800	
	North Corridor/DC-67					
34TH FLOOR						
	Small Office at E.Side/ED-23	12" x 12" Grey Floor Tiles [2-layer composite] Mastic associated with 12" x 12" Grey Floor Tiles	1,500		1,700	
	Room in the Middle/ED-34					
	Room in the Middle/ED-45					
	North Corridor Storage Room/ED-56					
	North Corridor Storage Room/DC-56					
	Office in The Middle/ ED-34					
	North Hallway E.Side/ CB-78					
	Office W.Side/ AB-56	12" x 12" Black Floor Tiles [1 layer]			3,500	
33RD FLOOR						
	Small Office S.Side/ GF-12	12" x 12" Floor Tiles (Tan) Associated Mastic with 12" x 12" composite Floor Tiles	1,500		2,500	
	Small Office S.Side/ GF-23					
	Large Office S/E Side/ FE-23					
	East Hallway Small Office/ ED-23					
	S. Corridor Frate Elevator/ DC-34					
	N/E Small Storage Room/ GF-78					
	N.Side Small Office/ ED-78					
	W.Side Small Storage Room/ CB-34					
	W.Side Small Storage Room/ AB-34					
	S/W Small Storage Room/ CB-23					
	East Hallway Electrical Room/ ED-34	12" x 12" Black Floor Tiles Mastic associated with 12" x 12" Black Floor Tiles	1,000		3,000	
	Electrical Room/ N. Middle/ ED-56					
	Large Office/ N.Side/ ED-56					
	S.Hallway Electrical Room/ ED-34					
	W.Side A\V Room/ AB-34					
	Room Adj To Frate Elevator/ ED-23					
	N.Corridor Small Storage Room/ DC-56	12" x 12" Floor Tiles (Grey)			200	

DRAFT REVISED TABLE 6

SUMMARY OF INSPECTION RESULTS FOR ASBESTOS BY FLOOR (11/02/04)

FLOOR	LOCATION	CONFIRMED ACM	TRC REVISED QUANTITY		APPROXIMATE QUANTITY	
			SF	LF	SF	LF
32ND FLOOR						
	S/E. Small Room/ FE-34	12" x 12" Black/Beige Floor Tiles Mastic Associated with 12" X 12" Floor Tiles	850		500	
	Conference Room E.Side/ GF-45					
	N/E Small Room/ FE-56					
	Stairwell B / ED-56					
	N.Corridor Small Storage Room/ DC-56					
31ST FLOOR						
	East Side Small Office/ HG-45	12" x 12" Black and Beige Floor Tiles and Mastic	4,200		3,800	
	East Hallway Into Open Area/ HG-45					
	Conference Room E.Side/ GF-45					
	East Side Small Office N./ GF-56					
	East Side Small Office S./ GF-56					
	EP. Room N.Corridor/ FE-56					
	Middle Elevator Room/ ED-45					
	North Corridor Small Storage Room/ ED-56					
	Conveyor Room North/ DC-56					
	West Side Small Office/ CB-34					
	West Side Small Office/ CB-45					
30TH FLOOR						
	S.Corridor Electrical Panel Room/ DC-34	12" x 12" Pink Floor Tiles Mastic associated with 12" X 12" Pink Floor Tiles	500		800	
	S. Small Room By Stairway A/ FE-34					
	N. Corridor Small A/C Room/ FE-56					
	Conveyor Room North/ DC-56					
	Open Area North/East/ GF-67	12" x 12" Black Floor Tiles Mastic associated with 12" X 12" Black Floor Tiles	3,600		1,300	
	North Side Small Office/ FE-67					
	North Side Small Office/ FE-67					
	North Side Small Office/ ED-67					
	North Side Small Office/ GF-78					
	North Side Small Office/ GF-78					
	North Side Small Office/ FE-78					
	North Side Small Office/ FE-78					
	North Side Small Office/ FE-78					
	North Side Small Office/ ED-78					
	North Side Stairwell B / ED-56					
	South Side Telecom Room/ ED-34					
	South Open Area by Stairs/ DC-23					

DRAFT REVISED TABLE 6

SUMMARY OF INSPECTION RESULTS FOR ASBESTOS BY FLOOR (11/02/04)

FLOOR	LOCATION	CONFIRMED ACM	TRC REVISED QUANTITY		APPROXIMATE QUANTITY	
			SF	LF	SF	LF
29TH FLOOR						
	East Side Room/ GF-34	12" x 12" Floor Tiles (Grey) Associated Mastic on Floor Tiles	2,200		400	
	East Side Room/ GF-45					
	North East Side Small Office/ GF-56					
	North East Side Small Office Storage/ GF-56					
	Kitchen N. Side Room/Middle/ DE-67					
	N. Side Room/Middle/ ED-78					
	N. Corridor Storage Room/ DC-56					
	N. Corridor Small Room/ CB-56					
	S/W Side Small Room/ BC-34					
	S/W Side Small Room/ BC-34					
28TH FLOOR						
	North Side Small Office/ DC-67					
	North Side Small Office/ DC-67					
	Mechanical Space/AB-34	12" x 12" Floor Tiles (Light Brown)			120	
27TH FLOOR						
	NONE					
26TH FLOOR						
	N/E Side Office/GF-67	12" x 12" Floor Tiles (Beige) and Mastic	750		1,000	
	Room Adjacent to Men's Room E./DC-56					
	Room Adjacent to Men's Room W./DC-56					
25TH FLOOR						
	South Hall / Open Area / Middle / FE-23	12" x 12" Floor Tiles (Black)	2,000		6,000	
	South Hall / Small Office / Middle / FE-34					
	Room Adj. To Men's Room/West/ CD-56					
24TH FLOOR						
	By Women's B/Room/Middle/ DC-34	12" x 12" Floor Tiles (Grey) and Mastic	120		260	

DRAFT REVISED TABLE 6

SUMMARY OF INSPECTION RESULTS FOR ASBESTOS BY FLOOR (11/02/04)

FLOOR	LOCATION	CONFIRMED ACM	TRC REVISED QUANTITY		APPROXIMATE QUANTITY	
			SF	LF	SF	LF
23RD FLOOR						
	South Corridor Conveyor hall/ ED-34	12" x 12" Floor Tiles 2nd Layer (Black) and Mastic	500		250	
	South Corridor Women's Room/ FE-34					
	South Side Corridor/ DC-34					
	Vending Machine Room/DC-34	12" x 12" Floor Tiles (Grey)	900		2,000	
	East Hall / Room 2304 / CB-34					
	East Hall / Open Area / AB-34					
	Office 2307 W. Side / AB-56					
	Above ceiling tiles, restricted area	HVAC Duct Caulking (Joint)				1,500
	West Open Area / AB-34	Associated Mastic on Baseboard (Brown)			300	
	South Open Area / DC-23					
	East Open Area / GF-34					
22ND FLOOR						
	Hallway 2254 SE Side / GF-23	12" x 12" Floor Tiles 2 Layers (Grey) and Mastic	400		600	
	Hallway 2253 / FE-23					
	SW Corner Room / AB-12					
21ST FLOOR						
	NONE					
20TH FLOOR						
	Large South Hall West / ED-12	Pipe Insulation at 6"-12" Pipe				500
	Large South Hall Middle / FE-12					
	Large South Hall East / FE-12					
	Vending Machine Room / GF-34	Pipe Joint Insulation at 1" Pipe				50
	South Corridor / DC-34					
	West Small Office / GF-34	12" x 12" Floor Tiles 2nd Layer (Black)			300	
	Stairwell at South Corridor / GF-23					
19TH FLOOR						
	Storage Adj. to Stair 3/GF-23, closet adj. to vending machine	12" x 12" Floor Tiles 1st Layer (Beige)			350	
	Vending Machine Room, Stair 3, closet adj. to vending machine	12" x 12" Floor Tiles 2nd Layer (Black)			600	
18TH FLOOR						
	Stair 3 Stairwell/ GF-23	12" x 12" Floor Tiles 2nd Layer (Black)	200		350	
	West Side Small Storage Room/ GF-34	Linoleum Sheeting and Mastic	100		500	
	South Side Men's Room/ CD-34					
17TH FLOOR						
	SE From Hallway At Stair A/ FE-34	12" x 12" Floor Tiles (Black) and Mastic			300	
	Room At NE Gash/ GH-56					
	Gash South Wall Base	Gash: Wall/Floor Joint Tar Paper			250	

DRAFT REVISED TABLE 6

SUMMARY OF INSPECTION RESULTS FOR ASBESTOS BY FLOOR (11/02/04)

FLOOR	LOCATION	CONFIRMED ACM	TRC REVISED QUANTITY		APPROXIMATE QUANTITY	
			SF	LF	SF	LF
16TH FLOOR						
	Gash South Wall Base	Gash: Wall/Floor Joint Tar Paper	250		100	
	Mens Bathroom	Linoleum and Mastic (Brown)			500	
	Womens Bathroom					
15TH FLOOR						
	Room in Front Of Stair A/ GF-34	12" x 12" Floor Tiles 2nd Layer (Black)			150	
	Gash South Wall Base	Gash: Wall/Floor Joint Tar Paper	250		100	
14TH FLOOR						
	S. Small Office Adj To Large Hallway /FE-23	12" x 12" Floor Tiles 2 Layers (Beige)	500		6,000	
	E. Side Room / Middle / GF-23					
	East Corridor Storage Room / GF-34	12" x 12" Floor Tiles (Black)	1,250		150	
	East Open Area / GF-45					
	West Small Office / CB-34	12" x 12" Floor Tiles 2 Layers (Gray)	1,250			
	West Small Kitchen / CB-34					
	S. Room Adj. To Large Hallway/ FE-12					
	Room South To Hallway At Stair A / FE-34					
	S. Room Adj. To Hallway Small Office/ FE-12					
12TH FLOOR						
	Gash South Wall Base	Gash: Wall/Floor Joint Tar Paper			250	
	Mens Bathroom	Linoleum and Mastic (Brown)	500			
	Womens Bathroom					
	West Corridor Storage Room / FE-34	Associated Mastic on Baseboard (Brown)	50		100	
11TH FLOOR						
	Small Office W. Side/ AB-45	12" x 12" Floor Tiles 2nd Layer (Black) and Mastic	6,000		7,000	
	Large Office W. Side/ AB-34					
	West Corridor / AB-34					
	Large Office W. By Open Area / GF-34					
	SE in Fr. Of Corner Room / CB-23					
	SE Small Storage Room/ GF-34					
	West Side Large Office/ GH-34					
	West Side Small Office/ GH-45					
	West Side Small Office/ GH-45					
	West Side Small Office/ GH-45					
	West Side Small Office/ GH-45					
	West Side Small Office/ GH-45					
	Large Office Adj. To Small Office's / GF-45					
	East Corridor / GH-45					
	Large Office Adj. To Small Office's / GF-56					
	W. Corridor / 2nd Room From S. / AB-34					
	Gash South Wall Base	Gash: Wall/Floor Joint Tar Paper			250	

DRAFT REVISED TABLE 6

SUMMARY OF INSPECTION RESULTS FOR ASBESTOS BY FLOOR (11/02/04)

FLOOR	LOCATION	CONFIRMED ACM	TRC REVISED QUANTITY		APPROXIMATE QUANTITY	
			SF	LF	SF	LF
10TH FLOOR						
	Column locations FG-34, FE-23, BC-23, BC-34,	12" x 12" Floor Tiles (Beige)			600	
	Storage by Main Corr. EF-34	12" x 12" Floor Tiles (Black)	200		300	
	Gash South Wall Base	Gash: Wall/Floor Joint Tar Paper	250		200	
9TH FLOOR						
	Entire South West Section: Column locations AE-16	12" x 12" Floor Tiles (Beige) and Mastic	9,000		9,000	
		12" x 12" Floor Tiles 2 Layers (Grey/Composite) and Mastic			1,500	
	Gash South Wall Base	Gash: Wall/Floor Joint Tar Paper	250		60	
8TH FLOOR						
	SE Corner: FH-23, GF-34	12x12 Gray/Black VAT and Mastic	350			
	Gash South Wall Base	Gash: Wall/Floor Joint Tar Paper			250	
7TH FLOOR						
	SW Section AD-14, Hallway ED-34, ED-34 Small Office, FE-23 Small Offices	12" x 12" Floor Tiles	6,000		400	
	Gash South Wall Base	Gash: Wall/Floor Joint Tar Paper			250	
		Associated Mastic on Baseboard (Brown)			500	
5TH AND 6TH FLOORS MECHANICAL ROOM						
	Along Perimeter South, East, North, and West Wall	Transite Board Wall	7,000		4,500	
	Upper Level of Maintenance Shop BC-56	Pipe Insulation, Greater Than 12"				1,200
	Entire North Section AH-68, AB-18, Interior Corridor GC-36	12" x 12" Floor Tiles (Gray, Beige) and Mastic	11,600		2,000	
4TH FLOOR						
	Small Offices GH-34, DG-13	12x12 Beige and Mastic	300		0	
3RD FLOOR						
	SE Section and Corridors: CG-16	12" x 12" Floor Tiles and Mastic			4,500	
2ND FLOOR						
	Small Office: GH-56	12x12 Floor Tiles and Mastic	200		0	
MEZZANINE						
	Corridor: FE-36	12" x 12" Beige Floor Tiles			800	
1ST FLOOR						
	South Section AH-14, Corridors CH-46, and NW section AD-68	12" x 12" Floor Tile [2 Layers]	13,500		10,500	

DRAFT REVISED TABLE 6

SUMMARY OF INSPECTION RESULTS FOR ASBESTOS BY FLOOR (11/02/04)

FLOOR	LOCATION	CONFIRMED ACM	TRC REVISED QUANTITY		APPROXIMATE QUANTITY	
			SF	LF	SF	LF
BASEMENT A						
	Mid Section of the Entire Floor AH-37	12" x 12" Floor Tile/3rd Layer (Black)	15,500		14,000	
		12" x 12" Floor Tile/3rd Layer (Light Brown)				
		Associated Mastic on Floor Tiles				
		12" x 12" Floor Tile/2nd Layer (Dark Grey) and Mastic			12,000	
		12" x 12" Floor Tile (Black)			2,000	
	Security Area BE-12	12x12 White Floor Tiles	720		0	
	Electrical Room	Sealant at Cable Entrances	50		50	
	Pipe Shaft by Service Elevator: Basement to Upper Floors	24" Pipe Insulation				300
	Above ceiling tiles	30" Pipe Insulation	400			500
BASEMENT B						
	Entire Vault Area: AH-13, and Storage Room FH-56	12x12 Beige (2 layers) and Mastic	9,250		0	
	Small Room ED-45	12" x 12" Floor Tile (Black) and Mastic			30	
	Main Lobby ED-57	Transite Pipe	200		0	
EXTERIOR						
	Exterior Facade	Sealant over Weather Stripping at Metal Column Parts				45,500
	Exterior Facade	Caulking between Column Metal Covers				45,500

Attachment 3

NYSDOL Project Designer Certificate
(1 page)

STATE OF NEW YORK - DEPARTMENT OF LABOR

ASBESTOS CERTIFICATE

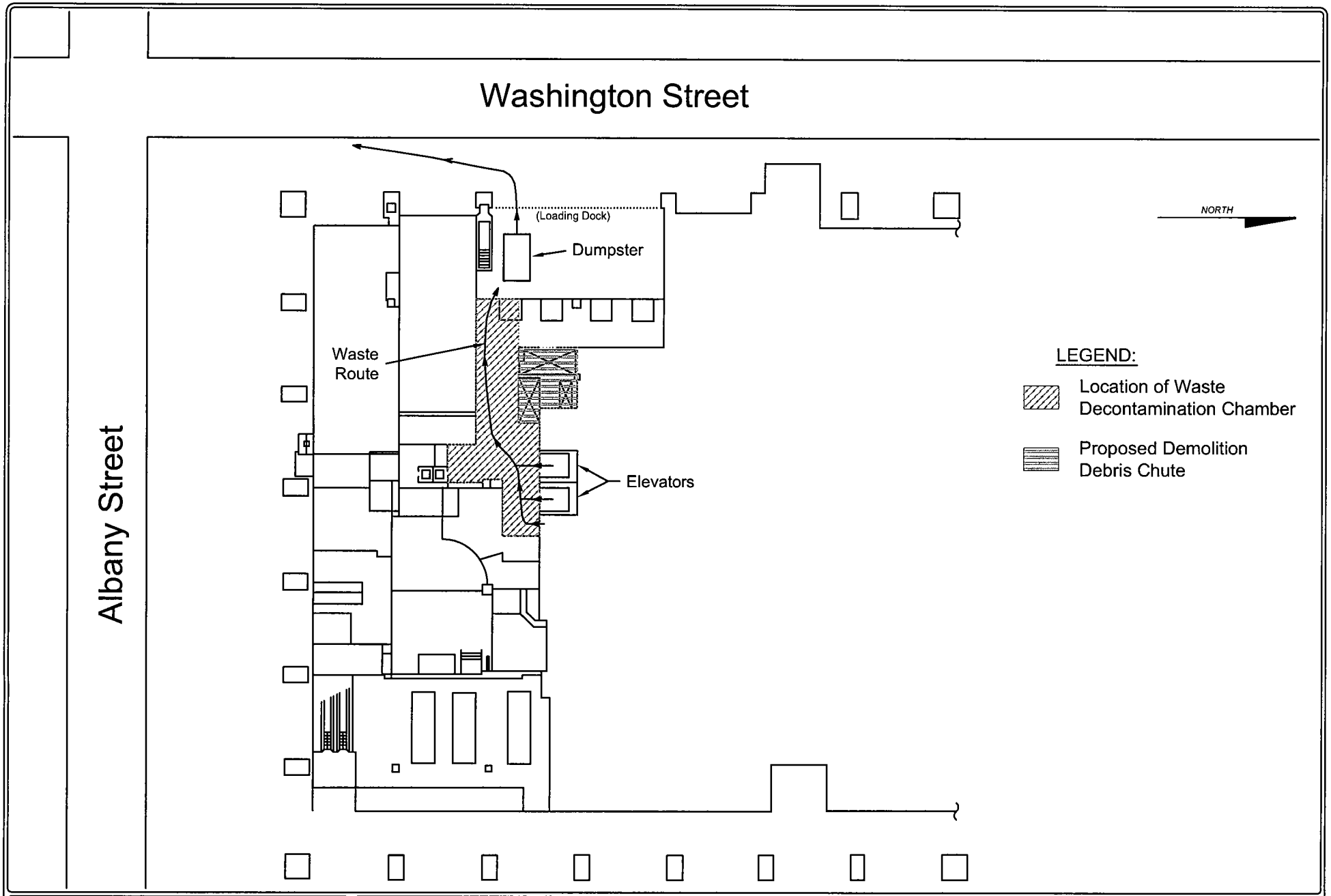
ROBERT F LEWIN
CLASS(EXPIRES)
C A/TEC(11/05) D INSP(11/05)
H PM (11/05) I PD (11/05)

CERT# 88-08267

MUST BE CARRIED ON ASBESTOS PROJECTS

Figure 1

First Floor Plan Location of Waste Decontamination Chamber and Proposed Demolition Chute
(1 page)



WESTON

DATE: NOVEMBER 2004

FIGURE #: 1

PROJECT: 130 LIBERTY STREET

CLIENT NAME: GILBANE BUILDING COMPANY

TITLE: FIRST FLOOR PLAN
LOCATION OF WASTE
DECONTAMINATION CHAMBER
AND PROPOSED DEMOLITION DEBRIS CHUTE

01194firstfloor.dwg

Figure 2

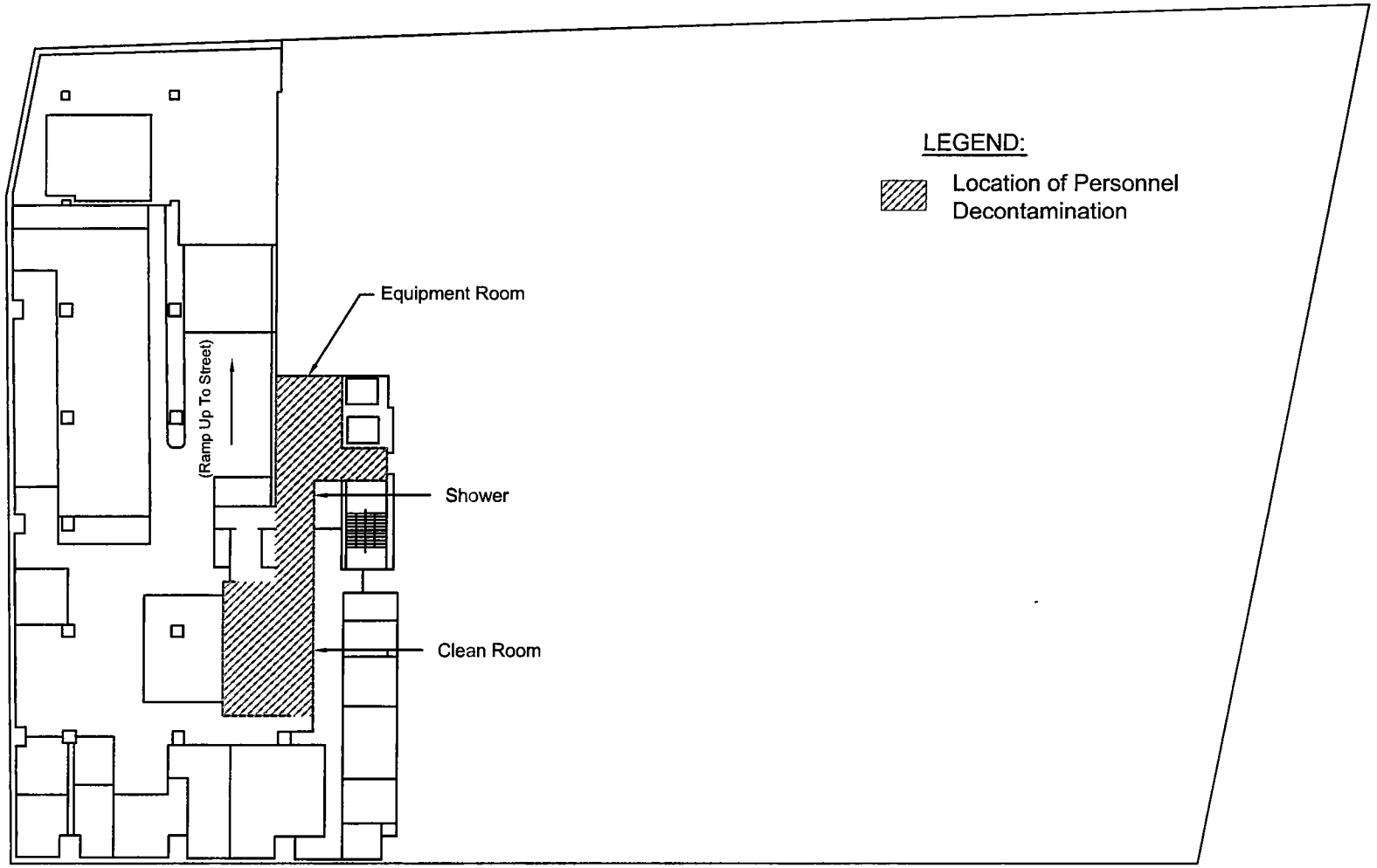
Location of Personnel Decontamination Chamber

(1 page)

Washington Street

NORTH

Albany Street



WESTON	PROJECT: 130 LIBERTY STREET	TITLE: CELLAR "A" FLOOR PLAN LOCATION OF PERSONNEL DECONTAMINATION CHAMBER
DATE: NOVEMBER 2004	CLIENT NAME: GILBANE BUILDING COMPANY	
FIGURE #: 2		

01195BasementFloor.dwg

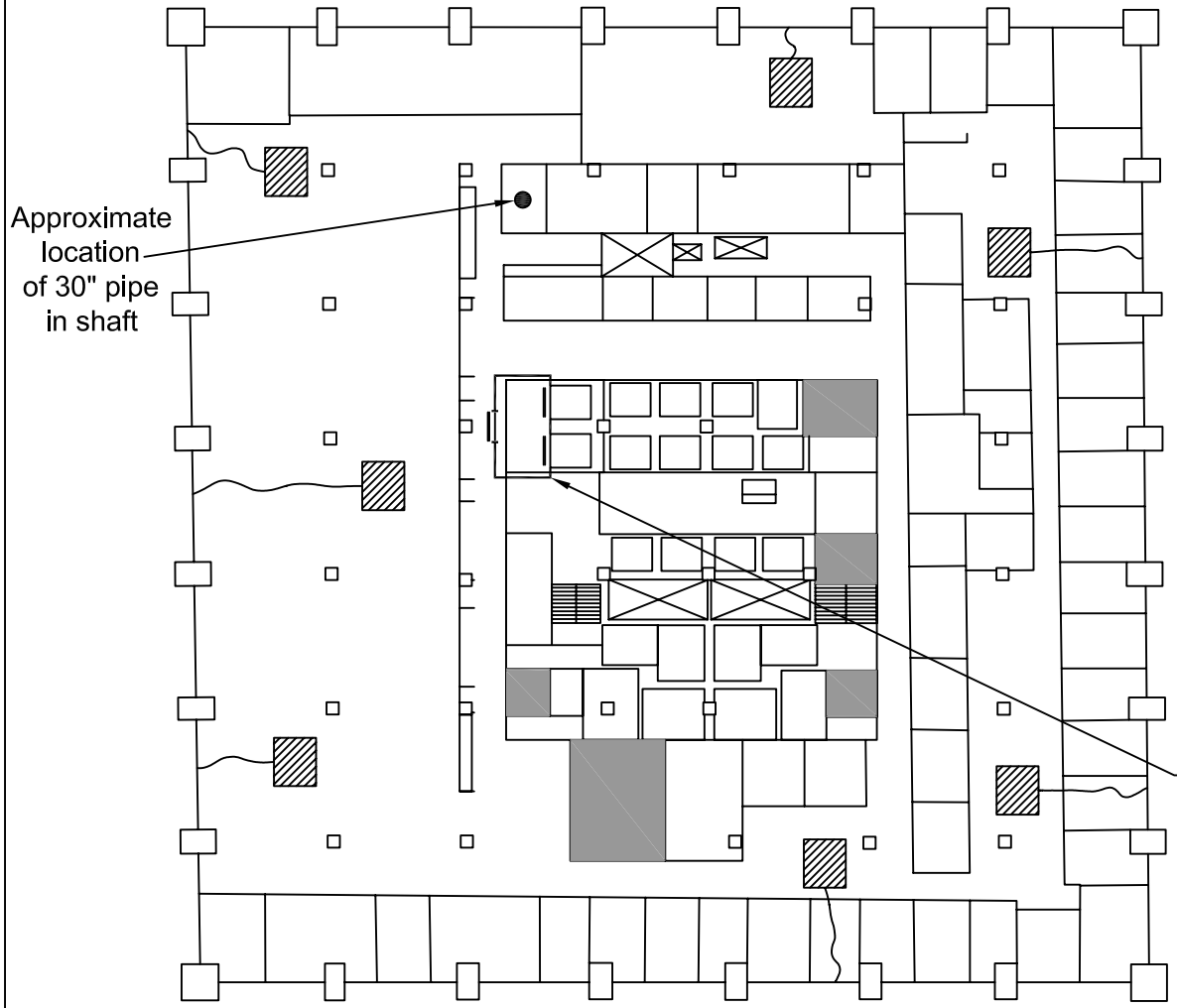
Figure 3

Typical Work Area Layout

(1 page)

Washington Street

Albany Street



NORTH

LEGEND:

Suggested Location of Negative Filtration Unit Manifold for Approximately 3 to 4 Units.

WESTON	PROJECT: 130 LIBERTY STREET	TITLE: TYPICAL WORK AREA LAYOUT
DATE: NOVEMBER 2004	CLIENT NAME: GILBANE BUILDING COMPANY	
FIGURE #: 3		

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