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1.0 GENERAL REQUIREMENTS

1.1 Scope of Work

(a) Furnish all labor, materials, tools and equipment required to perform all asbestos abatement operations (which includes removal, handling, storing, transporting, and disposing of Asbestos-Containing Material) throughout the New York City Transit System as indicated in the Site-Specific Procedures (SSP) (see Section 12N–SSP), on the Contract Drawings and as specified herein.

(b) Mark, tag, paint or otherwise identify all Asbestos-Containing Material (ACM) to be removed under this Contract, before any work is done at the Work Site to ensure that the ACM is not disturbed prior to authorization.

(c) In the event of any damage to the infrastructure during asbestos abatement operations, the asbestos abatement Contractor is responsible for its restoration to the original condition.

(d) Asbestos containing materials which have not been previously identified can possibly exist on the Work site and can possibly be encountered during construction. The Contractor shall notify the Engineer immediately upon encountering any suspected asbestos containing material in the Work area, and not disturb any such possible asbestos containing materials.

1.2 Regulations

(a) Comply with this specification and the latest requirements of applicable laws, standards and regulations of the Federal, State and Local laws, including those listed below.

(1) United States Environmental Protection Agency National Emission Standards for Hazardous Air Pollutants (NESHAPS) 40 CFR Part 61.

(2) United States Environmental Protection Agency for Asbestos in Water, EPA 600/4-80-005.

(3) U.S. Department of Labor, Occupational Safety and Health Act Standards, 29 CFR Part 1926.

(4) U.S. Department of Labor, Occupational Safety and Health Act Standards, 29 CFR Part 1910. 134.

(5) Part 56 of Title 12 of the State of New York Official Compilation of Codes, Rules and Regulations, 12NYCRR 56.

(6) New York State Department of Environmental Conservation, 6NYCRR Part 364, Waste Transporter Permits.

(7) Article 30 of New York State Labor Law, Products Containing Asbestos; Licensing.

(8) New York City Local Law 70, NYC Department of Sanitation Regulations in Relation to Transport, Storage and Disposal of Asbestos Waste.

(9) ASTM Standard E1368 "Standard Practice for Visual Inspection of Asbestos Abatement Projects".

(b) Comply with applicable waste handling, transportation and disposal regulations for the Work Site and for each waste disposal landfill.

(c) The following documentation shall be available on the Work Site:

(1) A copy of: Worker's, Supervisor's, Air Sampling Technician's, and Project Monitor's NYS-DOL Asbestos Certificates;

(2) Copies of respiratory protection program and Negative Exposure Assessment;

(3) Written emergency procedures;

(4) The completed asbestos survey and design including but not limited to bulk samples chain of custodies, bulk sample results, drawings, variances, SSP, and photo documentation for affected portions of the building, structure and work site. It shall be kept on the construction site throughout the duration of the asbestos project and any associated demolition, renovation, remodeling or repair project;

(5) A copy of the air sampling log if the Project Monitor /air sampling technician is on site. If the Project Monitor /air sampling technician is not on site, a copy of the air sample log shall be supplied within 24 hours of the request to produce a copy there of;

(6) A copy of all air sampling results, including method of analysis, by date for the entire asbestos project, organized by regulated abatement work area;

(7) A copy of the Project Monitor's daily logs during abatement;

(8) The supervisor's daily log with entry/exit logs organized by date;

(d) Post at the entrance to the decontamination unit 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 12NYCRR 56.

(2) A copy of all applicable US EPA and NYS-DOL Notifications and amendments, System Wide Variance (SWV) Payment Form (if applicable) and Approved Variances, amendments and re-openings being used for the project.

(3) A list of telephone numbers for local hospital, location of hospital and/or emergency squad, local fire department, the building owner (or representative) and the NYS-DOL Asbestos Control Program.

(4) The original signed Asbestos Abatement Placard and General Order Tracking Form, if applicable, issued by the MTA/NYCTA Office of System Safety.

(5) An entry/exit log. All persons who enter the regulated abatement work area or enclosure shall sign the entry/exit log, located in the clean room, upon every entry and exit.

(6) Copies of waste hauler information, including but not limited to the location of the waste site, permits and licenses.

(7) Copy of all Contractor and Consultant NYS-DOL Company handling licenses.

(8) Copies of Laboratory documents: Environmental Laboratory Approval Program (ELAP).

(9) A copy of all Material Safety Data Sheets (MSDS) for hazardous chemicals used during the Asbestos Project.

(10) Copies of Area Emergency procedures, site-specific emergency procedures, including but not limited to the location of emergency exits, locations of fire extinguishers and exiting procedures.

1.3 Definitions

"Abatement" shall mean any portion that includes procedures to control fiber release from asbestos containing material. This includes removal, encapsulation, enclosure, repair, or handling of asbestos material that may result in the release of asbestos fiber.

“Airlock” shall mean a system for permitting entrance and exit while restricting air movement between the contaminated and uncontaminated areas. Airlock construction shall consist of two curtained doorways with three alternating six mil fire retardant polyethylene curtains per doorway, separated by a distance of at least three feet such that one passes through one doorway into the airlock, allowing the doorway sheeting to overlap and close off the opening before proceeding through the next doorway. Minimum airlock size shall be 3 feet wide, by three feet long, by six feet in height.

"Air Sampling" shall mean the process of measuring the fiber content of a known volume of air collected during a specified period of time, using accepted methodologies.

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

"Asbestos" shall mean any naturally occurring hydrated mineral silicate separable into commercially usable fibers, including chrysotile (serpentine), amosite (cummingtonite-

grunerite), crocidolite (riebeckite), tremolite, anthophyllite and actinolite.

“Asbestos Abatement Permit Placard” shall mean a permit issued by NYCTA, Office of the System Safety (OSS), which shall be posted at the Work Site at all times until the Project is completed. Asbestos removal cannot begin until OSS issues a project placard.

"Asbestos Containing Material (ACM)" shall mean any material containing greater than one percent (1%) of asbestos, also known as Asbestos Material.

“Asbestos Handler (Worker)” shall mean any person who removes, encapsulates, encloses, repairs, or disturbs Asbestos-Containing Material. This person shall have completed an approved training course and be certified by the NYS-DOL.

"Asbestos Handler Supervisor" shall mean any person who performs supervision of persons (other than authorized visitors) permitted to enter the restricted area and regulated abatement work area. This person shall have completed approved training courses and be certified by the NYS-DOL.

"Asbestos Handling Certificate" shall mean a Certificate issued by the NYS-DOL[1] to an individual who has satisfactorily completed an approved asbestos safety and health program.

"Asbestos Inspector" shall mean any person who performs the limited tasks involved in the asbestos survey, identification and assessment of the condition of asbestos and asbestos material and the recording and reporting thereof, or who is involved in the collection of bulk samples of asbestos material or suspected asbestos material for laboratory analysis. This person shall have completed approved training courses and be certified by the NYS-DOL[1].

"Asbestos Project" shall mean work that involves removal, encapsulation, enclosure, repair or disturbance of friable or non-friable asbestos, or any handling of asbestos material that may result in the release of asbestos fibers. An asbestos project shall include any disturbance of asbestos fibers, and the planning, asbestos survey, design, background air sampling, inspection, air sampling and oversight of abatement work, cleanup and the handling of all asbestos material subject to abatement, as well as the supervising of such activities. An asbestos project starts with Phase I when the planning, asbestos survey, and design work begins, or is required to begin. The project shall not be considered completed until Phase II D is complete.

"Asbestos Project Phase IA of Work" shall mean the asbestos survey, planning and design.

"Asbestos Project Phase IB of Work" shall mean the background air sampling.

"Asbestos Project Phase IIA of Work" shall mean the regulated abatement work area(s) preparation and enclosure construction.

"Asbestos Project Phase IIB of Work" shall mean the asbestos handling including; gross removal or abatement, initial cleans and waste removal.

"Asbestos Project Phase IIC of Work" shall mean final cleaning and clearance air samples.

"Asbestos Project Phase IID of Work" shall mean final waste removal from site.

“Asbestos Project Kick-off Meeting” shall mean a meeting to detail the responsibilities of the Engineer, Contractor and the independent Project Monitor consultant for the Project.

"Asbestos Survey" shall mean a thorough inspection for and identification of all PACM, suspect ACM, or asbestos material throughout the building/structure or portion thereof to be demolished, renovated, remodeled, or repaired. The completed asbestos survey shall be kept on the construction site throughout the duration of the asbestos project and any associated demolition, renovation, remodeling or repair project.

“Asbestos Waste” shall mean ACM, PACM, asbestos material or asbestos contaminated objects requiring disposal pursuant to applicable laws and regulations.

"ASTM" shall mean the American Society for Testing and Materials.

"Authorized Visitor" shall mean any party on asbestos project, who has to enter the asbestos project restricted area or regulated abatement work area for emergency purposes or regulatory compliance inspections. Visitors shall comply with all applicable requirements OSHA 29 CFR 1926.

"Building Owner" shall mean the NYCTA 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.

"Clean Room" shall mean an uncontaminated area or room which is a part of the personal decontamination enclosure, with provisions for storage and changing of persons' street clothes and protective equipment.

"Clearance Air Monitoring" shall mean an accepted method of air sampling used upon completion of final cleaning, during Phase IIC of an asbestos project. This method consists of using aggressive sampling techniques to dislodge and stir up remaining asbestos fibers, then air samples are collected for appropriate analysis to determine representative airborne fiber concentrations.

"Commissioner" shall mean the Commissioner of the New York State Department of Labor (NYS-DOL).

“Confined Space” shall mean any area large enough and so configured that an employee can bodily enter and perform assigned work, has limited or restricted means of entry or exit and is not designated for continuous employee occupancy.

“Contractor” shall mean the individual, firm or corporation, its successors and assigns that enter into the Contract to perform the Project. An asbestos abatement Contractor engaged in Asbestos Projects for NYCTA shall have a valid NYS-DOL Company asbestos-handling license. All asbestos abatement shall be performed in accordance with this specification, SSP, Contract Drawings and all applicable laws.

"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.

“Curtained Doorway” shall mean an assembly which consists of at least three overlapping sheets of 6-mil fire retardant plastic over an existing or temporarily framed doorway, used to separate the chambers within the decontamination system enclosures and to inhibit airflow if the negative air ventilation system shuts down.

"DAR” shall mean the MTA NYC Transit Departmental Asbestos Representative.

“Decontamination Enclosure System (decon)" shall mean a series of connected rooms, usually attached to the regulated abatement work area, for the decontamination of persons, materials and equipment.

“Disturbance” shall mean any activities that disrupt the matrix of ACM or PACM, or generate debris, visible emissions or airborne asbestos fibers from ACM or PACM. This includes moving of friable ACM from one place to another.

"Encapsulant (sealant) or Encapsulating Agent" shall mean a liquid material which can be applied to asbestos material and which prevents the 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 and to the substrate (penetrating encapsulant). This may also be used to seal surfaces from which ACM has been removed.

"EPA" shall mean the United States Environmental Protection Agency

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

"Fixed Object" shall mean equipment, furniture or other item that is affixed, as a whole, to a floor ceiling, wall or other building structure or system.

"Friable" shall mean any material that when dry, can be crumbled, pulverized or reduced to powder by hand pressure, or is capable of being released into the air by hand pressure.

“General Order (G.O.)” shall mean a formal, written Service Diversion plan that is used to accomplish work through exclusive use of a track or tracks in a designated area.

“General Order (G.O.) Tracking Form” shall mean a form documenting receipt of an approved G.O. by the Office of System Safety. The G.O. Tracking Form shall be posted at the Work Site in addition to the Office of System Safety Placard.

“Glovebag” shall mean a manufactured impervious bag-like enclosure constructed of at least 6-mil transparent plastic, seamless at the bottom, with inward-projecting long sleeve glove(s), which may also contain an inward-projecting water wand sleeve, an internal tool pouch, and an attached, labeled receptacle or portion for asbestos waste. The glovebag is constructed and installed to surround the object or area to be decontaminated and contain all asbestos fibers

released during the removal process.

"Glovebag Technique" shall mean a method for removing asbestos material from heating, ventilating, and air conditioning (HVAC) ducts, electrical cables, piping runs, valves, joints, elbows, and other non-planar surfaces by using a glove-bag.

"HEPA Filter" shall mean a high efficiency particulate air filter capable of trapping and retaining 99.97 percent of all mono-dispersed particles of 0.3 microns in diameter or larger.

"HEPA Vacuum equipment" shall mean vacuuming equipment designed for abatement, with a high efficiency particulate air filtration system.

"Holding Area" shall mean a chamber in the waste decontamination enclosure utilized for temporary storage of containerized ACM waste.

“Intact” shall mean asbestos material that has not crumbled, been pulverized, or otherwise been damaged or disturbed, and the material’s matrix has not noticeably deteriorated.

“Isolation Barriers” shall mean installed temporary hardwall barriers that complete the containment enclosure and establish the regulated abatement work area.

"Large Asbestos Project" shall mean an asbestos project involving the disturbance (e.g., removal, enclosure, encapsulation, repair) of 260 linear feet or more, or 160 square feet or more of Asbestos-Containing Material.

“Manifest” shall mean a chain of custody document duly authorized by parties attesting to the quantities, travel route and deposition of the asbestos waste materials. At the time of waste pick up by the authorized waste hauler the parties present shall be the Contractor and the Engineer. The manifest shall be filled out completely and signed in the presence of all the fore-mentioned persons at the time of the asbestos waste pick up. Submit this document for each Project with each payment request. The Consultant shall verify each manifest.

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

“Miscellaneous Material” shall mean any material on structural components, structural members or fixtures, such as, but not limited to floor tile and ceiling tiles: does not include surfacing material or thermal system insulation.

“Mobile Decontamination Enclosure System (decon)" shall mean a functioning decon system enclosure built in a vehicle (i.e. Truck), positioned as close to the Work Area as practical.

"Negative Air Pressure equipment" shall mean a local exhaust system, capable of maintaining air pressure within a containment at lower pressure than the air pressure outside of such containment, and which provides for HEPA filtration of all air exhausted from the containment.

"Negative Exposure Assessment” as per 29 CFR 1926.1101 (f) (2) (iii).

“NIOSH” shall mean the National Institute for Occupational Safety and Health.

“12 NYCRR Part 56” (12NYCRR56) shall mean the Official Compilation of Codes, Rules and Regulations of the State of New York.

"NYS-DOL" or "Department" shall mean the New York State Department of Labor.

"OSHA" shall mean the Occupational Safety and Health Administration

"PCM" shall mean Phase Contrast Microscopy.

“Permitted Confined Space” shall mean any confined space that contains one or more of the following conditions: the potential to contain a hazardous atmosphere, the potential for engulfing an entrant, has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downwards and tapers into a smaller cross section or contains any other recognized serious safety or health hazard.

"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 Contractor.

"Personal Decontamination System Enclosure" shall mean an area designated for controlled passage of all persons to and from the regulated abatement work area.

"Personal Protective equipment" (PPE) shall mean disposable work suits or coveralls, head covering, eye protection, footwear, gloves, and appropriate NIOSH-approved respirators with appropriate NIOSH-approved filters.

“Presumed Asbestos Containing Material (PACM)” shall mean all thermal system insulations and surfacing materials found in buildings constructed no later than 1980. PACM is considered to be ACM unless proven otherwise by appropriate bulk sampling and laboratory analyses.

"Plasticize" shall mean to cover floors, walls, ceilings or other surfaces with 6-mil fire retardant plastic sheeting.

"PLM" shall mean Polarized Light Microscopy.

"Project Monitor (PM or Consultant)" shall mean an individual (working for a firm hired by NYCTA), other than the Contractor, certified by the Commissioner as having satisfactorily demonstrated his or her ability to oversee an Asbestos Project from start to finish. The PM shall provide the supervision, Air Monitoring and support services described in these specifications. The Consultant is independent of the Contractor for the Project and of the individual or firm performing the asbestos abatement/removal work and shall act as the on-site representative for the Engineer.

“Presumed Asbestos Containing Material (PACM)” shall mean all thermal system insulations and

surfacing materials found in buildings constructed no later than 1980. PACM is considered to be ACM unless proven otherwise by appropriate bulk sampling and laboratory analyses.

“Notification of Residential and Business Occupants” shall mean the written notice of an upcoming asbestos abatement project. It is the responsibility of the asbestos Contractor to post ten calendar days prior to the commencement of Phase II A work on any asbestos project, and to maintain these notices at all direct means of access to the floor, such as but not limited to stairways, ramps, emergency ingress or egress, elevators, escalators, ladders, hallways, corridors and trapdoors.

“Qualitative Fit Test” shall mean a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual’s response to the test agent.

"Quantitative Fit Test" shall mean exposing the respirator wearer to a test atmosphere containing an easily detectable, non-toxic aerosol, vapor or gas as the test agent. Instrumentation, which samples the test atmosphere and the air inside the face piece of the respirator, is used to measure quantitatively the leakage into the respirator. There are a number of test atmospheres, test agents, and exercises to perform during the tests.

“Regulated Abatement Work Area” shall mean the portion of the restricted area where abatement work actually occurs.

“Reinforced Poly” shall mean reinforced (6) six-mil opaque fire-retardant plastic sheeting.

"Removal" shall mean abatement, consisting of operations where ACM, PACM or asbestos material is removed or stripped from structures or substrates. This includes demolition operations.

"Restricted Area" shall mean a restricted area established and marked for the abatement portion of an asbestos project. This area shall include, but not limited to asbestos project regulated abatement work areas and any contiguous decontamination facilities, adjoining staging areas where work materials, debris or waste from such work may accumulate, remote decontamination areas, and waste areas (dumpsters, trailers, etc.).

“Restricted asbestos handler (allied trades)” shall mean any person performing any limited or special tasks in preparation for or ancillary to an Asbestos Project, such as a carpenter, electrician, plumber or similar occupation, or any other person who may potentially disturb friable or non-friable asbestos during the course of any employment, shall possess a valid restricted asbestos handler (allied trades) certificate and shall have such certificate or a copy thereof in his/her possession at all times while working on the project.

“SSP” shall mean Site Specific Procedures.

“SSV” shall mean Site Specific Variance.

“Sequential Abatement” shall mean the abatement of different types of ACM within a common regulated abatement work area in a priority order.

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

"Small Asbestos Project" shall mean an asbestos project involving the disturbance (e.g., removal, enclosure, encapsulation, repair) of more than 25 and less than 260 linear feet of friable Asbestos-Containing Material or more than ten and less than 160 square feet of friable Asbestos-Containing Material.

“Surfacing Material” shall mean any material that is sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes.

"Surfactant" shall mean a chemical wetting agent added to water to reduce the surface tension of the water and improve its penetration for added mitigation of airborne fiber release.

"System Wide Variance (SWV)" shall mean the prior approved System Wide Variances, obtained by NYCTA from the New York State Department of Labor (NYS-DOL) for use on NYCTA Property.

"TEM" shall mean Transmission Electron Microscopy.

“TSI” shall mean Thermal System Insulation.

"Waste Decontamination System Enclosure (waste decon)" shall mean an area, consisting of a washroom and a holding area separated from each other by airlocks, designated for the controlled transfer of materials and equipment from the regulated abatement work area.

"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.

“Work Train” shall mean NYCTA trains utilized for an Asbestos Project, either as an extension of the Work Area and/or the transportation of the remote personal/waste decon. Wheel stops and/ or bumper blocks shall be furnished as required for each work train.

1.4 Placard Package Submittals

(a) Provide the following documents for the Engineer's approval a minimum of forty-five (45) days prior to the intended start of the asbestos abatement work:

(1) Asbestos abatement cost estimate.

(2) List of previous waste transporter experience in New York City and New York State.

(3) A list of previous asbestos abatement experience including Projects in New York City and New York State (owner, dates, contact person, quantities and value).

(4) A valid copy of the NYS-DOL Asbestos Handling License.

(5) Chain of Command.

(6) Licenses and permits for the proposed asbestos waste transporter.

(7) List and Certifications of any Waste Transfer stations to be utilized associated with the disposal of the asbestos waste.

(8) Certifications, length of experience disposing of asbestos waste, list of principal owners, and location of asbestos waste landfill(s) (name, address, telephone #) to be utilized for the Project.

(9) Copies of original and all amended EPA and NYS-DOL notifications for all Asbestos Projects. Clearly indicate what section was amended and sequence of the notifications.

(10) The abatement schedule including locations, dates, type of activities, equipment to be utilized, staffing and times for work to be done per activities.

(11) Copies of Public Notices for all Asbestos Projects.

(12) Shop drawings of scaffolding and other temporary structures designed, signed and sealed by a NYS licensed Professional Engineer.

(b) Upon approval of items (1)-(12), the Engineer will provide an Asbestos Abatement Permit ("PLACARD"). The original signed PLACARD shall be posted at all times, at the Work Site for the duration of the abatement work. No work shall be permitted without a placard.

(c) In addition, attendance at an Asbestos Project Kick-off Meeting, to be held within seven days prior to the start of asbestos abatement activities, is required.

1.5 Permits and Notifications

Secure all necessary permits and execute all necessary notifications in conjunction with asbestos removal, hauling and disposal, required by Federal, State, and Local Authorities.

1.6 Work Area On-Site Planning

(a) The Work Areas shall be phased as described in the Contract Drawings.

(b) Work Areas shall be constructed as not to prohibit passengers' and/or NYCTA employees' access to trains, stairways, or means of egress as defined by the Engineer.

1.7 Temporary Lighting and Power

(a) For Temporary Lighting and Power refer to Specification Section 1B, Paragraph 1.7.

(b) For Power Equipment refer to Specification Section 1B, Paragraph 1.31

1.8 Temporary Water

(a) Locate potable water source and make all plumbing connections for water to perform all Asbestos Projects.

(b) If the Authority cannot provide a water source, supply an adequate supply of drummed potable water to perform the Asbestos Project.

(c) When work is conducted below 32 degrees Fahrenheit or 0 degrees Celsius, utilize measures to prevent the water from freezing.

1.9 Regulated Area

(a) Warning signs, printed in English, Spanish and the predominant language of the workers, shall be displayed at all approaches, entrance ways to the Work Area and barriers separating the Work Area from adjacent non-Work Areas. OSHA 1926.1101(k)(7) requirements shall be followed. Lettering requirements shall be as follows:

Legend (In Addition to Caution)	Size	Type
DANGER	1"	Black
ASBESTOS	3/4"	Black
MAY CAUSE CANCER	1/4"	Gothic
CAUSES DAMAGE TO LUNGS	1/4"	Gothic
AUTHORIZED PERSONNEL ONLY	1/4"	Gothic
WEAR RESPIRATORY PROTECTION & PROTECTIVE CLOTHING IN THIS AREA		

1.10 Engineering Controls

(a) Install Engineering Controls as per this specification and the regulations before any Asbestos-Containing Material is disturbed or removed.

(b) Estimate the number of HEPA filtered ventilation units to be employed for each applicable Phase in order to achieve four (4) air changes per hour including during clearance air sampling. A minimum of one (1) additional unit having a capacity of at least equal to that of the primary unit shall be installed, as a backup unit to be used upon primary unit failure, or if necessary during primary unit filter changes. Proper installation procedures, including use of appropriate filters and manufacturer's recommended operating procedures shall be followed. Each HEPA should bear an appropriate UL label to indicate ability to perform under specified conditions. Pre-filters, secondary filters and HEPA-filters shall be replaced when dirty. Once installed and operational, daily inspections shall be conducted to insure the airtight integrity of the system, and the findings shall be documented by the asbestos abatement Contractor's supervisor in the daily project log. Inspection, necessary repairs and documenting is required daily. Contractor's supervisor shall also document in the daily project log when the filters are changed.

(c) Demonstrate to the Project Monitor that negative air is established by means of smoke

tests and manometers. A manometer shall be used for all OSHA Class I Large and Small size asbestos project regulated abatement work areas.

1.11 Temporary Structures

(a) Temporary structures shall be constructed of one (1) of the following two (2) types as directed by the Engineer:

(1) Plywood Temporary structures shall be constructed with 2" x 4" studding located 16” on center, covered by 3/8” plywood.

(2) Polyethylene Temporary structures shall be constructed with 2" x 4" studding located 16” on center, covered by two (2) layers of 6-mil reinforced opaque fire-retardant plastic sheeting.

(b) All temporary structures such as isolation and visual barriers, enclosures, shields, barricades and bulkheads within the New York City Transit System and Project shall be constructed of incombustible or fireproofed (Fire-retardant pressure impregnated) materials. Temporary structures (other than Plastic sheeting) shall be painted and repainted as required (at intervals not to exceed 6 months) with two coats of an approved paint of a color as directed by the Engineer.

(c) Fireproof (fire-retardant pressure impregnated) wood shall meet the requirements as specified in paragraph 27-328 of the Building Code of the City of New York.

(d) All fireproof (fire-retardant pressure impregnated) wood shall be clearly identified with an impression on both faces of the wood, as to the type and grade of the treatment and the name of manufacturer.

(e) The edges of the isolation barriers partition shall be sealed at the floor, ceiling, walls and fixtures using caulk, fire-retardant expandable foam or duct tape to form an airtight seal. The seams of the partition sheathing shall also be sealed airtight using these techniques.

(f) Canopy abatement temporary structures located between the platform and canopy roof shall be designed to withstand high winds such that the enclosure framing shall not be thrust into the train clearance envelope or thrust into the platform area (including provision for super-elevation, end approach, etc.). The enclosure shall be designed to withstand wind loads of 30-lb. /sq. ft.

(g) Temporary structures built on or near the active platform and/ or track shall not obstruct the right of way and interfere with the safe operation of the Railroad and must comply with the NYCT Office of System Safety Guidelines for Constructing Temporary Enclosure/Structure (see pages 12N 71 thru 78).

1.12 Scaffolding, Lifts and Ladders

(a) Where ladders, lifts or scaffolds are used on a project to allow work surfaces to be easily and safely reached for removal and cleaning, care shall be taken to prevent breaching of

the containment areas. Scaffold joints and ladder openings shall be sealed with duct tape to prevent incursion of asbestos. Scaffolds, lifts and scaffolds and their use shall comply with OSHA 29 CFR 1926 and other applicable codes.

(b) Supply shop drawings for all scaffolding construction, designed, signed and sealed by a New York State licensed Professional Engineer.

2.0 WORKER PROTECTION

(a) Provide employees ("workers") and visitors with NIOSH approved respirators and a sufficient quantity of filter cartridges, of a size and type to be determined by the concentration of fibers found during air sampling, as required by the regulations. Workers shall change filter cartridges following each worker's break outside of the Regulated Abatement Work Area. Unused filter cartridges shall be stored at the Work Site in the clean room and shall be totally protected from exposure to asbestos prior to their use.

(b) While in the Regulated Abatement Work Area, after the installation of the personal decontamination unit, workers shall always wear a respirator properly fitted on the face. Respirators shall be worn and used in accordance with prevailing OSHA regulations.

(c) Workers shall be instructed and trained in proper respirator use in accordance with the required regulations. Satisfactory documents shall be submitted to the Engineer showing that all abatement workers have been fit tested and provided with the appropriate respirator.

(d) Workers shall always wear disposable, full-body coveralls in colors other than white and disposable head covers, gloves and footwear in the Regulated Abatement Work Area after installation of the personal decontamination unit. Footwear may be non-disposable. Non-disposable footwear shall be left in the Regulated Abatement Work Area at all times until disposal at job completion.

3.0 MOBILIZATION

3.1 Decontamination System Enclosure - Personal/ Waste / Holding Facilities

3.1.1 Decontamination Facilities - General

(a) **Installation**. Construct decontamination facilities as shown on the Contract Drawings and in accordance with the regulations. Personal decontamination system enclosure shall be constructed and functional prior to commencing the remainder of the Phase IIA regulated abatement work area preparation activities. Waste decontamination system enclosure shall be constructed and functional at the completion of Phase IIA preparation activities. After installation of the personal decontamination system enclosure, all access to the regulated abatement work area shall be via the installed personal decontamination system enclosure. These systems must be kept clean, sanitary and climate controlled at all times in conformance with all federal, state and local government requirements. These systems shall remain on-site, operational and be used until completion of Phase

IIC of the asbestos project.

(1) **Clean Room**. All attempts shall be made to size the clean room in accordance with applicable rules and regulations where permitted by site conditions. Provide benches, lockers and hooks for storage of street clothes of workers in the clean room. In the same room provide uncontaminated disposable protective clothing and equipment. The clean room shall be used by workers and visitors to change from street clothes to disposable protective clothing, respirators and other personnel protective equipment prior to entering into the contaminated area. It shall then be used to dress into street clothing after they have showered and dried in the Shower Room as they exit from the contaminated area. The clean room shall also contain one complete set of personal protective equipment.

(2) **Shower Room**. Provide one shower per 6 full-shift abatement personnel calculated on the basis of the largest shift. Multiple showers shall be simultaneously accessible (installed I parallel) to certified personnel. Provide disposable towels and liquid soap, for the duration of the Project. Provide pass through shower facilities arranged to provide complete showering of workers and visitors as they exit from the contaminated area. Make provisions to prevent contaminated water run-off from the Shower Room. The shower shall have hot and cold water, adjustable at the tap.

(3) **Equipment Room**. Provide an equipment room with a drum lined with a labeled, minimum 6-mil plastic bag for contaminated clothing and equipment. In this area, workers and visitors dispose of their disposable protective clothing, except the Respirator, as they prepare to enter the Shower Room after leaving the Regulated Abatement Work Area.

(4) **Washroom**. The wash room/cleanup room shall be equipped with the facilities to wash and wipe the outside of the Bags prior to removing them from the Regulated Abatement Work Area for transportation to the landfill. Make provisions to prevent any contaminated water run-off.

(5) **Curtained Doorway**. Provide an assembly which consists of at least 3 overlapping sheets of 6-mil fire retardant plastic over an existing or temporary framed doorway. One sheet shall be secured at the top and left side, the second 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.

(6) **Airlocks.** Provide airlocks consist of 2 curtained doorways separated by a distance of at least 3 feet, such that one passes through one doorway into the airlock, allowing the doorway sheeting to overlap and close off the

opening before proceeding through the next doorway. Minimum airlock size shall be 3 feet wide, by 3 feet long, by 6 feet height.

(7) **Heating and ventilation**. Provide heating and ventilation in the entire Decontamination System so that airflow shall be from the outside towards the workspace.

(8) **Water requirements**. All water utilized during this Project and contaminated by asbestos shall be filtered. The final filter should be of a 5-micron size. A system containing a series of several filters with progressively smaller pore size shall be used to avoid rapid clogging of the filtration system by large particles. Filtered wastewater shall be discharged to a sanitary sewer. Used filters shall be disposed of as asbestos containing waste.

(9) **Fire protection**. At a minimum, provide two fire extinguishers, to be placed inside and outside of the decontamination facility and within the Regulated Abatement Work Area where it is accessible to the workers.

(10) **Safety.** Worker and waste decontamination units shall be constructed in an arrangement that is safe and suitable to the permitted site conditions.

(b) **All workers shall**:

(1) Sign the entry/exit log upon every entry and exit of the personal decontamination facility (including all consultants and contractors).

(2) Remove street clothes in the clean room and put on the disposable coveralls and head covers, gloves, footwear and respirator before entering the Regulated Abatement Work Area. No asbestos contaminated items are permitted in this room.

(3) When leaving the Regulated Abatement Work Area, prior to exiting, all gross contamination and debris are to be removed from coveralls using a HEPA filter vacuum. The disposable coveralls, head covers, gloves and footwear in the Equipment Room shall be removed upon leaving the Regulated Abatement Work Area. Work equipment, footwear and all other contaminated work clothing shall be stored in the Equipment room. All areas between the shower room and Regulated Abatement Work Area shall be treated as part of the Regulated Abatement Work Area.

(4) Still wearing their respirators, workers shall proceed to the showers and remove their respirators while showering with liquid soap and water.

Respirators shall not be removed until respirators and workers have been washed free of dust.

(5) Workers shall shower each time they exit the Regulated Abatement Work Area and before entering the clean room to change into street clothes.

(6) Shower wastewater shall be drained, collected and stored pending disposal or filtered for sanitary sewer discharge. Filters shall have at least a 5.0-micron particle size collection capability. Used filters shall be disposed of as asbestos-containing waste.

(7) Workers shall not eat, drink, smoke, chew gum, or chew tobacco, in the work and decontamination areas.

(8) All persons entering the Regulated Abatement Work Area shall wear an approved respirator and disposable coverall, head cover, gloves and footwear. Control access to the Work Site and maintain a daily log of personnel entering the Regulated Abatement Work Area. A list of names of workers shall be posted with their start and stop times for each day. NYS-DOL asbestos certification number and Social Security Number shall be recorded as well for each worker.

A. A copy of the log shall be provided to the Engineer every week, indicating the past weeks' work. A certified copy of the logbook shall be provided to the Engineer at the end of the Project.

B. Provide disposable coveralls, head cover, gloves and footwear to any authorized visitor.

C. All workers shall possess a current New York State Department of Labor Asbestos Handler or Supervisor certificate while performing work. The certification shall be presented for examination to the Engineer.

3.1.2 Personal Attached Decontamination System Enclosure

(a) Provide a personal decontamination unit outside the Regulated Abatement Work Area consisting of a serial arrangement of rooms attached to all locations where personnel shall enter or exit the Regulated Abatement Work Area. Each space shall be clearly identified and separated from the others and the Regulated Abatement Work Area. If airlocks are utilized, they shall have weighted door flaps constructed of at least 3 overlapping sheets of 6 mil fire-retardant plastic sheeting and have alternating openings. Personal decontamination enclosure system may be constructed of metal, wood or plastic supports covered with fire-retardant

plastic sheeting. A minimum of 1 layer of 6-mil fire-retardant plastic sheeting shall be required on walls and the ceiling of the enclosure system. At least 2 layers of 6-mil fire-retardant reinforced plastic sheeting shall be installed on the floor. Special provisions, including scheduling of showers, shall be provided in the event of personnel from both sexes being in the Regulated Abatement Work Area. All decontamination enclosure systems accessible to the public shall be constructed of 3/8" thick fire-retardant plywood (with outer walls painted in navy-blue color). Structural studs shall be 2" x 4" and be spaced 16" on center on the outer part of the wall. The decontamination unit shall have lockable doors, sturdy and if located outside shall be able to withstand all weather conditions.

(1) The Large Asbestos Project decontamination unit shall consist of a clean room, shower room, equipment room connected in series but separated from each other by airlocks. Minimum airlock size shall be 3 feet wide, by 3 feet long, by 6 feet in height.

(2) The Small Asbestos Project decontamination unit shall consist of a clean room, shower room, equipment room connected in series but separated from each other and all other areas by curtained doorways only, with at least 3 overlapping sheets of 6-mil fire retardant plastic and weights attached to the bottom.

3.1.3 Personal Remote/Mobile Decontamination System Enclosure

(a) If a personal decontamination system enclosure cannot be attached to the regulated abatement work area provide a remote/mobile Decontamination unit as close to the regulated abatement work area as possible that meets the requirements of Paragraph 3.1.2 and 3.1.5 (if required) of this specification that shall be utilized for work performed during this Project.

(b) Asbestos Workers involved in the removal procedure shall wear two (2) disposable suits, including gloves, hood and footwear, and appropriate respiratory equipment. All street clothes shall be removed and stored in a clean room within the Work Site.

(c) At a minimum, two (2) extra airlocks shall be constructed. One shall be constructed at the entrance to the equipment room or equipment/ washroom. The other extra airlock shall be constructed attached to the entrance of the regulated abatement work area; or if not permitted due to the site conditions the remote airlock shall be positioned in close proximity to the entrance of the work area and additional curtained doorway with 3 layers of overlapping 6-mil fire-retardant plastic sheeting shall be utilized at the entrance to the regulated abatement work area. These airlocks shall have lockable doorways at the entrance to the airlock from

uncontaminated areas. These airlocks shall be cordoned off and appropriately signed and shall not be used as waste decontamination areas.

(d) Workers exiting the Regulated Abatement Work Area shall utilize double suiting procedures as per applicable rules and regulations. Workers exiting the Regulated Abatement Work Area shall enter the extra airlocks described in Paragraph c and then Personal Remote/Mobile Decontamination Enclosure System immediately after exiting the delineated Regulated Abatement Work Area. Clean disposable suits in a re-sealable container shall be located inside the clean room of the Decontamination Enclosure System as well as in the extra airlock associated with regulated abatement work area described in Paragraph c. Prior to exiting the Regulated Abatement Work Area (for materials or shift changes) the workers shall remove the outer suit and dispose it as ACM waste while in the airlock. Workers shall then don a clean set of protective clothing and proceed directly to the Decontamination Enclosure System.

(e) If the Workers are on a lunch period they shall decontaminate. If the workers shall be returning to the Regulated Abatement Work Area, a clean outer suit may be worn during the rest period.

(f) If both suits are compromised during the abatement procedures the workers shall request that the on-site supervisor provide additional clean suiting until all suits can be disposed of during decontamination procedures. Workers with contaminated inner suits shall not make trips outside of the Regulated Abatement Work Area.

(g) The walkway from the regulated abatement work area to the airlocks, remote/mobile decontamination systems enclosures or other regulated abatement work areas shall be cordoned off or restricted by certified asbestos workers during use only.

(h) Double suiting procedures shall be used during all trips to and from the Regulated Abatement Work Area, the Decontamination Enclosure System, and the waste storage/hauler.

3.1.4 Remote/Mobile Decontamination Unit in Work Train

(a) Provide personal and waste decontamination units that meet the requirements of Paragraph 3.1.3 and 3.1.5 (if required) of this specification that shall be utilized for work performed during Projects that utilize a work train. It will consist of a diesel engine, a rider car for decontamination systems enclosures (personal and waste if require), a flatbed car with a mechanical crane (if required), a second flatbed car with additional waste holding area enclosure with floor wall and ceiling covered with 2 layers of 6-mil fire-retardant plastic sheeting (if required). In addition, a

section of the flatbed car with mechanical crane shall be covered with 2 layers of 6-mil fire-retardant plastic sheeting and provided with additional remote airlock.

(b) Furnish wheel stops and/ or bumper blocks as required for each work train.

(c) The Contractor shall comply with all requirements referenced in Specification Section 1D – Manner of Prosecution of the Work pertaining to the Asbestos Projects in the subway tunnel or on the subway tracks near Contact Rails and on the Work Train.

3.1.5 Waste Decontamination System Enclosure

(a) Provide a waste decontamination unit consisting of a serial arrangement of rooms as shown on the drawing or as directed by the Engineer. The decontamination unit shall consist of a washroom/clean-up room and holding area. Each space shall be clearly identified and separated from each other by an air lock. The airlock shall have weighted door flaps constructed of at least 3 overlapping sheets of 6 mil fire-retardant plastic sheeting and have alternating openings. A minimum of 1 layers of 6-mil fire-retardant plastic sheeting shall be required for walls and the ceiling. At least 2 layer of 6-mil reinforced plastic sheeting shall be required on the floor.

(b) All waste decontamination enclosure systems accessible to the public shall be constructed of 3/8" thick fire-retardant plywood (with outer walls painted in navy-blue color). Structural studs shall be 2" x 4" and be spaced 16" on center on the outer part of the wall. The decontamination unit shall have lockable doors, sturdy and if located outside shall be able to withstand all weather conditions.

(c) The waste washroom shall be equipped with a wash bin of sufficient size to perform waste containers washing operations and shall have a submersible pump installed to collect waste water and deliver it to the shower wastewater filtration system and filtered in accordance with Paragraph 3.1.1 a(7) of this Section.

(d) Where there is only 1 exit from the regulated abatement work are, the holding area of the waste decontamination system enclosure may branch off from the equipment room of the personal decontamination system enclosure. The equipment room shall also be used as a waste washroom.

(e) For Small asbestos project with only one exit from the regulated abatement work area, the shower room of the personal decontamination system enclosure may be used as waste washroom. The clean room of the same system shall not be used for waste storage but may be used for waste transfer to transportation carts or waste containers directly and immediately.

(f) When a remote/mobile personal decontamination system enclosure is allowed and utilized in addition to the requirements of this Paragraph and Paragraph 3.1.3 of this Section for Small and Large size regulated abatement work areas an additional waste washroom chamber consistent with waste decontamination system enclosure washroom requirements shall be constructed within the regulated abatement work area, attached to the existing airlock used to access the work area. When this situation creates a hardship due to the specific site conditions such as removal of Non-friable flooring materials or utilization of a remote airlock (as described in Paragraph 3.1.3) the additional washroom shall be constructed right outside the regulated abetment work area in conjunction with attached airlock or shall not be constructed at all in case of the remote airlock and all waste bags shall be wet wiped, HEPA-vacuumed, doubled bagged and placed on the plastic sheeting close to the work area's exit.

(g) ACM bagged waste shall be kept locked in holding area wet, and inspected daily. Waste shall not be stored for periods longer than 24 hours.

3.2 Site Specific (Minor/ Confined Space/ Tunnel/ Track)

3.2.1 Minor Asbestos Project Mobilization

(a) Furnish all tools, materials and labor necessary to perform Minor Asbestos Projects as per applicable rules and regulations.

3.2.2 Confined Space Mobilization

(a) Furnish all tools, equipment, materials and labor including but not limited to tripod, harnesses, Compressed Air Breathing Apparatus (CABA), real time gas monitor, necessary to perform confined space entry as per applicable OSHA requirements.

(b) All personnel entering a confined space to perform an Asbestos Project shall be confined space entry certified and properly equipped as per NYCTA and all applicable rules and regulations. The valid confined space certificates shall be presented for examination to the Engineer.

3.2.3 Tunnel/Track Mobilization

Furnish all tools, materials and labor necessary to perform Asbestos Projects in the subway tunnel or on the subway tracks near Contact Rails or on the W ork Train. The Contractor shall comply with all applicable rules and regulations referenced in Specification Section 1D – Manner of Prosecution of the Work.

4.0 GENERAL ABATEMENT PROCEDURES

(a) Adequately Wetting Of Asbestos-Containing Material

The Asbestos-Containing Material (ACM) shall be sprayed with water containing a wetting agent to enhance penetration. The wetting agent shall be 50% polyoxyethylene ester and 50% polyoxyethylene ether (Aqua-GRO or approved equal), in a concentration of one (1) ounce in five (5) gallons of water. A fine spray of the amended water shall be applied to reduce fiber release preceding and as required during the removal of the ACM. The material shall be sufficiently saturated to prevent emission of airborne fibers, and to maintain airborne fiber concentrations below the exposure limits prescribed in the OSHA regulations referenced in the specifications. If visible emissions are observed coming from ACM, then the material is not adequately wet.

(b) Asbestos-Containing Material Removal

The ACM shall be removed in sections using manual methods whenever possible. If mechanical means are required, the Engineer shall approve tools and procedures. Before beginning removal of the next section in sequence, the material shall be double-bagged while still wet into two bags of 6-mil thickness. Bags shall be labeled as Class 9 waste including the Generator Label in accordance with EPA NESHAP regulations.

Thoroughly clean the Regulated Abatement Work Areas of all asbestos-containing debris, before, during and after the ACM removal.

No dry removal or disturbances of ACM shall be permitted without State and Federal approval.

(c) Electric Power

As per existing OSHA standards all electric power to negative pressure containment (if utilized within regulated abatement work area) shall be shut down and locked out, including but not limited power to fixtures, lighting, outlets and machinery or equipment. All temporary power to regulated abatement work area shall be brought in from outside and be protected by a ground fault circuit interrupter (GFCI) with connections located outside the regulated abatement work area in secure, dry and accessible space. The negative air equipment shall be on GFCI protected circuit separate from the remainder of the regulated abatement work area temporary power circuit.

If electric power to negative pressure containment including but not limited power to fixtures, lighting, outlets and machinery or equipment must stay in operation due to health and safety requirements then all unprotected cables and wires (except low-voltage, 24 V and below), panel boxes of cables and joints in live conduits shall be covered with 3 individually duct taped and sealed independent layers of 6-mil fire retardant polyethylene. In addition, the sufficient number of warning signs with minimum of 2” high letters that reads: DANGER LIVE ELECTRICAL – KEEP CLEAR, shall be placed on all energized circuits and all live covered barriers at a maximum of 10 foot intervals. All the above

mentioned precautions must remain in place until satisfactory clearance air sampling results have been obtained.

Existing power cables carry high voltage power (600 V and above). Abate asbestos cable wrap, cable seal and duct seal when the power is “off”. NYCTA shall turn the power "off" when requested. Verify that electricity is turned off and secured by lockout, tag-out procedure.

If the NYCTA cannot de-energize the power cables, NYCTA shall obtain approval and variances from the appropriate State and Federal agencies prior to initiating dry removal procedures during the design phase. Non-conductive tools and approved gloves shall be used when abating energized cables and heaters.

(d) Site Security/Safety

Ensure adequate site security is maintained at all times, including times when abatement activities are not occurring (between shifts, weekends, etc.). Site security program shall include surveillance controls to prevent unauthorized access to the Regulated Abatement Work Areas and shall include inspection and surveillance of critical barriers, negative air systems, and decontamination units. Establish and maintain emergency and fire exits from the Regulated Abatement Work Area as per existing fire code requirements. Emergency procedures shall have priority.

4.1 Non-Friable Flooring and Mastic Removals (SWV# 17-0142)

(a) Background air sample results as per Subpart 4.9 (a) and 6, allows the clearance criteria of the work area to be higher than 0.01 fibers per cubic centimeter. Since background air samples will not be collected, all work areas will be cleared to the more stringent criteria of less than 0.01 fibers per cubic centimeter.

(b) In lieu of Subpart 4.9 (d) and 11.7 (d), clearance air monitoring of the work area will be conducted in accordance with the following modifications:

(1) Air samples will be collected inside the regulated abatement work area during Asbestos Abatement (Phase II B and II C) activities until post abatement cleaning is complete. The number of samples collected inside of each individual work area shall be based on the amount of material in the work area. 5 air samples for large work areas, 3 air samples for small work areas and a minimum of 1 air sample shall be collected inside of each minor work area.

(2) The results of the last set air samples collected during Asbestos Abatement (Phase II C) activities will also be used as the clearance air sample criteria. Phase II C will include the final cleaning and lockdown encapsulation of non-removal surfaces covered with fire-retardant plastic sheeting.

(3) After a satisfactory visual inspection and provided the airborne fiber concentrations are below 0.01 fibers per cubic centimeter (f/cc), the regulated work area can be dismantled in accordance to subpart 9.3.

(4) If results of the last set of inside regulated work area air samples are equal to or greater than 0.01 f/cc, the contractor will continue cleaning of the regulated work area using wet methods with negative air pressure equipment operating. Air samples will be collected inside and outside the regulated abatement work area during the re-cleaning activities and used as the clearance air sampling criteria.

(5) If results of the last set of outside regulated work area air samples are equal to or greater than 0.01 f/cc, the contractor will clean-up the surfaces outside the regulated work area using HEPA-vacuums and wet methods. Air samples will be collected outside the regulated abatement work area during the clean-up activities and used as the clearance air sampling criteria.

(c) Due to large sizes, shapes of the various MTA/NYCT facilities (Bus depots, Subway Stations, etc.) and the location of work areas, the ambient air sample requirement of Subpart 7.1 (c) (3) will not be performed. The number of air samples collected outside the work area shall be based on the amount of material to be removed for that particular work area. 5 air samples for large work areas, 3 air samples for small work areas and a minimum of 1 air sample shall be collected outside of each minor work area. Common outside the work area air sample shall be collected if a single remote/mobile decontamination unit is utilized for simultaneous abatement of several adjacent regulated work areas.

(d) All attempts will be made to size the clean room in accordance with Subpart 7.5 (b) (8) requirements where permitted by site conditions.

(e) In lieu of Personal Decontamination System requirements of Subpart 7.5 (d) (2) and (6) a mobile system will be used if the site conditions (examples include but are not limited to interference with the MTA/NYCT system operations, the riding public and/or NYCT employees, space restrictions within Bus Depots, Subway Stations, etc.) do not allow an attached/remote decontamination system. The mobile decontamination system will be located as close to the work area as possible (examples include but are not limited to entrance(s) to Bus Depots, Subway Stations, etc.). The Decontamination System will be cordoned off with asbestos warning tape and signs. Prior to removal from the job site at the end of each shift, the mobile system will be HEPA vacuumed, wet wiped completely and sealed. The remote and/or mobile decontamination system's shower may me used as an equipment decontamination washroom. Equipment shall be decontaminated only during times when the shower(s) are not being used by personnel.

(f) In lieu of subpart 7.5 (d) (3) and 7.11(f)(1)(ii)(d) requirements of an airlock attached to the entrance to the regulated work area(s), a remote airlock (changing chamber) may be

utilized where it is logistically not possible to attach it to the work area (examples include but are not limited to the catwalk space and safety restrictions, active track (third rail and right of way) adjacent to the work area entrance, etc.). It will be positioned in close proximity to the regulated work area (such as but not limited to the closest station platform entrance, inactive section of work site, etc.). Curtained doorway with three layers of overlapping poly will be utilized at the entrance to the each work area. The remote airlock (changing chamber) will be cordoned off with asbestos warning tape and signs. Workers will HEPA vacuum and wet wipe themselves in the work area prior to moving towards the remote airlock (changing chamber).

(g) In lieu of the designated pathway requirement of Subpart 7.5 (d)(4), the walkway from the regulated abatement work area to the remote/mobile decontamination unit or next regulated abatement work area will be cordoned off or restricted by certified asbestos workers during use.

(h) The location of the washroom as required by Subpart 7.5 (f) (2) (i), will be determined by the following site conditions.

(1) If the Non-friable floor and/or mastic to be abated do not allow the washroom to be constructed inside the regulated work area, the washroom will be constructed outside the regulated work area entrance and attached to the existing airlock (changing chamber) used to access the regulated abatement work area.

(2) If a remote airlock (changing chamber) is utilized based on site conditions, the washroom chamber will not be constructed. A waste wash-area will be established inside the work area by placing fire-retardant plastic sheeting on the floor close to the work area's exit. All waste bags will be wet wiped, Hepa-vacuumed and doubled bagged and or be containerized in the wash-area prior to the waste being transferred to the waste container on site. No ACM abatement or cleanup activities may occur during waste container transfer operations.

(3) If a waste container is not on-site prior to the waste transfer, a waste holding area shall be constructed. The holding area is to temporarily store the bagged or containerized waste until the waste can be transferred to a waste transport vehicle.

(4) The remote airlock (changing chamber) will be cordoned off with asbestos warning tape and signs.

(i) In lieu of the continuous operation of negative air unit(s) requirements of Subpart 7.8 (a) (1), (3), (8), (10) (vii) and 9.1 (a) negative air unit(s) will be active in the work area when work is being performed. The work area will be sealed during non-working hours. Prior to sealing of the work area all surfaces will be wet wiped and/or Hepa-vacuumed and the negative air unit(s) shall continue to operate for an additional 20-30 minutes post disturbance activities. Upon restarting of the negative air unit(s) the Contractor will ensure

that all barriers remain intact and secure, prior to the continuation of abatement activities. Inspection, necessary repairs and documenting will be performed during negative air unit(s) operation.

(j) In lieu of ventilation unit(s) exhaust ducting not to exceed 25 feet in length and negative air units exhausting greater than 15 feet outside of the building/ structure with a four foot high construction fence constructed a minimum of 10 feet from the end of the exhaust tube or bank of tubes requirements of Subpart 7.8 (a)(5), (a)(10)(ii), (viii) and (a)(11), negative air units will be exhausted outside the work area into a non-public / normally unoccupied area (no box required). If a non-public / normally unoccupied area is not available, the negative air units will be exhausted into a plywood box a minimum of 1' x 1' x 1' with a pre-filter covering the exhaust end into a public / occupied area. The exhaust box will be cordoned off with a tape barrier. An air sample of the negative air exhaust shall be collected in these area(s) and outside of the box.

(k) A one (1) hour pre-abatement period and settling/drying time for large projects and a thirty (30) minute pre-abatement period and settling/drying time for small projects shall be observed.

(l) All ACM shall be abated utilizing manual abatement methods only.

(m) In lieu of final cleanup procedures requirements of Subpart 9.1 and 11.7 (d), one stage of post-abatement cleaning of all areas abated will be performed at the conclusion of Phase II C activities. Additionally, floor plastic sheeting and isolation barriers will also be cleaned if applicable. After the post-abatement cleaning is complete and settling/drying time has elapsed, a visual inspection by the Project Monitor and Contractor Supervisor shall be performed to confirm that the scope of abatement work is complete, and the area is dry and free of visible debris/residue. If re-cleaning is required, an additional visual inspection shall be performed. Additional air samples will be collected during all re-cleaning activities and will be utilized as the clearance air sample criteria. Waiting/settling and drying times will not be applicable.

(n) Preparation requirements:

(1) Non-friable Flooring and/or Mastic Removal work area preparation will be conducted in accordance with Subpart 11.7.

(2) Alternatively, the work area will be prepared with the following modifications. In lieu of the plasticizing requirements of Subpart 11.7 (b) (2), (3), (5) the following alternatives will be used in the removal areas:

i) Construct a tent as per Subpart 7.11 (f) (1) and procedures identified within this variance. The tent will remain in place until satisfactory clearance air testing results have been obtained.

ii) Negative air will be maintained at four air changes per hour for tent enclosure work areas.

(o) A distance of approximately 10 feet will be maintained to restrict the general public from the cordoned off work area during the actual removal of ACM, except in those areas/locations where it is logistically impossible (examples include but are not limited to: adjacent tracks where there is active train traffic or locations where non-certified individuals are required to enter the 10 foot perimeter to gain access to or perform their job tasks, i.e. train/crane operators, track workers, etc.).

4.2 Tent and Glovebag Removals (SWV# 17-0140)

(a) Background air sample results as per Subpart 4.9 (a) and 6, allows the clearance criteria of the work area to be higher than 0.01 fibers per cubic centimeter. Since background air samples will not be collected, all work areas will be cleared to the more stringent criteria of less than 0.01 fibers per cubic centimeter.

(b) In lieu of Subpart 4.9 (d) and 11.8 (d), clearance air monitoring of the "Tent Enclosure" constructed on the track, will be conducted in accordance with the following modifications:

(1) Air samples will be collected inside the regulated abatement work area during Asbestos Abatement (Phase II B and II C) activities until post abatement cleaning is complete. The number of samples collected inside of each individual work area shall be based on the amount of material in the work area. 5 air samples for large work areas, 3 air samples for small work areas and a minimum of 1 air sample shall be collected inside of each minor work area.

(2) The results of the last set of air samples collected during Asbestos Abatement (Phase II C) activities will also be used as the clearance air sample criteria. Phase II C will include the final cleaning and lockdown encapsulation of non-removal surfaces covered with fire-retardant plastic sheeting.

(3) Upon satisfactory visual inspection and provided the airborne fiber concentrations are below 0.01 fibers per cubic centimeter (f/cc), the regulated work area can be dismantled in accordance to subpart 9.3.

(4) If results of the last set of inside regulated work area air samples are equal to or greater than 0.01 f/cc, the Contractor will continue cleaning of the regulated work area using wet methods with negative air pressure equipment operating. Air samples will be collected inside and outside the regulated abatement work area during the re-cleaning activities and used as the clearance air sampling criteria.

(5) If results of the last set of outside regulated work area air samples are equal to or greater than 0.01 f/cc, the Contractor will clean-up the surfaces outside the regulated work area using HEPA-vacuums and wet methods. Air samples will be collected outside the regulated abatement work area during the clean-up activities and used as the clearance air sampling criteria.

(c) Due to large sizes, shapes of the various MTA/NYCT facilities (Bus depots, Subway Stations, etc.) and the location of work areas, the ambient air sample requirement of Subpart 7.1 (c) (3) will not be performed. The number of air samples collected outside the work area shall be based on the amount of material to be removed for that particular work area. 5 air samples for large work areas, 3 air samples for small work areas and a minimum of 1 air sample shall be collected outside of each minor work area. Common outside the work area air sample shall be collected if a single remote/mobile decontamination unit is utilized for simultaneous abatement of several adjacent regulated work areas.

(d) All attempts will be made to size the clean room in accordance with Subpart 7.5 (b) (8) requirements where permitted by site conditions.

(e) In lieu of Personal Decontamination System requirements of Subpart 7.5 (d) (2) and (6) a mobile system will be used if the site conditions (examples include but are not limited to interference with the MTA/NYCT system operations, the riding public and/or NYCT employees, space restrictions within Bus Depots, Subway Stations, etc.) do not allow an attached/remote decontamination system. The mobile decontamination system will be located as close to the work area as possible (examples include but are not limited to entrance(s) to Bus Depots, Subway Stations, etc.). The Decontamination System will be cordoned off with asbestos warning tape and signs. Prior to removal from the job site at the end of each shift, the mobile system will be HEPA vacuumed, wet wiped completely and sealed. The remote and/or mobile decontamination system's shower may me used as an equipment decontamination washroom. Equipment shall be decontaminated only during times when the shower(s) are not being used by personnel.

(f) In lieu of subpart 7.5 (d) (3) and 7.11(f)(1)(ii)(d) requirements of an airlock attached to the entrance to the regulated work area(s), a remote airlock (changing chamber) may be utilized where it is logistically not possible to attach it to the work area (examples include but are not limited to the catwalk space and safety restrictions, active track (third rail and right of way) adjacent to the work area entrance, etc.). It will be positioned in close proximity to the regulated work area (such as but not limited to the closest station platform entrance, inactive section of work site, etc.). Curtained doorway with three layers of overlapping poly will be utilized at the entrance to each work area. The remote airlock (changing chamber) will be cordoned off with asbestos warning tape and signs. Workers will HEPA vacuum and wet wipe themselves in the work area prior to moving towards the remote airlock (changing chamber).

(g) In lieu of the designated pathway requirement of Subpart 7.5 (d)(4), the walkway from the regulated abatement work area to the remote/mobile decontamination unit or next regulated abatement work area will be cordoned off or restricted by certified asbestos workers during use.

(h) The location of the washroom as required by Subpart 7.5 (f) (2) (i), will be determined by the following site conditions:

(1) If the work area configuration does not allow the washroom to be constructed inside the regulated work area, the washroom will be constructed outside the regulated work area entrance and attached to the existing airlock (changing chamber) used to access the regulated abatement work area.

(2) If a remote airlock (changing chamber) is utilized based on site conditions, the washroom chamber will not be constructed. A waste wash-area will be established inside the work area by placing fire-retardant plastic sheeting on the floor close to the work area's exit. All waste bags will be wet wiped, Hepa-vacuumed and doubled bagged and or be containerized in the wash-area prior to the waste being transferred to the waste container on site. No ACM abatement or cleaning activities may occur during waste transfer operations.

(3) If a waste container is not on-site prior to the waste transfer, a waste holding shall be constructed. The holding area is to temporarily store the bagged or containerized waste until the waste can be transferred to a waste transport vehicle.

(4) The remote airlock (changing chamber) will be cordoned off with asbestos warning tape and signs.

(i) In lieu of the continuous operation of negative air unit(s) requirements of Subpart 7.8 (a) (1), (3), (8), (10) (vii) and 9.1 (a) negative air unit(s) will be active in the work area when work is being performed. The work area will be sealed during non-working hours. Prior to sealing of the work area all surfaces will be wet wiped and/or Hepa-vacuumed and the negative air unit(s) shall continue to operate for an additional 20-30 minutes post disturbance activity. Upon restarting of the negative air unit(s) the contractor will ensure that all barriers remain intact and secure, prior to the continuation of abatement activities. Inspection, necessary repairs and documenting will be performed during negative air unit(s) operation.

(j) In lieu of ventilation unit(s) exhaust ducting not to exceed 25 feet in length and negative air units exhausting greater than 15 feet outside of the building/ structure with a four foot high construction fence constructed a minimum of 10 feet from the end of the exhaust tube or bank of tubes requirements of Subpart 7.8 (a)(5), (a)(10)(ii), (viii) and (a)(11), negative air units will be exhausted outside the work area into a non-public / normally unoccupied area (no box required). If a non-public / normally unoccupied area is not

available the negative air units will be exhausted into a plywood box a minimum of 1' x 1' x 1' with a pre-filter covering the exhaust end into a public / occupied area. The exhaust box will be cordoned off with a tape barrier. An air sample of the negative air exhaust shall be collected in these area(s) and outside of the box.

(k) A one (1) hour pre-abatement waiting period and settling/drying time for large projects and a thirty (30) minute pre-abatement waiting period and settling/drying time for small projects will be observed.

(l) In lieu of final cleanup procedures requirements of Subpart 9.1 and 11.8 (d), for "Tent Enclosure(s)" constructed on the track, one stage of post-abatement cleaning of all areas abated will be performed at the conclusion of Phase II C activities. After the post-abatement cleaning is complete a visual inspection by the Project Monitor and Contractor Supervisor shall be performed to confirm that the scope of abatement work is complete, and the area is dry and free of visible debris/residue. If re-cleaning is required, an additional visual inspection shall be performed. Additional air samples will be collected during all re-cleaning activities and will be utilized as the clearance air sample criteria. Waiting/settling and drying times will be applicable.

(m) A distance of approximately 10 feet will be maintained to restrict the general public from the cordoned off work area during the actual removal of ACM, except in those areas/locations where it is logistically impossible (examples include but are not limited to: adjacent tracks where there is active train traffic or locations where non-certified individuals are required to enter the 10 foot perimeter to gain access to or perform their job tasks, i.e. train/crane operators, track workers, etc.)

4.3 Non-Friable Component Intact Removals (Transite Panels, etc.) (SWV# 17-0139)

(a) Background air sample results as per Subpart 4.9 (a) and 6, allows the clearance criteria of the work area to be higher than 0.01 fibers per cubic centimeter. Since background air samples will not be collected, all work areas will be cleared to the more stringent criteria of less than 0.01 fibers per cubic centimeter.

(b) In lieu of Subpart 4.9 (d), clearance air monitoring of the work area will be conducted in accordance with the following modifications:

(1) Air samples will be collected inside the regulated abatement work area during Asbestos Abatement (Phase II B and Phase II C) activities post abatement cleaning is complete. The number of samples collected inside of each individual work area shall be based on the amount of material in the work area. 5 air samples for large work areas, 3 air samples for small work areas and a minimum of 1 air sample shall be collected inside of each minor work area.

(2) The results of the last set air samples collected during Asbestos Abatement (Phase II C) activities will also be used as the clearance air sample criteria. Phase II C will include the final cleaning and lockdown encapsulation of non-removal surfaces covered with fire-retardant plastic sheeting.

(3) Upon satisfactory visual inspection and provided the airborne fiber concentrations are below 0.01 fibers per cubic centimeter (f/cc), the regulated work area can be dismantled in accordance to subpart 9.3.

(4) If results of the last set of inside regulated work area air samples are equal to or greater than 0.01 f/cc, the Contractor will continue cleaning of the regulated work area using wet methods with negative air pressure equipment operating. Air samples will be collected inside and outside the regulated abatement work area during the re-cleaning activities and used as the clearance air sampling criteria.

(5) If results of the last set of outside regulated work area air samples are equal to or greater than 0.01 f/cc, the Contractor will clean-up the surfaces outside the regulated work area using HEPA-vacuums and wet methods. Air samples will be collected outside the regulated abatement work area during the clean-up activities and used as the clearance air sampling criteria.

(c) Due to large sizes, shapes of the various MTA/NYCT facilities (Bus depots, Subway Stations, etc.) and the location of work areas, the ambient air sample requirement of Subpart 7.1 (c) (3) will not be performed. The number of air samples collected outside the work area shall be based on the amount of material to be removed for that particular work area. 5 air samples for large work areas, 3 air samples for small work areas and a minimum of 1 air sample shall be collected outside of each minor work area. Common outside the work area air sample shall be collected if a single remote/mobile decontamination unit is utilized for simultaneous abatement of several adjacent regulated work areas.

(d) All attempts will be made to size the clean room in accordance with Subpart 7.5 (b) (8) requirements where permitted by site conditions.

(e) In lieu of Personal Decontamination System requirements of Subpart 7.5 (d) (2) and (6) a mobile system will be used if the site conditions (examples include but are not limited to interference with the MTA/NYCT system operations, the riding public and/or NYCT employees, space restrictions within Bus Depots, Subway Stations, etc.) do not allow an attached/remote decontamination system. The mobile decontamination system will be located as close to the work area as possible (examples include but are not limited to entrance(s) to Bus Depots, Subway Stations, etc.). The Decontamination System will be cordoned off with asbestos warning tape and signs. Prior to removal from the job site at the end of each shift, the mobile system will be HEPA vacuumed, wet wiped completely and sealed. The remote and/or mobile decontamination system's shower may me used

as an equipment decontamination washroom. Equipment shall be decontaminated only during times when the shower(s) are not being used by personnel.

(f) In lieu of subpart 7.5 (d) (3), requirements of an airlock attached to the entrance to the regulated work area(s), a remote airlock (changing chamber) may be utilized where it is not logistically possible to attach it to the work area (examples include but are not limited to the catwalk space and safety restrictions, active track (third rail and right of way) adjacent to the work area entrance, etc.). It will be positioned in close proximity to the regulated work area (such as but not limited to the closest station platform entrance, inactive section of work site, etc.). Curtained doorway with three layers of overlapping polyethylene will be utilized at the entrance to each work area. The remote airlock (changing chamber) will be cordoned off with asbestos warning tape and signs. Workers will HEPA vacuum and wet wipe themselves in the work area prior to moving towards the remote airlock (changing chamber).

(g) In lieu of the designated pathway requirement of Subpart 7.5 (d)(4), the walkway from the regulated abatement work area to the remote/mobile decontamination unit or next regulated abatement work area will be cordoned off or restricted by certified asbestos workers during use.

(h) The location of the washroom as required by Subpart 7.5 (f) (2) (i), will be determined by the following site conditions.

(1) If the work area configuration does not allow the washroom to be constructed inside the regulated work area, the washroom will be constructed outside the regulated work area entrance and attached to the existing airlock (changing chamber) used to access the regulated abatement work area.

(2) If a remote airlock (changing chamber) is utilized based on site conditions, the washroom chamber will not be constructed. A waste wash-area will be established inside the work area by placing fire-retardant plastic sheeting on the floor within close proximity to the work area's exit. All waste bags will be wet wiped, Hepa-vacuumed and doubled bagged and or be containerized in the wash-area prior to the waste being transferred to the waste container on site.

(3) If a waste container is not on-site prior to the waste transfer, a waste holding shall be constructed. The holding area is to temporarily store the bagged or containerized waste until the waste can be transferred to a waste transport vehicle.

(4) The remote airlock (changing chamber) will be cordoned off with asbestos warning tape and signs.

(i) In lieu of Engineering Controls requirements of Subpart 7.8, localized engineering controls (HEPA Vacuum) will be utilized during the abatement.

(j) In lieu of Work Area Preparation requirements of Subpart 7.11, each work area will be defined as three-foot from each side and in front and/or below the Non-Friable components (transite panels, electrical panels, electrical boxes/switches, duct seals, wall mounted heaters and/or friable acm in non-acm containers, etc.), if possible. One layer of plastic sheeting will be secured to floor of the defined work area, below or in front of the equipment/material to be abated.

(k) In lieu of the pre-abatement waiting period requirement of Subpart 8.2 (b), the regulated work area(s) preparation will be continuously monitored to ensure that the prep remain intact and secure.

(l) When friable ACM in non-acm containers are to be abated together, the friable acm shall not be removed from the acm container both materials will be abated intact. The non-acm container shall be wrapped with 2 layers of six mil Fire retardant plastic sheeting. All cuts and sealing of ends will be performed in a glovebag.

(m) In lieu of final cleanup procedures requirements of Subpart 9.1, one stage of post-abatement cleaning of each work area's floor plastic sheeting and isolation barriers will be performed at the conclusion of Phase II C activities. After the post-abatement cleaning is complete and a one-hour settling/drying time for Large Asbestos Projects or a thirty-minute settling/drying time for Small Asbestos Projects has elapsed, a visual inspection by the Project Monitor and Contractor Supervisor shall be performed to confirm that the scope of abatement work is complete, and the area is dry and free of visible debris/residue. If re-cleaning is required, an additional visual inspection shall be performed. Additional air samples will be collected during all re-cleaning activities and will be utilized as the clearance air sample criteria. Waiting/settling and drying times will be applicable.

(n) A distance of approximately 10 feet will be maintained to restrict the general public from the cordoned off work area during the actual removal of ACM, except in those areas/locations where it is logistically impossible (examples include but are not limited to: adjacent tracks where there is active train traffic or locations where non-certified individuals are required to enter the 10 foot perimeter to gain access to or perform their job tasks, i.e. train/crane operators, track workers, etc.)

4.4 Non-Friable Exterior Removals (Roofing, Facades/siding, etc.) (SWV# 17-0147)

4.4.1 General

(a) All attempts will be made to size the clean room in accordance with Subpart 7.5 (b) (8) requirements where permitted by site conditions.

(b) In lieu of Personal Decontamination System requirements of Subpart 7.5 (d) (2) and (6) a mobile system will be used if the site conditions do not allow attached/remote. The mobile will be located as close to the work area as possible.

The Decontamination System will be cordoned off with asbestos warning tape and signs. Prior to removal from the job site at the end of each shift, the mobile system will be HEPA vacuumed, wet wiped completely and sealed. The remote and/or mobile decontamination system's shower may me used as an equipment decontamination washroom. Equipment shall be decontaminated only during times when the shower(s) are not being used by personnel.

(c) In lieu of subpart 7.5 (d) (3) and 7.11(f)(1)(ii)(d) requirements of a airlock (changing chamber) attached to the entrance to the work area(s), a remote airlock (changing chamber) may be utilized where it is logistically not possible to attach it to the work area (examples include but are not limited to the catwalk space and safety restrictions, active track (third rail and right of way, an area is to small to accommodate a regulated area and an airlock (changing chamber) or when the entire roof area is a regulated area and a lift is used, etc) adjacent to the work area entrance, etc.). It will be positioned in close proximity to the regulated work area (such as but not limited to the closest station platform entrance, inactive section of work site, etc.). Curtained doorway with three layers of overlapping polyethylene will be utilized at the entrance to the each work area. The remote airlock(s) (changing chamber(s)) will be cordoned off with asbestos warning tape and signs. Workers will HEPA vacuum and wet wipe in the work area prior to moving towards the remote airlock (changing chamber).

(d) In lieu of the designated pathway requirement of Subpart 7.5 (d)(4), the walkway from the regulated abatement work area to the remote/mobile decontamination unit or next regulated abatement work area will be cordoned off or restricted by certified asbestos workers, during use.

(e) The location of the washroom as required by Subpart 7.5 (f) (2) (i), will be determined by the following site conditions.

(1) If the material to be abated, does not allow the washroom to be constructed inside the regulated work area, the washroom will be constructed outside the regulated work area entrance and attached to the existing airlock used to access the regulated abatement work area.

(2) If a remote airlock (changing chamber) is utilized based on site conditions, the washroom chamber will not be constructed. A waste wash-area will be established inside the work area by placing fire-retardant plastic sheeting on the floor within close proximity to the work area's exit. All waste bags will be wet wiped, Hepa-vacuumed and doubled bagged and or be containerized in the wash-area prior to the waste being transferred to the waste container on site. ACM Abatement operations and cleanup shall not occur during waste transfer operations.

(3) If a waste container is not on-site prior to the waste transfer, a waste holding shall be constructed. The holding area is to temporarily store the bagged or containerized waste until the waste can be transferred to a waste transport vehicle.

(4) Using a waste decontamination enclosure, in accordance with 7.5 (e) and (f) would not be practical when large pieces are removed from roofs and when utilizing a chute. All waste containerization methods, including waste bags, wrapping in plastic sheeting, use of chutes into lined containers, etc will all be labeled appropriately. No abatement work or cleanup activities may occur during waste container transfer operations.

(5) The remote airlock (changing chamber) will be cordoned off with asbestos warning tape and signs.

(f) In lieu of 11.6 (b) (4) (viii), with regards to lining the lift with plastic sheeting, for all lifts used, small perforations will be made in the plastic sheeting covering the walls of the man-lift/scaffolding to allow for appropriate fall protection. These perforations will be sealed as possible without hindering the fall protection mechanisms.

(g) Lifts may by used to transfer waste material to the holding area/trailer/dumpster. The walls/guardrails of the lift will be covered with a minimum 1 layer of plastic.

(h) A distance of approximately 10 feet will be maintained to restrict the general public from the cordoned off work area during the actual removal of ACM, except in those areas/locations where it is logistically impossible (examples include but are not limited to adjacent tracks where there is active train traffic or locations where non-certified individuals are required to enter the 10 foot perimeter to gain access to or perform their job tasks, i.e. train/crane operator, track workers, etc.)

(i) Air sampling shall be performed as indicated in TABLE 2 (Asbestos Project Air Sampling Requirements)

4.4.2 Roofing

(a) The work area will be limited to the roof area from which the asbestos containing roofing materials are actively being removed.

(b) The asbestos work area(s) will be cordoned off with asbestos warning tape and signs, a minimum of 10 feet from non-work areas, except were logically impossible, i.e., where there is not 10 or more feet of roofing.

(c) In lieu of building a tunnel, where an entrance or vehicular door exists beneath the work

area, in accordance with 11.6 (b) (1) (i), a barrier will be constructed at a minimum height of five (5) feet (including height of parapet wall) from the roofing material. The barrier will extend a minimum of five (5) horizontal feet in each direction beyond the entrance or vehicular door. The barrier will be designed and constructed to withstand anticipated static and dynamic loading. Barrier may be constructed of 3/8" plywood or two (2) layers of reinforced polyethylene supported by 2" X 4" studding or other support system designed to withstand anticipated loading.

(d) In lieu of sealing all openings of as specified in 11.6 (b) (4) (i), all openings of the building being abated (including operable windows, doors, ducts, grills, communicating openings, etc.) within a distance of one (1) story, or twelve (12) feet, whichever is less, above and below the roof level and extending ten (10) feet horizontally from the work area, where the ten (10) feet horizontal extension will not impact non MTA property, will be sealed with two layers of at least six-mil flame-retardant plastic sheeting. All vent openings which cannot be sealed will be extended vertically, using plastic sheeting or hardwall barrier, a minimum of eight (8) feet and remain in operation. In lieu of sealing inoperable doors/windows, etc. with caulk/duct tape from the outside as specified in 11.6 (b) (4) (v), they may be sealed, caulked, or duct taped from the inside.

(e) In lieu of sealing windows on the outside of the building being abated, in accordance with 11.6 (b) (4) (iii) (iv), one of the following precautions will be employed:

(1) If a polyethylene drape or curtain is used it will extend five (5) feet beyond the last opening and within ten (10) feet of the regulated area. The drape may be removed following the completion of the section of roof within fifteen (15) feet of the regulated area.

(2) A barrier will be constructed as described, in 4.4.2(c) above. The barrier will extend a minimum of five (5) horizontal feet in each direction beyond window(s), which are not sealed.

(f) Where adjacent buildings equal to or greater in height to the roof level being abated exist, a barrier, as described in 4.4.2(c) above, will be constructed as described above if the adjacent building is within twenty-five (25) horizontal feet of the roof being abated.

(g) Upon completion of the roofing material removal, within each work area, the caulk, plastic tape or interior plastic sheeting may be removed; however, subsequent to the removal, the interior surfaces and trim of each window/opening that was sealed will be thoroughly HEPA vacuumed.

(h) Removed roofing materials will be transported across the roof in enclosed containers with two (2) layers of six-mil polyethylene.

(i) A chute, if used, will be air/dust tight along its lateral perimeter and at the terminal

connection to the dumpster at ground level (solid wall/opened top container). The dumpster will be lined with two (2) layers of six-mil plastic draped loosely over the sides so as to facilitate being wrapped over the top of the load and sealed prior to transport from the site. The upper end of the chute will be furnished with a hinged lid, to be closed when the chute is not used. Prior to transport from the work site, the dumpster will be disconnected from the chute and sealed air/dust tight utilizing six-mil plastic and tape, complete with appropriate labels. The roof waste material will be transported as an asbestos-containing material by appropriate legal methods.

(j) After a work area has been visually inspected and cleaned as per 56-11.6 (e) and waste has been removed as per 56-11.6 (f), non-certified workers may commence replacing the roofing system.

4.4.3 Façades/Siding

(a) The work area will be limited to the area from which the asbestos containing materials are actively being removed. In lieu of this section only applying to the front of the building or a wall of the building that has architectural interest in accordance with 11.6 (b) (4) (v)-(vi), facades will also apply to the remaining exterior wall areas of the building/structure which is not the front.

(b) Should it not be possible to plasticize windows/openings within 25 feet of the work area and/or where adjacent buildings/structures are within 25 feet of the work area, as described in 11.6 (b) (40 (vii), the plastic sheeting used along the sides of the lift/scaffold to waist height will be extended six (6) feet above the platform of the lift/scaffold on three (3) sides, using appropriate framing material. Perforations may be made in the plastic sheeting to allow for proper use of fall protection. These perforations will be resealed so as not to interfere with any fall protection in use.

(c) In lieu of a drop cloth being placed on the ground at a width of ten (10) feet for every floor above the first, maximum of thirty (30) feet, as described in 11.6 (b) (4) (viii), a drop cloth will be placed on the ground under the working area and will extend as far from the exterior of the building out, depending on the size of the area and any impedances (i.e., sidewalks, roadways, adjacent properties, etc) from the building. This area will be cordoned off and only certified personnel will be allowed within the area.

4.5 Modified Containment Removals (SWV# 17-0137)

(a) Background air sample results as per Subpart 4.9 (a) and 6, allows the clearance criteria of the work area to be higher than 0.01 fibers per cubic centimeter. Since background air samples will not be collected, all work areas will be cleared to the more stringent criteria of less than 0.01 fibers per cubic centimeter.

(b) Due to large sizes, shapes of the various MTA/NYCT facilities (Bus depots, Subway Stations, etc.) and the location of work areas, the ambient air sample requirement of Subpart 7.1 (c) (3) will not be performed. The number of air samples collected outside the work area shall be based on the amount of material to be removed for that particular work area. 5 air samples for large work areas, 3 air samples for small work areas and a minimum of 1 air sample shall be collected outside of each minor work area. Common outside the work area air sample shall be collected if a single remote/mobile decontamination unit is utilized for simultaneous abatement of several adjacent regulated work areas.

(c) All attempts will be made to size the clean room in accordance with Subpart 7.5 (b) (8) requirements where permitted by site conditions.

(d) In lieu of Personal Decontamination System requirements of Subpart 7.5 (d) (2) and (6) a mobile system will be used if the site conditions (examples include but are not limited to interference with the MTA/NYCT system operations, the riding public and/or NYCT employees, space restrictions within Bus Depots, Subway Stations, etc.) do not allow an attached/remote decontamination system. The mobile decontamination system will be located as close to the work area as possible (examples include but are not limited to entrance(s) to Bus Depots, Subway Stations, etc.). The Decontamination System will be cordoned off with asbestos warning tape and signs. Prior to removal from the job site at the end of each shift, the mobile system will be HEPA vacuumed, wet wiped completely and sealed. The remote and/or mobile decontamination system's shower may me used as an equipment decontamination washroom. Equipment shall be decontaminated only during times when the shower(s) are not being used by personnel.

(e) In lieu of subpart 7.5 (d) (3) and 7.11(f)(1)(ii)(d) requirements of an airlock attached to the entrance to the regulated work area(s), a remote airlock (changing chamber) may be utilized where it is logistically not possible to attach it to the work area (examples include but are not limited to the catwalk space and safety restrictions, active track (third rail and right of way) adjacent to the work area entrance, etc.). It will be positioned in close proximity to the regulated work area (such as but not limited to the closest station platform entrance, inactive section of work site, etc.). Curtained doorway with three layers of overlapping polyethylene will be utilized at the entrance to each work area. The remote airlock (changing chamber) will be cordoned off with asbestos warning tape and signs. Workers will HEPA vacuum and wet wipe themselves in the work area prior to moving towards the remote airlock (changing chamber).

(f) In lieu of the designated pathway requirement of Subpart 7.5 (d)(4), the walkway from the regulated abatement work area to the remote/mobile decontamination unit or next regulated abatement work area will be cordoned off or restricted by certified asbestos workers during use.

(g) The location of the washroom as required by Subpart 7.5 (f) (2) (i), will be determined by the following site conditions.

(1) If the work area configuration does not allow the washroom to be constructed inside the regulated work area, the washroom will be constructed outside the regulated work area entrance and attached to the existing airlock (changing chamber) used to access the regulated abatement work area.

(2) If a remote airlock is utilized based on site conditions, the washroom chamber will not be constructed. A waste wash-area will be established inside the work area by placing fire-retardant plastic sheeting on the floor within close proximity to the work area's exit. All waste bags will be wet wiped, Hepa-vacuumed and doubled bagged and or be containerized in the wash-area prior to the waste being transferred to the waste container on site. No ACM abatement work or cleanup activities may occur during waste container transfer operations.

(3) If a waste container is not on-site prior to the waste transfer, a waste holding area shall be constructed. The holding area is to temporarily store the bagged or containerized waste until the waste can be transferred to a waste transport vehicle.

(4) The remote airlock (changing chamber) will be cordoned off with asbestos warning tape and signs.

(h) In lieu of plasticizing of isolation barriers with two (2) layers of 6-mil fire-retardant plastic sheeting as prescribed at 7.1 (b) (4); floor, wall and ceiling surfaces (except where abatement of ACM, PACM or asbestos material shall be performed on those specific surfaces) shall be covered with two (2) layers of, at a minimum, six (6) mil fire-retardant plastic sheeting as prescribed at 7.11 (e).

(i) In lieu of the continuous operation of negative air unit(s) requirements of Subpart 7.8 (a) (1), (3), (8), (10) (vii) and 9.1 (a) negative air unit(s) will be active in the work area when work is being performed. The work area will be sealed during non-working hours. Prior to sealing of the work area all surfaces will be wet wiped and/or Hepa-vacuumed and the negative air unit(s) shall continue to operate for an additional 20-30 minutes, post disturbance activity. Upon restarting of the negative air unit(s) the Contractor will ensure that all barriers remain intact and secure, prior to the continuation of abatement activities. Inspection, necessary repairs and documenting will be performed during negative air unit(s) operation.

(j) In lieu of ventilation unit(s) exhaust ducting not to exceed 25 feet in length and negative air units exhausting greater than 15 feet outside of the building/ structure with a four foot high construction fence constructed a minimum of 10 feet from the end of the exhaust tube or bank of tubes requirements of Subpart 7.8 (a)(5), (a)(10)(ii), (viii) and (a)(11), negative air units will be exhausted outside the work area into a non-public / normally

unoccupied area (no box required). If a non-public / normally unoccupied area is not available, the negative air units will be exhausted into a plywood box a minimum of 1' x 1' x 1' with a pre-filter covering the exhaust end into a public / occupied area. The exhaust box will be cordoned off with a tape barrier. An air sample of the negative air exhaust shall be collected in these area(s) and outside of the box.

(k) In lieu of the pre-abatement waiting period requirement of Subpart 8.2 (b), the regulated work area(s) preparation will be continuously monitored to ensure that the integrity of the prep remain intact and secure.

(l) Follow section 9.1(e) for tent enclosures and section 9.1 for all other containment enclosures. Settling/drying times may be reduced to a maximum of 2 hours for friable and 1 hours for non-friable removals.

(m) Following asbestos removal, a single phase of cleaning will be performed (wet-wiping and HEPA-vacuuming). The two layers of sheeting covering floor, wall and ceiling surfaces shall remain in place until final air clearance has been established. After this cleaning is complete, a visual inspection by the Project Monitor and Contractor Supervisor shall be performed to confirm the completeness of abatement and cleanup. After satisfactory inspection results, a thin coat of lockdown encapsulant shall be applied to surfaces which were not the subject of abatement. A single waiting/drying/settling period will be observed. The waiting period to be observed shall be two (2) hours for fireproofing, plaster, TSI, and other friable materials; one (1) hour for manual removal of floor tile/mastic, manual abatement of interior non-friable and intact transite removals. Clearance air sampling shall not commence until the appropriate waiting/drying/settling period has elapsed and the area is dry.

(n) A distance of approximately 10 feet will be maintained to restrict the general public from the cordoned off work area during the actual removal of ACM, except in those areas/locations where it is logistically impossible (examples include but are not limited to: adjacent tracks where there is active train traffic or locations where non-certified individuals are required to enter the 10 foot perimeter to gain access to or perform their job tasks, i.e. train/crane operators, track workers, etc.).

4.6 Manholes (SWV# 17-0146)

(a) Background air sample results as per Subpart 4.9 (a) and 6, allows the clearance criteria of the work area to be higher than 0.01 fibers per cubic centimeter. Since background air samples will not be collected, all work areas will be cleared to the more stringent criteria of less than 0.01 fibers per cubic centimeter.

(b) In lieu of Subpart 4.9 (d), clearance air monitoring of the work area will be conducted in accordance with the following modifications:

(1) Air samples will be collected inside the regulated abatement work area during Asbestos Abatement (Phase II B and IIC) activities until post abatement cleaning is complete. The number of samples collected inside of each individual work area shall be based on the amount of material in the work area. 5 air samples for large work areas, 3 air samples for small work areas and a minimum of 1 air sample shall be collected inside of each minor work area.

(2) The results of the last set air samples collected during Asbestos Abatement (Phase II C) activities will also be used as the clearance air sample criteria. Phase II C shall include the final cleaning and lockdown encapsulation of non-removal surfaces covered with fire-retardant plastic sheeting.

(3) Upon satisfactory visual inspection and provided the airborne fiber concentrations are below 0.01 fibers per cubic centimeter (f/cc), the regulated work area can be dismantled in accordance to subpart 9.3.

(4) If results of the last set of inside regulated work area air samples are equal to or greater than 0.01 f/cc, the Contractor shall continue cleaning of the regulated work area using wet methods with negative air pressure equipment operating. Air samples will be collected inside and outside the regulated abatement work area during the re-cleaning activities and used as the clearance air sampling criteria.

(5) If results of the last set of outside regulated work area air samples are equal to or greater than 0.01 f/cc, the Contractor shall clean-up the surfaces outside the regulated work area using HEPA-vacuums and wet methods. Air samples will be collected outside the regulated abatement work area during the clean-up activities and used as the clearance air sampling criteria.

(c) Due to large sizes, shapes of the various MTA/NYCTA facilities (Bus depots, Subway Stations, etc.) and the location of work areas, the ambient air sample requirement of Subpart 7.1 (c) (3) will not be performed. The number of air samples collected outside the work area shall be based on the amount of material to be removed for that particular work area. 5 air samples for large work areas, 3 air samples for small work areas and a minimum of 1 air sample shall be collected outside of each minor work area. Common outside the work area air sample shall be collected if a single remote/mobile decontamination unit is utilized for simultaneous abatement of several adjacent regulated work areas.

(d) All attempts shall be made to size the clean room in accordance with Subpart 7.5 (b) (8) requirements where permitted by site conditions.

(e) In lieu of Personal Decontamination System requirements of Subpart 7.5 (d) (2) and (6) a mobile system shall be used if the site conditions (examples include but are not limited to interference with the MTA/NYCTA system operations, the riding public and/or NYCT

employees, space restrictions within Bus Depots, Subway Stations, etc.) do not allow an attached/remote decontamination system. The mobile decontamination system shall be located as close to the work area as possible (examples include but are not limited to entrance(s) to Bus Depots, Subway Stations, etc.). The Decontamination System shall be cordoned off with asbestos warning tape and signs. Prior to removal from the job site at the end of each shift, the mobile system shall be HEPA vacuumed, wet wiped completely and sealed. The remote and/or mobile decontamination system's shower may me used as an equipment decontamination washroom. Equipment shall be decontaminated only during times when the shower(s) are not being used by personnel.

(f) In lieu of subpart 7.5 (d) (3) and 7.11(f)(1)(ii)(d) requirements of an airlock attached to the entrance to the regulated work area(s), a remote airlock (changing chamber) may be utilized where it is logistically not possible to attach it to the work area (examples include but are not limited to the catwalk space and safety restrictions, active track (third rail and right of way) adjacent to the work area entrance, etc.). The remote airlock shall be positioned in close proximity to the regulated work area (such as but not limited to the closest station platform entrance, inactive section of work site, etc.). Curtained doorway with three layers of overlapping polyethylene shall be utilized at the entrance to each work area. The remote airlock (changing chamber) shall be cordoned off with asbestos warning tape and signs. Workers shall HEPA vacuum and wet wipe themselves in the work area prior to moving towards the remote airlock (changing chamber).

(g) In lieu of the designated pathway requirement of Subpart 7.5 (d)(4), the walkway from the regulated abatement work area to the remote/mobile decontamination unit or next regulated abatement work area shall be cordoned off or restricted by certified asbestos workers during use.

(h) The location of the washroom as required by Subpart 7.5 (f)(2)(i), shall be determined by the following site conditions:

(1) If the work area configuration does not allow the washroom to be constructed inside the regulated work area, the washroom shall be constructed outside the regulated work area entrance and attached to the existing airlock (changing chamber) used to access the regulated abatement work area.

(2) If a remote airlock (changing chamber) is utilized based on site conditions, the washroom chamber shall not be constructed. A waste wash-area shall be established inside the work area by placing fire-retardant plastic sheeting on the floor within close proximity to the work area's exit. All waste bags shall be wet wiped, HEPA-vacuumed and doubled bagged and or be containerized in the wash-area prior to the waste being transferred to the waste container on site. No ACM abatement work or cleanup activities may occur during waste transfer operations.

(3) If a waste container is not on-site prior to the waste transfer, a waste holding shall be constructed. The holding area is to temporarily store the bagged or containerized waste until the waste can be transferred to a waste transport vehicle.

(4) The remote airlock (changing chamber) shall be cordoned off with asbestos warning tape and signs.

(i) In lieu of the continuous operation of negative air unit(s) requirements of Subpart 7.8 (a) (1), (3), (8), (10) (vii) and 9.1 (a) negative air unit(s) shall be active in the work area when work is being performed. The work area shall be sealed during non-working hours. Prior to sealing of the work area all surfaces shall be wet wiped and/or HEPA-vacuumed and the negative air unit(s) shall continue to operate for an additional 20-30 minutes, post disturbance activities. Upon restarting of the negative air unit(s) the Contractor shall ensure that all barriers remain intact and secure, prior to the continuation of abatement activities. Inspection, necessary repairs and documenting shall be performed during negative air unit(s) operation.

(j) In lieu of ventilation unit(s) exhaust ducting not to exceed 25 feet in length and negative air units exhausting greater than 15 feet outside of the building/ structure with a four foot high construction fence constructed a minimum of 10 feet from the end of the exhaust tube or bank of tubes requirements of Subpart 7.8 (a)(5), (a)(10)(ii), (viii) and (a)(11), negative air units shall be exhausted outside the work area into a non-public / normally unoccupied area (no box required). If a non-public / normally unoccupied area is not available, the negative air units shall be exhausted into a plywood box a minimum of 1’ x 1’ x 1’ with a pre-filter covering the exhaust end into a public / occupied area. The exhaust box shall be cordoned off with a tape barrier. An air sample of the negative air exhaust shall be collected in these area(s) and outside of the box.

(k) In lieu of Engineering Controls requirements of Subpart 7.8, localized engineering controls (HEPA Vacuum) shall be utilized during the abatement in “Reach-in Access Manhole(s)”.

(l) All debris in the manhole(s) shall be removed during the pre-cleaning phase and disposed of as asbestos contaminated waste.

(m) Preparation requirements:

1) All Manhole(s)

i) In Lieu of plasticizing requirements of Subpart 7.11 (f) (1), after all debris clean-up is complete, 1 layer of 6-mil fire retardant plastic sheeting shall be secured to the manhole floor.

ii) The manhole(s) entrances shall be sealed between work shifts with a minimum of 2 layer of 6-mil fire retardant plastic sheeting posted with

appropriate signage. For Street / Platform Access Manhole(s), first, the opening shall be sealed, followed by the replacement of the manhole cover(s).

2) Reach-in Access Manhole(s):

i) In Lieu of critical and isolation barrier requirements of Subpart 7.11 (a), (b), critical barriers shall consist of filling holes, cracks or inlets with foam or caulking.

ii) In lieu of Work Area Preparation requirements of Subpart 7.11 (f)(1), each work area shall be cordoned off with asbestos warning tape and signs at a minimum of three-feet from each side and in front of the manhole opening. One layer of plastic sheeting shall be extended three feet onto the track from the working side of the manhole's opening.

iii) In lieu of engineering controls consistent with the requirements of 56-7.8, the suction end of HEPA vacuum hose shall be placed inside the manhole access. The HEPA vacuum shall run while the matrix of the ACM is being disturbed.

(n) A one (1) hour pre-abatement waiting period and settling/drying time for large projects/work areas and a thirty (30) minute pre-abatement waiting period and settling/drying time for small projects/work areas will be observed.

(o) All friable ACM (cementitious and non-cementitious cable insulation and cementitious duct seal) and friable ACM and non-ACM that are interconnected shall be abated as per Subpart 8.4 (a) (Glovebag procedures).

(p) Non-friable ACM (transite panels, duct sleeve, duct seals, wall and/or friable ACM in non-ACM containers, etc.) shall be removed intact from the substrate and wrapped in 2 layers of 6-mil fire retardant plastic sheeting.

(q) In lieu of final cleanup procedures requirements of Subpart 9.1, one stage of post-abatement cleaning of all areas abated shall be performed at the conclusion of Phase II C activities. Additionally, floor plastic sheeting and isolation barriers shall also be cleaned if applicable. After the post-abatement cleaning is complete a visual inspection by the Project Monitor and Contractor Supervisor shall be performed to confirm that the scope of abatement work is complete, and the area is dry and free of visible debris/residue. If re-cleaning is required, an additional visual inspection shall be performed. Additional air samples will be collected during all re-cleaning activities and will be utilized as the clearance air sample criteria. Waiting/settling and drying times will be applicable.

(r) A distance of approximately 10 feet shall be maintained to restrict the general public from the cordoned off work area during the actual removal of ACM, except in those areas/locations where it is logistically impossible (examples include but are not limited to:

adjacent tracks where there is active train traffic or locations where non-certified individuals are required to enter the 10-foot perimeter to gain access to or perform their job tasks, i.e. train/crane operators, track workers, etc.).

(s) If the shut down and lock out of all electrical power in the manhole is not possible the abatement of ACM shall be performed in accordance with the approved EPA Dry Removal Variance.

4.7 Multiple Materials Removals (SWV# 17-0141)

(a) The work area shall be plasticized as required by the NYS Department of Labor approved MTA/NYCTA System Wide variance based on the most stringent case of removal.

(b) Airlock (changing chamber) shall be constructed as per the relief granted by the NYS Department of Labor approved MTA/NYCTA System Wide variance based on the most stringent case of removal.

(c) Final cleaning, final settling/drying and visual inspections requirements shall be preformed and observed as per the relief granted by the NYS Department of Labor approved MTA/NYCTA System Wide variance based on the most stringent case of removal.

(d) The final clearance air sampling will be performed as per the relief granted by the NYS Department of Labor approved MTA/NYCTA System Wide variance based on the most stringent case of removal.

4.8 Track Equipment Removals (SWV# 17-0143)

(a) Background air sample results as per Subpart 4.9 (a) and 6, allows the clearance criteria of the work area to be higher than 0.01 fibers per cubic centimeter. Since background air samples will not be collected, all work areas will be cleared to the more stringent criteria of less than 0.01 fibers per cubic centimeter.

(b) In lieu of Subpart 4.9 (d), clearance air monitoring of the work area will be conducted in accordance with the following modifications:

(1) Air samples will be collected inside the regulated abatement work area during Asbestos Abatement (Phase II B and IIC) activities until final visual inspection is acceptable. The number of samples collected inside of each individual work area shall be based on the amount of material in the work area. 5 air samples for large work areas, 3 air samples for small work areas and a minimum of 1 air sample shall be collected inside of each minor work area.

(2) The results of the last set air samples collected during Asbestos Abatement (Phase II C) activities will also be used as the clearance air sample criteria.

(c) Due to large sizes, shapes of the various MTA/NYCTA facilities (Bus depots, Subway Stations, etc.) and the location of work areas, the ambient air sample requirement of Subpart 7.1 (c) (3) will not be performed. The number of air samples collected outside the work area shall be based on the amount of material to be removed for that particular work area. 5 air samples for large work areas, 3 air samples for small work areas and a minimum of 1 air sample shall be collected outside of each minor work area. Common outside the work area air sample shall be collected if a single remote/mobile decontamination unit is utilized for simultaneous abatement of several adjacent regulated work areas.

(d) All attempts shall be made to size the clean room in accordance with Subpart 7.5 (b)(8) requirements where permitted by site conditions.

(e) In lieu of Personal Decontamination System requirements of Subpart 7.5 (d) (2) and (6) a mobile system shall be used if the site conditions (examples include but are not limited to interference with the MTA/NYCTA system operations, the riding public and/or NYCT employees, space restrictions within Bus Depots, Subway Stations, etc.) do not allow an attached/remote decontamination system. The mobile decontamination system shall be located as close to the work area as possible (examples include but are not limited to entrance(s) to Bus Depots, Subway Stations, etc.). The Decontamination System shall be cordoned off with asbestos warning tape and signs. Prior to removal from the job site at the end of each shift, the mobile system shall be HEPA vacuumed, wet wiped completely and sealed. The remote and/or mobile decontamination system's shower may me used as an equipment decontamination washroom. Equipment shall be decontaminated only during times when the shower(s) are not being used by personnel.

(f) In lieu of subpart 7.5 (d) (3) requirements of an airlock attached to the entrance to the regulated work area(s), a remote airlock (changing chamber) may be utilized where it is logistically not possible to attach it to the work area (examples include but are not limited to the catwalk space and safety restrictions, active track (third rail and right of way) adjacent to the work area entrance, etc.). The remote airlock shall be positioned in close proximity to the regulated work area (such as but not limited to the closest station platform entrance, inactive section of work site, etc.). Curtained doorway with three layers of overlapping polyethylene shall be utilized at the entrance to each work area. The remote airlock (changing chamber) shall be cordoned off with asbestos warning tape and signs. Workers shall HEPA vacuum and wet wipe themselves in the work area prior to moving towards the remote airlock (changing chamber).

(g) In lieu of the designated pathway requirement of Subpart 7.5 (d)(4), the walkway from the regulated abatement work area to the remote/mobile decontamination unit or next regulated abatement work area shall be cordoned off or restricted by certified asbestos workers during use.

(h) In lieu of a washroom within the regulated abatement work area as required by Subpart 7.5 (f) (2) (i), each piece of equipment shall be HEPA vacuumed and wet wiped prior to leaving the Work Area.

(i) A waste holding area shall be constructed. It shall be located in the restricted area. The holding area is to temporarily store the bagged or containerized waste until the waste can be transferred to a waste container or a waste transport vehicle.

(j) In lieu of Engineering Controls requirements of Subpart 7.8, localized engineering controls (HEPA Vacuum) shall be utilized during the abatement.

(k) In lieu of Work Area Preparation requirements of Subpart 7.11, each work area shall be defined as three-foot from each side and in front and/or below the track equipment transite components, electrical boxes, switches, sealants and other non-friable components, if possible. One layer of plastic sheeting shall be secured to floor of the defined work area, below or in front of the equipment to be abated.

(l) Any time wire insulation is encountered in conjunction with track equipment removal, and is either assumed or confirmed to be ACM, the cutting of the wire insulation shall occur in a glovebag and exposed ends shall be sealed.

(m) A work train may be utilized during train service disruption. It will consist of (i) a diesel engine, (ii) a rider car for decontamination enclosure, (iii) a flatbed car with a mechanical crane and a remote airlock and (iv) a second flatbed car with waste holding area enclosure with floor, wall and ceiling covered with two layers of six mil plastic sheeting. Section of the floor of the first flatbed with mechanical crane, shall be prepped with two layers of six mil plastic sheeting.

(n) A distance of approximately 10 feet shall be maintained to restrict the general public from the cordoned off work area during the actual removal of ACM, except in those areas/locations where it is logistically impossible (examples include but are not limited to: adjacent tracks where there is active train traffic or locations where non-certified individuals are required to enter the 10 foot perimeter to gain access to or perform their job tasks, i.e. train/crane operators, track workers, etc.)

(o) **Preparation procedure <u>PROCEDURE 1</u>:**
Equipment containing ACM to be removed in its entirety utilizing a mobile truck decontamination unit and/or work train.

(1) For friable fibrous sealant at bottom of cases on elevated structures, a mobile truck decontamination unit shall be used. A man-bucket or scissors lift shall be used from street level to access the cases at track level. The perimeter of the lift shall be enclosed with a vision barrier consisting of secured canvas or tarp material. The lift shall be lined with two layers of six mil plastic sheeting. Beneath

the track cases, expandable foam shall be applied into the open base of the track case, sealing the opening.

(2) Equipment prepared at step a., if necessary, while the equipment is still fastened to its base, shall be wrapped in two layers of six mil plastic sheeting and labeled as asbestos-containing material.

(3) Each piece of equipment shall be unfastened and hoisted using mechanical crane arm or by manual means. The equipment shall be placed on the first flatbed car's plasticized portion of the floor. This flatbed section will now be designated as the work area and shall be cordoned off with asbestos warning tape.

(4) In lieu of Waste Decontamination System Enclosure and Equipment and Waste Container Decontamination and Removal Procedures of Subpart 7.5(f) and 8.9 respectively, each piece of equipment shall be HEPA vacuumed and wet wiped prior to lifting from the work area and placing in into the second flatbed waste holding area. Workers completing this task shall remain in the work area for the duration of the removal to observe any inadvertent damage to the case causing a possible release of asbestos fibers. The mobile and/or work train decontamination system's shower may be used as an equipment decontamination washroom. Equipment shall be decontaminated only during times when the shower(s) are not being used by personnel.

(5) The crane operator will perform the hoisting of the sealed, wrapped track equipment. The operator will not be "inside" the work area. The crane operator will have OSHA asbestos Awareness training. The crane operator will only participate in the transport of material not the abatement.

(6) Upon completion of the hoisting phase the work train will return to the train yard, where the wrapped cases shall be transferred by the Contractor to the waste container for future collections and disposal.

(7) Hoisting of equipment may involve multiple shifts.

(p) **Preparation procedure <u>PROCEDURE 2</u>:**
Equipment containing non-friable ACM in a non-ACM container and non-friable ACM accessories to be removed intact, in its entirety utilizing a remote decontamination unit.

(1) For the abatement of small, light-weight, isolated components such as the signal lights, etc. and for non-friable track accessories such as 3rd rail protection boards, etc. located on the side of the Right-of Way, for which a work train is unnecessary, a remote/mobile decontamination unit on the station near the work area shall be utilized.

(2) The Contractor shall disconnect or unfasten the small component from its base or support. Note that all components with ACM shall be removed intact without any disturbance to the ACM matrix during removal operations. If power tools are utilized to aid in unfastening components and may disturb the ACM, the power tools shall be manufactured with HEPA exhaust attachment and shall be utilized as per manufacturer's instructions. The immediate area from which the component is located shall be cordoned off as indicated in item k above to establish a regulated work area. The item shall be wrapped in two layers of 6-mil plastic sheeting or double bagged and labeled as asbestos containing material. The wrapped item shall be transported from its location on the way-side to the remote/mobile decontamination unit. If a track cart is utilized it shall be protected with two layers of 6 mil reinforced plastic sheeting. Subsequently, a visual inspection will be performed by the designated Project Monitor to confirm that the ACM has been properly handled and prepared for disposal with no visible disturbance to the ACM.

(3) Regulated abatement work area preparation and asbestos handling air samples as per Subpart 4.9 (b) and (c) for abatement of non-friable ACM, where the material can be removed intact with no disturbance to the material matrix, will not be performed. In lieu of performing air monitoring the removal will be continuously monitored by MTA/NYCTA's on-site representative (Project Monitor) to ensure the non-friable material(s) are being removed intact utilizing wet methods and upon completion of removal, the clearance criteria will consist of a visual inspection by the Supervisor representing the abatement Contractor and the Project Monitor. In addition, as an added precautionary step to protect the health and safety of the workers, MTA/NYCTA employees, and the general public, MTA/NYCTA's on site Project Monitor will collect full-shift, Personal Worker Exposure Samples for 50% of the abatement Contractor's work force. The samples will be collected as stipulated in 29 CFR 1926.1101 9 (C) (1) to monitor that no employee is exposed to airborne fiber concentrations above the Permissible Exposure Level (0.1 fibers/cc) as an 8 Hour Time Weighted Average. Upon completion of the satisfactory visual inspection, and breakdown of the Work Area, the personal exposure samples collected by the Project Monitor will be taken to an accredited laboratory for analysis.

(4) During abatement work on energized tracks, in lieu of using 3 layers of plastic sheeting to protect live electric (3rd rail) the Contractor shall cover the live rail and protection board using wooden enclosure beneath ¾ inch rubber mats.

(q) **Preparation procedure <u>PROCEDURE 3</u>:**
Equipment containing ACM to be abated at a different location

(1) Refer to section o. Preparation procedure PROCEDURE 1 – Steps 1, 2, 3, 4, and 5 above.

(2) Upon completion of hoisting phase, the work train will return to another location such as the train yard, where the wrapped cases shall be transferred by the Contractor to a Negative Pressure Tent Abatement Work Area Enclosure designated for ACM removal following the requirements set forth in Industrial Code Rule ICR 56. This tent shall be constructed using plywood barrier walls and two layers of six mil plastic sheeting with a flapped entrance with an attached airlock and washroom. The ACM waste shall be double bagged and removed from the Work Area. The non-asbestos containing cases shall be wet wiped and moved to a clean designated area outside the containment for recycling. The enclosure shall be sealed with a lockable door following each shift.

(r) **Preparation procedure <u>PROCEDURE 4</u>:**
Equipment containing ACM to be abated in place.

(1) For non-friable material such as cable sealants, etc. located beneath track at bottom of equipment on elevated structures the most practical means of accessing the material is from the street level.

(2) A mobile truck decontamination unit shall be utilized.

(3) It shall be necessary to utilize a man-bucket or scissors lift or scaffolding to access the material.

(4) The work area will be defined as either the platform of the scaffolding or man lift.

(5) As such, the floor of the platform shall be plasticized, and a regulated area established on the platform using asbestos warning tape.

(6) For non-friable material such as cable sealants on metal conduit etc., located on the side of the Right-of Way, where a man-bucket or scissors lift or scaffolding is not required, one layer of plastic sheeting shall be secured to floor below or in front of the material to be abated. The non-friable material shall be wrapped in two layers of six mil plastic sheeting or double bagged, and properly disposed.

(s) **Air sampling locations for abatement utilizing Work Train:**

(1) Two of the required outside of the Work Area samples will be taken at the following Work train locations:

(a) the Holding Area where the double wrapped waste is held and

(b) the outside of the decontamination unit on the rider car

(c) the remaining required outside samples shall be located outside the work area.

(2) Work Train Clearance at Train Yard – The rider car and two flat beds shall be cleaned by the Contractor and clearance air samples will be taken to clear the Work Train. One sample will be taken at each of the following locations:

(a) On rider car

(b) On first flat bed

(c) On second flat bed

(d) Three on the track bed outside the work train

Upon the receipt of acceptable Work Train Clearance samples as described above**,** the work train decontamination enclosure on the rider car, flatbed work area and flatbed waste holding area shall be broken down.

4.9 Non-Friable Exterior Canopies, etc. (SWV# 17-0145)

4.9.1 General

(a) All attempts shall be made to size the clean room in accordance with Subpart 7.5 (b) (8) requirements where permitted by site conditions.

(b) In lieu of Personal Decontamination System requirements of Subpart 7.5 (d)(2) and (6) a mobile system shall be used if the site conditions (examples include but are not limited to interference with the MTA/NYCTA system operations, the riding public and/or NYCT employees, space restrictions within subway stations, etc.) do not allow attached/remote. The mobile system shall be located as close to the work area as possible (examples include but limited to entrances to subway stations, etc.). The Decontamination System shall be cordoned off with asbestos warning tape and signs. Prior to removal from the job site at the end of each shift, the mobile system shall be HEPA vacuumed, wet wiped completely and sealed.

(c) In lieu of subpart 7.5 (d) (3) requirements of an airlock (changing chamber) attached to the entrance to the work area(s), a remote airlock (changing chamber) may be utilized where it is logistically not possible to attach it to the work area (examples include but are not limited to the catwalk space and safety restrictions, active track (third rail and right of way, and an airlock (changing chamber) or when the a lift is used, etc) adjacent to the work area entrance, etc.). The remote airlock shall be positioned in close proximity to the regulated work area (such as but not limited to the closest station platform entrance, inactive section of work site, etc.). Curtained doorway with three layers of overlapping polyethylene shall be utilized at the entrance to each work area. The remote airlock(s) (changing chamber(s)) shall be cordoned off with asbestos warning tape and signs. Workers shall HEPA vacuum and wet wipe in the work area prior to moving towards the remote airlock (changing chamber).

(d) In lieu of the designated pathway requirement of Subpart 7.5 (d)(4), the walkway from the regulated abatement work area to the remote/mobile decontamination unit or next regulated abatement work area shall be cordoned off or restricted by certified asbestos workers.

(e) The location of the washroom as required by Subpart 7.5 (f)(2)(i), shall be determined by the following site conditions:

(1) If the material to be abated, does not allow the washroom to be constructed inside the regulated work area, the washroom shall be constructed outside the regulated work area entrance and attached to the existing airlock (changing chamber) used to access the regulated abatement work area.

(2) If a remote airlock (changing chamber) is utilized based on site conditions, the washroom chamber shall not be constructed. A waste wash-area shall be established inside the work area by placing fire-retardant plastic sheeting on the floor within close proximity to the work area's exit. All waste bags shall be wet wiped, HEPA-vacuumed and doubled bagged and or be containerized in the wash-area prior to the waste being transferred to the waste container on site. No ACM abatement or cleanup activities may occur during waste container transfer operations.

(3) If a waste container is not on-site prior to the waste transfer, a waste holding area shall be constructed. The holding area is to temporarily store the bagged or containerized waste until the waste can be transferred to a waste transport vehicle.

(4) Using a waste decontamination enclosure, in accordance with 7.5 (f) would not be practical when large pieces are removed from canopies and when utilizing a chute. The large pieces shall be wrapped in two layers of plastic sheeting, wet wiped and HEPA vacuumed, prior to exiting the work area. All waste containerization methods, including waste bags, wrapping in plastic sheeting, use of chutes into lined containers, etc shall all be labeled appropriately.

(5) The remote airlock (changing chamber) shall be cordoned off with asbestos warning tape and signs.

(f) After a work area has been visually inspected and cleaned as per 56-11.6 (e) and waste has been removed as per 56-11.6 (f), non-certified workers may commence replacement work in the cleaned area.

(g) In lieu of 11.6 (b) (4) (viii), with regards to lining the lift with plastic sheeting, for all lifts used, small perforations shall be made in the plastic sheeting covering the walls of the man-lift/scaffolding to allow for appropriate fall protection. These perforations shall be

sealed as possible without hindering the fall protection mechanisms.

(h) Lifts may by used to transfer waste material to the holding area/trailer/dumpster. The walls/guardrails of the lift shall be covered with a minimum 1 layer of plastic.

(i) A distance of approximately 10 feet shall be maintained to restrict the general public from the cordoned off work area during the actual removal of ACM, except in those areas/locations where it is logically impossible (examples include but are not limited to: adjacent tracks where there is active train traffic or locations where non-certified individuals are required to enter the 10 feet perimeter to gain access to or perform their job tasks, i.e., train/crane operators, track workers, etc.)

(j) Air sampling shall be performed as indicated in **TABLE 2** (Asbestos Project Air Sampling Requirements).

4.9.2 Canopies

(a) The canopies are constructed of transite or are a tar material over a substrate. The work area shall be limited to the canopy section from which the asbestos-containing materials are actively being removed. If the canopy is planned to be abated in segments, then each segment shall be treated as a work area.

(b) The following shall not be constructed due to the nature of the work areas:

(1) The building of a tunnel, where an entrance or vehicular door exists beneath the work area, in accordance with 11.6 (b) (1) (i), will not be necessary due to the configuration of the canopy areas.

(2) The sealing of all openings as specified in 11.6 (b) (4) (i)(ii), all openings of the building being abated (including operable windows, doors, ducts, grills, communicating openings, etc.) within a distance of one (1) story, or twelve (12) feet, whichever is less, above and below the roof level and extending ten (10) feet horizontally from the work area.

(3) The sealing of windows on the outside of the building being abated or where an adjacent building is equal to or greater in height to the roof level is being abated, in accordance with 11.6 (b) (4) (iii) (iv).

(c) The work area will be separated from non-work areas by construction of barriers as follows:

<u>Above canopy</u>

(1) A barrier, constructed of, plastic sheeting, shall be constructed around the perimeter above the section of the canopy being abated. The barrier shall be a minimum of four (4) feet in height.

Below canopy

(2) Platform or decking shall be constructed above the station platform but beneath the asbestos canopy materials. This platform/decking system in conjunction with the barrier constructed above the section of canopy being abated shall form an envelope. Passengers and the general public will be permitted to walk beneath the scaffolding/decking system during abatement.

(3) Alternatively, barriers, constructed of at minimum, $^{3}/_{8}$ inch plywood, 6 mil reinforced plastic sheeting or tarps, shall be constructed around the perimeter below the canopy being abated. The barriers shall extend from the bottom of the canopy to the station platform. Passengers and the general public will be restricted from the area enclosed by these barriers.

(4) Where the substrate of the canopy is not being removed below canopy preparation (subparagraphs b & c) above shall not be utilized.

(5) During complete track shutdowns, plastic sheeting may be used to construct the barriers.

Work Train

(6) A personal decontamination unit shall be constructed on the work train, while it is in the yard.

(7) A visual barrier shall be constructed on one side of a train car, towards the active platform.

(8) Once the train arrived at the station, a work area shall be extended to the train by affixing the work train to the work area utilizing, at a minimum, barrier tape.

(9) Following removal or at the end of each shift, the work train will proceed to the yard. The containerized waste shall be transported to the yard (holding area/trailer/dumpster) via the work train for disposal

General

(10) The barriers shall be designed and constructed to withstand anticipated loading.

(11) Asbestos warning signage shall be posted on the non-work side of the barrier at a maximum spacing of twenty (20) feet.

(d) Asbestos containing caulking and sealant, which must be removed to facilitate installation of barriers, shall be removed by manual methods concurrently HEPA-vacuuming debris as the caulking and sealants are removed from the substrate. Following installation of barriers beneath the canopy, panels may be removed, only as required, to afford access for construction of the barrier above the canopy.

(e) Access to the work area will be through an airlock (changing chamber) attached to the work area barriers.

(f) The asbestos canopy shall be removed following installation of temporary structures and two (2) layers of surface polyethylene on the work area side of the temporary structures. The transite or tar like weatherproofing canopy material shall be removed using manual methods whenever possible. Transite shall be handled and lowered to the ground in a manner to prevent breakage.

(g) A chute, if used, shall be air/dust tight along its lateral perimeter and at the terminal connection to the dumpster at ground level (solid wall/opened top container). The dumpster shall be lined with two (2) layers of six-mil plastic draped loosely over the sides so as to facilitate being wrapped over the top of the load and sealed prior to transport from the site. The upper end of the chute shall be furnished with a hinged lid, to be closed when the chute is not used. Prior to transport from the work site, the dumpster shall be disconnected from the chute and sealed air/dust tight utilizing six-mil plastic and tape, complete with appropriate labels. The roof waste material shall be transported as an asbestos-containing material in accordance with applicable laws and regulations.

4.10 Caulking/Glazing Removals (SWV# 17-0144)

4.10.1 General – Friable and non-friable abatement located on the interior and exterior of structures, stations, facilities, etc.

(a) All attempts shall be made to size the clean room in accordance with Subpart 7.5 (b)(8) requirements where permitted by site conditions depending on the size of the area and pedestrian and vehicular traffic conditions.

(b) In lieu of Personal Decontamination System requirements of Subpart 7.5 (d) (2) and (6) a mobile system shall be used if the site conditions (examples include but are not limited to interference with the MTA/NYCTA system operations, the riding public and/or NYCT employees, space restrictions within Bus Depots, Subway Stations, etc.) do not allow an attached/remote decontamination system. The mobile decontamination system shall be located as close to the work area as possible (examples include but are not limited to entrance(s) to Bus Depots, Subway Stations, etc.). The Decontamination System shall be cordoned off with asbestos warning tape and signs. Prior to removal from the job site at the end of each shift, the mobile system shall be HEPA vacuumed, wet wiped completely and sealed. The remote and/or mobile decontamination system's shower may me used as an equipment decontamination washroom. Equipment shall be decontaminated only during times when the shower(s) are not being used by personnel.

(c) In lieu of subpart 7.5 (d) (3) and 7.11(f)(1)(ii)(d) requirements of an airlock (changing chamber) attached to the entrance to the work area(s), a remote airlock (changing chamber) may be utilized where it is logistically not possible to attach it to the work area

(examples include but are not limited to the catwalk, active roadway, an area is too small to accommodate a regulated area and an airlock (changing chamber) or when a lift is used. The remote airlock shall be positioned in close proximity to the regulated work area (such as but not limited to the closest station platform entrance, inactive section of work site, etc.). Work areas that utilize a tent shall have a curtained doorway with three layers of overlapping polyethylene at the entrance to each work area. The remote airlock(s) (changing chamber(s)) shall be cordoned off with asbestos warning tape and signs. Workers shall HEPA vacuum and wet wipe in the work area prior to moving towards the remote airlock (changing chamber).

(d) In lieu of the designated pathway requirement of Subpart 7.5 (d)(4), the walkway from the regulated abatement work area to the remote/mobile decontamination unit or next regulated abatement work area shall be cordoned off or restricted by certified asbestos workers, during use.

(e) The location of the washroom as required by Subpart 7.5 (f)(2)(i), shall be determined by the following site conditions:

(1) If the material to be abated, does not allow the washroom to be constructed inside the regulated work area, the washroom shall be constructed outside the regulated work area entrance and attached to the existing airlock used to access the regulated abatement work area.

(2) If a remote airlock (changing chamber) is utilized based on site conditions, the washroom chamber shall not be constructed. A waste wash-area shall be established inside the work area by placing fire-retardant plastic sheeting on the floor within close proximity to the work area's exit. All waste bags shall be wet wiped, HEPA-vacuumed and doubled bagged and or be containerized in the wash-area prior to the waste being transferred to the waste container on site. No ACM abatement or clean-up activities may occur during waste container transfer operations.

(3) If a waste container is not on-site prior to the waste transfer, a waste holding shall be constructed. The holding area is to temporarily store the bagged or containerized waste until the waste can be transferred to a waste transport vehicle.

(4) The remote airlock (changing chamber) shall be cordoned off with asbestos warning tape and signs.

(f) In lieu of 11.6 (b) (4) (viii), with regards to lining the lift with plastic sheeting, For all lifts used, small perforations shall be made in the plastic sheeting covering the walls of the man-lift/scaffolding to allow for appropriate fall protection. These perforations shall be sealed as possible without hindering the fall protection mechanisms.

(g) A distance of approximately 10 feet shall be maintained to restrict the general public from the cordoned off work area during the actual removal of ACM, except in those areas/locations where it is logistically impossible (examples include but are not limited to active roadway where there is active train, pedestrian, or vehicular traffic.)

(h) In lieu of final cleanup procedures requirements of Subpart 9.1 one stage of post-abatement cleaning of all areas abated shall be performed at the conclusion of Phase II C activities. After the post-abatement cleaning is complete and settling/drying time has elapsed, a visual inspection by the Project Monitor and Contractor supervisor shall be performed to confirm that the scope of abatement work is complete, and the area is dry and free of visible debris/residue. If re-cleaning is required an additional visual inspection shall be performed. Additional air samples will be collected during all re-cleaning activities and will be utilized as the clearance air sample criteria.

(i) Background air sample results as per Subpart 4.9 (a), allows the clearance criteria of the work area to be higher than 0.01 fibers per cubic centimeter. Since background air samples will not be collected, all work areas will be cleared to the more stringent criteria of less than 0.01 fibers per cubic centimeter.

(j) In lieu of Subpart 4.9 (d) clearance air monitoring will be conducted in accordance with the following modifications:

(1) Air samples will be collected inside the regulated abatement work area during Asbestos Abatement (Phase II B and II C) activities until post abatement cleaning is complete. The number of samples collected inside of each individual work area shall be based on the amount of material in the work area. 5 air samples for large work areas, 3 air samples for small work areas and a minimum of 1 air sample shall be collected inside of each minor work area.

(2) The results of the last set air samples collected during Asbestos Abatement (Phase II C) will also be used as the clearance air sample criteria. Phase II C shall include the final cleaning and lockdown encapsulation of non-removal surfaces covered with fire-retardant plastic sheeting.

(3) After a satisfactory visual inspection and provided the airborne fiber concentrations are below 0.01 fibers per cubic centimeter (f/cc), the regulated work area can be dismantled in accordance to subpart 9.3.

(4) If results of the last set of inside regulated work area air samples are equal to or greater than 0.01 f/cc, the Contractor shall continue cleaning of the regulated work area using wet methods. Negative air pressure equipment will be operating where appropriate. Air samples will be collected inside and outside the regulated abatement work area during the re-cleaning activities and used as the clearance air sampling criteria.

(5) If results of the last set of outside regulated work area air samples are equal to or greater than 0.01 f/cc, the Contractor shall clean-up the surfaces outside the regulated work area using HEPA-vacuums and wet methods. Air samples will be collected outside the regulated abatement work area during the clean-up activities and used as the clearance air sampling criteria.

(k) Due to large sizes, shapes of the various MTA/NYCTA facilities (Bus depots, Subway Stations, etc.) and the location of work areas, the ambient air sample requirement of Subpart 7.1 (c) (3) will not be performed. The number of air samples collected outside the work area shall be based on the amount of material to be removed for that particular work area. Five (5) air samples for large work areas, three (3) air samples for small work areas and a minimum of one (1) air sample shall be collected outside of each minor work area. Common outside the work area air sample shall be collected if a single remote/mobile decontamination unit is utilized for simultaneous abatement of several adjacent regulated work areas.

4.10.2 Friable Caulking/Glazing Abatement

(a) Tent operations shall be utilized for any size asbestos abatement project as described in Subpart 56-7.11(f) (1) and procedures identified within this variance. The tent shall remain in place until satisfactory air testing results have been obtained. Negative air shall be utilized as per 56-7.8 for minor and small asbestos abatement projects. 56-7.8 shall be followed for large asbestos abatement projects with the exception that 56-7.8(a)(8) will be increased to eight (8) air changes per hour. Note that the requirements will be based on the quantity of material(s) in each regulated abatement work area.

(b) A one (1) hour pre-abatement waiting period and settling/drying time for large projects and a thirty (30) minute pre-abatement waiting period and settling/drying time for small projects and a twenty (20) minute waiting period and settling/drying time for minor projects shall be observed.

(c) In lieu of the continuous operation of negative air unit(s) requirements of Subpart 7.8 (a) (1), (3), (8), (10) (vii) and 9.1 (a) negative air unit(s) shall be active in the work area when work is being performed. The work area shall be sealed during non-working hours. Prior to sealing of the work area all surfaces shall be wet wiped and/or HEPA-vacuumed and the negative air unit(s) shall continue to operate for an additional 20-30 minutes following completion of disturbance activities for the day. Upon restarting of the negative air unit(s) the Contractor shall ensure that all barriers remain intact and secure, prior to the continuation of abatement activities. Inspection, necessary repairs of negative air equipment and documenting of equipment performance shall be performed during negative air unit(s) operation.

(d) In lieu of ventilation unit(s) exhaust ducting not to exceed 25 feet in length and negative air units exhausting greater than 15 feet outside of the building/ structure with a four foot

high construction fence constructed a minimum of 10 feet from the end of the exhaust tube or bank of tubes requirements of Subpart 7.8 (a)(5), (a)(10)(ii), (viii) and (a)(11), negative air units shall be exhausted outside the work area into a non-public / normally unoccupied area (no box required). If a non-public / normally unoccupied area is not available, the negative air units shall be exhausted into a plywood box a minimum of 1' x 1' x 1' with a pre-filter covering the exhaust end into a public / occupied area. The exhaust box shall be cordoned off with a tape barrier. An air sample of the negative air exhaust shall be collected in these area(s) and outside of the box.

4.10.3 Non-Friable Caulking/Glazing Abatement

(a) The work area shall be prepared in accordance with 11.6(b) (4) (vi-viii) with the following exceptions. In lieu of the plasticizing requirements of 11.6 (b)(4)(vi) & (vii), sealing of windows and openings within twenty – five (25) feet, barriers up to 8 feet high (if possible) shall be established to separate the work areas from public areas. These barriers may be constructed of 6-mil plastic sheeting. Where this is not possible, (i.e. - man-lift abatements), all openings and penetrations within the immediate work area shall be sealed as stated in 7.11(a). The regulated abatement work area shall be cordoned off with asbestos warning tape at a distance of ten feet or as close as logistically possible.

(b) In lieu of the requirements of 11.6 (b)(4)(viii), floor surfaces along the length of the removal area extending 2 feet on both sides and 10 feet in front, or as close as logistically possible, shall be covered with at least 1 layer of 6-mil reinforced plastic sheeting. Lifts and scaffolds shall be plasticized in accordance with 11.6 (b) (4) (viii).

4.11 Token Booth (SWV# 16-1283)

4.11.1 General

(a) Work shall be limited to the disassembly and re-assembly of said panels/posts, the removal and reinstallation of non-ACM components (i.e. cabinets, shelves, equipment), and the cutting of an opening on selected wall panels. All work shall be classified as either Class III or Class IV Asbestos Work per OSHA.

(b) At a minimum, an equipment room shall be constructed, as per paragraph 3.1.1.a(3) of this section, adjacent to the regulated work area for the decontamination of employees and equipment which is potentially contaminated with asbestos until the Contractor can provide a negative exposure assessment as defined by OSHA to the Engineer.

(c) Workers shall wear respirators and protective clothing as required by paragraph 2.0 of this section until the Contractor can provide a negative exposure assessment as defined by OSHA to the Engineer.

(d) Each regulated work area shall be vacated and restricted to appropriately trained personnel, by cordoning off with caution tape at a minimum of three-foot (3') from each side and in front and/or behind the affected area, if possible.

(e) Due to the fact that the ACM adhesive is a NESHAP Category II Non-friable material and is present in minor quantities in sporadic locations within the components to, be

disassembled, the potential for impacting this material during these operations is minimal. As a result, no project air sampling shall be performed during this work associated with Tasks 4.11.2 to 4.11.5.

(f) Clearance air monitoring of the work area will be conducted as follows:

(1) Air samples will be collected inside the regulated abatement work area during Asbestos Abatement (Phase II B and IIC) activities until final visual inspection is acceptable. One (1) air sample will be collected outside the tent or mini-enclosure and one (1) air sample will be collected in each tent or mini-enclosure.

(2) The results of the last set of air samples collected during Asbestos Abatement (Phase II C) activities will also be used as the clearance air sample criteria. Phase II C shall include the final cleaning and lockdown encapsulation of the non-removal surfaces covered with fire-retardant plastic sheeting.

(3) Upon satisfactory visual inspection and provided the airborne fiber concentrations are below 0.01 fibers per centimeter (f/cc), the regulated work area can be dismantled.

(4) If results of the last set of inside regulated work area samples are equal to or greater than 0.01 f/cc, the Contractor shall continue cleaning of the regulated work area using wet methods with negative equipment operating. Air samples will be collected inside and outside the regulated abatement work area during the re-cleaning activities and used as the clearance air sampling criteria.

(5) If the results of the last set of outside regulated work area air samples are equal to or greater than 0.01 f/cc, the contractor shall clean-up the surfaces outside the regulated work area using HEPA-vacuums and wet methods. Air samples will be collected outside the regulated abatement work area during the clean-up activities and used as the clearance air sampling criteria.

4.11.2 Unfastening of non-ACM components (i.e. shelves, cabinets, equipment, glass, ceiling, etc.) from Token Booths – OSHA Class IV Work

(a) Work is considered Class IV Asbestos Work per OSHA and shall be performed by workers who possess OSHA Asbestos Awareness Training.

(b) Workers shall carefully unfasten non-ACM components from panels by unbolting and or un-screwing components from wall panels.

(c) This work shall not require an Asbestos Removal Placard from The Office of System Safety.

(d) Paragraphs 4.11.1 (b-c) shall not apply to this work.

4.11.3 Disassembly of fiberglass panels and metal posts with ACM adhesives – OSHA Class III Work

(a) Work is considered Class III Asbestos Work per OSHA and shall be performed by workers who possess NYS DOL Operations and Maintenance Certificates under the supervision of a NYS DOL Asbestos Supervisor.

(b) A regulated work area shall be established as per Paragraph 4.11.1(d).

(c) Workers shall carefully remove wall panels, metal fascia/trim and posts intact by unbolting components from metal posts and moving posts and panels without disturbing embedded ACM adhesive. The wall panels and fascia plates/trim shall be kept intact with the substrate.

(d) A HEPA vacuum shall be available within the regulated work area.

(e) After satisfactory visual inspection by the contractor's supervisor and Project Monitor the regulated work area can be dismantled.

4.11.4 Storage of fiberglass panels and metal posts

(a) Panels and posts shall be properly labeled in compliance with OSHA requirements. The labels shall read:

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

(b) The panels and posts shall be stored in an isolated/controlled area to prevent access by unauthorized individuals. The location where the panels and posts will be stored shall be approved in advance by the Engineer.

4.11.5 Re-assembly of fiberglass panels and metal posts – OSHA Class III Work

(a) Work is considered Class III Asbestos Work per OSHA and shall be performed by workers who possess NYS DOL Operations and Maintenance Certificates under the supervision of a NYS DOL Asbestos Supervisor.

(b) A regulated work area shall be established as per Paragraph 4.11.1(d).

(c) Workers shall carefully move and assemble wall panels and posts by bolting to the Token Booth framework without disturbing embedded ACM adhesive. The wall panels and fascia plates/trim shall be kept intact with the substrate.

(d) A HEPA vacuum shall be available within the regulated work area.

(e) After satisfactory visual inspection by the contractor's supervisor and Project Monitor the regulated work area can be dismantled.

4.11.6 Installation of non-ACM components (e.g. shelves, cabinets, equipment, glass, ceiling, etc.) in Token Booths – OSHA Class III Work

(a) Work is considered Class III Asbestos Work per OSHA and shall be performed by workers who possess NYS DOL Operations and Maintenance Certificates under the supervision of a NYS DOL Asbestos Supervisor.

(b) A regulated work area shall be established as per Paragraph 4.11.1(d).

(c) As a precaution, one layer of polyethylene sheeting shall be placed on the ground directly below the locations where the work is to be performed where feasible.

(d) Workers shall utilize drills with HEPA-filtered local exhaust ventilation attachments and/or screw guns with HEPA shrouds during the installation work.

(e) Workers shall carefully re-install non-ACM components by bolting and screwing components onto wall panels.

(f) A HEPA vacuum shall be used to clean up any visible debris that may be generated during this process.

(g) After satisfactory visual inspection by the Contractor's Supervisor and Project Monitor the regulated work area can be dismantled.

4.11.7 Modification of fiberglass panels for ADA Compliance – OSHA Class III Work

(a) Work is considered Class III Asbestos Work per OSHA and shall be performed by workers who possess NYS DOL Operations and Maintenance Certificates under the supervision of a NYS DOL Asbestos Supervisor.

(b) A regulated work area shall be established as per Paragraph 4.11.1(d).

(c) All cutting activities may be performed within a negative-pressure tent enclosure consisting of floors, walls and ceilings of at least one (1) layer six mil. fire retardant polyethylene sheeting except on the surface where the cutting is to be performed. Alternatively, in lieu of a tent enclosure, cutting may be performed within a mini-enclosure (e.g. glovebag/glovebox) without the use of a tent. The negative pressure tent enclosure or mini-enclosure shall also be constructed on the other side of the panel (non-cutting surface).

(d) Work shall entail the cutting of an opening on the existing wall panel to modify the panel for ADA compliance.

(e) Workers shall utilize hand tools or power tools with HEPA-filtered local exhaust ventilation attachments or HEPA shrouds during this work.

(f) Clearance air monitoring of the work area will be conducted as follows:

(1) Air samples will be collected inside the regulated abatement work area during

Asbestos Abatement (Phase II B and IIC) activities until final visual inspection is acceptable. One (1) air sample will be collected outside the tent or mini-enclosure and one (1) air sample will be collected in each tent or mini-enclosure.

(2) The results of the last set of air samples collected during Asbestos Abatement (Phase II C) activities will also be used as the clearance air sample criteria. Phase II C shall include the final cleaning and lockdown encapsulation of the non-removal surfaces covered with fire-retardant plastic sheeting.

(3) Upon satisfactory visual inspection and provided the airborne fiber concentrations are below 0.01 fibers per centimeter (f/cc), the regulated work area can be dismantled.

If results of the last set of inside regulated work area samples are equal to or greater than 0.01 f/cc, the Contractor shall continue cleaning of the regulated work area using wet methods with negative equipment operating. Air samples will be collected inside and outside the regulated abatement work area during the re-cleaning activities and used as the clearance air sampling criteria.

(4) If the results of the last set of outside regulated work area air samples are equal to or greater than 0.01 f/cc, the contractor shall clean-up the surfaces outside the regulated work area using HEPA-vacuums and wet methods. Air samples will be collected outside the regulated abatement work area during the clean-up activities and used as the clearance air sampling criteria.

5.0 PACKAGING, STORAGE, TRANSPORT AND DISPOSAL

(a) Place the container or disposal truck at the Work Site, only for the period required to complete the Asbestos Project. The Engineer shall be informed of the intended location of all containers or storage areas. The Engineer reserves the right to refuse the use of in-place container or storage area.

(b) All waste generated as part of the asbestos project shall be removed from the site within ten calendar days after successful completion of Phase IIC for all regulated abatement work areas at the site.

(c) A waste hauler duly licensed from the state and local authorities having jurisdiction shall haul waste.

(d) Document actual disposal of the waste at the designated landfill by completing a manifest.

(e) A waste manifest documenting the date of pick up, quantities of asbestos waste, travel route and disposal site shall be filled out completely and signed by the Contractor and the waste hauler at the time of pick up at the Work Site. Th e signing of the manifest shall be in the presence of the Engineer. The Engineer will verify all quantities on the manifest.

(f) If waste materials are to be transferred or stored at a transfer station in New York City, a manifest form for the disposal of asbestos waste shall be obtained, properly prepared, and copies provided to the Engineer prior to removal of any bagged asbestos waste from the site. For waste disposed outside of New York City, provide waste manifest chain of custody documentation, satisfactory to the Engineer to document the disposal of ACM waste in accordance with the regulations.

(g) The manifest is to include the address of the facility from which the asbestos waste is removed, and copies of the manifests shall be provided to the Project Monitor. The original manifests shall have the following address in the area marked "Building Owner" , which are to be returned to the New York City Transit as the generator to the same address

New York City Transit
CPM/ Environmental Engineering Division
2 Broadway, 2nd Floor
New York, New York 10004
(646) 252-3546

6.0 PROJECT MONITOR

The NYCTA will provide at its own costs the services of a Project Monitor for the supervision, inspection, air monitoring and support service for the work.

7.0 AIR MONITORING

The air monitoring protocol for all Projects are indicated in each System Wide Variance (SWV), SSP and Contract Drawings. For a quick reference guide see attached **TABLE 2** (Asbestos Project Air Sampling Requirements).

8.0 PAYMENT

(a) No progress payments for asbestos removal work shall be made unless all completed waste manifest forms (See Paragraph 5.0 Packaging, Transport and Disposal) submitted and verified by the Engineer to be complete and accurate.

(b) Final Payment shall not be made without submittal of the following documents:

(1) Copies of Notifications made to the USEPA, NYS-DOL and other applicable agencies (including all amendments).

(2) Copies of completed waste manifest forms for asbestos transported off site.

TABLE 1: Submittal Approvals

Item No.	Paragraph No.	Submittal	Approved By (Engineer or Designer
1	1.4 a.1	Abatement Cost Estimate	Engineer
2	1.4 a.2	Waste Transporter previous experience	Engineer
3	1.4 a.3	List of previous Asbestos Abatement Experience (Owner, dates, Contact Person, Quantities and Value)	Engineer
4	1.4 a.4	NYS-DOL Asbestos Handling License	Engineer
5	1.4 a.5	Chain of Command	Engineer
6	1.4 a.6	Licenses and/or permits for the Asbestos Waste Transporter	Engineer
7	1.4 a.7	List and Certifications of any waste transfer stations to be utilized associated with the disposal of waste	Engineer
8	1.4 a.8	Certifications/Experience of landfill(s) Principal Owner(s) and Location of Asbestos Waste Landfill(s) (name, address and telephone #) for the project	Engineer
9	1.4 a.9	Copies of EPA and NYS-DOL notifications	Engineer
10	1.4 a.10	Abatement schedule including location/date/time	Engineer
11	1.4 a.11	Copies of Public Notices for all asbestos project locations	Engineer
12	1.4 a.12	Project(s) shop drawings of scaffolding and temporary structures / enclosures shall be signed and sealed by a NYS licensed professional engineer	Engineer
13	3.1.1.b.8.A	A copy of the Contractor's job log shall be provided to the Engineer every week, indicating the past weeks' work. A certified copy of the logbook shall be provided to the Engineer at the end of the Project.	Engineer
14	8.0 b. 1	Copies of Notifications to USEPA, NYSDOL and other applicable agencies (including all amendments)	Engineer
15	8.0 b. 2	Copies of completed waste manifest forms for asbestos transported off site	Engineer

Notes:

1. This table does not include approvals for "or-equal" proposals. Approvals for "or-equal" proposals are covered in specification Section 1B.
2. Placard packaging submittals are required 45 days prior to the intended start of asbestos abatement work..

TABLE 2: MINIMUM AIR SAMPLING REQUIREMENTS

Except for Track Equipment SWV# 17-0143

Regulated Abatement Work Area Size	Phase I B	Phase II A	Phase II B	Phase II B	Phase IIC
	Back-ground	Work Area Preparation	Asbestos Handling **SWV# 17-0140** (excluding tent on the track) **SWV# 17-0137**	**Asbestos Handling** ***(Durings As Finals)*** **SWV-16-1283** **SWV# 17-0141** **SWV# 17-0146** **SWV# 17-0139** **SWV# 17-0142** **SWV# 17-0147** **SWV# 17-0145** **SWV# 17-0144** **SWV# 17-0140** (tent on the track)	**Final Cleaning & Clearance** **SWV# 17-0140** (excluding tent on the track) **SWV# 17-0137**
LARGE	**None**	**No inside air sampling required**		**5 Inside Regulated Work Area**	**5 Inside Regulated Work Area**
		1 per decon within 10 ft of each entrance/ exit of decon. 1 per negative air exhaust or per bank of 5 exhausts (*) 3 at critical barriers			**5 Outside Regulated Work Area**
SMALL	**None**	**No inside air sampling required**		**3 Inside Regulated Work Area**	**3 Inside Regulated Work Area**
		1 per decon within 10 ft of each entrance/ exit of decon. 1 per negative air exhaust or per bank of 5 exhausts(*) 1 at critical barriers			**3 Outside Regulated Work Area**
MINOR	**None**	**No inside air sampling required**		**1 Inside Regulated Work Area**	**1 Inside Regulated Work Area**
		1 at critical barrier.			**1 Outside Regulated Work Area**

Notes:

(1) **For Non-Friable Exterior Removals, collect one air sample inside the building/structure in addition to the samples stated in the table above.**

(2) **(*) In case there is no negative air exhaust, take one representative air sample outside the regulated work area.**

(3) **For multiple materials, perform air sampling based on the most stringent method of removal.**

(4) **If a remote/mobile decon is utilized, an additional sample shall be collected outside the regulated abatement work area within 10ft of each entrance or exit (air lock).**

TABLE 3: MINIMUM AIR SAMPLING REQUIREMENTS

For Track Equipment SWV# 17-0143 only

For procedure 2 [section 4.8 (p)] refer to note 2.

Regulated Abatement Work Area Size	Phase I B	Phase II A	Phase II B	Phase II B	Phase IIC
	Back-ground	Work Area Preparation	Asbestos Handling SWV 17-0143 (procedure 3)	Asbestos Handling *(Durings As Finals)* SWV# 17-0143 (procedures 1 & 4)	Final Cleaning & Clearance SWV# 17-0143 (procedure 3)
LARGE	None	No inside air sampling required		5 Inside Regulated Work Area	5 Inside Regulated Work Area
		1 per decon within 10 ft of each entrance/ exit of decon. 1 per negative air exhaust or per bank of 5 exhausts (*) 3 at critical barriers			5 Outside Regulated Work Area
SMALL	None	No inside air sampling required		3 Inside Regulated Work Area	3 Inside Regulated Work Area
		1 per decon within 10 ft of each entrance/ exit of decon. 1 per negative air exhaust or per bank of 5 exhausts(*) 1 at critical barriers			3 Outside Regulated Work Area
MINOR	None	No inside air sampling required		1 Inside Regulated Work Area	1 Inside Regulated Work Area
		1 at critical barrier.			1 Outside Regulated Work Area

Notes:

(1) **For track equipment removal utilizing work train [sections 4.8(o), (q) and (r)], see section 4.8(s).**

(2) **For track equipment removal utilizing remote decon [section 4.8(p)], see 4.8p (3).**

(3) **(*) In case there is no negative air exhaust, take one representative air sample outside the regulated work area.**

(4) **If a remote/mobile decon is utilized, an additional sample shall be collected outside the regulated abatement work area within 10ft of each entrance or exit (air lock).**

DESIGN GUIDELINES FOR CONSTRUCTING TEMPORARY ENCLOSURE/STRUCTURE

New York City Transit

Office of System Safety

Design Guidelines for Constructing

Temporary Enclosure/Structure

Revised: September 2005

New York City Transit

Office of System Safety
Risk Assessment Division

Design Guidelines for Constructing Temporary Enclosure/Structure

Revision Date: September 2005

Recommended by: _____ September 2005
Kenneth Brown
Director, Risk Assessment & Fire Safety

Approved by: _____ September 2005
Cheryl E. Kennedy
Vice President, Office of System Safety

OFFICE OF SYSTEM SAFETY (0SS)
RISK ASSESSMENT DESIGN GUIDELINES

TEMPORARY ENCLOSURE / STRUCTURE

General Requirements:

1. Enclosures shall be constructed of solid fire retardant material (such as wood treated with fire retardant chemicals, etc.). The fire-rating stamp shall be visible from the interior. Enclosures constructed of metal shall be properly grounded.

2. The height of any enclosure/structure shall be constructed tight to the ceiling from the platform/mezzanine's finished floor or as approved by CPM Safety and/or OSS.

3. Length of any one enclosure/structure shall *not* exceed 50' – 0" along the length of the platform. Total length of all enclosures/structures shall *not* exceed 100' – 0" on a platform at any time.

4. Enclosure doors shall have self-closing hinges and shall swing inward when enclosures are located in areas used by the public.

5. Enclosure shall *not* create any cul-de-sacs (i.e., blind alleys or dead ends).

6. The weight of the materials stored inside the enclosure shall *not* exceed the maximum allowable live load for the platform/mezzanine floor.

7. The contents of the enclosure may *not* project beyond the limits of the enclosure. Normal locks and hasps shall be permitted on the outside of the enclosure. Copies of the padlock keys for all platform and/or mezzanine temporary enclosures shall be clearly marked and kept at the nearest full time token booth. A sign shall be affixed to the enclosure to indicate which token booth. (see sketch #3, sign #4)

8. Enclosures shall *not* obstruct the line of vision of the Conductor (C/R) on the platform, or the Train Operator (T/O) to the signal and tracks. Enclosures must *not* interfere with CCTVs or their associated cameras.

9. Enclosure shall *not* fully or partially block the access to any exit(s), stair(s), passageway(s), any active room(s), or any electrical control panels/pull boxes. Enclosures shall *not* unnecessarily impede or restrict passenger flow.

10. *No* flammable/combustible/hazardous materials or gasoline-powered equipment shall be stored inside any enclosure.

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OFFICE OF SYSTEM SAFETY (OSS)
RISK ASSESSMENT DESIGN GUIDELINES

TEMPORARY ENCLOSURE / STRUCTURE

11. One 20-lb. (or two 10-lb.) type ABC dry chemical fire extinguisher(s) shall be provided inside the enclosure. The fire extinguishers should be readily accessible, and properly mounted. The location of the fire extinguishers within the enclosure shall be indicated with proper signage.

12. Interior lighting and ventilation shall be provided per applicable codes and standards. Existing platform/mezzanine lighting conditions shall be maintained by installing temporary lighting as warranted in the station area. Enclosures shall *not* adversely affect any existing lighting and ventilation in the station area.

13. User (Contractor/TA Forces) name and 24 hour emergency phone number shall be posted on the outside of the enclosure door. (see sketch #3, sign #4)

14. Contractor's drawings for the temporary enclosure/structure must be submitted to, and reviewed by, the Capital Program Management (CPM) Construction Manager's Office (CMO) for approval. If, upon review by the CMO, the proposed drawings are not within these guidelines, the drawings will be reviewed by CPM Safety. OSS shall be requested to review the drawings only in those instances when the design of the enclosure cannot be made to conform to established guidelines and the variance can not be resolved by the CMO and CPM Safety. A copy of all Contractors' drawings review/response by CPM CMO and CPM Safety shall be sent to OSS for information and possible site inspection.

15. Prior inspection and acceptance of the temporary enclosure/structure by the CM and /or CPM Safety must be required before the enclosure/structure is released for use.

16. All enclosures shall be removed upon completion of work.

Temporary Enclosure/Structure on Station Platform:

17. The clearance between the exterior wall and the platform edge shall be *not* less than 5 feet along the effective length of the platform (equal to a full train length + 15 feet). In the event where the clearance of 5' is not feasible, ***OSS requirements as shown on attached sketches 1, 2 & 3 must be met and a concurrence must be obtained from CPM Safety***. A written request for variances from these guidelines shall be made to QSM as required. Requests for any variance must fully describe the reason for the variance.
    NOTE: *In cases where the clearance between the Temporary Enclosure and the Platform Edge is less than 5 ft and the station is an ADA Accessible Station, the variance must be approved by OSS.*

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OFFICE OF SYSTEM SAFETY (0SS)
RISK ASSESSMENT DESIGN GUIDELINES

TEMPORARY ENCLOSURE / STRUCTURE

18. For temporary enclosures constructed ***beyond*** the effective length of the platform, the following criteria apply (***see sketch #1):***

    a. The clearance between the exterior wall and the platform edge shall ***not be*** less than 2 feet.
    b. The passageway between the exterior wall and the adjacent platform edge shall be separated from the public platform area by a gate having a sign reading: "Authorized Personnel Only".

19. Car markers, conductor boards and signals shall be adjusted as required only with the prior approval of Rapid Transit Operations (RTO) and the Division of Electrical Systems (DES) Signal Group.

20. Doors shall ***not*** open to the track side/passageway. Doors shall ***not*** swing to the outside in public areas.

Temporary Enclosure/Structure at Track Level:

21. NO CLEARANCE signs shall be displayed on the wall of the enclosure where the clearance between exterior wall and the center line of the adjacent track is less than 7'-0" on tangent track of IND/BMT lines and less than 6'-10" on tangent track on the IRT line.

22. The above mentioned clearances shall be ***increased*** on curves to accommodate railcar excess end clearances.

23. Enclosures constructed at track level shall ***not*** obstruct existing safety niches, emergency exits, emergency alarm locations and/or access to knife switches.

24. Temporary enclosures constructed at track level shall ***not*** result in "No Clearance" situation on both sides of a track for a distance greater than 15 feet.

Note: Any deviation from the foregoing requirements must be forwarded to OSS for approval. The submittal package must include reason(s) for the deviation and detailed drawings of the proposed temporary enclosure/structure.

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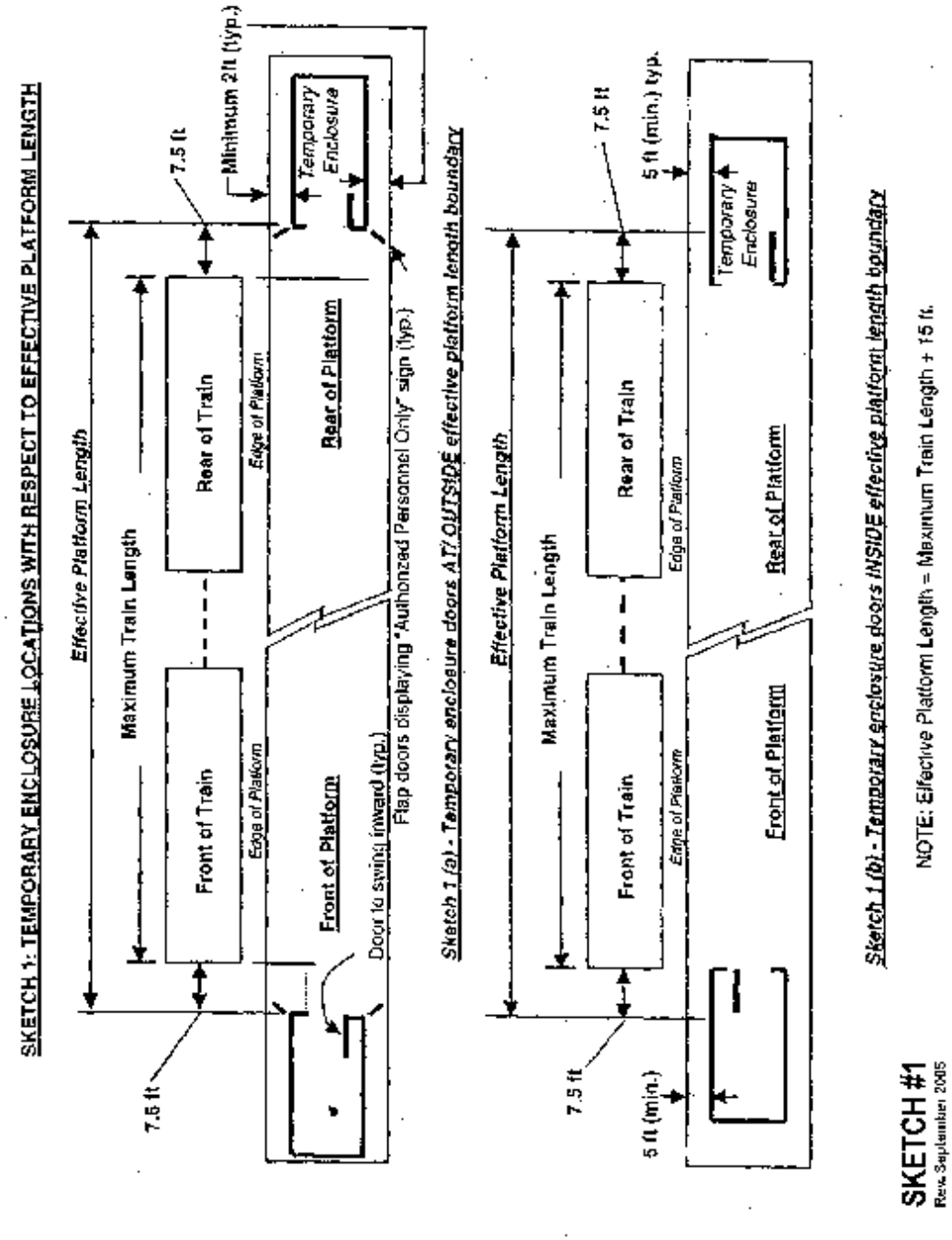
SKETCH 1: TEMPORARY ENCLOSURE LOCATIONS WITH RESPECT TO EFFECTIVE PLATFORM LENGTH
Effective Platform Length
Maximum Train Length
7.5 ft
Front of Train
Rear of Train
Edge of Platform
Front of Platform
Rear of Platform
Minimum 2ft (typ.)
Temporary Enclosure
Door to swing inward (typ.)
Flap doors displaying "Authorized Personnel Only" sign (typ.)
Sketch 1 (a) - Temporary enclosure doors AT/ OUTSIDE effective platform length boundary
5 ft (min.) typ.
5 ft (min.)
Sketch 1 (b) - Temporary enclosure doors INSIDE effective platform length boundary
NOTE: Effective Platform Length = Maximum Train Length + 15 ft.
SKETCH #1
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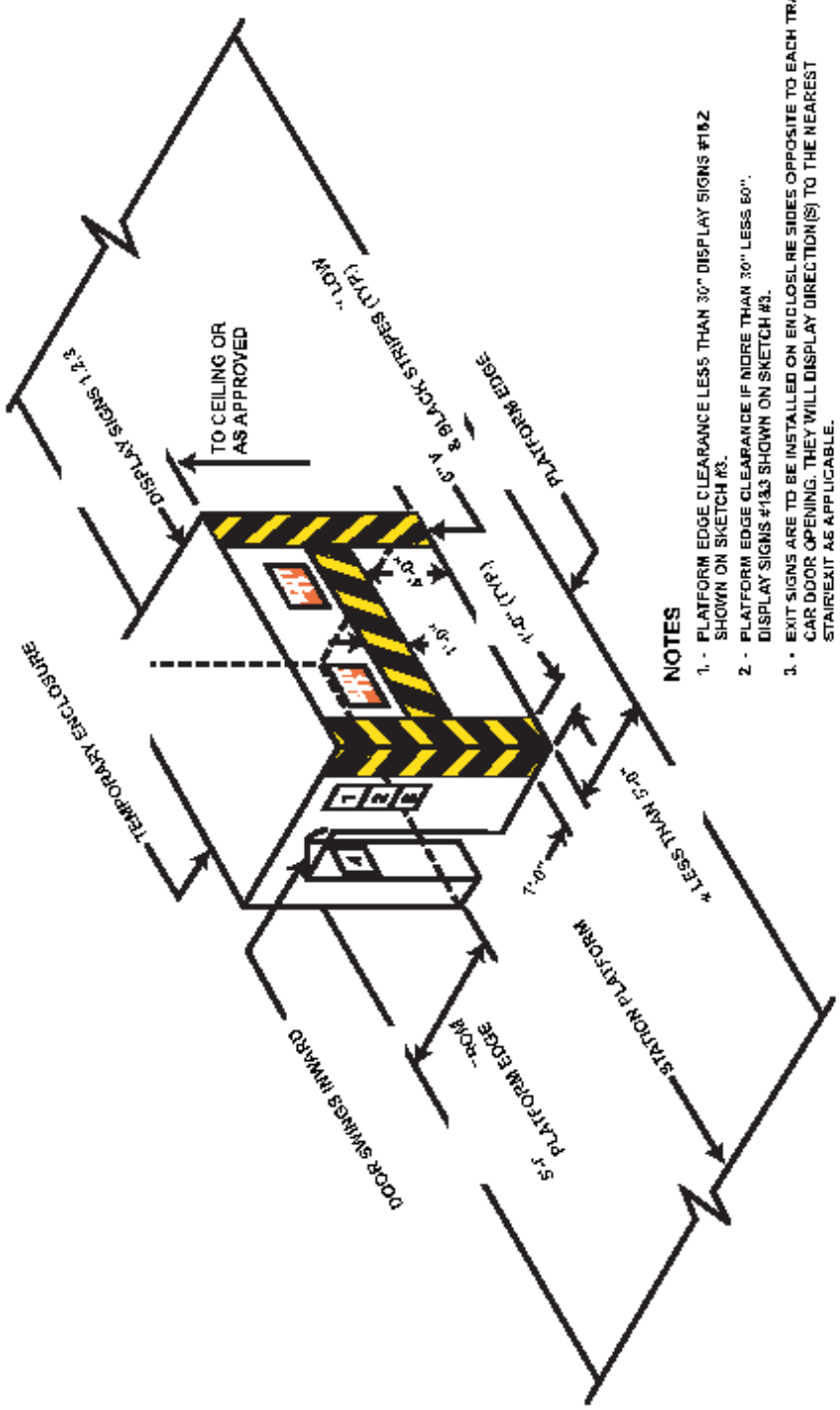
TEMPORARY ENCLOSURE/STRUCTURE ON STATION PLATFORM (WITHIN THE EFFECTIVE LENGTH OF PLATFORM)



NOTES

1. - PLATFORM EDGE CLEARANCE LESS THAN 30" DISPLAY SIGNS #1&2 SHOWN ON SKETCH #3.
2. - PLATFORM EDGE CLEARANCE IF MORE THAN 30" LESS 60". DISPLAY SIGNS #1&3 SHOWN ON SKETCH #3.
3. - EXIT SIGNS ARE TO BE INSTALLED ON ENCLOSURE SIDES OPPOSITE TO EACH TRAIN CAR DOOR OPENING. THEY WILL DISPLAY DIRECTION(S) TO THE NEAREST STAIR/EXIT AS APPLICABLE.
4. - CONTRACTOR SIGN SHALL BE INSTALLED ONTO DOOR.

* CONCURRENCE/APPROVAL OF VARIANCE REQUIRED PRIOR TO CONSTRUCTION OF ENCLOSURE

SKETCH #2
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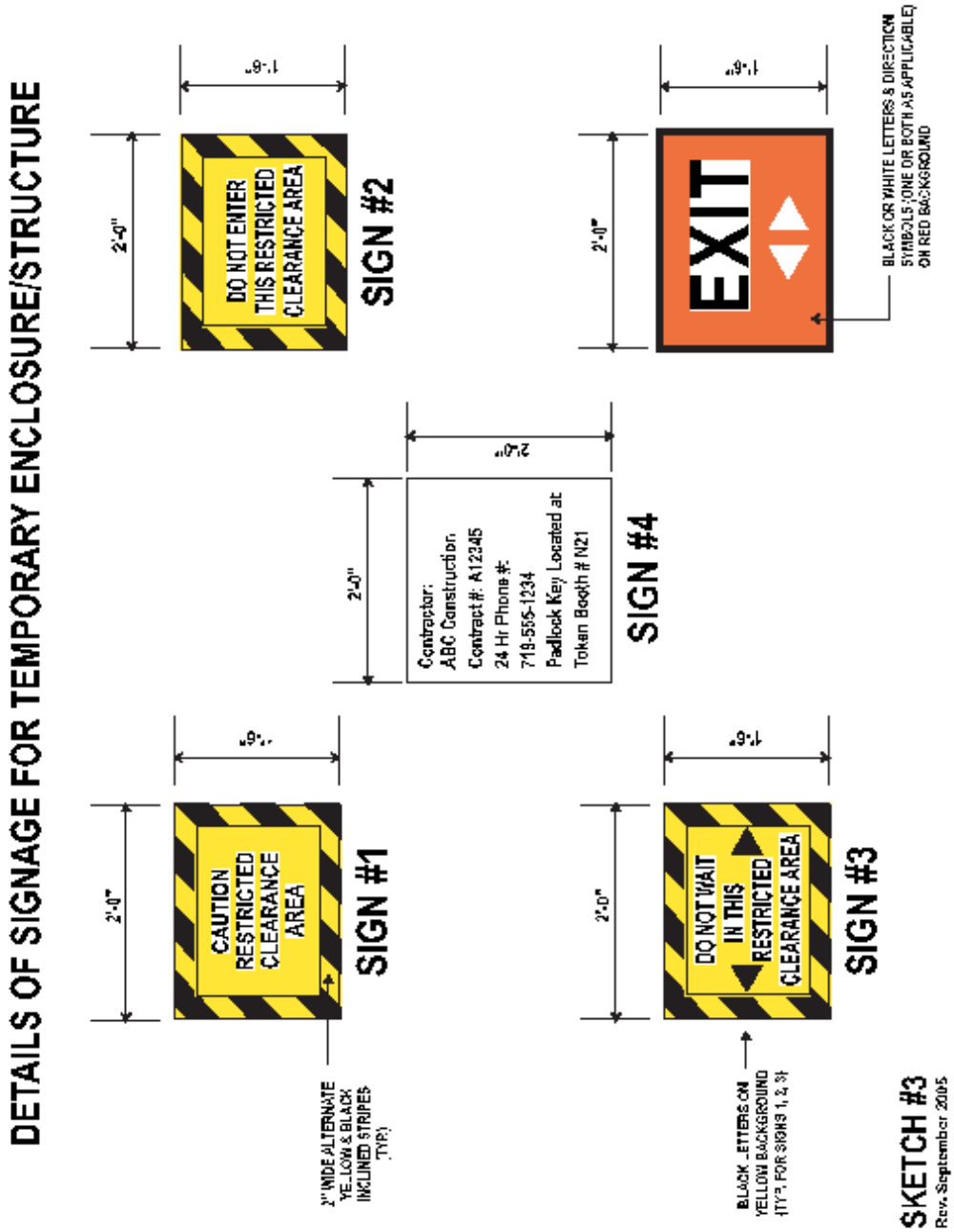
DETAILS OF SIGNAGE FOR TEMPORARY ENCLOSURE/STRUCTURE
2'-0"
1'-6"
CAUTION
RESTRICTED
CLEARANCE
AREA
SIGN #1
2" WIDE ALTERNATE YELLOW & BLACK INCLINED STRIPES (TYP.)
DO NOT ENTER
THIS RESTRICTED
CLEARANCE AREA
SIGN #2
Contractor:
ABC Construction
Contract #: A12345
24 Hr Phone #:
719-555-1234
Padlock Key Located at
Token Booth # N21
SIGN #4
DO NOT WAIT
IN THIS
RESTRICTED
CLEARANCE AREA
SIGN #3
BLACK LETTERS ON YELLOW BACKGROUND (TYP. FOR SIGNS 1, 2, 3)
EXIT
BLACK OR WHITE LETTERS & DIRECTION SYMBOLS (ONE OR BOTH AS APPLICABLE) ON RED BACKGROUND
SKETCH #3
Rev. September 2005