CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE

ADDENDA CONTROL SHEET

BID OPENING DATE: AUGUST 30, 2016

PROJECT NO.: QED991

TITLE: CONSTRUCTION OF DISTRIBUTION WATER MAINS IN 33RD AVENUE, ETC

ADDENDA ISSUED	No. OF DRAWINGS	DATE
#1: Additional Amendments		08/15/2016

ATTACH TO CONTRACT DOCUMENTS

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
INFRASTRUCTURE DIVISION
BUREAU OF DESIGN

PROJECT ID: QED991

NEW 72", 48" TRUNK WATER MAINS AND 20", 12", 8" DISTRIBUTION WATER MAINS AND APPURTENANCES IN 33RD AVENUE BETWEEN 156TH STREET AND FRANCIS LEWIS BOULEVARD; 158TH STREET BETWEEN 33RD AVENUE AND 32ND AVENUE; UTOPIA PARKWAY BETWEEN 33RD AVENUE AND 37TH AVENUE; 37TH AVENUE BETWEEN UTOPIA PARKWAY AND FRANCIS LEWIS BOULEVARD; FRANCIS LEWIS BOULEVARD BETWEEN 37TH AVENUE AND 38TH AVENUE; 38TH AVENUE BETWEEN FRANCIS LEWIS BOULEVARD AND 216TH STREET; 206TH STREET BETWEEN 38TH AVENUE AND 36TH AVENUE; AND 216TH STREET BETWEEN 38TH AVENUE AND 40TH AVENUE

INCLUDING SEWER AND STREET LIGHTING WORK

Together With All Work Incidental Thereto

BOROUGH OF QUEENS

ADDENDUM NO. 1

DATED: August 15, 2016

This Addendum is issued for the purpose of amending the requirements of the contract documents and is hereby made part of said contract documents to the same extent as if it was originally included therein.

Specifications For
Abatement Of Coal Tar Wrap Asbestos Containing Materials
REHABILITATION OF EXISTING TRUNK WATER MAINS IN CRESCENT STREET FROM 34TH AVENUE TO 31ST AVENUE; 31ST AVENUE FROM CRESCENT STREET TO 41ST STREET; AND 41ST STREET FROM 31ST AVENUE TO 25TH AVENUE
QUEENS, NY

Department of Design and Construction

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Revision #: 00 or Final Submission
Date: 10/16/2009

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SECTION 67.11
INCREMENTAL COST FOR ASBESTOS ABATEMENT WORK PERFORMED ON EXISTING STEEL PIPE WATER MAIN TO BE REMOVED

67.11.1 GENERAL

67.11.1.1 DESCRIPTION

(A) The contract documents are as defined in the "Standard Construction Contract". The General Conditions shall apply to all work of this section.

(B) Work specified herein shall be the removal and disposal of water main pipe of the specified diameter covered with Coal Tar Wrap Asbestos-Containing Materials (ACM) and asbestos-contaminated materials from designated areas of the water main replacement on this project.

(C) The phasing and scheduling of work for this project shall be coordinated with and approved by the Engineer. The Engineer will make the final determination on all issues under this contract covered by this specification in coordination with NYC Department of Design and Construction's Bureau of Environmental and Geotechnical Services (BEGS).

67.11.1.2 SCOPE OF WORK

(A) The Contractor is to provide all labor, materials, equipment, services, testing, appurtenances, permits and agreements necessary to perform the work required for the abatement of ACM and removal of pipe covered with asbestos-containing Coal Tar Wrap as required by these contract documents. All work shall be performed in accordance with this specification, EPA regulations, OSHA regulations, New York City Local Law 70, Title 15, Chapter 1 RCNY, New York State Industrial Code 56, NIOSH recommendations, and any other applicable federal, state or local government regulations. Whenever there is a conflict or overlap of the above references the most stringent provisions are applicable.

(B) The intent of this section is to ensure that the Contractor is responsible for the following:

(1) Abatement of all ACM.

(2) Cleaning and decontamination of the entire affected area.

(3) Removal of various sections of pipe in varying lengths, as necessary, that may be required to access ACM in each excavated area. The Contractor shall dispose of all debris associated with such removal activities as ACM waste.

(4) Removal and disposal of all ACM found within these areas such as soil within excavated area, section of pipes, and coal tar wrap, etc.

(5) Provide all scaffolding, platform installation, equipment, tools, transportation and any other equipment required and/or necessary to complete all work described in the contract documents.

(6) The Contractor shall be responsible for and shall include in the Contractor's bid any and all fees or changes imposed by Local, State or Federal Law, Rule or Regulation applicable to the work specified herein, including fees or charges which may be imposed subsequent to the date of the Bid Opening.

(C) The Contractor shall perform the following work as described below and indicated on the drawings. The drawings are only a diagrammatic representation of the work areas and do not constitute the actual quantities of material and or size of the pipe. Contractor is responsible for the confirmation of the actual total quantities of the work to be performed prior to bidding.

WORK AREA EXCAVATION:

Remove and dispose of asbestos-containing coal tar pipe wrap within work area. Asbestos-containing coal tar wrap shall be removed utilizing the approved NYCDEP procedure outlined below. Variance for utilizing this procedure within the work area shall be applied for by the Contractor and approved by the New York City Department of Environmental Protection (NYCDEP) prior to the start of abatement activities. In areas where coal tar wrap and pipe with coating of same are to be removed, the Contractor shall be responsible to remove all coal tar wrap material within the soil below the area where the pipe has to be removed. Repeating this procedure at several locations will not be cause for additional compensation to the Contractor. All piping and associated materials as well as impacted soil shall be disposed of as contaminated waste.

(D) The Contractor's attention is directed to the fact that patents cover certain methods of asbestos abatement indicated in the specifications. To date, patents have been issued with regard to negative pressure enclosures or negative or reduced pressure and glove-bag.

(E) The Contractor shall be solely responsible for and shall hold the City of New York Department of Design and Construction and the City harmless from any and all damages, losses and expenses resulting from any infringement by Contractor of any patent including, but not limited to, the patents described above, used by Contractor during performance of this agreement.

(F) Prior to starting, the Contractor must notify the Commissioner of the City of New York Department of Design and Construction if the Contractor anticipates any difficulty in performing the work as directed and required by these specifications. The Contractor shall be required to attend an on-site job meeting with the Engineer prior to start of work to examine conditions of the site for removal and plan the sequence for removal operations.

(G) The Contractor is responsible for amending the Asbestos Inspection Report (ACP-7) and resubmitting it to the NYCDEP Asbestos Control Program prior to abatement work as per Title 15, Chapter 1 of RCNY for any changes in quantities and/or starting date.

(H) If more than one (1) year has elapsed since the original ACP-7 was submitted to the Department of Environmental Protection, the Contractor is responsible for preparing and submitting a new ACP-7 to the Department of Environmental Protection as well as providing all other notifications to various regulatory agencies as required.

(I) In addition, the Contractor is also responsible for preparing, amending and submitting any Asbestos Variance Applications (ACP-9) that may be required for the completion of the contract or incidental work.

(J) The Contractor is also responsible for preparing and submitting all filings, notifications, etc. required by all City, State and Federal regulatory agencies having jurisdiction.

(K) For coordination with other contractors, see the General Conditions governing all contracts.

(L) Related Asbestos Removal Work Under Other Contracts:

(1) Each contractor shall be responsible for the removal of incidental asbestos not identified in this section and found prior to or during the work.

(2) Incidental asbestos is defined as ACM that is discovered during the course of their work that must be abated to enable contractors to perform the work of their contract.

(M) Work Hours:

(1) The Contractor shall establish the Contractor's work schedule in a way that avoids interference or conflict with the normal activities of the area. Work in the evenings shall be done at no additional cost to the City.

(2) All work shall be done during regular working hours unless the Contractor requests authorization to work in other than regular working hours and such authorization is granted by the Commissioner. (Regular working hours are those during which any given facility in which work is to be done is customarily open and functioning). If such work schedule is authorized by the Commissioner the work shall be done at no additional cost to the City.

(3) The order of phases and start dates associated with each will be determined by the Engineer.

(4) Waste transfer must be approved by the Engineer.

(N) Stages Of Asbestos Removal Work:

The Abatement Contractor or Subcontractor will be required to perform the work and it is the intent of this specification to remove all asbestos-containing and asbestos contaminated materials from the work area. The Contractor is responsible for verifying all quantities of materials listed here and bid accordingly.

(O) Certain equipment in the work area may need to remain operational during removal. Therefore, the removal of ACM from this equipment shall be performed as the last removal activities within the work area. The Contractor shall coordinate the scheduling for the removal of ACM on functioning equipment with the Engineer.

67.11.1.3 SPECIAL EXPERIENCE REQUIREMENTS FOR ASBESTOS ABATEMENT

(A) General: The special experience requirements set forth in Paragraph (B) below apply to the contractor who will be performing the Asbestos Abatement work under this contract. If the bidder intends to perform such work itself, it must demonstrate compliance with the special experience requirements. If the bidder intends to subcontract this work, the proposed subcontractor must demonstrate compliance with the special experience requirements. Once approved, no substitution will be permitted, unless the qualifications of the proposed replacement have been approved in writing in advance by the City.

(1) Evaluation: Compliance with the special experience requirements for Asbestos Abatement must be submitted for evaluation a minimum of thirty (30) days prior to commencement of that phase of work which may require removal coal tar wrap asbestos-containing materials. The Contractor is advised that the Contractor will not be permitted to commence excavation work at the site for that phase of construction which may require possible removal of coal tar wrap asbestos-containing materials, should the Contractor's Asbestos Abatement contractor fail to comply with the special experience requirements. Compliance with the experience requirements set forth herein will be determined solely by the City.

(2) Compliance By The Asbestos Abatement Contractor As An Entity: Compliance with the special experience requirements must be demonstrated by the Asbestos Abatement contractor. The Asbestos Abatement contractor itself must have been in existence as the same entity for the three (3) year period prior to the bid opening. During such period, the bidding entity itself must have achieved compliance with the special experience requirements. The Asbestos Abatement contractor entity may not use or rely on the experience or credentials of any other entity regardless of any relationship such other entity may have to the Asbestos Abatement contractor.

(B) Requirements: The Asbestos Abatement contractor must demonstrate compliance with the special experience requirements set forth in subparagraphs (1) through (5) below. The Asbestos Abatement contractor must submit documentation demonstrating compliance with all listed requirements. Such documentation shall include without limitation, all required licenses, certificates, and documentation.

(1) The Asbestos Abatement contractor must, whether an individual, corporation, partnership, joint venture or other legal entity, demonstrate for the three (3) year period prior to the bid opening,

that it has been licensed by the New York State Department of Labor, as an "Asbestos Contractor".

(2) The Asbestos Abatement contractor must, for the three (3) year period prior to the bid opening, have been in the business of providing asbestos abatement services as a routine part of its daily operations.

(3) The Asbestos Abatement contractor proposing to do asbestos abatement work must be thoroughly experienced in such work and must provide evidence of having successfully performed and completed in a timely fashion at least five (5) asbestos abatement projects of similar size and complexity. The aggregate cost of these projects must be at least $1,000,000 in each of the three (3) years.

(4) For each project submitted to meet the experience requirements set forth above, the Asbestos Abatement contractor must submit the following information for the project: name and location of the project; name title and telephone number of the owner or the owner's representative who is familiar with the Asbestos Abatement contractor's work; brief description of the work completed as a prime or sub-contractor; amount of contract or subcontract; and, the date of completion.

(5) The Asbestos Abatement contractor must demonstrate that it has the financial resources, supervisory personnel and equipment necessary to carry out the work and to comply with the required performance schedule, taking into consideration other business commitments. The Asbestos Abatement contractor must submit such documentation as may be required by the Department of Design and Construction to demonstrate that it has the requisite capacity to perform the required services of this contract.

(C) Throughout the specifications, reference is made to codes and standards which establish qualities and types of workmanship and materials, methods for testing and reporting on the pertinent characteristics thereof to provide materials or workmanship that meet or exceed the specifically named codes or standards where required by these specifications.

(D) Site Investigation: The Contractor shall inspect all the specifications and related drawings, and will investigate and confirm the site conditions affecting the work, including, but not limited to:

(1) Physical considerations and conditions of both the material and structure. These considerations include any obstacles or obstructions encountered in accessing or removing the material.

(2) Handling, storage, transportation and disposal of the material.

(3) Availability of qualified and skilled labor.

(4) Availability of utilities.

(5) Exact quantities of all materials to be disturbed and/or removed.

67.11.1.4 WORK BY OTHERS

The City reserves the right during the term of this contract to have work performed on asbestos abatement projects by other contractors as the situation warrants.

67.11.1.5 DEFINITIONS

(A) General Explanation: Certain terms used in this specification are defined below. Definitions and explanations of this specification are not necessarily complete or exclusive, but are general for the work to the extent they are not stated more explicitly in another element of the contract documents.

(B) Definitions In General Use:

(1) Approve: Where used in conjunction with Engineer's response to submittals, requests, applications, inquiries, reports and claims by Contractor, the meaning of term "approved" will be held to limitations of Engineer's responsibilities and duties as specified in contract documents. In no case will "approval" by Engineer be interpreted as a release of Contractor from responsibilities to fulfill requirements of contract documents.

(2) Directed, Requested, Etc.: Where not otherwise explained, terms such as "directed," "requested," "authorized," "selected," "approved," "required," "accepted," and "permitted" mean "directed by Engineer," "requested by Engineer," and similar phrases. However, no such implied meaning will be interpreted to extend Engineer's responsibility into Contractor's responsibility for construction supervision.

(3) Furnish: Except as otherwise defined in greater detail, term "furnish" is used to mean supply and deliver to project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.

(4) Indicated: The term "indicated" is a cross-reference to graphic representations, notes or schedules on drawings, to other paragraphs or schedules in the specifications, and to similar means of recording requirements in contract documents. Where terms such as "shown," "noted," "scheduled," and "specified" are used in lieu of "indicated," it is for purpose of helping reader locate cross-reference, and no limitation of location is intended except as specifically noted.

(5) Install: Except as otherwise defined in greater detail, term "install" is used to describe operations at project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations, as applicable in each instance.

(6) Installer: The term "installer" is defined as the entity (person or firm) engaged by Contractor, or its subcontractor or sub-subcontractor for performance of a particular unit of work at project site, including installation, erection, application and similar required operations. It is a general requirement that such entities (installers) be expert in operations they are engaged to perform.

(7) Provide: Except as otherwise defined in greater detail, term "provide" means furnish and install, complete and ready for intended use, as applicable in each instance.

(8) Testing Laboratory: The term "Testing Laboratory" is defined as an entity engaged by the City to perform specific inspections or tests of the work, either at project site or elsewhere; and to report and (if required) interpret results of those inspections or tests.

(C) Definitions Relative To Asbestos Abatement:

(1) Abatement: Procedures physically taken to control fiber release from ACM. This includes removal, encapsulation, enclosure, and repair.

(2) Aggressive Sampling: Method of sampling in which the individual collecting the air sample creates activity by the use of mechanical equipment during the sampling period to stir up settled dust and simulate activity in that area of the building.

(3) AIHA: American Industrial Hygiene Association.

(4) Airlock: System for permitting entrance and exit while restricting air movement between a contaminated area and an uncontaminated area. It consists of two (2) curtained doorways separated by a distance of at least three (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 second doorway, thereby preventing flow-through contamination.

(5) Air Sampling: Process of measuring the fiber content of a known volume of air collected during a specific period. The procedure utilized for asbestos follows the NIOSH Standard Analytical

Method 7400, or the provisional transmission electron microscopy methods developed by the US EPA which is utilized for lower detection levels and specific fiber identification.

(6) Amended Water: Water to which a surfactant has been added.

(7) ANSI: American National Standards Institute.

(8) Area Air Sampling: Any form of air sampling or monitoring where the sampling device is placed at some stationary location.

(9) Asbestos: Any hydrated mineral silicate separable into commercially usable fibers, including but not limited to chrysotile (serpentine), amosite (cumingtonite-grunerite), crocidolite (riebeckite), tremolite, anthophyllite and actinolite.

(10) Asbestos-Containing Material (ACM): Asbestos or any material containing more than one percent (1%) asbestos.

(11) Asbestos-Containing Waste Material: ACM or asbestos-contaminated objects requiring disposal.

(12) Asbestos Handler: Individual who disturbs, removes, repairs, or encloses friable asbestos material. This individual shall have completed approved training course(s) and be in possession of certification issued by NYCDEP and NYSDOL.

(13) Asbestos Handler Supervisor: Individual who supervises the handlers during an asbestos project and ensures that proper asbestos abatement procedures as well as individual safety procedures are being adhered to. This individual shall have completed approved training course(s) and be in possession of certification issued by NYCDEP and NYSDOL.

(14) Asbestos Handling Certificate: Certificate(s) issued to individuals who have met the criteria established by NYCDEP and/or NYSDOL.

(15) Asbestos Inspection Report: A report on the condition of a building or structure in relation to the presence and condition of asbestos therein.

(16) Asbestos Investigator: An individual certified by NYCDEP as having successfully demonstrated the ability to identify the presence of and evaluate the condition of asbestos in a building or structure.

(17) Asbestos Project: Any form of work performed in connection with the alteration, innovation, modification, or demolition of a building or structure which will disturb (e.g. remove, enclose, encapsulate) more than three (3) linear feet or more than three (3) square feet of friable ACM.

(18) ASTM: The American Society for Testing and Materials International.

(19) Authorized Visitor: Authorized visitor shall mean the Commissioner and the Commissioner's representative, and any representative of a regulatory or other agency having jurisdiction over the project.

(20) Certified Industrial Hygienist (CIH): Individual with a minimum of five (5) years experience as an industrial hygienist and who has successfully completed both levels of the examination administered by the American Board of Industrial Hygiene and who is currently certified by that board.

(21) Certified Safety Professional (CSP): Individual having a bachelor's degree from an accredited college or university and a minimum of four (4) years experience as a safety professional and who has successfully completed both levels of the examination administered by the Board of Certified Safety Professionals and who is currently certified by that board.

(22)City: Shall mean the City of New York.

(23)Clean Room: An uncontaminated area or room that is part of worker decontamination enclosure system with provisions for storage of workers' street clothes and protective equipment.

(24)Clearance Air Monitoring: Employment of aggressive sampling techniques with a volume of air collected to determine the airborne concentration of residual fibers and shall be performed as the final abatement activity.

(25)Commissioner: Shall mean the head of the Agency that has entered into this contract or a duly authorized representative.

(26)Competent Person: Shall mean the designated person as defined in OSHA 29CFR 1926.1101.

(27)Curtained Doorway: Device that consists of at least three (3) overlapping sheets of polyethylene over an existing or temporarily framed doorway. One sheet shall be secured at the top and left side, the second sheet at the top and right side, and the third sheet at the top and left side. All sheets shall have weights attached to the bottom to ensure that the sheets hang straight and maintain a seal over the doorway when not in use.

(28)Decontamination Enclosure System: Series of connected rooms, separated from the work area and from each other by air locks, for the decontamination of workers, materials, waste containers, and equipment.

(29)Encapsulant (Sealant) or Encapsulating Agent: Liquid material which can be applied to ACM and which temporarily controls the possible release of asbestos fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant). This may also be used to seal surfaces from which ACM has been removed.

(30)Encapsulation: Coating or spraying of ACM with a sealant.

(31)Enclosure: Construction of airtight walls and/or ceilings between ACM and the facility environment, or around surfaces coated with ACM, or any other appropriate procedure as determined by the NYCDEP which prevents the release of asbestos fibers.

(32)ELAP: Environmental Laboratory Approval Program administered by the New York State Department of Health.

(33)EPA or USEPA: United States Environmental Protection Agency.

(34)Equipment Room: Contaminated area or room that is part of the worker decontamination enclosure system with provisions for the storage of contaminated clothing and equipment.

(35)Fixed Object: Utility or associated piping within the work area that cannot be removed from the work area.

(36)Friable Asbestos Material: Asbestos or any ACM that can be crumbled, pulverized, or reduced to powder when dry, by hand or other mechanical pressure.

(37)Glove-Bag Technique: Method for removing friable ACM from heating, ventilation, and air conditioning (HVAC) ducts, short piping runs, valves, joints, elbows, and other nonplanar surfaces in a noncontained work area. The glove-bag assembly is a manufactured device consisting of a glove-bag (constructed of at least 6-mil transparent polyethylene), two inward-projecting long sleeve gloves, one inward-projecting water wand sleeve, an internal tool pouch, and an attached, labeled receptacle for asbestos waste. The glove-bag is constructed and installed in such a manner that it surrounds the object or area to be decontaminated and contains all asbestos fibers released during the removal process.

(38)HEPA-Filter: High efficiency particulate air filter capable of trapping and retaining 99.97-percent of particles (asbestos fibers) greater than 0.3-micrometers mass median aerodynamic equivalent diameter.

(39)Holding Area: Chamber in the equipment decontamination enclosure located between the washroom and an uncontaminated area.

(40)Homogeneous Work Area: Portion of the work area that contains one type of ACM and/or where one type of abatement is used.

(41)Industrial Hygiene: Science and art devoted to the recognition, evaluation, and control of those environmental factors or stresses, arising in or from the work place, which may cause sickness, impaired health and well being, or significant discomfort and inefficiency among worker or among the citizens of the community.

(42)Industrial Hygienist: Individual having a college or university degree or degrees in Engineering, Chemistry, Physics or Medicine, or related Biological Sciences who, by virtue of special studies and training, has acquired competence in industrial hygiene. Such special studies and training must have been sufficient in all of the above cognate sciences to provide the abilities:

(a) To recognize the environmental factors and to understand their effect on people and their well being; and,

(b) To evaluate, on the basis of experience and with the aid of quantitative measurement techniques, the magnitude of these stresses in terms of ability to impair people's health and well being; and,

(c) To prescribe methods to eliminate, control, or reduce such stresses when necessary to alleviate their efforts.

(43)Large Asbestos Project: Asbestos project involving the disturbances (e.g. removal, enclosure, encapsulation) of 260-linear feet or more of friable ACM or 160-square feet or more of friable ACM.

(44)Major Violation: Any action, on the job performance or lack of performance that may place any individual at risk other than the worker who commits the violation. A major violation is equivalent to two (2) violation points.

(45)Minor Asbestos Project: Project involving the disturbance (e.g. removal, enclosure, encapsulation, repair) of more than three (3) linear feet, but not more than twenty-five (25) linear feet of friable ACM or more than three (3) square feet, but not more than ten (10) square feet of friable ACM.

(46)Minor Violation: Any action, on the job performance or lack of performance that may place the worker at risk. A minor violation is equivalent to one (1) violation point.

(47)Movable Object: Any equipment or utility in the work area that can be removed from the work area.

(48)Negative Air Pressure Equipment: Portable local exhaust system equipped with HEPA filtration. The system shall be capable of creating a negative pressure differential between the outside and inside of the work area.

(49)NESHAPS: National Emission Standards for Hazardous Air Pollutants.

(50)NIOSH: National Institute for Occupational Safety and Health.

(51)NYCDEP: New York City Department of Environmental Protection.

(52)NYSDOL: New York State Department of Labor.

(53)Occupied Area: Area of the work site where abatement is not taking place and where personnel or occupants normally function or where workers are not required to use personal protective equipment.

(54)OSHA: Occupational Safety and Health Administration.

(55)Person: Individual, partnership, company, corporation, association, firm, organization, governmental agency, administration, or the NYCDEP, or any other group of individuals, or any officer or employee thereof.

(56)Personal Air Monitoring: Method used to determine employees' exposure to airborne fibers. The sample is collected outside the respirator in the worker's breathing zone.

(57)Personal Protective Equipment (PPE): Appropriate protective clothing, gloves, eye protection, footwear, and head gear.

(58)Physician: Person licensed or otherwise authorized under Article 131 Section 65.22 of the New York State Education Law.

(59)Plasticize: Cover floors and walls with polyethylene sheeting as herein specified or by using spray plastics as acceptable to the NYCDEP.

(60)Professional Engineer (PE): Individual having, at a minimum, a Bachelor's Degree in Engineering from an accredited college or university with four (4) years acceptable experience as an engineer and who has successfully completed both levels of the Professional Engineers Examination administered by the State of New York Department of Education, Division of Professional Licensing.

(61)Qualitative Fit Test: Individual test subject's responding (either voluntarily or involuntarily) to a chemical challenge outside the respirator face-piece. Three of the most popular methods include: (1) irritant smoke test; (2) odorous vapor test; and (3) taste test.

(62)Quantitative Fit Test: Exposing the respiratory wearer to a test atmosphere containing an easily detectable, nontoxic 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 test.

(63)Registered Architect (RA): Individual having, at a minimum, a Bachelor's Degree in Architecture from an accredited college or university with three (3) years acceptable experience as an architect and who has successfully completed both levels of the Architects Registration Examination administered by the State of New York Department of Education, Division of Professional Licensing.

(64)Removal: Stripping of any asbestos-containing materials from surfaces or components of a structure or taking out structural components in accordance with 40 CFR 61 Subparts A and M.

(65)Shower Room: Room between the clean room and the equipment room in the worker decontamination enclosure with hot and cold running water controllable at the tap and arranged for complete showering during decontamination.

(66)Small Asbestos Project: Asbestos project involving the disturbance (e.g. removal, enclosure, encapsulation) of more than 25-linear feet and less than 260-linear feet of friable ACM or more than 10-square feet and less than 160-square feet of friable ACM.

(67)Staging Area: Work area near the waste transfer airlock where containerized asbestos waste has been placed prior to removal from the work area.

(68)Structural Member: Load-supporting member of a facility, such as beams and load-supporting walls, or any nonload-supporting member, such as ceiling and nonload-supporting walls.

(69)Surfactant: Chemical wetting agent added to water to improve penetration.

(70)Visible Emissions: Emissions containing particulate material that are visually detectable without the aid of instruments.

(71)Washroom: Room between the work area and the holding area in the equipment decontamination enclosure system where equipment and waste containers are wet cleaned and/or HEPA-vacuumed prior to disposal.

(72)Wet Cleaning: Removal of asbestos fibers from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with amended water.

(73)Work Area: Designated excavation, spaces, or areas within a trench or structure where asbestos abatement activities take(s) place.

(74)Worker Decontamination Enclosure System: Portion of a decontamination enclosure system designed for controlled passage of workers and authorized visitors, consisting of a clean room, a shower room, and an equipment room separated from each other and from the work area by airlocks and curtained doorways.

(75)Work Site: Area where abatement activity is being performed. May be composed of one or more work areas.

67.11.1.6 STANDARD OPERATING PROCEDURES

(A) Develop and implement a written standard procedure for abatement work to ensure maximum protection and safeguard from asbestos exposure of the workers, visitors, employees, public, and environment.

(B) TELEPHONE PAGING DEVICE:

The Contractor or the Contractor's authorized representative shall, at all times during the normal workday or during periods of overtime work under this contract, carry a digital telephone paging device ("Beeper") and/or cellular telephones which can be activated by a telephone number in the 212 or 646 or 718 or 917 area code. The Contractor shall supply the Department of Design and Construction with the activation number for the device and the Contractor is liable to respond back to the calls from DDC within the next one (1) hour period after the Contractor receives calls from DDC. The cost to the Contractor for this device and all charges accruing thereto is deemed included in the price(s) bid for item(s) labeled, "INCREMENTAL COST FOR ASBESTOS ABATEMENT WORK PERFORMED ON EXISTING STEEL PIPE WATER MAIN TO BE REMOVED, COMPLETE".

(C) The standard operating procedure shall ensure:

(1) Tight security from unauthorized entry into the workspace.

(2) Restriction of Contractor's personnel to the immediate work area and access/egress routes.

(3) Donning of proper protective clothing and respiratory protection prior to entering the work area.

(4) Safe work practices in the work place, including provisions for inter-room communications, exclusion of eating, drinking, smoking, or in any way breaking the respiratory protection.

(5) Proper exit practices from the work space to the outside through the showering and decontamination facilities.

(6) Removing asbestos in ways that minimize release of fibers.

(7) Packing, labeling, loading, transporting, and disposing of contaminated material in a way that minimize exposure and contamination.

(8) Emergency evacuation procedures, for medical or safety situations, to minimize the potential exposure to airborne asbestos fibers for emergency personnel, and building environment.

(9) Safety from accidents in the workspace, especially from electrical shocks, fall hazards associated with scaffolding, slippery surfaces, and entanglements in loose hoses and equipment.

(10) Provisions for effective supervision, air monitoring and personnel monitoring for exposure during the work.

(11) Engineering systems that minimize exposure to fibers within the workspace.

(D) Provide an Asbestos Handler Supervisor to provide continuous supervision of all work, and to be responsible for the following:

(1) Ensure that individuals are using proper personal protective equipment and are trained in its use.

(2) Maintain entry log records and ensure that they are recorded in accordance with the provisions of Title 15, Chapter 1 of RCNY.

(3) Surveillance of the work areas at a minimum of once per work shift or as required by Title 15, Chapter 1 of RCNY, to ensure that the workers personal protective equipment is not torn or ripped and that respiratory protection is worn at all times.

(4) Ensure that sufficient personal protective equipment is stored in the clean room.

(5) Take precautions to prevent heat stress. Precautions include, but are not limited to, selecting lightweight protective clothing, reducing the work rate, and providing adequate fluid breaks.

(E) ENGINEERING CONTROLS:

(1) The 8-hour time weighted average airborne concentration of fibers to which any passerby may be exposed shall not exceed 0.01-fibers per cubic centimeter of air when fibers have a physical dimension longer than 5-micrometers as determined by the method prescribed in these specifications.

(2) All large asbestos projects shall utilize negative pressure ventilation equipment.

(3) The negative pressure ventilation equipment shall operate continuously, 24-hours a day, from the establishment of isolation barriers through successful clearance air monitoring. If such equipment shuts off, adjacent areas shall be monitored for asbestos fibers.

(4) On loss of negative pressure or electric power to the negative pressure ventilating units, abatement shall stop immediately and shall not resume until power is restored and negative pressure ventilation equipment is operating again.

(5) Negative pressure ventilation equipment shall be exhausted to the outside of the tent enclosure away from passer-by and/or sidewalks.

(a) At no time shall the negative pressure ventilation unit exhaust with 40-feet of a receptor or adversely affect the intake ports, louvers, or entrances for the adjacent buildings.

(b) Heavy duty ducting of equivalent, or larger, shape and dimension as that of the negative pressure ventilation exhaust port shall be used to exhaust to the structure.

(c) All ducting shall be sealed and braced or supported to maintain airtight joints.

(6) Where ducting to the outside is not possible, a second negative pressure ventilation unit compatible with the primary unit's capacity shall be connected in series. The area receiving the exhaust shall have sufficient, nonrecycling exhaust capacity to the outside of the structure.

(7) In the event that there is a failure of the containment system or a breach in the Isolation Barriers, all abatement work will cease and the Contractor will immediately correct the condition. Abatement work will not resume until the work area has been smoke tested by the third party laboratory and approved by the Project Monitor.

(F) LOCKDOWN ENCAPSULATION PROCEDURES:

The following procedures shall be followed to seal in nonvisible residue while conducting lockdown encapsulation on all surfaces from which ACM is removed:

(a) Only encapsulants rated as acceptable or marginally acceptable on the basis of Battelle Columbus Laboratory test procedures and rating requirements developed under the 1978 USEPA Contract shall be used for lockdown encapsulation.

(b) The encapsulant solvent or vehicle shall not contain a volatile hydrocarbon unless reviewed and approved by DEP.

(c) Latex paint with solids content greater than 15-percent shall be considered a lockdown sealant for coating all nonmetallic surfaces.

(d) Encapsulants shall be applied using airless spray equipment. Spraying is to occur at the lowest pressure range possible to minimize fiber release from encapsulant impact at the surface. It shall be applied with a consistent horizontal or vertical motion.

67.11.1.7 NOTIFICATIONS, PERMITS, WARNING SIGNS, LABELS, AND POSTERS

(A) Erect bilingual (English-Spanish) warning signs around the excavation and at every point of potential entry from the street level which can be viewed by the public without obstruction, in accordance with OSHA 29 CFR 1926.1101 (K) (Sign Specifications) and Title 15, Chapter 1 of RCNY. The warning signs shall be a bright color so that they will be easily noticeable. The size of the sign and the size of the lettering shall be no less than OSHA requirements.

(B) Provide the required labels for all polyethylene bags and all drums utilized to transport contaminated material to the landfill in accordance with OSHA 29 CFR 1926.1101 (K)(2) and by 49 CFR Parts 171 and 172 of the Department of Transportation regulations.

(C) Provide any other signs, labels, warnings, and posted instructions that are necessary to protect, inform and warn people of the hazard from asbestos exposure. Post in a prominent and convenient place for the workers a copy of the latest applicable regulations from OSHA, EPA, NIOSH, State of New York and New York City and any additional items mandated for posting by the aforementioned regulations.

(D) Furnish all permits, variances and notices required to perform the work.

67.11.1.8 EMERGENCY PRECAUTIONS

(A) Establish emergency exit(s) from the work area. The clean side of all emergency exits shall be equipped with two full sets of protective clothing and respirators at all times.

(B) Notify local medical emergency personnel, both ambulance crews and hospital emergency room staff prior to commencement of abatement operations as to the possibility of having to handle contaminated or injured workmen, and shall be advised on safe decontamination.

(C) Prepare to administer first aid to injured personnel after decontamination. Seriously injured personnel shall be treated immediately or evacuated immediately for decontamination. When an injury occurs, precautions shall be taken to reduce airborne fiber concentrations (i.e. misting of the air with water) until the injured person has been removed from the work area.

(D) Notify, before actual removal of the asbestos material, the local police and fire departments to the danger of entering the excavated area where removal is taking place. Contractor shall make every effort to help these agencies form plans of action should their personnel need to enter the contaminated area.

67.11.1.9 SUBMITTALS

(A) Pre-Construction Submittals:

Attend a pre-construction meeting scheduled by the City of New York Department of Design and Construction. This meeting shall also be attended by a designated representative of the City of New York third party air monitoring firm and the Engineer. At this meeting, the Contractor shall present three (3) copies of the following items, bound and indexed. The detailed plan of action must be submitted at least five (5) days prior to the pre-construction meeting.

(a) Contractor's scope of work, work plan and schedule.

(b) Notifications to Government Agencies.

(c) Copies of permits, clearance and licenses if required.

(d) Schedules: The Contractor shall provide to the Engineer a copy of the following schedules for approval. Once approved, schedules shall be maintained and updated as received. The Contractor shall post a copy of all schedules at the site:

(1) A construction schedule stating critical dates of the project including, but not limited to, mobilization, work area preparation, demolition, gross removal, fine cleaning, encapsulation, inspections, clearance monitoring, and phase of refinishing and final inspections. The schedule shall be updated biweekly, at a minimum.

(2) A schedule of staffing stating number of workers per shift per activity, name and number of supervisor(s) per shift, shifts per day, and total days to be worked.

(3) Submit all changes in schedule or staffing to the Engineer prior to implementation.

(4) A schedule of equipment to be used including numbers and types of all major equipment such as HEPA Air Filtration Units, HEPA-vacuums, airless sprayers, Water Atomizing Devices and Type "C" compressors.

(e) A written plan and shop drawings for preparation of work site and decontamination chamber.

(f) Description of protective clothing and approved respirator to be used, make, model, NIOSH approval numbers.

(g) Delineation of responsibility of work site supervision, including competent person, with names, resumes, and home telephone numbers.

(h) Explanation of decontamination sequence and isolation techniques.

(i) Description of specific equipment to be utilized, including make and model number of air filtration devices, vacuums, sprayers, etc.

(j) Description of any prepared methods, procedures, techniques, or equipment other than those specified in the contract documents.

(k) Explanation of the handling of contaminated wastes including EPA and NYCDEP identification numbers of Waste Hauler.

(l) Description of the final clean-up procedures to be used.

(m) Name and qualifications of Contractor's testing laboratory including AIHA accreditation, and proof of NIOSH PAT and NIST/NVLAP Bulk Quality Assurance Proficiency of OSHA samples for approval by the City of New York Department of Design and Construction.

(n) Written description of emergency procedures to be followed in case of injury or fire. This section must include evacuation procedures, source of medical assistance (name and telephone number) and procedures to be used for access by medical personnel (examples: first aid squad and physician). NOTE: Necessary Emergency Procedures Shall Take Priority Over All Other Requirements Of These Specifications.

(o) Material Safety Data Sheets (MSDS) for encapsulants, sealants, firestopping foam, cleaners/disinfectants, spray adhesive and any and all potentially hazardous materials that may be employed on the project. No work involving the aforementioned will be allowed to proceed until MSDS are reviewed.

(p) Worker Training And Medical Surveillance: Contractor shall submit a list of the persons who will be employed by The Contractor and the Contractor's Subcontractors in the removal work. Present evidence that workers have received proper training required by the regulations and the medical examinations required by OSHA 29 CFR 1926.1101.

(q) Logs: Specimen copies of daily progress log, visitor's log, and disposal log.

(1) The Contractor shall provide a permanently bound log book of minimum 8-1/2" x 11" size at the entrance to the Worker and Waste Decontamination enclosure system as hereinafter specified. Log book shall contain on title page the project name, name, address and phone number of Environmental Control Representative; name, address and phone number of Abatement Contractor; name, address and phone number of Contractor and City's air testing entity; and, emergency numbers including, but not limited to local Fire/Rescue Department. Log book shall contain a list of personnel approved by the laboratory for entry into the work area.

(2) All entries into the log shall be made in nonwashable, permanent ink and such pen shall be strung to or otherwise attached to the log to prevent removal from the log-in area. Under no circumstances shall pencil entries be permitted. Any significant events occurring during the abatement project shall be entered into the log. Upon completion of the job, the Contractor shall submit the logbook containing a day-to-day record of personnel log entries countersigned by the Project Monitor everyday.

(r) Worker's Acknowledgments: Submit statements signed by each employee that the employee has received training in the proper handling of ACM understands the health implications and risks involved; and understands the use and limitations of the respiratory equipment to be used.

(B) Submit copies of the following items to the Project Monitor during the work:

(1) Security and safety logs showing names of person entering workspace, date and time of entry and exit, record of any accident, emergency evacuation, and any other safety and/or health incident.

(2) Progress logs showing the number of workers, supervisors, hours of work and tasks completed shall be submitted daily to the Engineer.

(3) Contractor's current work progress shall be submitted for review by the Engineer at weekly progress meetings.

(4) All Contractors' air monitoring and inspection results.

(C) Project Closeout Submittals:

Upon completion of the project and as a condition of acceptance, the Contractor shall present two (2) copies of the following items, bound and indexed:

(1) Lien Waivers from Contractor, Subcontractors and Suppliers,

(2) Daily OSHA air monitoring results,

(3) All Waste Manifests (Asbestos and Construction Debris), seals and disposal logs,

(4) Field Sign-In/Sign-Out Logs for every shift,

(5) A Letter of Compliance stating that all the work on this project was performed in accordance with the specifications and all applicable Federal, State and Local regulations,

(6) All Warranties as stated in the specifications,

(7) Fully executed disposal certificates and transportation manifest.

67.11.1.10 QUALITY ASSURANCE

(A) All work required for the completion of this project or called for in this specification must be executed in a workmanlike manner by using the appropriate methods established by regulatory requirements and/or industrial standards. All workmanship or work methods are subject to review and acceptance by the Engineer. Throughout the specification, reference is made to codes and standards which establish qualities, levels or types of workmanship which will be considered acceptable. It is the Abatement Contractor's responsibility to comply with these codes and standards during the execution of this work.

(B) All materials and equipment required or consumed during the work of this contract must meet the minimum acceptable criteria established by codes and standards referenced elsewhere in this specification. Materials and equipment must be submitted for prior approval as part of the Contractor's "Shop Drawings".

(C) It is the Abatement Contractor's responsibility, when so required by the specification or upon written request from the Commissioner or the Commissioner's representative to furnish all required proof that workmanship, materials and/or equipment meet or exceed the codes and standards referenced. Such proof shall be in the form requested, typically a certified report or test conducted by a testing entity approved for that purpose by DDC.

(D) The Contractor shall furnish proof that employees working under the Contractor's supervision have had instruction on the dangers of asbestos exposure, on respirator use, decontamination, and OSHA

regulations. This proof shall be in the form of a notarized affidavit to the effect that the above requirements have been satisfied.

(E) The Contractor will have at all times in the Contractor's possession and in view at the job site the OSHA regulations 29 CFR 1910.1001, and 1926.1101 Asbestos, and Environmental Protection Agency 40 CFR, Part 61, subpart B: National Emission Standard for asbestos, asbestos stripping, work practices and disposal of asbestos waste. The Contractor shall also have one copy of NYC Title 15, Chapter 1 of RCNY and NYS DOL ICR 56 at the job site at all times.

(F) Familiarity With Pertinent Codes And Standards: In procuring all items used in this work, it is the Contractor's responsibility to verify the detailed requirements of the specifically named codes and standards and to verify that the items procured for use in this work meet or exceed the specified requirements, and are suitable for their intended use.

(G) Rejection Of Noncomplying Items: The Commissioner reserves the right to reject items incorporated into the work that fail to meet the specified minimum requirements. The Commissioner further reserves the right, and without prejudice to other recourse that maybe taken, to accept noncomplying items subject to an adjustment in the contract amount as approved by the City.

(H) Applicable Regulations, Codes And Standards: Applicable standards listed in these specifications include, but are not necessarily limited to, standards promulgated by the following agencies and organizations:

(1) United States Environmental Protection Agency (EPA or USEPA)
Region II
Asbestos NESHAPS Contact
Air And Waste Management Division
(Air Compliance Branch) - USEPA
290 Broadway, 21st Floor
New York, New York 10007-1866
212-637-3660

(2) Occupational Safety and Health Administration (OSHA)
Region II - Regional Office
201 Varick Street, Room 908
New York, New York 10014
212-337-2378

(3) National Electrical Code (NEC)
See NFPA

(4) National Fire Protection Association (NFPA)
1 Batterymarch Park
Quincy, Massachusetts 02169-7471
617-770-3000

(5) National Institute for Occupational Safety and Health (NIOSH)
Robert A. Taft Laboratory
4676 Columbia Parkway
Mailstop R12 Cincinnati, Ohio 45226
513-841-4428

(6) Department of Health and Mental Hygiene (DOHMH)
Environmental Investigation
125 Worth Street
New York, New York 10013
212-442-3372

(7) American National Standards Institute (ANSI)
(Successor to USASI and ASA)
25 West 43rd Street (between 5th and 6th Avenue), 4th Floor
New York, New York 10036
212-642-4900

(8) American Society for Testing and Materials (ASTM)
100 Bar Harbor Drive
West Conshohocken, Pennsylvania 19428-2959
610-832-9500

(9) New York City Department of Environmental Protection (NYCDEP)
Bureau of Environmental Compliance
Asbestos Control Program
59-17 Junction Boulevard, 8th Floor
Corona, New York 11368
718-595-3682

(10) New York City Department of Sanitation
125 Worth Street, Room 714
New York, New York 10013
212-566-1066

(11) New York State Department of Labor (NYSDOL)
Division Of Safety And Health
Engineering Services Unit
State Office Building Campus
Albany, New York 12240-0010

(I) Post all applicable regulations in a conspicuous place at the job site. Assure that the regulations are not altered, defaced or covered by other materials. One copy of each regulation must also be kept at the Contractor's office.

67.11.1.11 CITY/CONTRACTOR RESPONSIBILITIES

(A) The City will not enter the portions of the excavation, in which work is being performed during the entire asbestos removal operation, including completion of clean up.

(B) The Contractor shall provide a plan for 24-hours job security both for prevention of theft and for barring entry of curious but unprotected personnel into work areas.

(C) The Contractor shall provide own means of power if needed and the City will not be held responsible for the downtime due to faulty Contractor's equipment.

(D) The Contractor shall provide, at Contractor's own expense, all electrical, water, and waste connections, tie-ins, extensions, and construction materials, supplies, etc. At the end of each shift, the Contractor shall disconnect all hoses within the work zone and place in equipment room of the worker decontamination unit. The Contractor shall ensure positive shutoff of all water to work area during nonworking hours.

(E) All temporary facilities required to be installed, shall be subject to the approval of the Commissioner. Prior to starting the work at any site; specify clearly the temporary locations of facilities preferably with sketches and submit the same to the Engineer for approval.

(F) The Contractor shall provide water needed to conduct the required asbestos abatement. All temporary plumbing or adaptations to supply the needs of the work area shall be installed and removed by the Contractor and the cost thereof included in the unit price bid for abatement work.

Shower water for the decontamination unit shall be provided hot. Heating of water, if necessary, shall be provided by the Contractor.

(G) Any additional electrical equipment (i.e. transformers, etc.), which is necessary shall be at the Contractor's expense.

(H) The Contractor shall provide fire protection in accordance with all State and Local fire codes.

(I) Any parts of the service lines, within the excavated work area, disturbed or damaged by the installation and/or removal of the temporary service lines, shall be restored to their original condition by the Contractor to the satisfaction of the respective utility company.

(J) Contractor shall supply hot shower water necessary for use in the decontamination unit.

67.11.1.12 USE OF THE AREA

(A) The Contractor shall confine Contractor's apparatus, the storage of materials, and supplies, and the operation of the Contractor's workmen to limits established by law, ordinances, and the directions of the Engineer. All flammable or combustible materials shall be properly stored to obviate fire and in areas approved by the Engineer.

(B) The Contractor shall assure of a clear path out of the excavated area, that appropriate safety barriers are established to prevent access, and that work areas are kept neat, clean, and safe.

(C) All surrounding work, fixtures, soil lines, drains, water lines, gas pipes, electrical conduit, wires, utilities, etc. which are to remain in place shall be carefully protected and, if disturbed or damaged, shall be repaired or replaced as directed by the City in accordance with the terms of this contract.

(D) Attention is specifically drawn to the fact that other contractors, performing the work of other contracts, may be (or are) brought upon any of the work sites of this contract. Therefore, the Contractor shall not have exclusive rights to any site of work and shall fully cooperate and coordinate Contractor's work with the work of other contractors who may be on (or are on) any site of the work of this contract. Regulated area exempted.

(E)Temporary toilet facilities must be provided by the Contractor on the site. Coordinate location of such facilities with the Engineer.

67.11.1.13 PROTECTION AND DAMAGE

(A) The Contractor is responsible to cover and protect all equipment that cannot be removed from work areas.

(B) No materials or debris shall be thrown within the excavated area.

(C) Debris shall be removed from the work site daily. Work area shall be left neat and clean after each work shift, so that work may proceed the next regular workday without interruption. Limited bag storage may take place within the work area when approved by the Engineer.

67.11.1.14 RESPIRATORY PROTECTION REQUIREMENTS

(A) Respiratory protection shall be worn by all individuals who may be exposed to asbestos fibers from the initiation of the asbestos project until all areas have successfully passed clearance air monitoring in accordance with regulations and these specifications.

(B) The Contractor shall develop and implement a written respiratory protection program with required site-specific procedures and elements. The program shall be administered by a properly trained individual. The written respiratory protection program shall include the requirements set forth in OSHA Standard 29 CFR 1910.134, at a minimum.

(C) The Contractor shall provide workers with individually issued and marked respiratory equipment. Respiratory equipment shall be suitable for the asbestos exposure level(s) in the work area(s), as specified in OSHA Standards 26 CFR 1910.134 and 29 CFR 1926.1101, NIOSH Standard 42 CFR 84, or as more stringently specified otherwise, herein.

(D) Where respirators with disposable filter parts are employed, the Contractor will provide sufficient filter parts for replacement as necessary or as required by the applicable regulation.

(E) All respiratory protection shall be NIOSH approved. All respiratory protection shall be provided by the Contractor, and used by workers in conjunction with the written respiratory protection program.

(F) Contractor shall provide respirators selected by an Industrial Hygienist that meet the following requirements:

AIRBORNE CONCENTRATION OF ASBESTOS OR CONDITIONS OF USE	REQUIRED RESPIRATOR
Not in excess of 1-fibers per cubic centimeter (f/cc), ten (10) times Permissible Exposure Level (PEL)	Half-mask air purifying respirator, other than a disposable respirator, equipped with high efficiency filters.
Not in excess of 5-f/cc, 50 times PEL	Full face-piece air-purifying respirator equipped with high efficiency filters.
Not in excess of 100-f/cc, 1,000 times PEL	Powered air purifying respirator equipped with equipped with high efficiency filters or any supplied air respirator operated in continuous flow mode.
Not in excess of 100-f/cc, 1,000 times PEL	Full face-piece supplied air respirator operate in pressure demand mode.
Greater than 1,000-f/cc, 10,000 times PEL, or unknown concentration	Full face-piece supplied air respirator operate in pressure demand mode, equipped with an auxiliary positive pressure self-contained breathing apparatus.

(G) Selection of high efficiency filters:

(1) All high efficiency filters shall have a nominal efficiency rating of 100 (99.97-percent effective) when tested against 0.3-micrometer monodisperse diethyl-hexyl phthalate (DOP) particles.

(2) Choose N-, R-, or P- series filters based upon the presence or absence of oil particles.

(a) N- series filters shall only be used for non-oil solid and water based aerosols or fumes.

(b) R- and P -series filters shall be used when oil aerosols or fumes (i.e., lubricants, cutting fluids, glycerin, etc.) are present. The R- series filters are oil resistant and the P- series filters are oil proof.

(c) Follow filter manufacture recommendations.

(3) If a vapor hazard exists, use an organic vapor cartridge in combination with the high efficiency filter.

(H) Historical airborne fiber level data may serve as the basis for selection of the level of respiratory protection to be used for an abatement task. Historical data provided by the Contractor shall be based on personal air monitoring performed during work operations closely resembling the processes, type of material, control methods, work practices, and environmental conditions present at the site. Documentation of aforementioned results may be requested by the City and/or Testing Laboratory for review. This will not relieve the Contractor from providing personal air monitoring to

determine the time-weighted average (TWA) for the work under contract. The TWA shall be determined in accordance with 29 CFR 1926.1101.

(I) At no time during actual removal operations shall half-mask air purifying respirators be allowed unless a full 8-hour TWA and excursion limit have been conducted, and reviewed by the Project Monitor. Use of single use dust respirators is prohibited for the above respiratory protection.

(J) Workers shall be provided with personally issued and individually marked respirators. Respirators shall not be marked with any equipment that will alter the fit of the respirator in any way. Only waterproof identification markers shall be used.

(K) The Contractor shall ensure that the workers are qualitatively or quantitatively fit tested by an Industrial Hygienist initially and every 12-months thereafter with the type of respirator the Contractor will be using.

(L) Whenever the respirator design permits, workers shall perform the positive and negative air pressure fit test each time a respirator is worn. Powered air-purifying respirators shall be tested for adequate flow as specified by the manufacturer.

(M) No facial hairs (beards) shall be permitted to be worn when wearing respiratory protection that requires a mask-to-face seal.

(N) If a worker wears glasses, a spectacle kit to fit their respirator shall be provided by the Contractor at the Contractor's expense.

(O) Respiratory protection maintenance and decontamination procedures shall meet the following requirements:

(1) Respirators shall be inspected and decontaminated on a daily basis in accordance with OSHA 29 CFR 1910.134 (b); and,

(2) High efficiency filters for negative pressure respirators shall be changed after each shower; and,

(3) Respiratory protection shall be the last piece of worker protection equipment to be removed. Workers must wear respirators in the shower when going through decontamination procedures as stated in Subsection 67.11.3.3; and,

(4) Airline respirators with high efficiency filtered disconnect shall be disconnected in the equipment room and worn into the shower. Powered air-purifying respirator face pieces shall be worn into the shower. Filtered/power pack assemblies shall be decontaminated in accordance with manufacturers recommendations; and,

(5) Respirators shall be stored in a dry place and in such a manner that the face-piece and exhalation valves are not distorted; and,

(6) Organic solvents shall not be used for washing of respirators.

(P) Authorized visitors shall be provided with suitable respirators and instruction on the proper use of respirators whenever entering the work area. Qualitative fit test shall be done to ensure proper fit of respirator.

67.11.1.15 PROTECTIVE CLOTHING

(A) Provide worker protection as required by the most stringent OSHA and/or EPA standards applicable to the work. Provide to all workers, foremen, superintendents, authorized visitors and inspectors, protective disposable clothing consisting of full-body coveralls, head covers, gloves and 18-inch high boot type covers or reusable footwear.

(B) In addition to personal protective equipment for workers, the Contractor shall make available at each worksite at least four (4) additional uniforms and required respiratory equipment each day for personnel who are authorized to inspect the work site. The Contractor shall also provide, for the duration of the work at any site involving a decontamination unit for worksite access, a lockable storage locker for use by the Engineer. In addition to respiratory masks for workers, the Contractor must have on hand at the beginning of each work day, at least four (4) masks each with two (2) sets of fresh filters, for use by personnel who are authorized to inspect the worksite. The Contractor shall check for proper fit of the respirators of all City personnel authorized to enter the work area.

(C) Asbestos handlers involved in tent procedures 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. The double layer personal protective equipment shall be used for installation of the tent and throughout the procedure, if a decontamination unit (with shower and clean room) is contiguous to the work area, only one (1) layer of disposable personal protective equipment shall be required; in this case, prior to exiting the tent the worker shall HEPA vacuum and wet clean the disposable suit.

The outer disposable suit (if two (2) suits are worn) shall be removed and remain in the tent upon exiting. Following the tent disposal and work site clean up the workers shall immediately proceed to a shower at the work site. The inner disposal unit and respirator shall be removed in the shower after appropriate wetting. The disposal clothing shall be disposed of as asbestos-containing waste material. The workers shall then fully and vigorously shower with supplied liquid bath soap, shampoo, and clean dry towels.

(D) Coveralls: Provide disposable full-body coveralls and disposable head covers. Require that they be worn by all workers in the work area. Provide a sufficient number for all required changes for all workers in the work area.

(E) Boots: Provide work boots with non-skid soles, and where required by OSHA, foot protection, for all workers. Provide boots at no cost to workers. Paint uppers of all boots yellow with waterproof enamel. Do not allow boots to be removed from the work area for any reason after being contaminated with ACM and/or dust.

(F) Hard Hats: Provide hard hats as required by OSHA for all workers, and provide a minimum of four (4) spares for Inspectors, visitors, etc. Label all hats with same warning label as used on disposal bags. Require hard hats to be worn at all times that work is in progress that may cause potential head injury. Provide hard hats of the type with polyethylene strap suspension. Require hats to remain in the work area throughout the work. Thoroughly clean and decontaminate and bag hard hats prior to removing them from the work area at the end of the work.

(G) Goggles: Provide eye protection (goggles) as required by OSHA for all workers involved in any activity that may potentially cause eye injury. Require them to be worn at all times during these activities. Thoroughly clean and decontaminate goggles before removing them from the work area.

(H) Gloves: Provide work gloves to all workers, of the type dictated by the work and OSHA Standards. Do not remove gloves from the work area. Dispose of as asbestos-contaminated waste at the end of the work. Gloves shall be worn at all times, except during work area preparation activities that do not disturb ACM.

(I) Reusable footwear, hard hats and eye protection devices shall be left in the contaminated Equipment Room until the end of the asbestos abatement work.

(J) Disposable protective clothing shall be discarded and disposed of as asbestos waste every time the wearer exits from the workspace to the outside through the decontamination facility.

(K) Respirators, disposable coveralls, head covers and foot covers shall be provided by the Contractor for the Project Monitor, Engineer and any other authorized representative who may inspect the work area. Provide two (2) respirators and six (6) respirator filter changes per day.

67.11.1.16 AIR MONITORING - CONTRACTOR

(A) The Contractor shall employ a qualified Industrial Hygiene Laboratory to analyze air samples in accordance with OSHA Regulations, 1926.1101 (Asbestos Standards for Construction) and New York City regulations. All costs for this work shall be deemed included in the price(s) bid for item(s) labeled, "INCREMENTAL COST FOR ASBESTOS ABATEMENT WORK PERFORMED ON EXISTING STEEL PIPE WATER MAIN TO BE REMOVED, COMPLETE".

(B) The Industrial Hygiene Laboratory shall be a current proficient participant in the American Industrial Hygiene Association (AIHA) PAT Program. The laboratory identification number shall be submitted and approved by the City. The laboratory shall be accredited by the AIHA and New York State Department of Health Environmental Laboratory Approval Program (ELAP).

(C) The Industrial Hygiene Laboratory shall also be a current proficient participant in the NIST/NVLAP Quality Assurance Program for the identification of bulk samples. Laboratory identification number shall be submitted to and approved by the City.

(D) The Contractor shall require a competent person (as defined in OSHA 1926.1101) to perform the following functions and to be on-site continuously for the duration of the project:

(1) Monitor the set up of the work area enclosure and ensure its integrity.

(2) Control entry and exit into the work enclosure.

(3) Ensure that employees are adequately trained in the use of engineering controls, proper work practices, proper personal protective equipment and in decontamination procedures.

(4) Insure that employees use proper engineering controls, proper work practices, proper personal protective equipment and proper decontamination procedures.

(5) The competent person (as defined in OSHA1926.1101) shall check for rips and tears in work suits, and ensure that they are mended immediately or replaced.

(E) Air monitoring responsibilities, shall be performed by a representative of the testing laboratory retained by the Contractor.

(F) Contractor shall submit to the City all credentials of the designated (as defined in OSHA 1926.1101) and Industrial Hygiene Laboratory representative for approval.

(G) Air monitoring and inspection shall be conducted by the Contractor's competent person (as defined in OSHA 1926.1101).

(H) Continuous (daily or per shift) monitoring and inspection will include work area samples, personnel samples from the breathing zone of a worker to accurately determine the employees' 8-hour TWA (unless Type C respirators are used) and decontamination unit clean room samples.

(I) Work area samples and employee personnel samples shall be taken using pumps whose flow rates can be determined to an accuracy of ±5-percent, at a minimum of two (2) liters per minute. This must be demonstrated at the job site.

(J) Sampling and analysis methods shall be per NIOSH 7400A.

(K) Test Reports:

(1) Promptly process and distribute one (1) copy of the test results, to the Commissioner.

(2) Prompt reports are necessary so that if required, modifications to work methods and/or practices may be implemented as soon as possible.

(3) Contractor shall by facsimile notify the Commissioner within 24-hours of the results of each test, followed by written notification within three (3) days.

(L) The Contractor's competent person shall conduct inspections and provide written reports daily. Inspections will include checking the standard operating procedures, engineering control systems, respiratory protection and decontamination systems, packaging and disposal of asbestos waste, and any other aspects of the project which may affect the health and safety of the people and environment.

(M) All costs for required air monitoring by the Contractor's competent person shall be borne by the Contractor.

(N) The City reserves the right to conduct air and surface dust sampling in conjunction with and separate from the Testing Laboratory for the purposes of Quality Assurance.

(O) All samples shall be accompanied by a Chain of Custody Record that shall be submitted to the Project Monitor upon completion of analysis.

67.11.1.17 TESTING LABORATORY

(A) The City, at its own expense, will employ the services of an Independent Testing Laboratory. The Testing Laboratory will perform air sampling activities at the site and perform periodic observations of the work site.

(B) The Laboratory will perform analysis of air samples utilizing phase contrast microscopy (PCM) and/or transmission electron microscopy (TEM). This laboratory shall meet the standards stated herein.

(C) Observations will include, but not be limited to, checking the standard operating procedures, engineering control systems, respiratory protection, decontamination systems, packaging and disposal of asbestos waste, and any other aspects of the project that may affect the health and safety of the environment, Contractor, and/or facility occupants.

(D) The Testing Laboratory shall have access to all areas of the asbestos removal project at all times and shall continuously inspect and monitor the performance of the Contractor to verify that said performance complies with this specification. The Testing Laboratory shall be on site throughout the entire abatement operation.

(E) The City will be responsible for costs incurred with the required laboratory work. Any subsequent additional testing required due to limits exceeded during initial testing shall be paid for by the Contractor.

(F) At a minimum, air sampling shall be conducted in accordance with the following schedule:

ABATEMENT ACTIVITY	PRE-ABATEMENT	DURING ABATEMENT	POST- ABATEMENT
Equal to or greater than 10,000-square feet or 10,000-linear feet of ACM	PCM	PCM	TEM
Less than 10,000-square feet or 10,000-linear feet of ACM	PCM	PCM	PCM
Exceptions to the above:			
Boiler Rooms	PCM	PCM	PCM
Tent and Glovebag Procedures	PCM	PCM	PCM
Demolitions	PCM	PCM	PCM

Note: TEM is acceptable wherever PCM is required.

(G) Prior to commencement of abatement activities, the Testing Laboratory will collect a minimum number of area samples inside each homogeneous work area.

(1) Samples will be taken during normal activities and circumstances at the work site.

(2) Samplers shall be located within the proposed work area and at all proposed isolation barrier locations.

(3) Samples shall be analyzed using PCM.

(4) The number of samples to be collected will be determined by the size of the project.

(H) Area air sampling during abatement shall be conducted as specified in the following documents except as restricted or modified herein:

(1) Measuring Airborne Asbestos Following An Abatement Action, US EPA document 600/4-85-049 (Nov., 1985);

(2) Guidance For Controlling Asbestos-Containing Materials In Buildings; US EPA Publication 560/5-85-024 (June, 1984);

(3) Methodology For The Measurement Of Airborne Asbestos By Electron Microscopy, US EPA Contract No. 68-02-3266;

(4) Mandatory And Nonmandatory Electron Microscopy Methods, set forth in 40 CFR Part 763, Subpart E, Appendix A;

(5) NIOSH 7400 method using "A" counting rules.

(I) In accordance with the above criteria, area samples (see NYCDEP Asbestos Control Program Regulations) shall conform to the following schedule:

AREA SAMPLES FOR ANALYSIS BY	MINIMUM VOLUME	FLOW RATE
PCM, 25-mm cassettes	560-liters	5 to 15-liters/minute
TEM, 25-mm cassettes	560-liters	1 to 10-liters/minute
TEM, 37-mm cassettes	1,250-liters	1 to 10-liters/minute

(1) All costs resulting from additional air tests and observations shall be borne by the Contractor. These costs may include, but are not limited to, labor, analysis fees, materials, and expenses.

(2) After the area has been found to be in compliance, the Contractor may remove Isolation Barriers, tents if any and perform final cleaning as specified.

(J) Clearance And Excavation Re-entry Criteria:

(1) The clearance criteria shall be applied to each excavated work area independently.

(2) For PCM analysis, the clearance air monitoring shall be considered satisfactory when all of the samples regardless of the size of the project are less than or equal to 0.01-f/cc or the background concentrations, whichever is greater.

(3) For TEM analysis, the clearance air monitoring shall be considered satisfactory when the requirements stated in 40 CFR Part 763, Subpart E, Appendix A, Section IV are met.

(4) As soon as the air monitoring tests are completed, the Testing Laboratory will send the results of such tests to the City and notify the Contractor.

(5) The Contractor shall cooperate fully with all aspects of air monitoring operations.

67.11.1.18 TAMPERING WITH TEST EQUIPMENT

All parties to this contract are hereby notified that any tampering with testing equipment will be considered an attempt at falsifying reports and records to federal and state agencies and each offense will be prosecuted under applicable state and federal criminal codes to the fullest extent possible.

67.11.2 PRODUCTS

67.11.2.1 MATERIALS

(A) Wetting Agents: Surfactant shall consist of resin materials in a water base, that have been tested to ensure materials are nontoxic and nonhazardous. Surfactants shall be installed according to the manufacturer's written instructions.

(B) Encapsulants (Sealants, Lockdown Encapsulants): Encapsulants shall consist of pigmented (nontransparent) liquid material which can be applied to asbestos containing materials or bare surfaces exposed after an abatement which temporarily controls the possible release of asbestos fibers from the material or surface either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant). The encapsulant shall be installed according to the manufacturer's written instructions. Sealing materials to be applied to structural members and decking assemblies scheduled to receive spray-applied fireproofing shall be approved by UL for use with the specified material.

(C) Fire Retardant Polyethylene Sheeting: Minimum uniform thickness of 6-mil. Provide largest size possible to minimize seams.

(D) Fire Retardant Reinforced Polyethylene Sheeting: For covering floor of decontamination units, provide translucent, nylon reinforced or woven polyethylene laminated, fire retardant polyethylene sheeting. Provide largest size possible to minimize seams, minimum uniform thickness 6-mil.

(E) Drums: Asbestos-transporting drums, sealable and clearly marked with warning labels as required by OSHA and EPA.

(F) Polyethylene Disposal Bags: Asbestos disposal bags, minimum of 6-mil thick. Bags shall be clearly marked with warning labels as required by OSHA and EPA.

(G) Signs: Asbestos warning signs for posting at perimeter of work area, as required by OSHA and EPA.

(H) Waste Container Bag Liners And Flexible Trailer Trays: One piece leak-resistant flexible tray with absorbent pad.

(I) Tape: Provide tape which is of high quality with an adhesive that is formulated to aggressively stick to sheet polyethylene.

(J) Spray Adhesive: Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.

(K) Flexible Duct: Spiral reinforced flex duct for air filtration devices.

(L) Protective Clothing: Workers shall be provided with sufficient sets of properly fitting, full-body, disposable coveralls, head covers, gloves, and 18-inch high boot-type foot covers. Protective clothing shall conform to OSHA Standard 29 CFR 1926.1101.

67.11.2.2 TOOLS AND EQUIPMENT

(A) Air Filtration Device (AFD): AFDs shall be equipped with High Efficiency Particulate Air (HEPA) filtration systems and shall be approved by and listed with Underwriter's Laboratory.

(B) Transportation Equipment: Transportation Equipment, as required, shall be suitable for loading, temporary storage, transit and unloading of contaminated waste without exposure to persons or property. Any temporary storage containers positioned outside the excavated work area for temporary storage shall be metal, closed and locked.

(C) Vacuum Equipment: All vacuum equipment utilized in the work area shall utilize HEPA filtration systems.

(D) Vacuum Attachments: Soft Brush Attachment, Asbestos Scraper Tool, Drill Dust Control Kit.

(E) Electric Sprayer: An electric airless sprayer suitable for application of encapsulating material and shall be approved by and listed with Underwriters Laboratory.

(F) Water Sprayer: The water sprayer shall be an airless or other low-pressure sprayer for amended water application.

(G) Water Atomizer: Powered air-misting device equipped with a ground fault interrupter and equipped to operate continuously.

(H) Brushes: All brushes shall have nylon bristles. Wire brushes are excluded from use due to their potential to shred asbestos fibers into small, fine fibers. Wire brushes may be used for cleaning pipe joints within glove-bags upon written approval of the Engineer.

(I) Hand Power Tools: Shall be equipped with HEPA-filtered local exhaust ventilation if used to drill, cut into or otherwise disturb ACM.

(J) Other Tools And Equipment: The Contractor shall provide other suitable tools for the stripping, removal, encapsulation, and disposal activities including but not limited to: hand-held scrapers, sponges, rounded-edge shovels, brooms, and carts.

(K) Fans And Leaf Blower: Provide Leaf Blower (one leaf blower per floor) and one 20-inch diameter fans for each 10,000-cubic feet of work area volume to be used for aggressive sampling technique for clearance air testing.

(L) Fire Extinguishers: Provide type "A" fire extinguishers in spaces where there is minimal danger of electrical or grease-oil-flammable liquid fires. In other areas, provide type "ABC" dry chemical extinguishers of NFPA recommended types for the exposure in each case. All fire extinguishers shall comply with the applicable recommendations of NFPA Standard 10, "Standard For Portable Extinguishers." Provide a minimum of four (4) fire extinguishers in each work area; one in the equipment room of the decontamination unit, one outside the work area in the clean room or directly outside same, and two fire extinguishers where they are most effective for their intended purpose. Do not exceed seventy-five (75) feet between fire extinguishers within the workarea.

(M) First Aid Kits: The Contractor shall maintain adequately stocked first aid kits in the clean rooms of the decontamination units and within work areas. The first aid kit shall be approved by a licensed physician for the work to be performed under this contract.

(N) Water Service:

Water Heater: Provide UL rated 40-gallon electric water heaters to supply hot water for Personal Decontamination Enclosure System Shower. Wiring of the water heater shall comply with NEMA, NECA, and UL standards.

(O) Telephone Paging Device:

The Contractor or the Contractor's authorized representative shall, at all times during the normal workday or during periods of overtime work under this contract, carry a digital telephone paging device (Beeper). The device shall be activated by a telephone number in the 718, 212, 646, 917, 800, or 888 area codes. The Contractor shall supply the City with the activation number for the device and respond to calls from the City within one (1) hour. The cost to Contractor for this device and all charges accruing thereto is deemed included in the price(s) bid for item(s) labeled, "INCREMENTAL COST FOR ASBESTOS ABATEMENT WORK PERFORMED ON EXISTING STEEL PIPE WATER MAIN TO BE REMOVED, COMPLETE".

67.11.2.3 CLEANING

(A) Throughout the construction period, the Contractor shall maintain the work area as described in this section.

(1) The Contractor shall prevent excavated areas other than the work area from becoming contaminated with asbestos-containing dust or debris. Should areas outside the work area become contaminated with asbestos-containing dust or debris as a consequence of the Contractor's work practices, the Contractor shall be responsible for cleaning these areas in accordance with the procedures appended in Title 15, Chapter 1 of RCNY and NYSDOL ICR56. All costs incurred in cleaning or otherwise decontaminating nonwork areas and the contents thereof shall be borne by the Contractor at no additional cost to the City.

(2) The Contractor shall provide to all personnel and laborers the required equipment and materials needed to maintain the specified standard of cleanliness.

(B) General:

(1) Waste water from asbestos removal operations, including shower water, may be discharged into the public sewer system only after approved filtration is on operation to remove asbestos fibers.

(2) Asbestos wastes shall be double bagged in six (6) mil (0.006") polyethylene bags approved for ACM disposal and shall be properly labeled and handled before disposal.

(3) The Contractor shall use corrugated cartons or drums for disposal of asbestos-containing waste having sharp edged components (e.g. nails, screws, metal lathe and tin sheeting) that may tear polyethylene bags and sheeting. The waste within the drums or cartons must be double bagged.

(4) The Contractor shall transport all bags of waste to disposal site in thirty (30) gallon capacity metal or fiber drums with tight lids, or in locked steel dumpster.

(5) Dumping of debris, waste or bagged waste will not be permitted.

(6) Cleanup of visible accumulations of loose ACM shall occur whenever there is a sufficient amount to fill a single asbestos bag.

(7) ACM shall be collected utilizing rubber dust pans and rubber squeegees.

(8) HEPA vacuums shall not be used on wet materials unless specifically designed for that purpose.

(9) Metal shovels shall not be used within the work area.

(10)Accumulations of dust shall be cleaned off all surfaces of the work area daily.

(11)Mastic solvent when used will be applied in moderation (e.g. by airless sprayer).

(12)The Contractor shall retain all items in the storage area in an orderly arrangement allowing maximum access, not impeding traffic, and providing the required protection of all materials.

(13)The Contractor shall not allow accumulation of scrap, debris, waste material, and other items not required for use in this work. Asbestos contaminated waste must not be kept on the work site overnight.

(14)At least twice a week (more if necessary), the Contractor shall completely remove all scrap, debris and waste material from the job site.

(15)The Contractor shall provide adequate storage space for all items awaiting removal from the job site, observing all requirements for fire protection and concerns for the environment.

(16)All respiratory protection equipment shall be selected from the latest NIOSH Certified Equipment list.

(17)Daily and more often, if necessary, the Contractor shall inspect the work areas and adjoining spaces, and pick up all scrap, debris, and waste material. All such items shall be removed to the place designated for their storage.

(18)Weekly, and more often, if necessary, the Contractor shall inspect all arrangements of materials stored on the site; re-stack and tidy them or otherwise service them to meet the requirements of these specifications.

(19)The Contractor shall maintain the site in a neat and orderly condition at all times.

67.11.3 EXECUTION

67.11.3.1 WORKER DECONTAMINATION FACILITY

(A) Large Asbestos Projects (Small Project Option):

Provide a worker decontamination facility in accordance with, Title 15, Chapter 1, OSHA Standard 29 CFR 1926.1101, 12NYCRR Part 56 and as specified herein. Worker decontamination shall be in accordance of the NYCDEP approved procedure for removing asbestos containing coal tar wrap.

(a) Structure:

(1) Use modular systems or build using wood or metal frame studs, joists, and rafters placed at a maximum of 16-inches on-center.

(2) When worker decontamination unit is located outdoors, in areas with public access, or in correctional facilities, frame work shall be lined with minimum 3/8" thickness plywood sheathing. Sheathing shall be caulked or taped airtight at all joints and seams.

(3) Interior shall be covered with two (2) layers of opaque 6-mil polyethylene sheeting, with a minimum overlap of 12-inches at seams. Seal seams airtight using tape and adhesive. The interior floor shall be covered with two (2) layers of reinforced fire-retardant polyethylene sheeting with a minimum overlap on the walls of twelve (12) inches.

(4) Entrances to the decontamination unit shall be secured with lockable hinged doors. Doors shall be open at all times when abatement operations are in progress. Doors shall be louvered to allow for air movement through the decontamination units into work area.

(b) Curtained Doorways: A device to allow ingress or egress from one room to another while permitting minimal air movement between the rooms.

(c) Air Locks: Air locks shall consist of two curtained doorways placed a minimum of three (3) feet apart.

(d) Decontamination Enclosure System shall be placed adjacent to the work area and shall consist of three (3) totally enclosed chambers, separated from work area and each other by airlocks, as follows:

(1) Equipment Room: The equipment room shall have a curtain doorway to separate it from the work area, and share a common airlock with the shower room. The equipment room shall be large enough to accommodate at least one (1) worker (allowing them enough room to remove their protective clothing and footwear), and a 6-mil disposal bag for collection of discarded clothing and equipment. The equipment room shall be utilized for the storage of equipment and tools after decontamination using a HEPA-vacuum and/or wet cleaning. A one-day supply of replacement filters, in sealed containers, for HEPA-vacuums and negative air machines, extra tools, containers of surfactant, and other materials and equipment required for the project shall be stored here. A walk-off pan filled with water shall be placed in the work area just outside the equipment room for persons to clean foot coverings when leaving the work area. Contaminated footwear and reusable work clothing shall be stored in this room.

(2) Shower Room: The shower room shall have two (2) airlocks (one that separates it from the equipment room and one that separates it from the clean room). The shower room shall contain at least one (1) shower, with hot and cold water adjustable at the tap, per eight (8) workers. Careful attention shall be given to the shower to ensure against leaking of any kind. Contractor shall supply towels, shampoo and liquid soap in the shower room at all times. Shower water shall be drained collected, and filtered through a system with at least a 5-micron particle size collection capacity. A system containing a series of several filters with progressively smaller pore sizes shall be used to avoid rapid clogging of the filters by large particles. Filtered water shall be discharged in accordance with applicable codes. Contaminated filters shall be disposed of as asbestos waste.

(3) Clean Room: The clean room shall share a common airlock with the shower room and shall have a curtained doorway to separate it from outside noncontaminated areas. Lockers, for storage of workers' street clothing, and shelves, for storing respirators, shall be provided in this area. Clean disposable clothing, replacement filters for respirators, and clean dry towels shall be provided in the clean room. The clean room shall not be used for the storage of tool, equipment or other materials.

(B) Small Asbestos Projects:

Provide a worker decontamination facility in accordance with, Title 15, Chapter 1, OSHA Standard 29 CFR 1926.1101, 12NYCRR Part 56 and as specified herein. Unless approved by NYCDEP and the City, worker decontamination facilities shall be attached to the work areas.

(a) Structure:

(1) Use modular systems or build using wood or metal frame studs, joists, and rafters placed at a maximum of 16-inches on-center.

(2) When worker decontamination unit is located outdoors, in areas with public access, or in correctional facilities, frame work shall be lined with minimum 3/8" thickness plywood sheathing. Sheathing shall be caulked or taped airtight at all joints and seams.

(3) Interior shall be covered with two (2) layers of opaque 6-mil polyethylene sheeting, with a minimum overlap of 12-inches at seams. Seal seams airtight using tape and adhesive. The interior floor shall be covered with two (2) layers of reinforced fire-retardant polyethylene sheeting with a minimum overlap on the walls of twelve (12) inches.

(4) Entrances to the decontamination unit shall be secured with lockable hinged doors. Doors shall be open at all times when abatement operations are in progress. Doors shall be louvered to allow for air movement through the decontamination units into work area.

(b) Curtained Doorways: A device to allow ingress or egress from one room to another while permitting minimal air movement between the rooms.

(c) Air Locks: Air locks shall consist of two (2) curtained doorways placed a minimum of three (3) feet apart.

(d) Decontamination Enclosure System shall be placed adjacent to the work area and shall consist of three (3) totally enclosed chambers, separated from work area and each other by airlocks, as follows:

(1) Shower Room: The shower room shall have two (2) airlocks (one that separates it from the work area and one that separates it from the clean room). The shower room shall contain at least one (1) shower, with hot and cold water adjustable at the tap, per eight (8) workers. Careful attention shall be given to the shower to ensure against leaking of any kind. The Contractor shall supply towels, shampoo and soap in the shower room at all times. Shower water shall be drained collected, and filtered through a system with at least a 5-micron particle size collection capacity. A system containing a series of several filters with progressively smaller pore sizes shall be used to avoid rapid clogging of the filters by large particles. Filtered water shall be discharged in accordance with applicable codes. Contaminated filters shall be disposed of as asbestos waste.

(2) Clean Room: The clean room shall share a common airlock with the shower room and shall have a curtained doorway to separate it from outside noncontaminated areas. Lockers, for storage of workers' street clothing, and shelves, for storing respirators, shall be provided in this area. Clean disposable clothing, replacement filters for respirators, and clean dry towels shall be provided in the clean room. The clean room shall not be used for the storage of tools, equipment or other materials.

(C) Decontamination Enclosure System Utilities: Lighting, heat, and electricity shall be provided as necessary by the Contractor, and as specified herein.

67.11.3.2 WASTE DECONTAMINATION FACILITY

(A) Large Asbestos Project (Small Project Option):

Provide a worker decontamination facility in accordance with, Title 15, Chapter 1, OSHA Standard 29 CFR 1926.1101, 12NYCRR Part 56 and as specified herein. Unless approved by NYCDEP and the City, worker decontamination facilities shall be attached to the work areas.

(a) Structure:

(1) Use modular systems or build using wood or metal frame studs, joists, and rafters placed at a maximum of 16-inches on-center.

(2) When worker decontamination unit is located outdoors, in areas with public access, or in correctional facilities, frame work shall be lined with minimum 3/8" thickness plywood sheathing. Sheathing shall be caulked or taped airtight at all joints and seams.

(3) Interior walls shall be covered with two (2) layers of opaque 6-mil polyethylene sheeting, with a minimum overlap of 12-inches at seams. Seal seams airtight using tape and adhesive. The interior floor shall be covered with two (2) layers of reinforced fire-retardant polyethylene sheeting with a minimum overlap on the walls of twelve (12) inches.

(4) Entrances to the decontamination unit shall be secured with lockable hinged doors. Doors shall be open at all times when abatement operations are in progress. Doors shall be louvered to allow for air movement through the decontamination units into the work area.

(b) Curtained Doorways: A device to allow ingress or egress from one room to another while permitting minimal air movement between the rooms.

(c) Air Locks: Air locks shall consist of two (2) curtained doorways placed a minimum of three (3) feet apart.

(d) Decontamination Enclosure System shall be placed adjacent to the work area and shall consist of three (3) totally enclosed chambers, separated from the work area and each other by airlocks, as follows:

(1) Washroom: An equipment washroom shall have two (2) air locks (one separating the unit from the work area and one common air lock that separates it from the holding area. The washroom shall have facilities for washing material containers and equipment. Gross removal of dust and debris from contaminated material containers and equipment shall be accomplished in the work area, prior to moving to the washroom.

(2) Holding Area: A holding area shall share a common air lock with the equipment washroom and shall have a curtained doorway to outside areas. A hinged, lockable door shall be placed at the holding area entrance to prevent unauthorized access into the work area.

(B) Decontamination Enclosure System Utilities: Lighting, heat, and electricity shall be provided as necessary by the Contractor, and as specified herein.

67.11.3.3 PERSONNEL ENTRANCE AND DECONTAMINATION PROCEDURES FOR REMOVAL OPERATIONS UTILIZING REMOTE DECONTAMINATION FACILITIES

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

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

(C) Each worker shall, before leaving the work area or tent, clean the outside of the respirators and outer layer of protective clothing by wet cleaning and/or HEPA-vacuuming. The outer disposable suit shall be removed in the airlock prior to proceeding to the Worker Decontamination Unit. The inner disposable suit and respirator shall be wet wiped and HEPA-vacuumed thoroughly before removing and prior to aggressive shower.

(D) Following showering and drying off, each worker or authorized visitor shall proceed directly to the clean room, dress in street clothes, and exit the decontamination enclosure system immediately.

67.11.4 PREPARATION OF WORK AREA AND REMOVAL PROCEDURES

67.11.4.1 REMOVAL OF ASBESTOS-CONTAINING MATERIAL

(A) Contractor shall be responsible for the proper removal of ACM from the work area using standard industry techniques. The Testing Laboratory representative shall observe the work.

General Requirements:

(a) Removal of ACM shall be performed using wet methods. Dry removal of ACM is prohibited.

(b) Spray ACM with amended water with sufficient frequency and quantity to enhance penetration. Sufficient time shall be allowed for amended water to penetrate the material to the substrate prior to removal. All ACM shall be thoroughly wetted while work is being conducted.

(c) Accumulation of standing water on the floor of the work area is prohibited.

(d) Apply removal encapsulants, when used, in accordance with the manufacturer's recommendations and guidelines.

(e) Containerize ACM immediately upon detachment from the substrate.

(f) Pre-Removal Inspections:

(1) Prior to removal of any ACM, the Contractor shall notify the Testing Laboratory and request a pre-removal inspection. Posting of warning signs, building of decontamination enclosure systems, and all other preparatory steps have been taken prior to notification of the Testing Laboratory.

(2) Contractor shall correct any deficiencies observed by Testing Laboratory at no additional cost to City.

(3) Following the Testing Laboratory's approval of the work area preparations, removal of ACM may commence.

(B) Removal of Coal Tar Wrap shall be as follows:

Work shall be performed as outlined in the coal tar wrap removal procedures (see Appendix) approved by the New York City Department of Environmental Protection (NYCDEP).

67.11.4.2 MAINTENANCE OF CONTAINED WORK AREA AND DECONTAMINATION ENCLOSURE SYSTEMS

(A) Ensure that barriers are installed in a manner appropriate to the expected weather conditions during the project and for its duration. Repair damaged barriers and remedy defects immediately upon their discovery. Visually inspect barriers at the beginning and end of each work period.

(B) Visually inspect nonwork areas and the decontamination enclosure system for water leakage. Perform the visual inspection a minimum of two (2) times for each 8-hour work shift.

67.11.5 ASBESTOS WASTE MANAGEMENT

67.11.5.1 ACM WASTE REQUIREMENTS

(A) The Contractor and all subcontractors are specifically alerted to the illegal practice of combining asbestos-containing waste (ACW) from one project with the ACW of other projects without using the services of a permitted waste transfer station as defined by 6 NYCRR Part 360 and 364. As part of the shop drawing submittals, the Contractor must submit for approval the proposed method of transportation and disposal that will be utilized to manage the ACW of this contract. If a permitted transfer station is to be used, the cost shall be included in the bid price. The Contractor must submit a waste manifest consistent with whatever approved method is utilized as part of the invoicing and payment procedures.

(B) The Contractor shall maintain compliance with the strictest set of regulations of Title 15, Chapter 1 of RCNY, NYC LL 70/85, NYS DOL ICR 56, USEPA, Asbestos Regulation 40 CFR Section 61.152, 29

CFR 1926.1101, 29 CFR 1910.1200 (F) of OSHA's Hazard Communication Standards, and other applicable standards.

NOTE: Any penalties incurred for failure to comply with any of the above regulations and/or fines imposed due to negligence of the Contractor will be the sole responsibility of the Contractor.

When presenting ACW for storage at the generation site, the Contractor shall:

(1) Wet down ACW in a manner sufficient to prevent all visible emissions of dust into the air.

(2) Seal material in a leak tight container while wet.

(3) Keep ACW separate from any other waste.

(C) When presenting ACW for storage away from the site of generation, the Contractor shall:

(1) Ensure that ACW has been properly packaged as per requirements above.

(2) Examine the containers of ACW to ensure that there are no breaks in the containers and that no visible dust is being released into the air.

(3) If examination reveals damage to a container of ACW the Contractor or person accepting the waste shall immediately wet down the ACW and repackage it into a clean leak tight container. The subsequent repackaging shall be the financial responsibility of the Contractor and occur at no extra cost to the City.

(4) Keep ACW separate from any other waste.

(D) When storing ACW - The Contractor shall:

(1) Ensure that the ACW has been sufficiently wetted down in tight containers.

(2) Rewet and repackage any damaged containers.

(3) Maintain at storage site an adequate supply of spare leak tight containers.

(4) Maintain at storage site an adequate supply of amended water.

(5) Keep ACW separate from any other waste.

(6) Keep ACW in a secured, enclosed, and locked container.

(7) If the Contractor has intention of sorting a quantity of ACW greater than or equal to 50-cubic yards, the Contractor shall:

Submit a written request and receive written approval from the City.

(E) When presenting for transport, the Contractor shall:

(1) Ensure that ACW has been sufficiently wetted down.

(2) Examine the integrity of the container's airtight seal.

(3) Rewet and repackage any damaged containers.

(4) Keep ACW separate from all other waste.

(5) Ensure that a person transporting asbestos waste holds a valid permit issued pursuant to law.

(6) Frequency of waste removal:

Properly packaged and labeled asbestos waste shall be removed from the site on a daily basis. Under no circumstance shall asbestos waste be stored on site without written approval from the City. The Waste Hauler and landfill shall be as indicated on the notifications to regulatory agencies.

(F) Waste Load-Out Through Equipment Decontamination Enclosure (Full Decontamination Facility): Place asbestos waste in disposal bags. Large items not able to fit into disposal bags shall be wrapped in one (1) layer of 6-mil thick polyethylene sheeting. Clean outer covering of asbestos waste package by wet cleaning and/or HEPA-vacuuming in a designated part of the work area. Move wrapped asbestos waste to the equipment washroom, wet clean each bag or object and place it inside a second disposal bag, or a second layer of 6-mil polyethylene sheeting, as the item's physical characteristics demand. Air volume shall be minimized, and the bags or sheeting shall be sealed airtight with tape.

(1) The clean containerized items shall be moved to the equipment decontamination enclosure holding area pending load-out to storage or disposal facilities.

(2) Workers who have entered the equipment decontamination enclosure system from the uncontaminated nonwork area shall perform load-out of containers from the decontamination enclosure holding area. Dress workers moving asbestos waste to storage or disposal facilities in clean overalls of a color different than from that of coveralls used in the work area. Ensure that workers do not enter from uncontaminated areas into the equipment washroom or the work area. Ensure that contaminated workers do not exit the work area through the equipment decontamination enclosure system.

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

(4) Labeled ACM waste containers or bags shall not be used for non-ACM debris or trash. Any materials placed in labeled containers or bags, including those turned "inside-out", shall be handled and disposed of as ACM waste.

(G) All asbestos materials, wastes, shower water, polyethylene, disposable equipment and supplies shall be disposed of as contaminated waste, in accordance with the EPA regulation (40 CFR, Section 61.150) and those requirements of the New York Department of Environmental Conservation and New York City Department of Sanitation.

(H) All asbestos materials shall be prepared for transportation in accordance with this specification and all applicable Federal, State, County and City Regulations. The Contractor shall submit the following documentation:

(1) Where applicable, an EPA Generator's identification number which has been obtained from the EPA for all asbestos waste generated from the project.

(2) Applicable State Waste Hauler license and registration numbers.

(3) Federal Hazardous Materials Waste Hauler number.

(4) Designated landfill EPA Permit numbers.

(I) Prior to loading asbestos waste the enclosed cargo areas (dumpster) shall be prepared as follows:

(1) Clean via HEPA-vacuum and wet wipe techniques the enclosed cargo areas of all visible debris prior to preparing with polyethylene.

(2) Line the cargo area with two (2) layers of 6-mil polyethylene sheeting to prevent contamination from damaged or leaking containers. Floor sheeting shall be installed first and extend up the walls a minimum of 24-inches. Wall sheeting shall be overlapped and taped securely into place.

(J) Asbestos-containing waste shall be placed on level surfaces in the cargo area of the dumpster and shall be packed tightly to prevent any shifting or tipping of the waste during transportation.

(K) Asbestos-containing waste shall not be thrown into or dropped from the dumpster. All material shall be handled carefully to prevent rupture of the containers.

(L) All personnel engaged in handling and loading of contaminated waste outside of the work area shall wear protective clothing. The disposable clothing shall include head, body and foot protection and color of clothing shall be different from abatement personnel in the work area. Minimum respiratory protection shall be half face, dual cartridge, air purifying respirators with HEPA-filters.

(M) The Contractor shall immediately clean debris or residue observed on containers or surfaces outside of the work area. Cleaning shall be via HEPA equipped wet/dry vacuums only.

(N) All asbestos-containing waste shall be transported from the abatement site to the landfill by a registered Waste Hauler. When transporting ACW:

(1) Ensure that the ACW has been sufficiently wetted down in a leak tight container.

(2) Rewet and repackage any damaged containers.

(3) Maintain at storage site an adequate supply of spare leak tight containers.

(4) Maintain at storage site an adequate supply of amended water.

(5) Keep ACW separate from any other waste.

(O) Keep ACW in a secured, enclosed, and locked container.

(P) Waste transport documents shall conform to the requirements of the U.S. Department of Transportation, Hazardous Materials Transportation Regulation, 49 CFR Part 173 and EPA 40 CFR 61.150 (d)(1)(2). Shipping documents shall be clearly marked with the required designation "RQ Asbestos". The Contractor shall provide a copy of this document to the City.

(Q) A uniform hazardous waste manifest shall be prepared by the Contractor and signed by the Contractor each time the Contractor ships a dumpster load of Asbestos-Containing Waste Material. The uniform hazardous waste manifest shall include the site of waste generation, the names and addresses of the Transporter, the Contractor, and the landfill operator with information on the type and number of asbestos-waste containers, time and date. The Contractor shall provide the Engineer, Testing Laboratory or authorized designated representative with signed copies of the waste manifest before each departure.

(R) The Contractor or the Contractor's registered hazardous Waste Hauler shall transport asbestos-containing waste material from the abatement site directly to the specified disposal site. The Contractor or Waste Hauler shall not accept material from any other site when transporting asbestos-containing waste material from the abatement site. The authorized DDC representative or Engineer reserves the right to travel with Contractor's Waste Hauler to the waste disposal site. No intermediate storage of waste material (i.e. Contractors warehouse) shall be permitted.

(S) Final or progress application for payments will not be processed unless all hazardous waste manifests generated to date have been received and reviewed by the Engineer.

(T) All asbestos materials, wastes, shower water, polyethylene disposable equipment and supplies shall be disposed of as contaminated waste, in accordance with the EPA regulation (40 CFR, Section

61.150) and those requirements of the New York State Department of Environmental Conservation and the New York Department of Sanitation.

(U) The Contractor shall transport all sealed drums to a landfill disposal site approved by the Department of Environmental Conservation and the EPA. Transportation shall be performed by a New York State registered Waste Hauler, where required. When presenting the ACW for disposal the Contractor or subcontractor shall:

(1) Ensure that waste container is properly labeled according to the National Emission Standard for Hazardous Air Pollutants (NESHAP); Asbestos Revision, 40 CFR, Part 61, Subpart M. The labels shall include the name of the waste generator and the location where the waste was generated.

(2) Comply with all applicable orders issued pursuant to asbestos disposal.

(3) Ensure that ACW has been sufficiently wetted down.

(4) Rewet and repackage any damaged containers.

(5) Keep ACW separate from all other wastes.

(V) The Contractor shall notify the waste disposal site, at least 24-hours prior to transportation of contaminated waste to be delivered. The Contractor shall determine if a larger notification period is required.

(W) At the site, the Contractor or Waste Hauler trucks shall approach the dump location as close as possible for unloading asbestos waste. Containers shall be carefully placed in the ground. Do not throw containers from truck.

(X) The Contractor or Waste Hauler shall inspect containers as they are unloaded at the disposal site. Material in damaged containers shall be repacked in empty containers, as necessary.

(Y) The Contractor or Waste Hauler shall not remove asbestos-containing waste material from drums unless required to do so by the disposal site City. Used drums shall be disposed of as asbestos-contaminated waste.

(Z) All personnel engaged in unloading of the containers at the waste site shall wear protective clothing. The disposable clothing shall include head, body and foot protection. Minimum respiratory protection shall be half face, dual cartridge, air purifying respirators with HEPA-filters. Workers shall remove their protective clothing at the disposal site, place it in labeled disposal bags and leave them with the deposited waste shipment.

(AA) For the compaction operation, the Contractor shall ensure that disposal sites personnel have been provided with personal protective equipment by the disposal operator. If the disposal site City has not provided this protective equipment, the Contractor shall supply protective clothing and respiratory protection for the duration of this operation (PAPR respirators are mandatory).

(BB) If containers are broken or damaged, the Contractor or Waste Hauler shall, using personnel who are properly trained and wearing proper protective equipment, shall repackage the waste in properly labeled containers. The Contractor shall then clean the entire truck and its contents using HEPA-vacuums and wet cleaning techniques until no visible residue is observed.

(CC) Following the removal of all containerized waste, the Contractor shall decontaminate the truck cargo area using HEPA-vacuums and/or wet cleaning techniques until no residue is observed. All 6-mil polyethylene sheeting shall be removed and discarded as asbestos-containing waste material along with contaminated cleaning material and protective clothing, in containers at the disposal site.

(DD) The transporter(s) of all asbestos waste shall not back-haul any items on returning from landfill/disposal site.

(EE) All asbestos waste shall be disposed of in an approved Asbestos Landfill site only.

(1) NO PERSON UNDER ANY CIRCUMSTANCES SHALL ABANDON A.C.W. The same shall be disposed of only by certified persons in approved landfills.

(2) A manifest form will be signed by the Landfill documenting receipt and acceptance of the asbestos-containing waste. This manifest will be furnished to the City of New York.

(3) It is the responsibility of the Asbestos Contractor to determine current waste handling, transportation and disposal regulations for the work site and for each waste disposal landfill. The Asbestos Contractor must comply fully with these regulations and all appropriate U.S. Department of Transportation, EPA and other Federal, State and Local entities' regulations and all other current legal requirements.

(4) The Asbestos Contractor shall obtain an agreement from the transporter(s) that the practice of "Back-Hauling" will not be engaged in, with respect to any and all waste loads taken from this site during the work.

(5) The Asbestos Contractor will document actual disposal of the waste at the designated landfill by having completed a Disposal Certificate and will provide a copy of the same to the Department of Design and Construction.

67.11.6 ACCEPTANCE

67.11.6.1 ACCEPTANCE

(A) Upon satisfactory completion of all decontamination procedures, a certificate will be issued by the Engineer with copies to all parties.

(B) A Letter Of Compliance stating that all the work on the project was performed in accordance with the specifications and all applicable Federal, State and Local regulations.

(C) All warranties as stated in the specifications.

67.11.7 MEASUREMENT AND PAYMENT

67.11.7.1 MEASUREMENT

The quantity of "INCREMENTAL COST FOR ASBESTOS ABATEMENT WORK PERFORMED ON EXISTING STEEL PIPE WATER MAIN TO BE REMOVED, COMPLETE" to be measured for payment shall be the actual number of linear feet of each size steel water main pipe and fittings with asbestos containing coal tar wrap removed in compliance with the requirements of this section. Measurement shall be made in linear feet along the axis of the pipes. The removal lengths of valves, fittings and other pipe connections that are attached to the steel pipe water main and required to be removed as part of the removal operation of the existing steel pipe water main shall be included for purpose of this calculation.

No additional measurement for payment will be made for the removal of any coal tar wrap asbestos containing material from the existing steel pipe which is designated to remain in place, but is required to facilitate the cutting of the existing pipe and joining it to the new pipe to the existing steel pipe. The cost shall be deemed to be included in the unit price bid for this item.

67.11.7.2 PAYMENT

The contract price for "INCREMENTAL COST FOR ASBESTOS ABATEMENT WORK PERFORMED ON EXISTING STEEL PIPE WATER MAIN TO BE REMOVED, COMPLETE" shall be the unit price bid per

each size existing steel pipe water main's incremental cost difference for all labor, material, equipment, insurance, and incidentals required to complete all work under other scheduled contract items, using the methods required under this section to remove and dispose of coal tar wrap asbestos containing materials associated with water main replacement.

This item will be paid only in conjunction with other scheduled contract items for installing the new steel water main pipe (e.g. Payment would be made under the unit price bid for Item No. 60.21SP6T72 - FURNISHING, DELIVERING AND LAYING 72-INCH STRAIGHT STEEL PIPE, 3/4-INCH WALL THICKNESS, for the length of pipe installed plus payment would be made under the unit price bid for Item No. 67.11AA72 - INCREMENTAL COST FOR ASBESTOS ABATEMENT WORK PERFORMED ON EXISTING 72-INCH DIAMETER STEEL PIPE WATER MAIN TO BE REMOVED, COMPLETE, in order to remove and dispose of the existing asbestos contaminated coal tar wrapped pipe). However, payment will be made under this item only for the initial length of pipe and appurtenances removed at a particular location.

Payment for Incremental Cost For Asbestos Abatement Work Performed On Existing Steel Pipe Water Main To Be Removed, Complete will be made under the Item Number as calculated below:

The Item Numbers for Incremental Cost For Asbestos Abatement Work Performed On Existing Steel Pipe Water Main To Be Removed, Complete have nine characters. (The decimal point is considered a character, the third character.)

(1) The first five characters shall define Incremental Cost For Asbestos Abatement Work Performed On Existing Steel Pipe Water Main To Be Removed, Complete:

67.11

(2) The sixth and seventh characters shall define Incremental Cost For Asbestos Abatement Work Performed On Existing Steel Pipe Water Main To Be Removed, Complete:

AA - Incremental Cost For Asbestos Abatement Work Performed On Existing Steel Pipe Water Main To Be Removed, Complete

(3) The eighth and ninth characters shall define the Diameter of the Existing Steel Pipe Water Main. (The eighth and ninth characters representing the unit of inches for the Diameter of the Existing Steel Pipe Water Main.) See examples below:

36 - 36"
72 - 72"

(4) Examples of Item Numbers together with Description and Pay Unit as provided in the Bid Schedule are provided below:

Item No.	Description	Pay Unit
67.11AA36	INCREMENTAL COST FOR ASBESTOS ABATEMENT WORK PERFORMED ON EXISTING 36-INCH DIAMETER STEEL PIPE WATER MAIN TO BE REMOVED, COMPLETE	L.F.
67.11AA72	INCREMENTAL COST FOR ASBESTOS ABATEMENT WORK PERFORMED ON EXISTING 72-INCH DIAMETER STEEL PIPE WATER MAIN TO BE REMOVED, COMPLETE	L.F.

APPENDIX

NYCDEP ATTACHMENTS

NYC DEP Asbestos Control Program VAR #_____

ATTACHMENT TM
REQUIREMENTS FOR MODIFIED TENT PROCEDURES (FOR GROSS ABATEMENT)
APPLIES TO VARIANCES FROM TITLE 15, CHAPTER 1, RULES OF THE CITY OF NEW YORK, SECTIONS 1-81(m) AND 1-91(c) {15 RCNY § 1-81(m) AND § 1-91(c)}

1. All tent enclosures and contiguous spaces within a radius of 10 feet shall be roped off and regulated to allow only certified workers and authorized visitors to enter.

2. 15 RCNY § 1-106 shall be complied with except that
   I. all tents shall be lined with 2 layers of plastic sheeting (6-mil thickness at a minimum);
   ii. the amounts of ACM that may be abated in each modified tent shall **NOT EXCEED** (a) 160 square feet and/or (b) 260 linear feet.
   iii. the total amount of ACM that may be abated at any one time in several modified tents shall **NOT EXCEED** 1,000 combined square feet plus linear feet.

3. All modified tents shall be fully framed (including horizontally across the top, if applicable) with 2x3 (minimum) wood or metal studs spaced not more than 36 inch center-to-center vertically around all sides (except at the entry/exit which shall not exceed 36 inch width); and

4. A minimum of one air volume change per 15 minutes through each modified tent shall be maintained.

5. An airlock having at least 3 feet length between the two curtained doorways shall be constructed at the entrance to each and every tent if the decontamination unit is not attached to the tents, and

6. If a decontamination unit is not attached to each tent, located within each airlock there shall be extra clean and uncontaminated disposable protective suits (e.g.Tyveks), and one such clean suit shall be worn by each worker in the airlock, immediately after removal of the outer suit as per 15 RCNY § 1-106(k), before each worker exits any airlock.

7. Any decontamination unit that is not attached to a tent (i.e. that is remote from a tent) shall be constructed in compliance with the requirements of Attachment D and must be located on the same floor as the modified tents.

8. Decontamination units that are attached to tents shall comprise at least a shower room and a clean room, with one curtained doorway separating them, and with a second curtained doorway separating the tent from the shower room.

9. After the ACM removal and bagging [refer 15 RCNY § 1-106(f) and (g)], the bagged waste shall be HEPA-vacuumed then wet cleaned and transferred into the airlock or into the shower room (as per Items 5 and 8 above respectively) for double bagging, and thereafter the double-bagged waste shall be transferred outside the airlock or outside the clean room for its final transfer to storage in a holding area and/or to legal means of disposal.

10. If the integrity of the tent is compromised and/or visible emissions are detected outside the tent and/or levels exceed 0.01 f/cc work shall stop and 15 RCNY § 1-45(a) shall be complied with immediately. Post-abatement clearance air samples shall be required in the areas outside the tent.

11. A minimum of 3 during area air samples and 3 post abatement clearance air samples must be taken in compliance with section 1-41 of the NYC DEP Asbestos Regulation for each modified tent.

NOTE: This attachment may be revised at any time by the Department.

TRU/JM 04/2005

NYC DEP ASBESTOS CONTROL PROGRAM VAR#_____

ATTACHMENT D
REMOTE WORKER DECONTAMINATION UNIT

APPLIES TO VARIANCE FROM TITLE 15, CHAPTER 1, RULES OF THE CITY OF NEW YORK SECTIONS 1-82(a) AND 1-83(a)* {15 RCNY § 1-82(a) AND § 1-83(a)*}.

1. The remote worker decontamination unit shall be constructed outside the work area, in accordance with 15 RCNY § 1-82, and attached to individual glovebag work areas (or tents) or common space leading to individual work areas.

2. The remote worker decontamination unit shall consist of, at least, a shower room, and a clean room separated from each other by an airlock and from the glovebag work area.

3. In addition to the shower heads, the shower room shall be provided with a flexible hose for equipment and waste decontamination.

4. The remote holding area for the asbestos containing waste shall comply with Title 16, Chapter 8, Rules of the City of New York (16RCNY 8 ET SEQ.)

5. The decontamination unit shall be maintained in accordance with 15 RCNY § 1-94 (except sub-section b).

6. All asbestos handlers shall wear two disposable suits, including gloves, hood and footwear, and appropriate respiratory equipment, after removing street clothes in the clean room, and must exit from the shower room.

7. Each worker, before leaving the glovebag work area (or tent), shall clean the outside of the respirators and outer protecting clothing by wet cleaning and/or HEPA vacuuming. The outer disposable suit shall be removed in the work area and the workers shall then proceed to the shower room. The inner disposable suit and respirator shall be washed thoroughly before removing and prior to aggressive shower.

8. After the ACM removal and bagging {refer 15 RCNY § 1-105(c)15}, the bagged waste shall be HEPA-vacuumed and then transferred to the shower room for wet cleaning and double bagging, prior to storage and disposal.

9. Worker and waste decontamination cannot take place at the same time and decontamination system shall be in place for the entire duration of the abatement activities.

10. The following additional conditions must be complied with in order to re-use an attached decontamination enclosure system(s) as a remote decontamination unit.

    i) Final air clearance must be achieved in the full containment area to which the decontamination enclosure system(s) is attached.

    ii) The decontamination enclosure system(s) shall be re-plasticized in accordance with 15 RCNY § 1-82.

*Required for projects disturbing 1,000 or more linear feet.

NOTE: This attachment may be revised at any time by the Department.

TRU/JM 4/2005

ATTACHMENT
ASBESTOS CONTAINING COAL TAR WRAP AND PIPE REMOVAL PROCEDURE

The work procedure to be utilized for the removal of asbestos and the water main pipe shall be as follows:

I. Personal Protective Equipment

Prior to beginning work, all workers performing the removal of the coal tar wrap must equip themselves with the proper personal protective equipment (PPE). The PPE required for the removal of coal tar wrap includes:

(1) Tyvek suit with boot protection ("booties").
(2) Disposable gloves (latex ornitrile).
(3) Eye protection.
(4) Half face respirator with HEPA cartridges.

In addition to the PPE listed above, the tools and materials which will be required for this operation shall include the following:

(1) Amended water solution.
(2) 6-mil plastic sheeting.
(3) 6-mil plastic asbestos disposal bags.
(4) Disposable rags or wipes.
(5) Duct tape.
(6) Hand tools (chipping hammer, chisel, scraper, putty knife).
(7) Abrasive pads.
(8) Asbestos barrier tape.

NOTE: No power tools, grinders, sanders, or burning apparatus can be used to remove coal tar wrap.

II. Work Procedure

(A) Removal:

The following work procedure shall be employed when removing coal tar wrap:

(1) Set up the asbestos barrier tape around the perimeter of the excavation.
(2) Place 6-mil plastic sheeting under the steel water main pipe to collect loose debris.
(3) Wet down coal tar wrap with amended water.
(4) Use hand tools to break away the large chunks of coal tar wrap. Place the removed wrap in a plastic asbestos disposal bag.
(5) Remove only the amount of wrap around the circumference of the pipe (two (2) foot wide strip) necessary to cut the pipe for future removal.
(6) Ensure that the intact coal tar wrap on the pipe is not damaged when removing the pipe from the excavation.
(7) For sections of pipe left in the ground, seal all ends of exposed wrap with duct tape. Plastic wrap and duct tape all coated pipes that will be removed from the site.
(8) In the event that some wrapping material did not fall onto the plastic sheeting, collect these pieces and place them on the sheeting.
(9) Once coal tar wrap removal is completed and the exposed ends are sealed, fold the plastic sheeting onto itself and place it in a properly labeled asbestos bag.
(10) Wet wipe all equipment with amended water and rags before removal from work area. Place used rags and old work gloves in asbestos disposal bags.
(11) Ensure that bagged ACM is wet prior to transportation.
(12) Cut the pipe at the abated locations using mechanical, cold cutting methods.
(13) Double wrap large sections of cut pipe with intact ACM with two (2) layers of six (6) mil plastic sheeting, sealed with tape in ten (10) foot sections.

(14) Wrapped sections of pipe with intact ACM shall be properly labeled in accordance with OSHA Regulations 29 CFR 1926 58K(2), and shall be kept wet until disposal in compliance with Title 15, Chapter 1, Rules of the City of New York (15RCNY 1).

(B) Disposal:

The following work procedure shall be employed when disposing coal tar wrap:

(1) Double bag all waste materials. The inside and outside bags must have an asbestos label with the work location identified.
(2) Complete an asbestos waste tracking form and attach it to the bag.
(3) Place double bagged waste in a truck and transport it to an approved New York State asbestos landfill.
(4) All ACM waste bags must be picked up and disposed of on a daily basis at the end of each shift.

By signing in the space provided below, the bidder acknowledges receipt of the forty-five (45) pages of this Addendum.

THIS ADDENDUM MUST BE SIGNED BY ALL BIDDERS AND ATTACHED TO THEIR BIDS.

Purnima Dhawi
for **GURDIP SAINI, P.E.**
Associate Commissioner/Design I

_____
Name of Bidder

By:_____

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