PHASE I WORK PLAN

Non-Time Critical Removal Action
Causeway Phase I

Stratford Army Engine Plant - Stratford, Connecticut

Contract No. DAAD05-97-D-7004
Delivery Order No. 0187

AUGUST 2001

Prepared by

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LIST OF ACRONYMS

BEC .....Base Environmental Coordinator

BRAC .....Base Realignment and Closure Act

CENAE.....US Army Corps of Engineers – New England District

CO .....Contracting Officer

CPM.....Critical Path Method scheduling software

CWTP.....Chemical Waste Treatment Plant

Engineer.....Harding ESE Representatives

GSA .....General Services Administration

HTRW .....Hazardous, Toxic and Radiological Waste

LOP .....Levels of Protection

IPM.....International Property Management

NCRA.....Non-Time Critical Removal Action

RCRA .....Resource Conservation and Recovery Act

SAEP .....Stratford Army Engine Plant

SHSC/QCO .....Site Health & Safety Coordinator/Quality Control Officer

SSHP .....Site Safety and Health Plan

SVOC .....Semi-Volatile Organic Compound

SOP.....Standard Operating Procedure

SOW .....Scope of Work

SVOCs.....Semi-Volatile Organic Compounds

TACOM.....Tank-Automotive and Armament Command

USACE.....U.S. Army Corps of Engineers

VOC.....Volatile Organic Compound

WESTON .....Roy F. Weston, Inc.

1. INTRODUCTION

This Work Plan (WP) defines the technical approach planned by Roy F. Weston, Inc. (WESTON®) for implementation of a Non-Time Critical Removal Action (NCRA) at the Causeway area (Causeway), Stratford Army Engine Plant (SAEP), Stratford, Connecticut. This project (Phase I) is being completed as part of the requirements under the Base Realignment and Closure Act (BRAC).

Phase I Causeway activities will include demolition of structures to improve access to the causeway, and preparation of the causeway prior to installation of an engineered cover system (Phase II scope of services). The specific structures planned for demolition include Building Nos. 5 and 59. In addition, the containment curbing, bermed area and bollards surrounding the former Building 34 tank farm will be removed.

1.1 SITE BACKGROUND

Subsurface environmental investigations previously conducted at the Causeway identified volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), inorganics, and radiological contamination. More recently, limited remediation focused on radiological contaminants was performed in order to obtain closure and termination of the NRC license.

In order to prevent future receptor contact with the remaining impacted soil, the scope of services and design specifications describe the removal of impacted soil and debris, the demolition of certain structures to improve access to the Causeway, and installation of a permanent cover system over the Causeway.

1.2 SITE DESCRIPTION

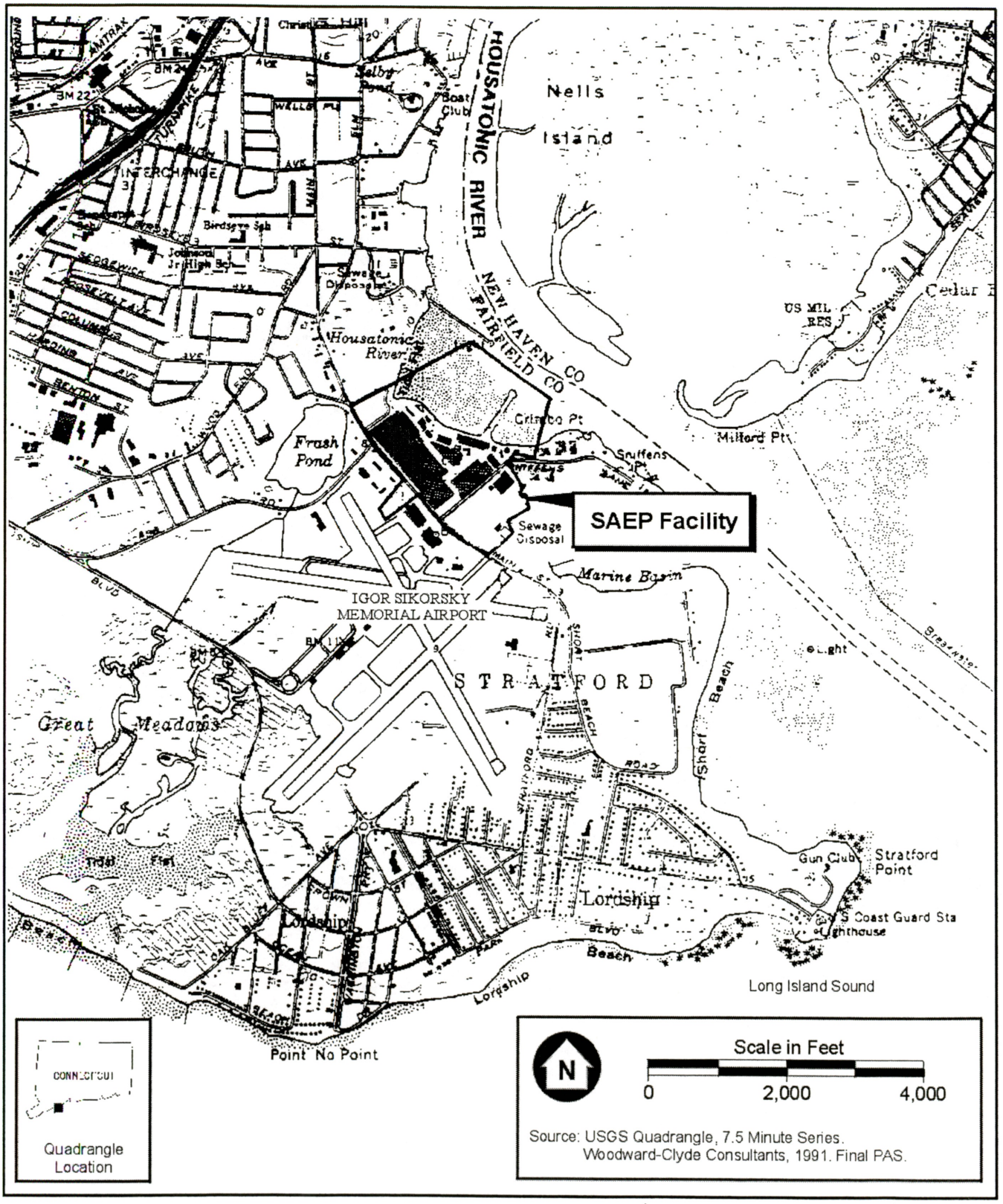
The SAEP facility consists of approximately 124 acres located in Stratford, Connecticut along the west bank of the Housatonic River. The SAEP is comprised of approximately 76 acres of developed land including 49 buildings, paved roadways, grounds and parking lots, and an estimated 10 acres along the Housatonic river where fill was placed, including the Causeway. The remaining 48 acres consist of the tidal flats located in the eastern portion of the facility.

The Causeway was initially constructed in the 1930s and expanded in the 1950s and 1960s. The source of fill used to construct the Causeway is unknown. However, previous investigations of the Causeway indicate that the fill material contains soil, cobbles, and construction debris (concrete, brick, asphalt, wood, glass, cinders, ash, and rebar).

Presently, the Causeway is overgrown with small trees, shrubs, and grasses. The surface of the Causeway, including the associated tidal flats, contains scattered piles and outcroppings of oversized debris, primarily concrete, boulders, and asphalt. Two dirt access roads extend along the length of the Causeway. Structures located on the Causeway include Building 59 and the former boat ramp and weather station.

Figure 1-1

Location Map



1.3 SCOPE OF SERVICES

The technical approach described in this Work Plan is consistent with the design documents entitled "- Non-Time Critical Removal Action, 90% Design", prepared by Harding ESE (July 2001) (NCRA 90% Design). The objectives for Phase I are to remove structures and thereby improve access to the Causeway, and to prepare the Causeway prior to installation of the permanent cover system (Phase II). The scope of services for Phase I include the following:

- Abandonment of one monitoring well and preservation of the remaining wells on the Causeway.
- Installation and maintenance of erosion and sedimentation controls around the work area.
- Clearing and chipping of trees and brush from the Causeway area.
- Removal of the containment curbing and berm to match surrounding grade along with protective bollards followed by paving.
- Demolition and off-site disposal of Building No. 5, including utility disconnections, and asbestos abatement. The slab and foundation will remain in place.
- Excavation and off-site disposal of contaminated soil present at six locations on the Causeway. Post-excavation samples and data analysis will be performed by the Engineer.
- Demolition and off-site disposal of Building 59, the weather station, and boat ramp.
- Removal and off-site disposal of oversized surface debris viable at the surface of the Causeway including rinsing of soil prior to removal.
- Installation and monitoring of heave platforms at the tidal flat surrounding the Causeway and completion of a topographic survey of the Causeway.

The work will be implemented in accordance with the following plans.

- Site Safety and Health Plan (SSHP),
- Work Plan including attachments for the Contractor Quality Control Plan (CQCP), Environmental Protection Plan (EPP), Asbestos Abatement Plan, and Demolition Plan
- Sampling and Analysis Plan (SAP).

The tasks covered under these plans include the following:

- Mobilization
- Site Preparation
- Erosion & Sedimentation Controls
- Clearing & Grubbing
- Demolition & Abatement
- Soil Remediation
- Waste Management & Removal
- Topographic Survey
- Record keeping & Closeout Report

2. MANAGEMENT

This section describes key project contacts, WESTON's project team and responsibilities, project management protocols, and communications.

2.1 PROJECT ORGANIZATION

WESTON's project organization is illustrated in Figure 2-1. Specific roles and responsibilities are highlighted in subsection 2.1.2. WESTON assembled this team by aligning specific individuals with relevant experience, including specialty subcontractors to supplement the skills of our team.

2.1.1 Key Contacts

The project representatives include key personnel from several organizations including the U.S. Army Tank-Automotive and Armament Command (TACOM), the U.S. Army Corps of Engineers, New York (NAN) and New England (NEA) Districts, the Connecticut Department of Environmental Protection (CT DEP), and the U.S. Environmental Protection Agency (EPA). The design engineering firm is Harding ESE, and the remedial action contractor is Roy F. Weston, Inc. (WESTON). The addresses and phone/fax numbers for key project contacts are presented in Table 2-1 on the following page.

2.1.2 WESTON Team

WESTON's team will be led by the Program Manager (Mr. Anthony Riccio), Regional Operations Manager (Mr. Todd Walles), and Project Manager (Mr. John-Eric Andersson). The field operations will be managed by the Construction Superintendent (Mr. Steven O'Brien). These individuals will be responsible for WESTON's overall performance on this project.

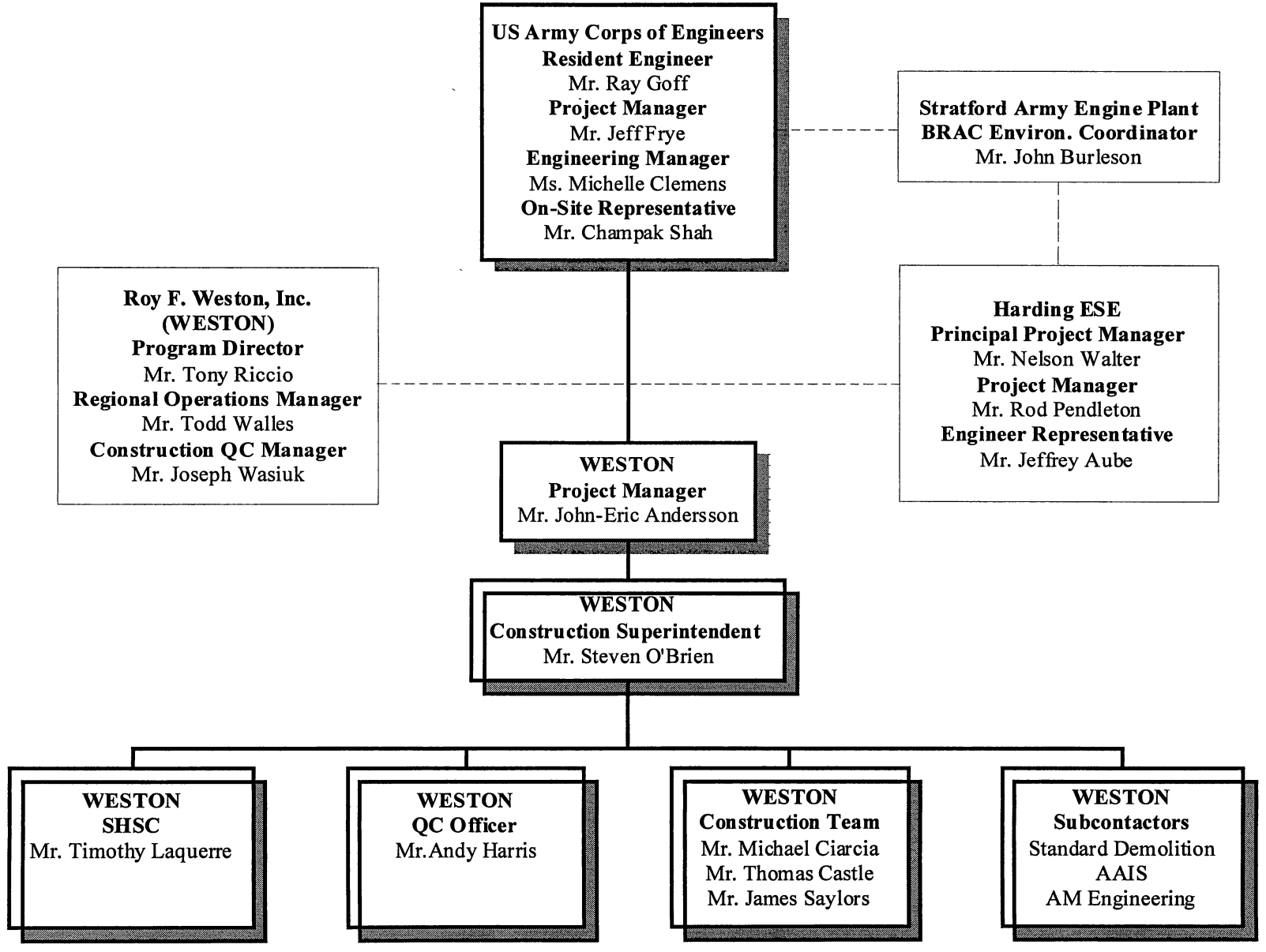
The construction team will include a Site Health and Safety Coordinator (SHSC) and Quality Control (QC) Officer, a Quality Assurance (QA) Manager, environmental technicians and heavy equipment operators. The Superintendent will lead daily site activities, including but not limited to, work performance by WESTON and subcontractors, progress against schedule, safety and quality. WESTON's key project personnel will remain unchanged for the duration of this assignment. In addition to the designated Site Safety Officer, WESTON's Superintendent and foremen have the necessary training and certifications to serve as alternate safety officers should the situation warrant.

WESTON's Project Manager and Superintendent will monitor progress and provide regular updates to the government representatives. Written submittals and payment applications will be directed to the Army Corps of Engineers – New England District (CENAE) resident engineer representative, Mr. Champak Shah. Logistics and local coordination of work will be arranged with the on-site facility managers, International Property Management (IPM), and the BRAC Environmental Coordinator, as necessary. At a minimum, WESTON's Project Manager, Construction QC Manager and Superintendent will attend scheduled progress meetings.

Table 2-1
Key Project Contacts

Name	Organization	Phone	Title	Address
Mr John Burleson	TACOM	203-385-4316	BRAC Environmental Coordinator	TACOM Bldg. 1, Rm 7, 550 Main St., Stratford, CT 06497
Mr. Ray Goffe	CENAE	413-593-6791	Resident Engineer	USACE Westover Resident Office, 570 Patriot Ave., Box 70, Chicopee, MA 01022
Mr Champak Shah	CENAE	413-593-6791	On-site Representative	USACE Westover Resident Office, 570 Patriot Ave., Box 70, Chicopee, MA 01022
Ms Michelle Clemens	CENAE	978-318-8228	Engineering Manager	USACE NE District Headquarters, 696 Virginia Rd. Concord, MA 01742
Mr Jeff Frye	USACE	212-264-2231	Project Manager	USACE NY District Attn: CENAN-PP-M 26 Federal Plaza, New York, NY 10278-0090
Mr. Kenneth Feathers	CTDEP	860-424-3770	Supervising Environmental Analyst	CT DEP 79 Elm St, Hartford, CT 06106-5127
Ms Margaret Welch	CTDEP	860-424-3034	CTDEP Long Island Sound Program	CT DEP 79 Elm St, Hartford, CT 06106-5127
Ms Meghan Cassidy	USEPA, Region I	617-918-1111		One Congress St. Suite 1100, Boston, MA
Mr. Jeffrey Aube	Harding ESE	207-775-5401 ext. 3422	Engineer Respresentative	511 Congress St PO Box 7050 Portland, ME 04112
Mr. Walter Nelson	Harding ESE	207-775-5401 ext 3637	Principal Project Manager	511 Congress St PO Box 7050 Portland, ME 04112
Mr. Rod Pendleton	Harding ESE	207-775-5401 ext 3605	Project Engineer	511 Congress St PO Box 7050 Portland, ME 04112
Ms Gina Rustad	Harding ESE	207-775-5401	Project Engineer	511 Congress St PO Box 7050 Portland, ME 04112
Mr Brian Johnson	Harding ESE	207-775-5401	Senior Geotechnical Engineer	511 Congress St. PO Box 7050 Portland, ME 04112
Mr John Rocherio	IPM	203-385-6649	Security Manager	550 Main St Stratford, CT 06497
Mr Richard Meier	IPM	203-385-6649	Director of Operations	550 Main St Stratford, CT 06497
Mr. Gary Hamann	IPM	203-385-6685	Manager of Engineering Systems	550 Main St. Stratford, CT 06497
Mr. Rick Barlo	IPM	203-385-6649	Facilities Engineer	550 Main St. Stratford, CT 06497
Mr Gary Ireland	IPM	203-385-6649	Facilities Engineer	550 Main St. Stratford, CT 06497
Mr. Tony Riccio	WESTON	508-520-6919	Program Manager	One Wall Street, 2nd Floor, Manchester, NH 03101
Mr. Todd Walles	WESTON	860-368-3211	Regional Operations Manager	148 Eastern Boulevard, Glastonbury CT 06033
Mr John-Eric Andersson	WESTON	860-368-3209	Project Manager	148 Eastern Boulevard, Glastonbury CT 06033
Mr Joseph Wasiuk	WESTON	603-656-5400	Construction QC Manager	One Wall Street, 2nd Floor, Manchester, NH 03101
Mr Steven O'Brien	WESTON	860-368-3215	Construction Superintendent	148 Eastern Boulevard, Glastonbury CT 06033

Figure 2-1
Project Organization Chart



2.2 PROJECT MANAGEMENT PROTOCOLS

A monthly status report will be submitted to the CENAE Representative on the second business day of each month (following mobilization) reporting on the prior month. The report will adhere to the specifications and include the project title, date of report, the name, title, telephone number, fax number, and address of the person completing the report; and a summary of the work performed during the reporting period which will include:

- Summary of deviations or variances to the work plan and/or specifications.
- Discussion, recommendation, and resolution of all problems.
- Scheduling information including percent of field/project work completed and delays encountered, if any.
- Personnel or staff responsibility changes, if applicable .
- Regulatory agency correspondence.
- Materials handling tabulations including weigh ticket summaries, samples logs, testing results, and the current status of stockpiled materials.
- Current and cumulative quantities of segregated stockpiles soils by waste stream and material transported offsite for disposal.

Internal status meetings will be conducted by WESTON weekly, or as-needed, to review resource requirements, progress against plan, schedule milestones, procurement and subcontract administration, and to resolve any QA/QC issues. WESTON will implement all work efficiently and in a consistent, cost-effective manner utilizing experienced personnel.

2.3 COMMUNICATIONS

All project communications with government representatives will be lead by WESTON's Program/Project Manager(s) and Construction Superintendent. These lead individuals will solicit assistance or direct others, as needed, in order to ensure that WESTON's work is performed according to the work plan and SAEP site requirements. All feedback or inquiries from entities or parties other than the government representatives shall be directed to the WESTON Project Manager, Mr. John-Eric Andersson at (860) 368.3209.

A pre-construction meeting was held at SAEP on 26 July 2001. The meeting was conducted to review the requirements of the contract and the technical specifications, to discuss site-specific requirements and to coordinate security policies.

A pre-construction safety conference will be scheduled (currently anticipated for 17 Aug 2001) prior to the start of construction to complete the site-specific safety orientation. Key personnel will be required to attend the initial safety orientation meeting. The SHSC and Superintendent will provide site-specific orientation training to the WESTON project team and subcontractors. This meeting will review SAEP policies and requirements, as well as WESTON's expectations for quality of work and safety.

Daily safety meetings will be held prior to the start of work each day to review the planned work tasks and to address safety requirements. The daily safety meeting will also be utilized for task specific training and an open discussion for work place safety, quality control, and lessons learned from the previous workday.

Monthly progress meetings will be conducted with the government representatives to review the progress of work, schedule milestones, design or regulatory issues, safety and quality control.

Two post-construction meetings will be held. The first will be held prior to the interim demobilization scheduled in December to review punch list items required for completion when work resumes after the winter season. The second meeting, the final inspection, will be performed upon ~~after the~~ completion of all authorized work. The work is currently expected to complete in the spring of 2002.

3. TECHNICAL APPROACH

WESTON's technical approach was developed based on the requirements of the NCRA 90% Design documents and in accordance with the planned schedule and associated work restrictions. An overview of the project schedule and approach are described herein.

3.1 PROJECT SCHEDULE

The Project Schedule has been prepared using SureTrack software and is illustrated in Figure 3-1. The work breakdown structure (WBS) presents the work elements and the planned durations, as well as early start/finish and float. The left portion of the schedule contains the WBS number, task description, remaining duration, and early start and finish dates. The project schedule was finalized based, in part, on the following parameters:

1. An authorization date of 24 July 2001;
2. A 10-day review timeframe for USACE review and approval of project plans;
3. Removal of oversized debris within the tidal zone cannot commence until after 1 October 2001.

The project schedule will be updated and distributed monthly (at a minimum) once mobilization has occurred. Updated schedules will include any revisions for actual or projected periods of performance as this information is obtained.

Important project milestones and approximate implementation timeframes are summarized as follows:

- Pre-Construction Activities- July 24th through August 17th
- On-site Safety Meeting & Orientation- August 17th
- Mobilization and Site Preparation Tasks- August 20th-24th
- Asbestos Abatement and Demolition- August 27th through Sept. 14th
- Contaminated Soil and Oversized Debris Removal at Causeway Top- Sept. 10th-28th
- Oversize debris removal in tidal zone- After October 1st oyster season restriction
- Completion of Phase I field work- on or about October 19th

3.2 PRE-CONSTRUCTION TASKS

Pre-construction tasks will include the following:

- Preparation of project plans.
- Permitting.
- Review and approval of material submittals.
- Underground utility notifications.

3.2.1 Work Plan

This Work Plan describes the site background, project objectives, compliance with federal, state, and local regulations, the basis for the technical approach, and a comprehensive work breakdown structure (WBS) to complete the project.

The Construction Quality Control Plan is provided in Appendix A herein. The QC procedures describe the inspections, documentation, record keeping, and corrective measures that will be used and enforced to monitor compliance with project specifications.

An Environmental Protection Plan (EPP) has been prepared to describe the actions WESTON will take to mitigate contamination of previously unimpacted areas of the SAEP facility, preparedness protocols for accidental releases, and to control storm water runoff and sedimentation. The EPP is provided in Appendix B of this Work Plan.

3.2.2 Sampling & Analysis Plan

A project-specific Sampling & Analysis Plan (SAP) has been prepared to describe the procedures and quality objectives applicable to the sampling activities required during this project. Sampling to be conducted by Weston includes; waste characterization analysis of demolition debris, oversized Causeway debris, and contaminated soil, and VOC analysis of decontamination liquids. Therefore, based on conversations held during the Pre-Construction Meeting (26 July 2001), it was agreed that the laboratory Quality Assurance & Quality Control (QA/QC) procedures would be reduced from Level III, as required by the Technical Specifications, to Level I, as is appropriate for waste characterization. This modification will confirmed in writing through approval of the SAP, which will be provided under separate cover.

3.2.3 Site-Specific Safety & Health Plan

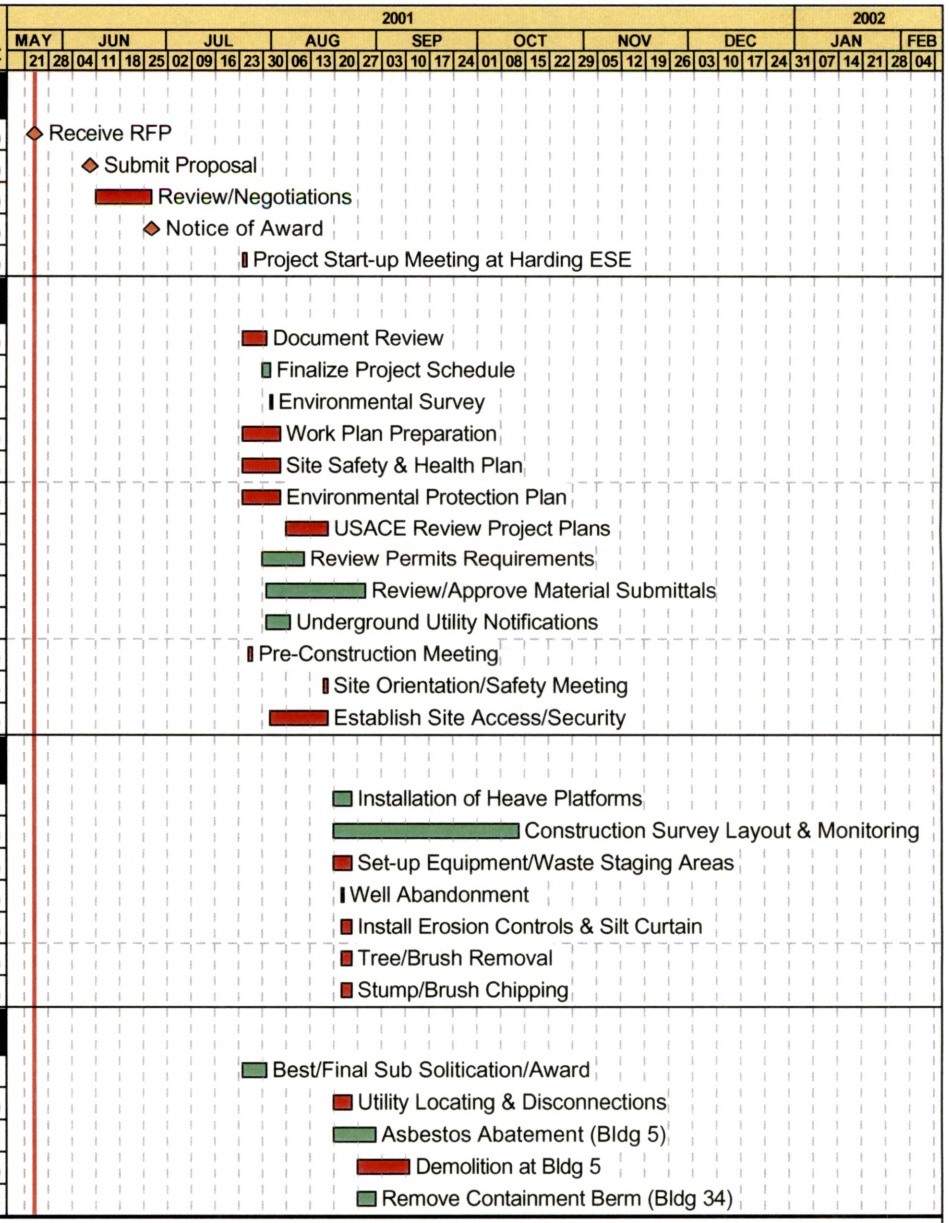
A Site-Specific Safety & Health Plan (SSHP) was written in accordance with 29 CFR 1910.120(b)(4) and the requirements outlined in the SOW and technical specifications. The SSHP includes appropriate information and guidelines for hazards anticipated on site. In addition, the SSHP establishes safety guidelines for the demolition and remediation activities, including personnel responsibilities, medical surveillance, training, site control, hazardous waste operations, equipment operations, personal protection, and construction safety. The SSHP was reviewed and approved by WESTON's Certified Industrial Hygienist. The SSHP is a separate stand-alone document to be referenced in conjunction with the Work Plan.

3.2.4 Permitting

The SAEP project is not subject to certain permit requirements due to CERCLA jurisdiction over the proposed remediation. However, all activities performed by WESTON will comply with the substantive requirements of the State of Connecticut and the Applicable or Relevant and Appropriate Regulations (ARARs) for this assignment.

Copies of relevant permits, licenses and certifications will be maintained at the WESTON project office. These may include, but not be limited to, safety certifications, utility clearances and termination authorizations, and asbestos abatement activity notifications. For example, WESTON has obtained a letter from the Town of Stratford confirming that a local permit is not required for demolition activities at the SAEP site until such time as the Town of Stratford or a private entity takes ownership of the property. A copy of this letter will be maintained in the project files, and made available for review. WESTON will also investigate the need for, and if necessary, obtain, other applicable local permits (e.g., utility clearance and digging permits).

Act ID	Description	Orig Dur	Early Start	Early Finish	Total Float
Contracting					
01010	Receive RFP	0	24MAY01		0
01020	Submit Proposal	0		08JUN01	0
01030	Review/Negotiations	12	11JUN01	26JUN01	0
01040	Notice of Award	0		26JUN01	0
01050	Project Start-up Meeting at Harding ESE	1	24JUL01	24JUL01	0
Mobilization & Pre-Construction					
02010	Document Review	5	24JUL01	30JUL01	0
02015	Finalize Project Schedule	2	30JUL01	31JUL01	3d
02020	Environmental Survey	1	01AUG01	01AUG01	5d
02030	Work Plan Preparation	9	24JUL01	03AUG01	0
02040	Site Safety & Health Plan	9	24JUL01	03AUG01	0
02050	Environmental Protection Plan	9	24JUL01	03AUG01	0
02080	USACE Review Project Plans	10	06AUG01	17AUG01	0
02090	Review Permits Requirements	10	30JUL01	10AUG01	5d
02100	Review/Approve Material Submittals	21	31JUL01	28AUG01	19d
02110	Underground Utility Notifications	5	31JUL01	06AUG01	9d
02120	Pre-Construction Meeting	1	26JUL01	26JUL01	0
02130	Site Orientation/Safety Meeting	1	17AUG01	17AUG01	0
03010	Establish Site Access/Security	13	01AUG01	17AUG01	0
Site Preparation					
03020	Installation of Heave Platforms	5	20AUG01	24AUG01	17d
03030	Construction Survey Layout & Monitoring	39 *	20AUG01	12OCT01	0
03040	Set-up Equipment/Waste Staging Areas	5	20AUG01	24AUG01	0
03050	Well Abandonment	1	22AUG01	22AUG01	0
03060	Install Erosion Controls & Silt Curtain	3	22AUG01	24AUG01	0
03070	Tree/Brush Removal	3	22AUG01	24AUG01	0
03080	Stump/Brush Chipping	3	22AUG01	24AUG01	0
Demolition					
06010	Best/Final Sub Solitication/Award	5	24JUL01	30JUL01	14d
06020	Utility Locating & Disconnections	5	20AUG01	24AUG01	0
06030	Asbestos Abatement (Bldg 5)	10	20AUG01	31AUG01	17d
06070	Demolition at Bldg 5	10	27AUG01	10SEP01	0
06080	Remove Containment Berm (Bldg 34)	5	27AUG01	31AUG01	19d



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Finish date	26OCT01
Data date	24MAY01
Run date	02AUG01
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Project name	SAEQ

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Summary bar
Start milestone point
Finish milestone point

Stratford Army Engine Plant
Non-Time Critical Removal Action (NTCRA) at Causeway Area

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Act ID	Description	Orig Dur	Early Start	Early Finish	Total Float
06090	Demolition at Bldg 59	9	04SEP01	14SEP01	20d
06100	Remove Oversized Debris at Causeway (top)	10	17SEP01	28SEP01	20d
06110	Causeway Boat Ramp Removal	3	01OCT01 *	03OCT01	0
06120	Demolition of Weather Station/Fencing	3	01OCT01	03OCT01	0
06130	Remove Oversized Debris in Tidal Zone	10	01OCT01	12OCT01	0
Soil Remediation					
07010	Layout Soil Remediation Locations	1	05SEP01	05SEP01	0
07020	Remove/Stage Contaminated Soil	5	10SEP01	14SEP01	0
07030	Backfilling	1	17SEP01	17SEP01	29d
Waste Management					
08010	Prepare Waste Profiles	10	17SEP01	28SEP01	0
08020	ACM Disposal	4	04SEP01	07SEP01	25d
08030	Demolition Debris Disposal	14 *	27AUG01	14SEP01	20d
08040	Over-Sized Debris Disposal	20 *	17SEP01	12OCT01	0
08050	Contaminated Soil Disposal	2	01OCT01	02OCT01	0
Restoration					
09010	Paving at Bldg 34 Demo Area	1	15OCT01	15OCT01	9d
09020	Causeway Topographic Survey	1	15OCT01	15OCT01	9d
09030	Well Retrofit	1	15OCT01	15OCT01	9d
09040	Maintain E&S Controls	37 *	22AUG01	12OCT01	0
Project Documentation					
10010	Monthly Summary Reports	68 *	24JUL01	26OCT01	0
10020	As-built Records (red-line)	63 *	31JUL01	26OCT01	0
10030	Remedial Action Completion Report	10	15OCT01	26OCT01	0
Project Management					
11010	Progress Meetings (monthly)	50 *	06AUG01	15OCT01	9d
11020	Progress Calls (bi-weekly)	68 *	24JUL01	26OCT01	0
11030	Procurement	68 *	24JUL01	26OCT01	0
11040	Project Management & Control	68 *	24JUL01	26OCT01	0
11050	Safety & Quality Assurance	68 *	24JUL01	26OCT01	0
11060	Administration	68 *	24JUL01	26OCT01	0

Start date	24MAY01
Finish date	26OCT01
Data date	24MAY01
Run date	02AUG01
Page number	2A
Project name	SAEQ

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Stratford Army Engine Plant
Non-Time Critical Removal Action (NTCRA) at Causeway Area

WESTON

3.2.5 Review and Approval of Material Submittals

WESTON will update and forward the submittal of materials requiring government approval as shown on the Submittal Register. Additional submittals may be presented for information only purposes.

3.2.6 Underground Utility Notification

WESTON will notify the SAEP representatives and Connecticut's "Call-Before-You-Dig" program to identify and locate utilities within the work area. WESTON will then identify all utility(s) requiring disconnection prior to demolition. It is our understanding from the pre-construction meeting, that all utilities except water and sewer have been disconnected from Bldg. 5. The demolition subcontractor will be required to excavate and cap the water supply and sewer discharge piping outside the footprint of the building and in accordance with local codes.

3.3 MOBILIZATION

The primary tasks scheduled for implementation during the week of August 20th include the following:

- Establishing the field office at Building No. 4- including activation of existing telephone and fax lines, mobilization of tables, chairs, computers and project office supplies, posting of required labor posters and job bulletin board, and completion of security briefings and badge issuance.

- Photographic documentation of the existing conditions within the work locations including pavement at haul routes, debris areas, staging locations, building conditions, and associated features. Relevant notes and locations will be made in the daily inspection reports and on the design drawings in accordance with as-built file record keeping.

- Mobilization and set up of WESTON's safety program will consist of posting the OSHA logs and notices, conducting safety briefings and orientation, verification of safety training certifications and medical monitoring reports, review and completion of heavy equipment check lists, storage of personal protective equipment (PPE) and decontamination supplies. Safety preparations will also include performance of a walk-over survey to review exclusion zones, contaminant reduction zones and support zones by the Site Health and Safety Coordinator (SHSC) and the Construction Superintendent. WESTON's safety equipment and supplies will be staged in a locked storage container inside the Causeway gate for easy access by site personnel. Additional supplies will be available at the field office.

- Notifications will be made to applicable agencies such as call-before-you-dig, the state department of health (DOH), the Coast Guard, the local harbor master, the boat club representatives, the local fire and police departments and other contacts, as necessary.

- Installation of erosion controls including silt fencing, and bales as specified in the design documents.

- Clearing of all vegetation currently present on the Causeway such as small trees, brush and seaside grasses. The vegetation will be cut down using chain saws, weed cutters and power equipment, and then fed through a motorized chipper for shredding. The shredded wood chips and grass will be spread along the top of the Causeway as designated in the specifications.

- Fabrication and installation of the heave platforms (5) at designated locations described in the specifications and drawings. The heave platforms will be set into the tidal flats using marine skips or

small platforms, as necessary. Blocks will be placed over the heave platform bases in order to maintain the monitoring poles in an upright position. A survey monitor will be attached to the top of each pole and initial elevations will be recorded prior to demolition of Building 59 or removal of oversized debris from the Causeway.

- Installation of an equipment washing pad near the Causeway gate to spray-clean vehicles and thereby avoid tracking potentially impacted materials along haul routes to the debris and waste stockpile areas. This stone area will be equipped with a portable plastic tank, pressure sprayer and generator, and be manned on an as-needed basis.

- Initial surveying and establishment of survey control points. Additionally, the existing well locations will be surrounded with three wood stakes and survey flagging to properly locate and protect the well casings during construction. The surveyors will monitor the heave platforms before and during demolition of Building 59 and removal of oversized debris from the Causeway.

WESTON's full-time construction crew for performance of the site preparation tasks will include; a Construction Superintendent, Foreman/heavy equipment operator, Site Safety Coordinator/QC Inspector, Field Support Coordinator, and 2 environmental technicians that have extensive experience with power tools and heavy equipment operations. The WESTON team will be assisted, as needed, by the Project Manager, and Construction QC Manager. Subcontractors retained during this phase will include a licensed land surveyor.

3.4 WORK ZONES AND STAGING AREAS

During mobilization field crews will establish site controls and delineate work zones as work progresses. These zones may include areas for the placement of a storage trailer, equipment and materials staging, and waste and debris managing areas. Based on conversations with IPM Representatives during the site inspections, WESTON may utilize the proposed stockpile area near the former AST farm, as indicated on the Phase 1 plans. However, once Building 5 is demolished, WESTON plans to use the remaining slab for material staging.

To prevent both exposures to personnel and minimize the migration of contamination due to tracking, work areas and personal protective equipment requirements within those areas will be clearly identified. Safety fence, caution tape and in some cases signs will be posted to delineate different work zones. Signs will also be utilized to direct visitors to the authorized entrance.

WESTON will designate work areas or zones as suggested in *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*, NIOSH/OSHA/USCG/EPA, November 1985. The areas surrounding the work area will be divided into the following three zones:

1. Exclusion Zone (EZ)
2. Contamination Reduction Zone (CRZ)
3. Support Zone (SZ)

Exclusion Zones (EZ) will be established on a task specific basis, such as excavations on the Causeway or around buildings during demolition. Levels of Protection (LOP) within exclusion zones will be consistent with the known and anticipated hazards associated with the tasks being performed. Specific details on the LOP required by task are addressed in the hazard risk analysis table of the SSHP. The anticipated location of the EZ is shown on the site plan in the SSHP.

Contaminant Reduction Zones (CRZ) will be positioned immediately adjacent to required EZs and may include an equipment decontamination pad, personnel decontamination area, and waste management containers. The level

of control of access to the EZ through the CRZ will also be appropriate to the known and anticipated hazards associated with the tasks being performed.

The Support Zone (SZ) will consist of the remainder of the site where there are no site specific access limitations. The SZ will include parking/staging areas, perimeter access roads, and any other area outside the CRZ. Site security and control will be coordinated through SAEP and IPM personnel. The objective of this Site Security and Control Plan is to establish procedures for maintaining site security during all work activities performed at thesite. WESTON will comply with existing access control procedures, site security protocols, and work permit requirements of IPM and SAEP security.

WESTON will provide a list of personnel, subcontractors, and suppliers to the SAEP security personnel. All personnel who enter the facility shall check in and out every day. On the first day all staff must attend a mandatory site-specific orientation provided by SAEP personnel. All dedicated project personnel will be issued photo badges. Subcontractors, vendors and suppliers who make routine visits and deliveries will be required to obtain contractor access badges on a daily basis. Samples of signatures for personnel on the list will be provided. WESTON and subcontractor personnel shall wear identifying marks on hard hats identifying the company for whom the employee works.

WESTON will coordinate site access through the SAEP Site Security Supervisor. Schedules of deliveries and personnel arrivals will be provided with as much advance notice as possible.

SAEP-approved radios will be utilized to maintain communications throughout the jobsite. The radios will allow project personnel and SAEP security personnel to communicate effectively.

As described above, WESTON employees, subcontractors, and suppliers shall register with SAEP security upon arrival at the facility and shall sign out before leaving for the day. Employee sign-in/out will be conducted at a location established by the COR.

After checking in with SAEP Security, site visitors and personnel will be required to enter their name, affiliation, purpose of visit, and time of site entry/exit into a permanently bound logbook maintained by WESTON at project office (Building 4). The logbook will include equipment and vehicles entering and leaving the Site.

Visitors and vendors will only be allowed in the designated work zones appropriate to their task. Those who must gain access to an Exclusion Zone must show proof of required training and medical clearances as described in the Site Safety and Health Plan.

4. SITE PREPARATION

Site preparation activities include the installation of heave platforms, site facilities, erosion and sedimentation controls, and clearing and grubbing of the Causeway, a brief work area environmental survey, establishment of staging areas, and monitoring well abandonment.

4.1 HEAVE PLATFORMS

Prior to the initiation of Phase I work on the causeway, WESTON will construct and install five heave platforms according to the Specifications. Loose debris including plants and aquatic animals (mussels, snails, etc) shall be removed from the heave platform location by hand prior to placement of the base. The plywood will be placed on the tidal flat with the flange orientated vertically. A 2-inch galvanized steel pipe will be threaded into the flange. 3 courses of concrete ballast (i.e. concrete blocks) will be placed on top of the base to secure it in place.

In general, the heave platforms will be installed 30 feet from the approximate contact of the fill and riverine sediment on the south side of the Causeway and 40 feet from the approximate contact on the north side of the Causeway. Scaled locations obtained from the drawings will be utilized to determine the location of the heave platforms.

4.2 EROSION CONTROL

Erosion and sedimentation controls will be established before work begins, in accordance with the Environmental Protection Plan (EPP) presented in Appendix B.

4.3 LAND CLEARING

Following the establishment of erosion and sedimentation controls WESTON will initiate clearing and grubbing activities on the Causeway. Trees and brush will be cut and chipped onto the causeway surface inside the silt fence barrier for utilization as erosion control mulch. Roots and stumps larger than three inches in diameter and matted roots from designated grubbing areas shall be removed to a depth of not less than 2 feet, as necessary. Roots and stumps will also be chipped into mulch. Any material that is not suitable to chip will be power washed and staged pending disposal at an off-site facility. A written directive will be obtained from the government representative and state the conditions covering the disposal of such products and will also state the areas in which they may be placed.

4.4 SITE SURVEY

Surveying tasks will be performed throughout the project and will include: tying in of existing control points; monitoring of heave platforms; and performing an A-1 topographical survey of the Causeway upon completion of the Phase I activities (discussed in Section 8.2). A land surveyor licensed in the State of Connecticut will complete all survey activities.

WESTON will utilize the existing permanent control information provided in the design documents. WESTON will install any additional control required to complete the survey. All survey work shall be referenced to Connecticut State Planes NAD 83 and NGVD 29. Survey work shall meet the horizontal and vertical accuracy criteria defined by the Standards of Accuracy and General Specifications of Geodetic Control Surveys established by the U.S. Department of Commerce.

Heave platforms will be constructed as described in section 5.1 of this Work Plan. The platforms shall be installed prior to the initiation of Phase I work on the Causeway portion of the site, such that monitoring of the platforms may be conducted to collect background information on movement in the tidal flats. Monitoring of the platforms shall be conducted to assess the impact of Phase I and II activities on tidal flat elevations. It is anticipated that there will be initial settlement of the platforms as they seek equilibrium on the mud flat after placement. Platform settlement shall be surveyed at the following frequencies:

- Initial survey prior to initiation of Phase I work on the Causeway.
- Twice per week during the first month of Phase I on the Causeway.
- Once per week for the remainder of Phase I on the Causeway.

The elevation of the platforms shall be surveyed to an accuracy of +/- 0.01 feet.

4.5 MONITOR WELL ABANDONMENT

There are five existing monitoring wells on the Causeway. In accordance with Section 02522 of the Technical Specifications WESTON will abandon monitor well MWCD-00-01 and protect the four remaining wells during construction activities. Monitor well abandonment shall consist of filling the well with sealing material, removal of the protective casing, and removal of a portion of the solid riser pipe to a point 1-foot below the existing grade surface at the well. The well fill sealant material shall be Floseal® or an approved equivalent. The filling of the well shall be continuous and conducted to the manufacturers specifications using the tremmie method. A monitoring well abandonment record shall be submitted as part of the Phase 1 Completion Report. The abandonment record shall include the following information:

Do you need to cut up casing before grouting?

- Project name
- Well number, location, depth, and diameter
- Date and method of abandonment
- Description and total quantity of well filler sealant material

4.6 WASTE STOCKPILE LOCATIONS

Building 5 is planned to be demolished first. The Building 5 slab and the approved materials staging area, shown on drawing C-102 of the Specifications, will be utilized for the staging and stockpiling of demolition and oversized debris prior to disposal. Stockpiling of contaminated materials is not anticipated, however should it be necessary to build a contaminated material stockpile, it shall meet the following criteria:

- It will be constructed to isolate stored contaminated material from the environment.
- It will not exceed 500 cubic yards in size.

4.7 DECONTAMINATION PAD

WESTON will utilize the existing on-site decontamination pad to clean portable equipment. WESTON will also construct a decontamination pad at the exit of the Causeway. To construct a pad, the subgrade will first be graded and compacted. The pad will be constructed out of crushed stone and sloped to encourage infiltration of the decontamination water into the subgrade soils. Additional erosion and sedimentation controls will be placed adjacent to the decontamination pad to prohibit the direct discharge of the decontamination water into the adjacent surface waters.

5. SITE WORK

5.1 WORK SEQUENCE

Construction activities are planned to begin on or about the week of August 27, 2001. Demolition activity will be initiated with a review of underground utilities locations with WESTON and SAEP representatives. All buried utilities in the vicinity of Building 5 will be marked on the ground surface using spray paint. The project staff will jointly review available as-built drawings and other information from the site along with walk-about inspections with IPM.

The Building5 area has been identified as a primary stockpile location for oversized debris removed from the Causeway. Therefore, asbestos abatement and subsequent demolition will be the first construction activities to be performed. The asbestos and demolition subcontractors will mobilize the week of August 27, 2001. Concurrent with set-up and implementation of asbestos abatement activities within Building 5, demolition will begin with excavation of utilities outside the building. Active existing utilities (water and sewer) will be capped outside the building according to local code requirements.

Following completion of the utilities disconnect and asbestos abatement, demolition of Building 5 will commence using a hydraulic excavator (with grappler and/or shear attachments) and/or front end loader. Demolition debris will be sorted into piles by material type (concrete, asphalt, metal, etc.) for off-site disposal. All demolition debris will be characterized, managed and transported as described in Section __ (Waste Management).

Demolition of the containment area adjacent to Building 34 will begin while debris is removed at Building 5. The concrete berm, protective bollards, asphalt and clean fill will be removed to surrounding grade. Debris and soil from beneath the berm will be staged, sampled and then removed for off-site disposal. Intrusive excavation will not be performed below surrounding grade. The completed area will be graded with gravel suitable for paving, compacted, and covered with an asphalt binding course. Final asphalt paving will not be performed until after completion of Phase II construction to avoid damaging the newly paved area.

Demolition at Building 59 and the surrounding blast wall(s) will follow immediately after completion of Building 5. Non-dynamic load equipment will be used to hydraulically crush the concrete in place. This method is preferred in order to lessen the vibration and loading on the surface of the Causeway. The concrete debris will sorted to separate into waste types (concrete, metals, etc.) to the extent feasible and removed from the Causeway.

Upon completion of demolition activities at Building 59, WESTON will begin the removal of oversized debris from the surface of the Causeway. As necessary, WESTON may use hydraulic crushing equipment, similar to that used on Building 59, to resize and sort the Causeway debris and facilitate off-site shipment.

The primary equipment to be mobilized by WESTON in support of Phase I activities includes: an excavator (CAT 330B or equal with grapple attachment), front end loader (CAT 950 or equal), a rubber tired backhoe (Case 580K or equal), and an articulated dump truck (CAT D300 or equal). The equipment will arrive and be maintained in good working condition at the site. WESTON will review the heavy equipment inspection checklists each day and provide to the field office support coordinator. Routine maintenance and fueling of the equipment will be done near the Causeway gate without removing the equipment from the Causeway. Heavy equipment will be staged during off-hours adjacent to the Causeway gate.

A haul roadway will be staked along the Causeway to guide the truck driver(s) and maintain a common thoroughfare. The washing of oversized debris and equipment will be done away from the haul route so that muddy conditions on the truck lane are minimized and the tracking of impacted soil is limited. The trucks will be spray-cleaned at the Causeway gate, when necessary, to remove significant soil build-up from the tires.

Oversized debris on the Causeway surface above the tidal zone will be excavated during the month of September. The debris will be handled using an excavator, spray-rinsed to remove excess soil and then loaded into an off-road truck for relocation to the Building 5 staging area. If necessary, the oversized debris will be crushed at the staging area to facilitate loading and/or meet disposal facility limits on debris size. Representative samples will be collected from the oversized debris as described in the SAP.

The removal of oversized debris within the tidal zone cannot begin until after October 1st. WESTON will utilize a similar approach, by excavating the debris, spray-cleaning and then loading into an off-road truck for relocation to the staging area. Samples will be collected of the various types of debris to profile for disposal purposes only.

The truck tracking pad near the Causeway gate will not be removed upon completion of the Phase I construction activities, but instead be utilized again during performance of Phase II work. Likewise, other waste staging area supplies, equipment and materials that can be utilized during phase II work will remain on site. The balance of the equipment and supplies will be demobilized.

5.2 ASBESTOS ABATEMENT

At a minimum, the asbestos abatement work will consist of removal of all ACM from Building 5 as previously identified in Appendix H of the Technical Specifications and shown in tables 3.6.1-3 and on Figure 3.6.1. Any additional ACM discovered during demolition of Building 5 or Building 59 not previously identified will be handled in accordance with the general provisions of this plan. In the event that additional ACM is discovered, an amendment to this plan will be prepared for approval.

WESTON will ensure that the proper permits are secured to facilitate the timely notification of state, federal, regional and local authorities regarding the removal, transportation and disposal of the ACM. The following notifications will be made:

- CT DEP Solid Waste Disposal Permit notification 25 days prior to the commencement of work
- US EPA notification 10 days prior to the commencement of work
- CT DOH notification 10 days prior to the commencement of work

The Asbestos Abatement Plan (AAP) is provided in Appendix A to this Work Plan and outlines the work procedures to be used in the removal and disposal of ACM, and conforms to the requirements of 40 CFR 61.22. The APP discusses proposed means and methods, air monitoring, disposal, and manifest record keeping. WESTON will maintain the following documentation on site:

- A copy of current licenses for asbestos abatement work.
- Copies of Manufacturers certifications that air-handling equipment required to handle ACM conform to ANSI 29.2.
- A list of proposed ACM disposal facilities, their written acceptance of SAEP ACM and a written notice of facilities compliance with it's operating permit.
- The name of the testing laboratory to be used for personnel exposure monitoring, the qualifications of the lab technicians, and notice of the labs participation in a PAT program.

5.2.1 Quality Control

All personnel exposed to airborne asbestos will show proof of proper training in hazard recognition, safety and health precautions, and the use and requirements for personal protective equipment and clothing. Supervisors will also demonstrate qualifications as a "competent person" in accordance with the requirements of 29 CFR 1926.58 (b) and section (e)(6)(iii) of that same standard. At a minimum the competent person will directly oversee

removal activities, establishment of enclosures, assurance of enclosure integrity, control entrance and exit from the enclosure, exposure monitoring, use of PPE, use of hygiene facilities and the use of engineering emission controls.

WESTON will review the importance of good house keeping practices with abatement personnel prior to initiating asbestos abatement activities. Wastes will be managed to prevent the spread of asbestos fibers over the general work area. The use of air compressors to blow down the work area will be prohibited. When removal is completed, an independent Industrial Hygienist (IH) will certify the area is safe before warning signs are removed. The IH will provide written certification that the airborne concentrations of asbestos are less than 0.01 fibers/cc and that all ACM has been removed from the area.

5.2.2 Safety & Monitoring

Copies of training certificates for all personnel performing asbestos abatement activities will be reviewed by WESTON prior to beginning work and will be maintained on site.

WESTON will ensure that monitoring of airborne concentrations of asbestos fibers will be in accordance with the requirements of 29 CFR 1926. Baseline or pre-removal monitoring will be conducted inside the building prior to beginning work to establish ambient plant air quality.

WESTON will comply with the applicable federal, state, and local requirements regarding the handling, storage, transportation and disposal of asbestos waste material. Work requiring the use of respirators will be conducted in accordance with WESTON's corporate Respiratory Protection Program, the attached AAIS Respiratory Protection Program (Appendix B), and the requirements detailed in 29 CFR 1910.134.

After asbestos abatement and final clean up of the asbestos control area, WESTON will ensure that the control area meets clean-up criteria before enclosure removal. Asbestos control area monitoring will be conducted utilizing aggressive sampling techniques as described in the Guidance For Controlling Asbestos-Containing Material in Buildings EPA 560/5-85-024 Appendix M. Sampling will be by the phase contrast microscopy (PCM) method. A Minimum of five (5) samples will be collected from each asbestos control area. The sampling volume for each sample is to be approximately 3,000 liters. Should any of the post-abatement monitoring samples be higher than 0.01 fibers/cc the area will be recleaned and the monitoring repeated.

Because the buildings are to be demolished after asbestos abatement they will not be reoccupied. The requirement for the establishment of a five (5) day TWA after control area enclosure removal does not apply.

5.2.3 ACM Disposal

WESTON will be responsible for selecting a properly permitted ACM disposal facility. Proof of current disposal facilities operating permits obtained along with a letter from the facility stating that they are currently in compliance with the terms of their operating permit. WESTON will ensure that asbestos waste, scrap, debris, bags, containers, equipment, and asbestos-contaminated clothing and used PPE which may produce airborne concentrations of asbestos fibers are placed in properly labeled sealed plastic bags. WESTON will ensure that the hauling, transportation and disposal of the ACM is conducted in accordance with the requirements of 40 CFR 61 subpart B.

WESTON will oversee and review the generation and completion of the ACM manifests, bills of lading and shipping papers. The manifest package will comply with the requirements of the US EPA, US DOT and the State of Connecticut as required for the transportation of ACM. WESTON will verify waste types and quantities to

ensure the paperwork has been properly completed and accurately represents the materials being shipped. Signature approval of each shipment will be obtained from the BEC or authorized government representative.

5.3 BUILDING DEMOLITION

This section presents the activities involved in the demolition of Building 59, Building 5, the Causeway weather station and boat ramp, and the containment area adjacent to Building 34. A detailed Demolition Plan is provided in Appendix D to this Work Plan.

- **Building 59**

  The existing exterior walls, all interior walls, the building foundation of Building 59, and the concrete ramp located on the north side of the building will all be removed to a depth of 2 feet below existing grade. Basement slabs, when present, will be broken up to permit drainage. The surrounding area will be graded to a maximum of 4H:1V slope.

- **Building 5**

  The existing exterior walls and all interior walls of Building 5 will be removed to existing grade. The surface slab of the building will be left in place to prevent infiltration into the subsurface within the area of the building footprint.

- **Causeway Weather Station & Boat Ramp**

  The chain-link fence and weather equipment of the weather station will be removed. The concrete structures of the weather station and boat ramp will be removed to a depth of 2 feet below existing grade. Demolition of the weather station and boat ramp will be conducted under low tide conditions.

  A pressure washer will be utilized to remove residual soils from all demolition debris, as necessary. Washing on the Causeway will be performed in close proximity the removal area, above elevation 4.1 and at least 50 feet from the soil excavation areas. Washing will be performed in a manner to minimize migration of sediments. Material will be washed above at least one active siltation barrier. Debris will be removed from the Causeway daily, if possible.

- **Building 34 Containment Berm**

  The concrete berm surrounding the Building 34 former AST farm, the protective posts, and the tank supports will be removed to the existing ground surface. Following removal of these structures, the area will be prepared and paved with a binder course only, to allow increased access to the Causeway area.

5.4 OVERSIZED DEBRIS

Visible surface debris greater than 2 feet in any dimension will be removed from the surface of the Causeway. It is estimated that approximately 1,200 cubic yards of solid debris will require removal from the Causeway, as indicated on the drawings. The location and approximate volume of additional debris discovered during the removal process will be noted for future removal under Phase II of this work.

The concrete ramp and residual steel reinforcing at the end of the Causeway will be removed as part of this work. The ramp will be removed to a minimum of 2 feet below the existing grade. Due to the location of the concrete ramp, removal will be conducted during low-tide conditions.

Prior to transport off the Causeway to designated staging areas, the oversized debris will be cleaned of excess soil using a high-pressure washer. The washing will be performed close to the area of removal, above elevation 4.1,

with the water being allowed to infiltrate the ground surface. Washing will be completed in such a manner so as to minimize the potential for migration of sediments, and at a locations above at least one active siltation barrier.

5.5 CONTAMINATED SOIL

Areas of soil contamination shall be excavated to within 1 foot of the depth and extent shown in the Specification figures. From these figures, an estimated total of 35 cubic yards will be removed from the Causeway. Upon completion of an excavation , the Engineer will verify the removal of all contaminated soil and will collect samples from each of the excavation walls and floor to confirm that the extent of required excavation has been reached. All impacted soil will be temporarily staged in roll-off containers pending waste characterization and proper disposal. Waste staging details are provided in Section 7. Following excavation of the impacted soils, the individual excavations will be graded to minimize the collection of precipitation and surface-water runoff. The excavations will be secured with safety fence. No backfilling of the excavations will be completed during Phase I activities.

6. WASTE MANAGEMENT

6.1 WASTE SEGREGATION

All stockpiling and staging of wastes will occur either at the location of waste generation or at a staging area. Waste streams will be segregated by waste type and location of generation. Roll-off containers, frac tanks, stockpiles, and waste specific containers (i.e., asbestos bags) will be utilized. Specific waste handling procedures will be described by waste in the following sections. Stockpiles will be constructed to facilitate proper drainage of runoff. If necessary, covers for stockpiles will be 10-mil polyethylene plastic or similar material. All covers will be weighted down with sandbags and/or other suitable heavy objects to resist wind loads.

6.1.1 Asbestos

All ACM will be contained in bags and/or a lined roll-off container prior to off-site disposal.

6.1.2 Demolition Debris

Demolition debris will be segregated by material and stockpiled prior to off-site disposal.

6.1.3 Oversized Debris

Oversized debris will be segregated by material and stockpiled prior to off-site disposal.

6.1.4 Contaminated Soil

Contaminated soil is to be excavated from six (6) previously determined locations. Due to the limited planned volume of soil to be removed, all excavated soil will be staged in water-tight roll-off units. An impermeable cover will be placed over the roll-off units to prevent precipitation from coming in contact with the contaminated soil. Once filled, the roll-off containers will be transferred to the container storage area for characterization sampling.

6.2 WASTE CHARATERIZATION

6.2.1 Demolition Debris

WESTON will collect one representative sample from each waste type to be generated by demolition activities (i.e., concrete, asphalt, roofing, metal, etc.). WESTON may collect these samples *in-situ* prior to commencement of demolition activities. Each sample will be analyzed for corrosivity, ignitability, reactivity, toxicity (TCLP for VOCs, SVOCs, metals, pesticides, and herbicides), total VOCs, total SVOCs, total PCBs/pesticides, and total metals. Some of these analyses may be omitted should satisfactory information be obtained regarding generator knowledge. The results of these analyses and any existing analytical data will be used to select an appropriate off-site disposal facility for each waste type. The required frequency of and parameters for additional characterization sampling will be determined by the selected disposal facility. WESTON will provide analytical results and facility requirements to CENAE prior to shipment.

6.2.2 Causeway Debris

WESTON will collect one representative sample from each waste type to be generated by demolition activities (i.e., concrete, asphalt, roofing, metal, etc.). WESTON will collect these samples *in-situ* prior to commencement of debris removal activities. Each sample will be analyzed for corrosivity, ignitability, reactivity, toxicity (TCLP for VOCs, SVOCs, metals, pesticides, and herbicides), total VOCs, total SVOCs, total PCBs/pesticides, and total metals. The results of these analyses and any existing analytical data will be used to select an appropriate off-site disposal facility for each waste type.

Due to the presence of contamination in the Causeway soils, oversized debris removed from the surface will be washed prior to transfer off the Causeway. Following washing, each piece of oversized debris will be inspected for evidence of impact (odor, staining, etc.). In the event that evidence of impact is observed, the material will be transferred to an alternate staging area for additional sampling. Otherwise, the material will be managed and disposed according to the characterization completed prior to removal.

6.2.3 Causeway Soil

WESTON will collect one representative soil sample during the excavation of each of the six (6) excavation areas. These samples will be incorporated into one composite sample to be analyzed for corrosivity, ignitability, reactivity, toxicity (TCLP for VOCs, SVOCs, metals, pesticides, and herbicides), total VOCs, total SVOCs, total PCBs/pesticides, and total metals. The results of these analyses and any existing analytical data will be used to select an appropriate off-site disposal facility. Confirmation samples will be collected by the Engineer from each of the excavation walls and floor to verify that the extent of required excavation has been reached.

6.2.4 Decontamination Liquids

WESTON will collect samples of containerized decontamination liquids at a frequency of one (1) sample per five hundred (500) gallons of liquid. Each sample will be analyzed for total volatile organic compounds (VOCs) to determine acceptability for processing through the on-site Chemical Waste Treatment Plant (CWTP) located in Building 63. Due to the CWTP influent VOC limit of 100 ppb, all decontamination liquids found to contain VOCs above this level will be pre-treated trough activated carbon adsorption units. Sampling will be repeated following carbon treatment to confirm the absence of VOCs above the CWTP influent limit.

6.3 WASTE TRANSPORTATION AND DISPOSAL

6.3.1 Non-Hazardous Waste

Once properly characterized as a non-hazardous waste, WESTON will complete waste profiles and select appropriate off-site disposal facilities for each waste type. WESTON will complete all required disposal documents and schedule waste shipments. Signature approval of shipping documents will be required from the BEC or authorized government representative.

6.3.2 Hazardous Waste

In the event that a waste is characterized as hazardous, WESTON will provide the CENAE and BEC with the analytical data. Under the terms of WESTON's contract for this project, all transportation and disposal of

hazardous waste is to be arranged directly by the BEC or government representative. WESTON will provide assistance in evaluating disposal options and completing waste profile and shipping documents.

7. SITE RESTORATION

Following completion of Phase I activities, WESTON will demobilize only those personnel, equipment, and materials not required for Phase II activities. As it is anticipated that Phase II construction activities will begin immediately upon completion of Phase I, WESTON will perform limited site restoration activities as follows:

7.1 PAVING

Upon removal of associated protective posts and tank supports to existing ground surface, WESTON will pave the containment area adjacent to Building 34 in order to improve access to the Causeway during Phase II activities. Due to the amount of traffic anticipated through this area during Phase II, the asphalt paving will consist of the binder course only.

7.2 SURVEY

Following completion of all Phase I activities, WESTON will complete a Class A-1 topographical survey of the Causeway. The topographic survey will include elevations of 100 linear feet of the SAEP Dike on either side of the Causeway extending 50 feet toward the facility and elevations of river sediments (i.e., tidal flats) within 75 feet of the Causeway, including the heave platforms. The survey will be used to develop detailed elevation information for the causeway and the surrounding area using 1-foot contours.

7.3 EROSION AND SEDIMENTATION CONTROLS

All Phase I erosion and sedimentation controls will be left in place at the conclusion of the Phase I activities. Specifically, WESTON will inspect the silt fence, hay bales, erosion control mats, and silt curtain to verify the controls are working according to their design. Any repairs will be completed prior to WESTON's demobilization from the Causeway.

8. CLOSEOUT

The process for Task Order closeout will include the following:

- Deliverables - WESTON will ensure that all deliverables have been submitted. WESTON and CENAE will ensure that all deliverables have been approved and accepted, as applicable.
- Acceptance - WESTON and CENAE will assure all work has been inspected and accepted.
- Final Report and As-Builts
- Records Transfer - WESTON will provide a copy of its Document Control Number (DCN) list to CENAE. WESTON will retain other documents as required by the contract.
- Release of Liens and Waiver of Claims - WESTON will obtain a release of liens from each of the subcontractors performing work on this project.

APPENDIX A
CONTRACTOR QUALITY CONTROL PLAN

1. OVERVIEW

This Contractor Quality Control Plan (CQCP) was developed to identify and implement quality requirements to ensure that project activities are conducted appropriately. The CQCP was prepared for the Corps of Engineers, New England District (CENAE), in compliance with the Technical Specifications of the Non-Time Critical Removal Action (NCRA) 90% at the Causeway area (Causeway), Stratford Army Engine Plant (SAEP), Stratford, Connecticut.

This plan was prepared to ensure that all work is accomplished within an acceptable level of internal controls and review procedures. These controls and procedures will eliminate conflicts, errors, and omissions, and will ensure the technical accuracy of all deliverables.

The Causeway Phase I Project consists of the following activities:

- Abandonment of one monitoring well and preservation of the remaining wells on the Causeway.
- Installation and maintenance of erosion and sedimentation controls around the work area.
- Clearing and chipping of trees and brush from the Causeway area.
- Removal and off-site disposal of the containment area (asphalt cover, clean fill and concrete containment curbing) adjacent to Building 34 to match surrounding grade along with protective bollards followed by paving.
- Demolition and off-site disposal of Building No. 5, including utility disconnections, and asbestos abatement. The slab and foundation will remain in place.
- Excavation and off-site disposal of contaminated soil present at six locations on the Causeway. Post-excavation samples and data analysis will be performed by others.
- Demolition and off-site disposal of Building 59, the weather station, and boat ramp.
- Removal and off-site disposal of oversized surface debris viable at the surface of the Causeway including rinsing of soil prior to removal.
- Installation and monitoring of heave platforms at the tidal flat surrounding the Causeway and completion of a topographic survey of the Causeway.
- Waste characterization sampling.

The scope of this plan provides quality control (QC) measures applicable to administrative, engineering, and technical activities associated with the Causeway Phase I project. The requirements of this plan are also applicable to all WESTON subcontractors This CQCP has been developed for the activities associated with the above tasks.

2. PROJECT ORGANIZATION AND RESPONSIBILITIES

Under the supervision of CENAE, WESTON is responsible for implementing the Scope of Work (SOW). WESTON will provide a staff of experienced administrative and technical professionals to serve as key personnel for this project. These personnel were selected for their management and technical abilities. A discussion of WESTON roles and responsibilities and a project organizational chart is presented in Section 2 of the Work Plan.

Mr. Andy Harris has been designated as the QC Officer for this project, reporting to Mr. Joe Wasiuk, Construction QC Manager. Completion of quality control inspection and report documents may be conducted by others under the supervision of Mr. Harris. Quality assurance audits and reviews may be performed by Mr. Tony Riccio (Program Manager) or Mr. Todd Walles (Regional Operations Manager) in support of Mr. Wasiuk.

3. FIELD ACTIVITIES

3.1 QUALITY REQUIREMENTS

The quality requirements associated with field activities in support of this task order are defined in Table 3-1. These requirements apply to all field activities that affect the quality of work and work products. The quality requirements associated with sampling and analysis are identified in the Sampling and Analysis Plan (SAP). The approved SAP will be followed for sampling activities, except in cases where field conditions may not coincide with the conditions outlined in the SAP.

QA/QC checks will be conducted as follows:

- **Daily Briefings** - The QC Officer and Site Health & Safety Coordinator (SHSC) will ensure that daily safety and operational briefings are conducted routinely, by either observing or conducting the briefings.
- **Communications** - Positive communications with the CENAE Field Representative and SAEP personnel will be maintained throughout the workday.
- **Training** - The SHSC will ensure that initial site-specific training is performed for all field personnel prior to startup of field activities, and that all safety control measures have been established. Training will be accomplished using only approved training materials
- **Documentation** - The QC Officer will ensure the completion of all project documentation (scheduled progress and inspection reports, survey data and as-built drawings, laboratory analytical reports, etc.).
- **Review** - The Construction Superintendent will review all documentation for accuracy.

Table 3-1
Causeway Phase I

Objective	Activity	Activity Quality Requirement	Quality Control Verification
Planning	Pre-construction tasks	Prepare all required plans, consisting of Work Plan, SSHP, and SAP, submit required information to start project	Submittal Register
Prepare Site	Mobilization/Site Preparation	Mobilize equipment and personnel according to schedule. Prepare site for remedial activities	Daily Contractor Quality Control Report Daily Site Health and Safety Meeting Report. Daily Equipment Checklist. Construction Equipment Inspection Checklist.
Waste Characterization	Sampling	Sample collection and management procedures and laboratory data reports will be reviewed for compliance with the Specifications, Work Plan and SAP	Analytical Data Report & Validation QC Inspection
Asbestos Abatement	Removal of ACM from Building 5	Subcontractor abatement and waste management procedures will be reviewed for compliance with the Specifications, Work Plan and Asbestos Abatement Plan	Daily Contractor Quality Control Report Daily Site Health and Safety Meeting Report. Daily Equipment Checklist. Construction Equipment Inspection Checklist. Health and Safety Compliance Inspection QC Inspection
Demolition activities	Buildings 5, 59 and 34 berm area	Subcontractor demolition and waste management procedures will be reviewed for compliance with the Specifications, Work Plan and Demolition Plan	Daily Contractor Quality Control Report Daily Site Health and Safety Meeting Report. Daily Equipment Checklist. Construction Equipment Inspection Checklist. Health and Safety Compliance Inspection. QC Inspection
Excavate and containerize soils.	Soil Excavation	Soil excavation and management procedures will be reviewed for compliance with the Specifications and Work Plan	Daily Contractor Quality Control Report Daily Site Health and Safety Meeting Report. Daily Equipment Checklist. Construction Equipment Inspection Checklist. Health and Safety Compliance Inspection. Analytical Data Report QC Inspection
Waste Management.	Handling, Transportation and Disposal	All non-hazardous and contaminated debris will be segregated, loaded, transported and disposed of off site at an acceptable facility	Daily Site Health and Safety Meeting Report. Daily Equipment Checklist Construction Equipment Inspection Checklist. Health and Safety Compliance Inspection Analytical Data Report QC Inspection Transporter licenses, permits to be reviewed.

3.2 FIELD DOCUMENTATION

All field activities affecting quality control will be performed in accordance with documented procedures, instructions, or drawings identified in the specifications. During all field activities, WESTON will use the following reporting formats:

- Daily Inspection Report (Form 1).
- Quality Assurance Audit Checklist and Audit Notes (Form 2).
- Daily Site Health and Safety Meeting Report (Form 3).
- Construction Equipment Inspection Form (Form 4).
- Health and Safety Compliance Inspection (Form 5).
- Field Logbooks.

These reports will be used to document construction quality control activities. Related laboratory test reports and vendor data will be attached to these QC reports when daily work activities are associated with these data.

4. FIELD INSPECTIONS

The WESTON QC Officer will maintain a field logbook of inspection and monitoring activities. This daily logbook will be used in preparing the Daily Construction Quality Control Report form. The Daily Construction Quality Control Reports for the activities of each day of the previous week will be submitted weekly to the CENAE Representative (Mr. Champak Shah). Reports will not be submitted for days on which no work is performed. At a minimum, one report will be submitted for every seven days of no work and on the last day of a period of work stoppage. Reports will be signed and dated by the QC Officer.

The Daily CQC Report and the Daily Inspection Report include:

- Contractor/subcontractors and responsibilities.
- Equipment used, with any idle or downtime noted.
- Location, personnel, and description of work for each day.
- Test and/or control activities performed. Any deficiencies to the specifications will be noted along with the corrective action taken.
- Quantity of materials received at the site. For all materials received, acceptability, storage, and compliance with specifications will be noted.
- Quantity and type of waste material shipped from the site.
- Review of submittals.
- Off-site surveillance activities.
- Safety evaluations including a description of inspections, results, and any corrective actions.

5. AUDITS

Field performance will be evaluated to ensure that quality standards and objectives are met. The evaluation will be accomplished through audits and corrective action through use of the Daily Construction Quality Control Report (Form 2, Attachment A). Audits will be conducted and corrective actions will be implemented when non-conformances or deficiencies are identified. Additional audits will be conducted periodically. The audits will be planned and conducted by the QC Manager and clearly defined before they are initiated. Procedures for auditing activities will be identified prior to implementation of the audits.

The audit process will involve identifying non-conformances or deficiencies, reporting and documenting them, initiating corrective action through appropriate channels, and following up with a compliance review. Records will be kept of all auditing tasks and findings on the Quality Assurance Audit Checklist and Audit Notes (Form 3, Attachment A). In addition, copies of the audit findings will be provided to CENAE within 1 week of completion of the audit. For this project, it is anticipated the QC Manager will perform one audit.

The field team involved with construction activities is responsible for reporting all suspected technical non-conformances or deficiencies to the QC Officer. The QC Officer is responsible for evaluation of the situation and taking action, if any is required, after following the notification protocol.

FORMS

FORM 1

DAILY CONTRACTOR QUALITY CONTROL REPORT

DAILY INSPECTION REPORT

DATE:_____

WESTON® MANAGERS DESIGNERS/CONSULTANTS

WEEK NO.:	HOURS ON SITE:	WRITTEN BY:	REVIEWED BY:	WORK ORDER AND TASK:

WEATHER/TEMPERATURE:

LOCATION OF WORK:

WESTON PERSONNEL:	EQUIPMENT:	VISITORS:
SITE MANAGER:		
SITE ENGINEER:		
SHSC:		
OTHERS:		

SUBCONTRACTOR:	TRADE/SERVICE:
(1)	
(2)	
(3)	

AGREEMENT MADE/PHONE CONVERSATIONS:

MATERIALS DELIVERED (Amount, Condition, Purpose):

TEST DATA (List items here and record details on appropriate test data sheet):

SAFETY VIOLATIONS/COMMENTS:

WORK COMPLETED BY WESTON:

WORK COMPLETED BY SUBCONTRACTORS:

DAILY INSPECTION REPORT

DATE:_____

MANAGERS DESIGNERS/CONSULTANTS

Report is complete and correct. Work in compliance with contract except where noted.

CQC INSPECTOR (Print Name): _____ *CQC SIGNATURE:* _____

TYPE OF INSPECTION (Preparatory, Initial, Follow Up):

CQC FINDINGS (Satisfactory Work Completed and Deficiencies):

RECOMMENDED CORRECTIVE ACTIONS:

SAFETY OBSERVATIONS:

WORK PERFORMED BY WESTON (Continued):

WORK PERFORMED BY SUBCONTRACTORS (Continued):

FORM 2

QUALITY ASSURANCE AUDIT CHECKLIST AND AUDIT FORM

QUALITY ASSURANCE AUDIT CHECKLIST AND AUDIT NOTES

1. **Audit Number**: _____
   (Contract No. and Audit No.)
   Note: several different forms covering several dates or locations may be required for a single auditing event.

2. **Auditor:** _____

3. **Date**: _____ **4. Time:** _____

5. **Location**: _____

6. **Persons Contacted**: _____

7. **Consistency with Schedule**: _____

8. **CQCP Staffing Changes** (have they been approved by CENAE, have qualifications been appended to the plan?): _____

9. **Documents Available** (yes/no observations): _____
   CQC Plan: _____
   Technical Specifications: _____
   Site Safety and Health Plan: _____
   Drawings, as built (maintained?): _____
   Daily CQC reports (on file, up-to-date, complete?): _____
   Inspection records (type of inspection, up-to-date, filed properly, completed properly, signed, follow-up on noncompliance?) _____
   Test records (type of test, up-to-date, filed properly, completed properly, signed, follow- up on noncompliance?): _____

10. **Chemical Quality Management:**
    Sample log: _____
    Chain-of-custody forms on file: _____
    Laboratory reports (on schedule, in accordance to format, include QC data?): _____
    _____
    _____
    Equipment calibration records (up-to-date, complete?): _____
    _____

11. **Health and Safety:**
    Site Health & Safety Coordinator or alternate on-site (name?): _____
    Personnel on-site (current with field certification requirements?): _____
    _____
    Safety log (up-to-date, complete?): _____
    Daily inspection records (up-to-date, complete, follow-up?): _____
    Required monitoring instruments on-site: _____
    Monitoring instrument calibration records (on file and up-to-date?): _____
    _____

12. Field Inspection:

Type or nature of work observed:_____

Persons and/or subcontractor doing work:_____

Applicable specifications:_____

Work being done in accordance with specifications?_____

Work completed consistent with schedule?_____

Safety rules being adhered to?:_____

Work zones delineated and honored?_____

Personal protective equipment used?_____

Other safety issues:_____

FORM 3

DAILY SITE HEALTH AND SAFETY MEETING REPORT

DAILY SAFETY MEETING RECORD
AND WEEKLY SAFETY MEETING

Conducted by:

Project Site: Date:

Weather:

Activities to be conducted:

Safety Briefing Topics Discussed:

- Slips/Trips/Falls
- Work Zones
- Hard hats/safety glasses
- Heat/Cold Stress (Pulse rate, Breaks, Drink Fluids)
-
-
-
-

Safety Issues of Concern Noticed During Previous Activities:

FORM 4

CONSTRUCTION EQUIPMENT INSPECTION CHECKLIST

EQUIPMENT/TRUCKING INSPECTION CHECKLIST

This inspection form is to be filled out at the start of the work shift by the Equipment/Truck Operator to insure that the equipment/truck is safe to operate and is free from apparent damage which could cause failure while in use. Once completed, this form is to be given to the Site Manager to be kept on file on-site. In all cases, consult the manufacturer's data to ensure compliance with all safety inspection criteria which may not be indicated below.

MAKE/DESCRIPTION_____
MODEL/SERIAL_____

	OK	Not OK	Comment And Actions Taken
Brakes			
Brake Lights			
Reverse Signal Alarm			
Horn			
Tires			
Steering			
Seat Belts			
Operating Controls			
Fire Extinguisher			
Lights			
Defroster			
Mirrors			
Instruments			
Coupling Devices			
Windshield/Window Glass			
Windshield Wiper			
Mud Flaps/Rock Guards			
Exhaust System			
Hitches & Safety Cables			
Hydraulic Lines/Air Hoses			
Engine Oil Level			
Roll-Over Protection/ Emergency Equipment			

Odometer: _____ Hour Meter: _____
Fuel Level: _____

Inspector Name/Signature: _____

Date: _____ Time: _____

Revised 01/1997

FORM 5

HEALTH AND SAFETY COMPLIANCE INSPECTION

HEALTH AND SAFETY COMPLIANCE INSPECTION

Legend X = Yes, O = No

SITE NAME:_____

WO #:_____

LOCATION:_____

INSPECTOR:_____

DATE:_____

CERTIFICATION OF PERSONNEL:

1._____ All WESTON personnel on site are currently active on certification list?
2._____ Site Safety Officer and Site Supervisor are qualified?

MEDICAL AND FIRST AID:

1._____ First Aid Kits accessible and identified?
2._____ Emergency eye/safety washes available?
3._____ Daily First Aid logs up to date?
4._____ First Aid Kits inspected weekly?
5._____ At least two First Aid trained persons on site at all times when working?

SITE SAFETY/EMERGENCY PLANS:

1._____ Safety plan posted on site and given to each person?
2._____ Initial site safety plan meeting held and documented before work begins?
3._____ Hazardous materials information available for all hazards?
4._____ Designated, qualified site health and safety coordinator on site?
5._____ Employees trained in toxicology/exposure risks?
6._____ Emergency telephone numbers posted?
7._____ Emergency routes designated?
8._____ Emergency plan and signal reviewed with all persons?

TRAINING:

1._____ Daily safety meetings documented?
2._____ Question and answer time available to all site personnel?
3._____ All employees instructed in hazardous materials handling practices?
4._____ New personnel to site receive: copy of safety plan_____, site orientation_____, Review of: LOP_____, DECON____, ZONES_____, Site specific safety and health hazards?____

HEALTH AND SAFETY FIELD AUDIT - Continued

Legend X = Yes, O = No

PERSONAL PROTECTION:

1._____ All equipment meets ANSI/OSHA/EPA criteria?
2._____ Levels of protection (LOP) established?
3._____ Site control zones (Exclusion, CRZ, Support) clearly designated?
4._____ All employees know their LOP scheme?
5._____ OSHA respirator program in place?
6._____ Employees fit tested for respirators?
_____ On site?
_____ Fit tests current?
7._____ Defective equipment tagged out?
8._____ Breathing air grade "D" certified?
9._____ Sufficient quantities of equipment?
10._____ Safety instrumentation maintained and calibrated?
_____ Maint. & Cal. logs up to date?

DECONTAMINATION:

1._____ Decon system set up on site?
_____ Used?
_____ According to safety plan?
2._____ Contamination reduction corridor clearly delineated within the CRZ?
3._____ Appropriate waste recepticals available for all waste?
4._____ Recepticals properly closed at end of day?
5._____ All Decon liquids properly contained and disposed of?
6._____ All wastes disposed of according to approved plan?
7._____ All personnel received Decon training?
8._____ All reusable personal protective gear deconned and disinfected at least daily?

FIRE PREVENTION/PROTECTION:

1._____ Hot work permits required?
2._____ Smoking restricted to designated area?
3._____ Fire lanes established, clearly designated & maintained?
4._____ Flammable/combustible liquid dispensing transfer systems grounded & bonded?
5._____ Proper flammable materials storage?
6._____ Fire alarm established, workers aware?
7._____ Location and use of fire extinguisher known by all personnel?
8._____ Fire extinguishers checked before each shift?
_____ Inspected monthly?
9._____ Fire extinguisher appropriate for fire hazard potential?
10._____ Combustible materials segregated from ignition sources?

HEALTH AND SAFETY FIELD AUDIT - Continued

Legend X = Yes, O = No

WALKING AND WORKING SURFACES:

1._____ Accessways, stairs, ramps and ladders free of ice, mud, snow or debris?
2._____ Ladders exceed max length?
3._____ Ladders used in passageways, doors or driveways?
4._____ Broken or damaged ladders tagged out?
5._____ Metal ladders prohibited in electrical service?
6._____ Safety feet on straight and extension ladders?
7._____ Stairways, floor and wall openings guarded?
8._____ Elevated work areas guardrailed or safety chained?
9._____ Flotation devices worn when working on or over water?
10._____ Toe boards on overhead work surfaces?
11._____ Mobile offices/labs have fixed stairs and handrails?
12._____ Work areas kept free of debris and equipment?

EXCAVATIONS, CONFINED SPACES, TUNNELS:

1._____ Excavations sloped, shored or benched to prevent cave-ins?
2._____ Shoring approved by engineer?
3._____ Guardrails or fences placed around excavations near walkways or roads?
4._____ Excavation locations lighted/or otherwise made visible at night?
5._____ Utility check performed and documented before excavation or drilling?
6._____ Ladders available in trenches more than 4 feet deep and at a minimum, 25' intervals along a fence?
7._____ All excavated material, personnel, heavy equipment is at least 24" from the edge of all trenches?
8._____ Confined space entry permit procedure in place and communicated to all?
9._____ Employee training includes CSE hazards?
10._____ Tunnels are adequately ventilated?
11._____ There is proper lighting?
12._____ Tunnel tested for: % O_2?
_____ LEL, flammable gases, vapors?
_____ TOX?
13._____ Communication available inside to out?
14._____ No flammables or combustibles in tunnel?
15._____ CSE procedures used for Tunnels?
16._____ CSE procedure checklist:
    _____ Safety watch?
    _____ Safety watch protected same as enterers?
    _____ Safety line?
    _____ Appropriate harness?
    _____ Continuous monitoring for % O_2, % LEL & TOX?

HEALTH AND SAFETY FIELD AUDIT - Continued

Legend X = Yes, O = No

EXCAVATIONS, CONFINED SPACES, TUNNELS (continued):

_____ Level B or constant ventilation and monitoring?
_____ Instruments calibrated?
_____ Maintain and inspect log for all equipment?

17.____ Confined space isolated from electrical/mechanical activation by following lock out/tag out proceedings?

_____ Confined space isolated from any raw materials/chemical lines by disconnecting or blanking these lines?

MOTOR VEHICLES/HEAVY EQUIPMENT:

1._____ Inspected before each use?
2._____ Operators licensed for equipment used?
3._____ Unsafe equipment tagged out and reported?
4._____ All safety appliances/guards in place?
5._____ Shut down for fueling?
6._____ Equipped with back-up alarms or spotter used if 360° visibility restricted?
7._____ Loads are secure before transport?
8._____ Roads and structures inspected for load capacity per vehicle weights?
9._____ Riders prohibited on heavy equipment?

SLINGS AND CHAINS:

1._____ Slings, chains and rigging rated for intended use and inspected per OSHA. Documentation of inspection in daily log?
2._____ Damaged slings, chains or rigging tagged out and reported?
3._____ Employees are instructed and keep clear of suspended loads?

ELECTRICAL:

1._____ Warning signs indicate the presence and location of high voltage equipment, 250 V or greater present and location?
2._____ Electrical equipment and wiring properly guarded?
3._____ Electrical lines, extension cords and cables guarded and properly maintained?
4._____ Extension cords kept dry out of puddles and rain?
5._____ Damaged equipment tagged out?
6._____ Underground electrical lines located and indicated?
7._____ Overhead electrical lines de-energized or elevated work platforms, work areas, booms or ladders erected so no contact can occur with electrical lines?
8._____ A positive electrical lock-out system is used whenever work is done on or in electric equipment or electrically activated equipment?

HEALTH AND SAFETY FIELD AUDIT - Continued

Legend X = Yes, O = No

HAND AND POWER TOOLS:

1._____ Guards and safety devices in place and used?
2._____ Inspected before each use?
3._____ Tagged out if defective?
4._____ Eye protection areas identified and protection worn?
5._____ Non sparking tools available?

WELDING AND CUTTING:

1._____ Fire extinguishers present at all welding and cutting operations?
2._____ Confined spaces, tanks, pipelines tested before welding or cutting?
3._____ Hot work permitting system in use?
4._____ Proper helmets and shields (including proper tint for UV protection) used?
5._____ Properly grounded?
6._____ Fuel gas and O_2 gas cylinders stored at least 20'apart?
_____ Stored upright and secured?
7._____ Only trained welders permitted?

COMPRESSED GAS CYLINDERS/PRESSURIZED LINES:

1._____ Breathing air cylinders charged only to prescribed pressure?
2._____ No other gas system can be mistaken for breathing air?
_____ Fittings prohibit cross connection?
3._____ Cylinders segregated appropriately in controlled, protected but well ventilated areas?
4._____ Smoking prohibited in storage areas?
5._____ Cylinders stored upright and secured?
6._____ Cylinder caps in place when stored (not in use) or when cylinders moved?
7._____ Fuel gas and O_2 minimum 20' apart when stored?
8._____ Pressurized air or waterlines are securely connected?
9._____ All site personnel know never to step across a pressurized line?
10.____ Gas or other hazardous lines are labelled appropriately?

MISCELLANEOUS:

1._____ Tools and other equipment (portable) are stored away from walkways, roads or driveways where they cannot fall on or be fallen over by site personnel?
2._____ Overhead hazards are noted, communicated to all and labeled as needed?
3._____ Hard hat, eye hearing and protection areas are defined and signs in place?
4._____ Hard hats, eye and head protection used where appropriate?
5._____ Signs or labels are in place or appropriate training received?

HEALTH AND SAFETY FIELD AUDIT - Continued

Legend X = Yes, O = No

6._____ Copies of contracts with client and sub-contractors are on-site, WESTON's role regarding site health and safety responsibilities clear in these and in the minds of the site manager(s)?

7._____ Sub-contractors have received approved copies of their safety plan or have signified their intent to conform with Weston's safety plan?

8._____ Site managers understand their responsibilities for sub-contractors' conformance with all OSHA and other health and safety requirements?

9._____ Site managers know what to do in the event of an OSHA inspection?

COMMENTS:

APPENDIX B
ENVIRONMENTAL PROTECTION PLAN

WESTON will prepare and submit the Environmental Protection Plan as an addendum to be submitted under separate cover.

ASBESTOS ABATEMENT PLAN

STRATFORD ARMY ENGINE PLANT

STRATFORD, CT.

REVISION 1
August 3, 2001

TABLE OF CONTENTS

SCOPE OF WORK

GENERAL SCOPE OF WORK:

The Work of this Contract is for work to be done in accordance with applicable regulations and these specifications.

Asbestos work areas are listed in Schedule 1.

Coordinate removals and protection to maintain building security and to prevent dust from entering as the result of outside abatement work.

Contractor is responsible for proper disposal of all wastes.

Perform incidental demolition to access materials to be removed where removal is indicated in Schedule 1.

DETAILED SCOPE OF WORK:

Remove all asbestos containing material listed drawing prepared by Malcolm Pirnie dated December 1997 and on the summary of analytical results on table 3.6.1-3. Roof field is not included (flashing only).

SCHEDULE 1

LOCATION	MATERIAL	FOOTAGE

See table 3.6.1 & 3.6.2 (excluding roof fields) of the Technical Specifications

ADDITIONAL DETAIL OF EXECUTION OF WORK

1. General Instructions:

Work will be executed according to the preceding instructions in the general section of this Specification except as modified by instructions under this section as follows:

The asbestos contractor is to provide means of reaching high work such as lifts, scaffolding, ladders and the like. Use of combustion engine driven equipment inside the building is prohibited.

Project Monitor Services, if required, will be provided by WESTON. Air clearance testing and monitoring shall be performed by the Project Monitor if the owner needs to reoccupy the work area prior to demolition following abatement. If the owner does not need to occupy the work area following abatement, final air sampling is not required.

Specifics as to locations of Negative Air and Decon Unit will be coordinated between WESTON and CENAE.

Space will be provided for a truck to enter and unload and to load waste bags. Space will also be provided for 2 waste containers.

There are windows at outside walls which can be opened sufficiently to discharge negative air exhausts; some adapting will be needed.

There are water and electrical outlets available.

General

1. Principal Regulations:

WESTON will conform to all applicable Federal State and Local Regulations. The principal Applicable Regulations are:

a. OSHA 29 CFR 1926.1101 (Construction Industry Asbestos Standard) *latest revision to 1926.58*
b. NESHAP (National Emissions Standards for Hazardous Air Pollutants) 40 CFR 61 Subpart M.
c. Connecticut General Statutes Sections 19a-332-1 through 19a-332-16 inclusive. (Standards for Asbestos Abatement).
d. Connecticut General Statutes Sections 19a-332-17 through 19a-332-23 inclusive. (Licensure and Training Requirements for Asbestos Abatement).
e. Worker Protection Rule 40 CFR 763 Subpart G (Applies to school workers).
f. OSHA 29CFR 1910.134 (Applies to Respirator Use.)
g. OSHA 29CFR 1910.38; 1926.24 and 1926.150-155 (Fire Safety)
h. OSHA 29CFR 1926.401 and 1926.416-.417 10.134 (Electrical Safety)
i. State, County, and City or Municipal codes and ordinances as applicable.
j. New pending applicable regulations if promulgated during the project.
k. Connecticut General Statutes Sec 22a-209-8 (i) (DEP Applies to Waste Disposal in Connecticut)
l. ASHARA (Asbestos School Hazard Abatement Reauthorization Act): EPA CFR 40 Part 763 Appendix C to Subpart E.
m. OSHA 29CFR 1910.145 (Accident prevention Signs and Tags)
n. EPA 40CFR 61 (General Provisions, Subpart A)
o. EPA 40CFR 763 (Asbestos Abatement Projects, Subpart G)
p. EPA 40CFR 171 (General Information)
q. EPA 40CFR 172 (Hazardous Materials)
r. EPA 40CFR 173 (General Shipping Requirements)
s. EPA 40CFR 177 (Transportation Requirements)
t. EPA 40CFR 178-179 (Container Specifications)

2. Air Monitoring

a. Provided by: All samples other than contractors personal air samples will be provided by the Building Owner who will hire an Licensed Project Monitor (PM) to monitor the work as herein specified.
b. Methods:

Samples will be collected and analyzed according to NIOSH Method 7400 (PCM) except where TEM analysis is specified for final air samples.

Final air samples will be collected aggressively and analysis conducted by TEM or PCM as specified in 40 CFR 763 Subpart E. TEM is required for reoccupancy testing of Work Areas with >500 lin ft or >1500 sq ft of Asbestos Materials to be Abated. PCM shall be used in all other cases.

c. Final Clearance for Interior Work

After completion of Removal in a Work Area, WESTON will make the first visual inspection and notify Project Monitor at least 24 hours in advance when the area is ready for testing. Following completion of WESTON's visual inspection, the IH will perform a visual inspection to ensure that no visible residue remains. The final air samples will be collected aggressively and analysis conducted by TEM or PCM as specified in 40 CFR 763 Subpart E.

d. Contractor's Personal Air Samples

Personal air sampling shall be conducted by WESTON according to CFR 29 1926.1101 to ensure workers are using proper respiratory protection. Samples will include daily 30 min excursion limit (EL) samples and 8 hour time-weighted average concentration (PEL) samples.

3. Notifications

a. Copies of the following notifications will be maintained at the WESTON project office.
b. Contractor shall prepare and submit *a 10 day notification* on forms required by the State of Connecticut Department of Public Health and Addiction Services (DPHAS). WESTON will pay the required fee to be submitted with the form. Notifications shall be sent to:

Connecticut Dept of Public Health (DPH)
410 Capitol Ave - MS # 51AIR,
P.O. Box 340308
Hartford, CT 06134
(860) 509-7367

c. Any disposal of Asbestos in the State of Connecticut must be authorized by the office of Solid Waste Management. To request a disposal permit, contact the Solid Waste Management Unit at (860) 424-3366.

Twenty five day notification must be sent to:
State of Connecticut
Dept. of Environmental Protection
Solid Waste Management Unit
79 Elm Street,
Hartford CT 06106

4. Contractor Qualifications:

The asbestos abatement contractor hired by WESTON is licensed by DPH as an Asbestos Contractor and has sufficient ability and experience in Asbestos Abatement and must be capable of meeting all the requirements of the regulations and the specification to enable him to prosecute and complete the Work successfully within a reasonable period of time.

Each Contractor employee to be used for the project must have proof of required training, medicals, fit testing and Accreditation required by the regulations cited:

5. Compliance with Safety Requirements and Regulations vs Specifications:

No requirement in these Specifications shall be construed as forcing WESTON or its employees or agents to commit an unsafe act or to violate any code or regulations. Where there is a conflict between the specifications and the regulations the most stringent condition shall apply. In any case where WESTON determines that compliance with any condition of this Specification is not feasible for safety reasons and supports this determination with engineering and/or other appropriate data in writing together with an acceptable alternate method which is consistent with the regulations, the alternate method will be duly considered. Any proposed changes are subject to approval by the IH.

6. Personnel Protection

a. Contractor's workers shall be instructed on fire, electrical, and other hazards peculiar to this job site. Instructions will include spill response, power failure and emergency evacuation procedures. The workers will receive the required OSHA Hazard Communication information required by CFR 29 1926.59 and training for any hazardous chemicals brought to this site.

b. Respiratory protection shall meet the requirements of OSHA as described in 29CFR 1910.134 and 1926.1101 for Asbestos. WESTON will provide appropriate respirators, disposable suits, and other safety equipment at no cost to his employees, for Asbestos and as needed for other physical and health hazards at the work site.

c. Any feasible combination of engineering controls, work practices, and personal protective equipment may be used to reduce personnel exposure to Asbestos and other hazards.

d. All persons entering the Work Area shall wear prescribed protective clothing and respirators until the Final Clearance Tests are successfully completed for the Work Area. Contractor has responsibility to establish and maintain at the work site daily logs of activities and the names, social security numbers and job titles of all persons entering the site.

e. WESTON shall maintain His Supervisor on site at all times. Duties of the Supervisor shall include:

1) Posting signs to comply with OSHA 1926.1101 and NESHAP certificates.

2) Maintaining copies of Regulations including 29 CFR 1926.1101 and 40 CFR 61 Subpart M, and a copy of these Specifications on site.

3) Guarding the Work Area against unauthorized intrusion and ensuring all persons entering the Work Area are properly certified, trained, and equipped. Maintaining the job narrative including proof of control of the Work Area and that each entry into the Work Area is recorded in the site log.

4) Providing workers with safety equipment, except any person will have his own personal, fitted respirator provided by WESTON.

5) Ensuring proper decontamination procedures such as proper use of suits and shower are followed without exception and that the shower and other safety equipment are properly functioning.

6) Ensuring that all records of the Abatement are kept including a copy of the Notifications, the methodology and results of all air sampling conducted during the Abatement, a complete list of the names and social security numbers of all Abatement Workers and Supervisors and other Contractor employees involved in the Abatement process on this project and all other individuals entering the Work Area, a log of control of access to the Work Area, all records of compliance with OSHA, DEP and EPA regulations and as applicable, Connecticut OSHA regulations, and documentation to demonstrate compliance with post abatement reoccupancy criteria.

f. Before leaving the Work Area each person shall: vacuum gross contamination from protective clothing, proceed to the Equipment Room and remove all clothing except respirator, and still wearing the respirator proceed naked to the shower and clean the respirator and self using soap and water and rinse self in the shower. Dispose of the wet respirator cartridges in a receptacle for Asbestos waste.

g. Following showering and drying off, each person shall proceed directly to the Clean (change) Room and dress in street clothes at the end of each days work or before eating or taking a break. Otherwise one may don disposable clothing of a different color or otherwise distinctively different, for use outside the Work Area, than suits used inside the Work Area.

h. Persons will not smoke, drink, eat, or chew gum or tobacco in the Work Area.

i. The prescribed protective clothing, respirator use and decontamination measures in the Work Area, including all those described in this Specification and prescribed in the Regulations will remain in effect from the moment Asbestos disturbance begins until Final Clearance of the Area.

8. Preparation of the Interior Work Areas

a. Per state of Connecticut Standards 19a-332a-1 thru 16

9. Preparation of the Decontamination Enclosure System (Decon): (Interior)

a. In general, the Decon unit will conform to drawings appended and consist of 3 totally enclosed chambers:

1) An Equipment Room with 2 curtained doorways; one to the Work Area and one to the Airlock.

2) A Shower Room with 2 curtained doorways; one to each Airlock. Plastic on Shower Room and adjoining Equipment and Clean Rooms shall be non-transparent. Showers with hot and cold water shall be provided and used at all Asbestos Removal operations. Careful attention shall be paid to the shower construction to prevent leakage of any kind. The shower will be supplied with soap, water and towels at all times. Waste water must be filtered using best available technology prior to discharge and the filter cannisters or other filter media included with the Asbestos wastes.

3) A Clean Room with one Curtained Doorway into the Airlock and one entrance or exit to non-contaminated areas of the building. The Clean Room shall have sufficient space for storage of the workers street clothes, towels and other non-contaminated items. Joint use of this space for other functions such as offices, extraneous equipment, materials or tools shall be prohibited.

4) Equipment Decontamination Enclosure. Provide or construct an Equipment Decontamination enclosure consisting of 2 totally enclosed chambers including:

a) a Washroom consisting of an Airlock with a Curtained Doorway to a designated staging area of the Work Area and a Curtained Doorway to the Holding Area.

b) A Holding Area constituting an Airlock with a Curtained Doorway to the Washroom and a Curtained Doorway to a designated uncontaminated area.

WESTON will provide/construct the decontamination facilities needed for the asbestos abatement of building 5.

10. Maintenance of Containment Systems

WESTON is responsible for preparing and maintaining the Containment in proper condition to serve the intended purpose and meeting the requirements of the Regulations and these Specifications as verified by the IH. WESTON will inspect the Enclosure initially and daily:

a. Visual inspection for conformity.

11. Asbestos Decontamination, Removal and Cleanup (Interior)

a. Police up all remaining floor tile including tile pieces lodged in walls and penetration and remaining intact or broken tile and all other visible debris. Spray Asbestos materials with Amended Water using the airless sprayer to produce a fine spray.

b. Bag the wet Asbestos waste at frequent intervals to prevent drying and to prevent possible tracking of Asbestos wastes.

c. Seal filled containers with the wet Asbestos waste in the Work Area. Wet clean the outside of the sealed bag and move to the Holding Area (bagout) for double bagging by workers who have entered from uncontaminated areas dressed in clean disposable suits. Only the double sealed bags and other cleaned materials will exit via the bagout. Persons will leave only via the Decon-shower route.

d. The Asbestos materials must be packaged in impermeable dust tight containers (i.e., heavy duty six mil polyethylene bags or sealed fiber pack drums).

e. All containers must be labeled in large legible letter:

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

f. After completion of Stripping Work, all surfaces from which Asbestos has been removed shall be wet brushed using a nylon brush, wet wiped and sponged or cleaned by an equivalent method to remove all visible material. During this Work the surfaces shall be kept wet. Wire brushes are not permitted.

g. Remove visible accumulations of Asbestos material and debris. Wet clean all surfaces within the Work Area and allow to dry.

h. Subsequent to the completion of all Asbestos Removal Work, clean all dried surfaces with a HEPA filtered vacuum (CAUTION: A HEPA vacuum will fail if used on wet material).

i. Apply a thin coat of Encapsulant to all surfaces cleaned and to polyethylene barriers after cleaning.

j. At appropriate times in the cleaning sequence:

1) Clean and remove sealed containers and equipment 2) Change HEPA filters.

k. Equipment Removal Procedures

1) Clean surfaces of contaminated containers and equipment by HEPA vacuuming and wet sponging or wiping before moving them into the Decon for final cleaning.

2) Persons will not leave via the equipment decontamination enclosures.

3) When the configuration of the equipment is such that cleaning of Asbestos Materials is not possible or not feasible, then the object shall be thoroughly wrapped in a minimum 2 layers of 6 mil polyethylene sheeting with all joints, seams and overlaps sealed with tape; or containerized in a metal drum with a locking lid.

4) HEPA vacuum cleaners shall be emptied of collected Asbestos Wastes prior to removal from the Work Area except at the end of the cleaning sequence when the cleaners are to be sealed in plastic and removed from the site for subsequent cleaning at the next abatement site.

5) HEPA Negative Air Units:

a) All pre-filters in the HEPA units shall be discarded in the Asbestos wastes prior to removal from the Work Area.

b) The HEPA units shall be damp cleaned completely inside and out and sealed in 2 layers of 6 mil polyethylene sheeting with all joints, seams and overlaps sealed with tape.

State law also requires that the replacement of filters shall be done prior to the beginning of the next Asbestos Abatement Project after installation of Containment barriers.

12. Initial Clearance Inspection

a. After cleaning the Work Area, WESTON will make an initial visual inspection. If the Work is incomplete or that there are visible accumulations of residue, WESTON shall repeat the cleaning until the Work Area is in compliance.

b. After successful completion of the above visual inspection, WESTON may apply Encapsulant (lockdown) i.e., apply a thin coat of Encapsulant to cleaned surfaces and to polyethylene barriers.

c. Allow the Work Area to dry at least overnight. WESTON may use optional leaf blowing to aid as a touch-up cleaning provided the blower does not impinge on Critical Barriers where any dust may enter contiguous areas.

d. Perform a final cleaning using wet wiping and HEPA vacuuming as appropriate.

13. Reoccupancy (Final Clearance) Testing

a. Before testing, all wastes must have been removed from the site. A final waste bag shall be on hand to receive contaminated suits and respirators and additional bags available for disposal of polyethylene and other containment components to be dismantled and discarded. After surfaces have dried, a final visual inspection by the Air Sampling Professional (IH) is performed. If this inspection reveals no visible residue, Final Air Sampling should be carried out.

b. Aggressive air sampling and analysis shall be undertaken by the IH who will select locations of the samples in the Work Area. At least 5 samples shall be taken in each Work Area. Sampling and analysis shall be carried out according to CFR 40 part 763. TEM is required for this Work Area.

For TEM analysis, collect 5 samples of at least 1200 liters each aggressively in the Work Area, and five samples of 1200 liters each collected non-aggressively at the same time outside the Work Area. The average concentration of 5 aggressive air samples taken within the Work Area must be less than 70 structures/ sq. mm or statistically less than the average Asbestos concentration determined in five ambient air samples outside the Work Area.

c. Work Areas which do not comply with the visual inspection or Final Air Clearance concentrations specified, shall continue to be cleaned at WESTON's expense until the specified criteria are achieved.

d. Upon successful Final Air Clearance, mandatory respiratory protection in the Work Area may be waived, the Critical Barriers removed, and the Negative Air Units shut down and removed.

14. Disposal

a. Wastes will be removed at appropriate times during the work sequence. WESTON will dispose of Asbestos wastes in accordance to Applicable Regulations.

b. Impermeable double containers are to be used to receive and retain any Asbestos-containing or contaminated materials until disposal at an acceptable disposal site. Containers shall be labeled in accordance with OSHA 1926.1101 and shall be both water and air tight. When tie wraps of plastic are used to secure waste bags, they must be at least five inches long, pointed, and looped. Plastic bags must be 6-mil or greater thickness.

c. After the Asbestos waste container is deployed, it will remain locked unless in immediate use. The job Foreman or Supervisor will maintain control of the key.

d. Seal filled containers with the wet Asbestos waste in the Work Area. Wet clean the outside of the sealed container and move to the Holding Area (bagout) for "double bagging" by workers who have entered from uncontaminated areas dressed in clean disposable suits. Only the double sealed containers and other cleaned materials will exit via the "bagout" (Equipment Decontamination unit). Persons will leave only via the Worker Decontamination- shower route.

e. The Asbestos materials must be packaged in impermeable dust tight containers (i.e., heavy duty six mil polyethylene bags or sealed fiber pack drums).

f. All containers must be labeled in large legible letter:

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

g. Material that becomes contaminated with Asbestos shall be decontaminated or disposed of as Asbestos waste.

h. Each waste container shall be tagged or labeled clearly with the name of the generator i.e. WESTON and the name of the work site.

i. WESTON will turn over to CENAE and SAEP a copy of the disposal document for the waste within 45 days.

15. Multi-Employer Worksites: New OSHA Requirements: 1926.1101

a. The asbestos contractor shall inform other employers at the site of:

1) the nature of the work with asbestos

2) the existence of and the requirements of regulated areas,

3) the measures to be taken to protect employees of the other employers from exposure.

4) any breaches in the containment or enclosure

5) that these employers must ascertain on a daily basis that the containment or enclosure is secure, or otherwise:

a) move their employees away from the regulated area until any breeches are corrected or

b) Provide the same protective equipment as specified herein for the asbestos contractor.

b. Comply with the supervision of the general contractor on the site with respect to the general contractor's determination of whether the asbestos contractor is in compliance with the OSHA asbestos standard cited herein.

c. Regardless of who creates any asbestos hazard, the employer of exposed employees is required to comply with applicable protective provisions of 1926.1101 to protect his employees.

d. Employers who discover the presence (of ACM or PACM) on the worksite must notify the project or building owner. On worksites having multi employers, the person who discovers the material is also to notify the other employers. An employer on a multi job worksite who is planning class I or class II asbestos work is to inform all the other employers on the site . They are to be informed of the location and quantity of these materials and the measures to be taken to protect them from exposure.

e. Transmit data to SAEP of any knowledge of the location and amount of ACM or PACM who must in turn pass this information to employers of employees who may be exposed.

f. Before class I, II or III work, is initiated, building and or project owners must notify their own employees and employers who are bidding on such work, of the quantity and location of ACM or PACM present in such areas. Owners must also notify their own employees who work in or adjacent to such jobs. Employers who are not owners planning any such covered activity must notify the owner of the location and quantity of ACM and PACM known or later discovered. The building owner must keep records of all information received through this notification scheme, or through other means, which relates to the presence, location and quantity of ACM and PACM in the owner's building, project or vessel and transfer all such information to successive owners. OSHA has defined 'building owner' to include those lessees who control the management and record keeping functions of a building/facility.

g. Within 10 days of completion of Class I or II asbestos work, the asbestos contractor shall inform the owner and employers who will be working in the area of the quantity and PACM or ACM remaining in the former regulated area and the final monitoring results.

h. For inadvertently discovered ACM/PACM there is a 24 hour notification requirement to the owner and all employers at the site.

16. Exposure Assessment:

a. Each employer who has a workplace where asbestos abatement is conducted, must ensure that a competent person conducts an exposure assessment in accordance with 1926.1101 immediately before or at the initiation of the abatement to ascertain expected exposures.

b. Each Initial Exposure assessment by the Competent Person shall include:
1) Air monitoring historical data
2) Degree and quality of supervision
3) Employee training and experience
4) Techniques used for wetting the ACM or PACM in the various circumstances encountered

5) Placing and repositioning the ventilation equipment, and

6) Impacts due to weather conditions

Irrespective of the results of the assessment, the requirement of this specification must be followed since these are predicated on additional State and Federal regulations.

17. Definitions:

Abatement: Procedures to control fiber release from Asbestos-containing materials; includes Removal, Encapsulation, and Enclosure.

Airlock: A system for permitting ingress and egress while assuring air movement to a contaminated area from an uncontaminated area.

Air Monitoring: The process of measuring the fiber content of a specific volume of air in a stated period of time.

Licensed Project Monitor (IH): A DPHAS Licensed professional capable of conducting air monitoring and analysis schemes. This individual is responsible for recognition of technical deficiencies in worker protection equipment and procedures during both planning and on-site phases of an Abatement project. Monitoring and worker protection. Air sampling shall be in accordance with NIOSH Method 7400 and as described in OSHA standards 29 CFR 1926.1101, or (as applicable for TEM) according to 40 CFR Part 763 Subpart E.

Amended Water: Water to which a surfactant has been added.

Asbestos: Asbestos is a name given to a number of naturally occurring fibrous silicates. There are two varieties of Asbestos; the serpentine form (Chrysotile) characterized by long, soft, flexible, and wavy fibers, and the amphiboles which occur as straight, needle-like fibers, and consist of crocidolite, amosite, anthophyllite, tremolite and actinolite.

ACM / Asbestos Containing Material: A material which contains more than 1% Asbestos by volume per EPA test Method 600/R-93/116.

DPH: Connecticut Department of Public Health

Category 1 and 2 Asbestos materials: Non-friable materials as defined in the amended NESHAP regulation 40 CFR 61, 11/20/90.

Class I Asbestos Abatement Work: Removal of Thermal System Insulation and surfacing removal of ACM or PACM (TSI and Surfacing have the same meaning as in EPA AHERA except drywall is not classed as surfacing but plaster is.

Class II Asbestos Abatement Work: Removal of ACM or PACM other than TSI and surfacing.

Class III work: Repair involving disturbance of ACM or PACM.

Class IV work: = Maintenance and custodial work in areas with ACM or PACM such as dusting surfaces, vacuuming carpets, sweeping or mopping asbestos containing floors or floors in areas where ACM or PACM is present; cleaning up ACM or PACM, changing a light bulb or battery in a smoke detector on a surfaced ceiling, polishing floor tile.

Clean Change Area: An area equipped as specified herein so that workers can decontaminate their suits and change into street clothes without passing back through the regulated area.

Clean Room: An uncontaminated area or room which is a part of the Worker Decontamination Enclosure with provisions for storage of worker's street clothes and protective equipment.

Competent Person: A person experienced in Asbestos Abatement with a current Asbestos Abatement Supervisor's Certificate from an EPA Approved Training Center. In addition, a person meeting the following requirements in 1926.32: "one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them."

Critical Barrier: The last layer of plastic sheeting separating Work Areas from non Work Areas

Curtained Doorway: A device to allow passage from one room to another while permitting minimal air movement between the rooms, typically constructed by placing two overlapping sheets of plastic over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one sheet along one vertical side of the doorway, and securing the vertical edge of the other sheet along the opposite vertical side of the doorway. Two curtained doorways spaced a minimum of six feet apart form an Airlock.

Decontamination Enclosure System (Decon.): A series of connected rooms, with Curtained Doorways between any two (2) adjacent rooms, for the decontamination of workers and of materials and equipment which is connected to and adjacent to the regulated area. A Decontamination Enclosure System always contains at least one (1) Airlock.

Encapsulant (sealant): a liquid material which can be applied to Asbestos-Containing Material and which controls the possible release of Asbestos fibers from the material either by creating a membrane over the surface (bridging Encapsulant) or be penetrating into the material and binding its components together (penetrating Encapsulant). Any such Encapsulants shall be in conformance with Building and/or Fire Safety Code requirements.

Encapsulation: All herein specified procedures necessary to apply an encapsulant to Asbestos-containing building materials to control the possible release of Asbestos fibers into the ambient air. The practice of spraying water damaged, loose, or hanging Asbestos material is not considered a satisfactory control method and is not considered Encapsulation for the purposes of this Specification. Encapsulation requires the same work area prep as removal and includes all the steps specified below:

a. Remove damaged, loose, or hanging areas of existing Asbestos material and place in sealable plastic bags for transport. b. Repair damaged and missing areas to obtain a suitable base for sealing using Asbestos free replacement material in accordance with manufacturer's instructions. c. Apply a final spray with Encapsulant.

Equipment Decontamination Enclosure: That portion of a Decontamination Enclosure System (Decon) designed for controlled transfer of materials and equipment, typically consisting of a Washroom and a Holding area.

Encase: To directly cover pipe insulation with an airtight impermeable cover such as remoistenable cloth or conduit.

Equipment Room: A contaminated area or room which is part of the Worker Decontamination Enclosure with provisions for storage of contaminated clothing and equipment.

Fixed Object: A unit of equipment or furniture in the Work Areas which cannot be removed from the Work Area.

Friable Asbestos Material: An Asbestos material that can be crumbled, pulverized or reduced to powder when dry by hand pressure and which releases Asbestos fibers into the environment.

HEPA Filter: A high efficiency particulate air (HEPA) filter in compliance with ANSI Z9.2-1979.

HEPA Vacuum Equipment: Vacuum equipment with a HEPA filter system for filtering the air effluent from the unit.

Holding Area: A chamber in the Equipment Decontamination Enclosure located between the Washroom and an uncontaminated area. The Holding area comprises an Airlock.

Mini-Containment: A fully contained small work area with decontamination unit, negative air which differs only in size from the containments herein specified.

Movable Object: A unit of equipment or furniture in the Work Area which can be removed from the Work Area.

Negative Air Units or Negative Air Pressure Equipment: A portable local exhaust system equipped with HEPA filtration used to create negative pressure in a contaminated area (negative with respect to adjacent uncontaminated areas) and capable of maintaining a constant discharge of filtered air outside and creating suction so that air flow direction moves from uncontaminated areas into the Work Areas.

NESHAP: National Emission Standards for Hazardous Air Pollutants, including Asbestos, administered by the EPA.

NIOSH; National Institute for Occupational Safety and Health.

PACM: Presumed Asbestos Containing Material. OSHA definition: TSI or Surfacing. Note: OSHA also assumes roofing and resilient flooring to contain asbestos but the work practices differ. EPA assumed ACM covers a much broader range of building materials.

Permissible Exposure Limit (PEL): OSHA Standard. Eight (8) hour time weighted average (TWA) of 0.1 fibers per cubic centimeter of airborne Asbestos, tremolite, anthophyllite, actinolite, or a combination of these materials as determined by the method prescribed in appendix A to OSHA Regulations 29 CFR 1926.1101, or by an equivalent method.

Plasticize: To cover floors and walls with plastic sheeting as herein specified.

Removal: All herein specified procedures necessary to remove Asbestos Containing Materials from the designated areas and to transport and dispose of these materials at an acceptable site.

Shower Room: A room between the Clean Room and the Equipment Room in the Worker Decontamination Enclosure with hot and cold or warm running water and suitably arranged for complete showering during decontamination. The Shower Room comprises an Airlock between contaminated and clean areas.

Stripping: Taking of Asbestos materials from any surface.

Surfactant: A chemical wetting agent added to water to improve penetration.

Surfacing Material: Material that is spray applied or troweled on or otherwise applied to surfaces.

Thermal System Insulation (TSI): Material applied to pipes, fittings, boilers, breeching, tanks, ducts or other components to prevent heat loss or gain.

Washroom: A room between the Work Area and the Holding Area in the Equipment Decontamination Enclosure with provisions for storage of contaminated clothing and equipment.

WESTON: Roy F. Weston, Inc.

Wet Cleaning: The process of eliminating Asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with water, and by afterwards disposing of these cleaning items as Asbestos contaminated waste.

Work Area: An area where Asbestos Abatement operations are performed which is isolated by physical boundaries to prevent the spread of Asbestos dust, fibers, or debris; Designated rooms, spaces or areas of the project in which Asbestos Abatement actions are to be undertaken or which may become contaminated as a result of such Abatement actions. A contained Work Area is an area which has been sealed, plasticized and equipped with a Decontamination Enclosure System.

Worker Decontamination Enclosure System: That portion of a Decontamination Enclosure System designated for controlled passage workers and other personnel and authorized persons typically consisting of a Clean Room, a Shower Room and an Equipment Room.

APPENDIX D
DEMOLITION PLAN

INTRODUCTION

This Demolition Plan (DP) has been prepared by Roy F. Weston, Inc. (WESTON®) to detail the procedures to be used in the building and structure demolition at the Stratford Army Engine Plant (SAEP) located in Stratford, Connecticut. This plan was developed in accordance with the requirements of the Causeway Phase I NCRA 90% Design Technical Specifications and the following references:

EM 385-1-1 Section 23 (A-F)

OPERATIONS

Structural Assessment

Prior to initiating demolition, a competent person will perform an engineering survey. The survey will evaluate the possibility of unplanned collapses of any portion of the structure and identify the existence of potential or real demolition hazards. WESTON will provide written documentation that the survey has been performed. Findings of the survey that would alter the proposed demolition sequence will be incorporated into the final demolition plan.

Waste Characterization

Prior to demolition, WESTON will collect characterization samples from each of the waste types (concrete, asphalt, metal, etc.) to be generated by demolition activity. The analytical data will be used to select the proper off-site disposal facility for each waste type prior to generation. This will allow the debris to be live-loaded during demolition, thereby reducing the amount of material stockpiled on site. In addition, WESTON will collect samples of potential asbestos-containing materials (ACM) that were identified in Building 59 during a site inspection. If analysis confirms these materials to be ACM, the Asbestos Abatement Plan (APP) described below will be amended to include the necessary abatement activity in Building 59. The procedures and quality objectives for all sampling conducted during this project are described in the Sampling & Analysis Plan (SAP), to be submitted under separate cover.

Asbestos Abatement

A detailed description of asbestos abatement work is presented in the Asbestos Abatement Plan (APP) presented as Appendix C to the Work Plan. Asbestos abatement will be performed in Building 5 prior to initiating demolition. Sampling and analysis of potential ACM in Building 59 will be completed prior to demolition of that structure. If the Building 59 is found to contain ACM, abatement will be performed prior to demolition. In that event the Asbestos Abatement Plan (APP) will be amended to include this activity. WESTON will provide written certification by a qualified person as specified in 40 CFR 763 that the abatement has been completed and ACM waste has been removed prior to demolition.

Training

All employees engaged in demolition activities will receive site-specific training including a review of the Demolition Plan and the Site Specific Safety & Health Plan (SSHP).

Utility Disconnection & Abandonment

Building 5 is the only structure scheduled for demolition from which active utilities require disconnection. SAEP Representatives have disconnected the electrical service, communications systems and the fire alarm system from Building 5. Utilities remaining to be disconnected include:

- Fire suppression sprinkler system
- Domestic water
- Sanitary sewer
- Storm sewer
- Steam and condensate lines
- Compressed air lines

WESTON will coordinate the location and disconnection of these remaining utilities with SAEP Representatives, who have facility drawings indicating the approximate location of underground utilities and first-hand knowledge of existing underground utility locations. Underground utility disconnection will be accomplished with a utility backhoe CAT 436 (or equivalent), under the direct supervision of WESTON and/or SAEP personnel. Only trained qualified personnel will perform utility disconnections. WESTON will confirm that any site utilities that loop from building to building have been locked out and tagged out prior to disconnection and demolition.

Testing will be conducted to confirm that former fuel supply lines to the Building 5 engine-testing cell have properly abandoned. Any hazards detected will be controlled or eliminated prior to demolition. Excavations for utility disconnection will be backfilled or guarded to prevent accidental entry into the excavation.

Building 59 utilities have been previously disconnected by SAEP Representatives. One electrical conduit exists from Building 59 to the weather station at the end of the Causeway. WESTON will confirm that this conduit has been de-energized prior to demolition of Building 59. There are no known utility lines in the Building 34 AST containment area or at the Causeway boat ramp. If utilities or suspect hazardous materials are encountered during demolition, work will stop, the hazard will be assessed and the CENAE and SAEP Representatives will be notified.

Building Demolition

The demolition team will generally consist of a three-person team: an operator, a laborer and a safety observer. The machine operator will mechanically demolish the building. The laborer will man a water hose for dust control. The safety observer will support the laborer and maintain watch over the demolition operation. An Exclusion Zone will be established around the perimeter of the building according to the procedures established in the SSHP. Entry into the building during demolition will be strictly prohibited. Demolition debris will be sorted by waste type once it is down on the ground.

Building 5

Starting on the south end of the building and proceeding in a northerly direction, the building will be demolished utilizing a CAT 973 front-end loader with a four-way bucket. The walls will be pushed in close to the roof line and the roof will be pulled down onto the building slab. The use of temporary bracing and shoring is not anticipated. Ground personnel will maintain a safe distance while equipment demolishes.

Once the building is down, the machine will size and sort demolition materials. The laborer and safety observer will keep clear of the machine and continue to size material with power tools and hand tools, as necessary. If torches and demolition saws are used hot work permits will be issued and a fire watch will be maintained. Demolition debris will be loaded into transport trucks for off-site disposal. The Building 5 floor slab will remain in place after building demolition.

Building 34 AST Containment and Bollards

The former AST containment berm and protective bollards adjacent to Building 34 shall be removed to existing grade. The containment area is currently backfilled with clean fill and capped with asphalt. There are no known utilities in this work area. The containment berm and bollards will be demolished concurrently with demolition of Building 5. The bollards will be cut off flush with the existing ground surface or completely removed, which ever is method effects the least disturbance to the surrounding pavement. The contents of the containment berm will be sufficiently removed to allow demolition of the above grade portion of the concrete berm. Excavated fill will be stockpiled for on-site reuse if suitable.

Building 59

Prior to demolition WESTON will sample suspected ACM. If suspected material tests positive, the asbestos abatement plan will be amended and the abatement will be performed prior to demolition. The APP amendment will be provided to CENAE for approval prior to implementation.

Starting at the south end and proceeding in a northerly direction, the outer containment wall and building will be demolished utilizing a CAT 235 excavator with a hydraulic crusher or shear. The concrete will be crushed and sized in place. This demolition method was selected to reduce dynamic stresses on the Causeway. The demolition team will utilize dust control and hand sizing techniques as described for Building 5. The structure will be removed to a depth of 2 feet below existing grade. If a basement slab is present, it will be broken up to permit drainage.

Demolition debris will be washed free of soil, as necessary, prior to removal for off-site disposal. Washing will be performed in close proximity to the removal area. Washing will be performed in a manner to minimize migration of sediments. Material will be washed above at least one active siltation barrier. Harding has collected concrete chip samples for waste characterization. WESTON will complete the waste profile when analytical results are provided.

Causeway Weather Station

Soil disturbance below elevation 4.1 prior to October 1, 2001, is prohibited at this site. Therefore, the Causeway weather station and boat ramp shall not be removed until after October 1, 2001. WESTON will confirm with SAEP Representatives that the electrical conduit connecting the weather station to Building 59 has been de-energized prior to removal. Demolition of the work will be conducted under low tide conditions to prevent siltation into the neighboring water way. Concrete structures will be removed to a depth of 2 feet below existing grade. Prior to transfer off the Causeway, soil will be removed from demolition debris as described above.