PROJECT MANUAL
AND
SPECIFICATIONS

TOWN OF SUFFIELD, CONNECTICUT

FORMER BRIDGE STREET SCHOOL
BUILDING ABATEMENT AND DEMOLITION
90 BRIDGE STREET
SUFFIELD, CT

Prepared for:

TOWN OF SUFFIELD
DEPARTMENT OF PUBLIC WORKS
230C MOUNTAIN ROAD
SUFFIELD, CONNECTICUT 06078

Prepared by:

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290 ROBERTS STREET, SUITE 301
EAST HARTFORD, CONNECTICUT 06108
ATC PROJECT 05944.20.004 TASK 1

SEPTEMBER 23, 2020

SPECIFICATIONS

END OF SECTION 00 01 10

Drawing Number	Title
ASB-1	ACM FIRST FLOOR PLAN
ASB-2	ACM BASEMENT FLOOR PLAN
ASB-3	ACM CRAWLSPACE AREAS

Reference Drawings

Site Plan, Utility Plan, Building Blue Prints

Original construction drawings are provided for information and reference only and may not represent conditions existing in the building. The Contractor is responsible for all work described in the scope of work regardless of information provided in the reference drawings.

END OF SECTION 00 01 15

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division - 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section summarizes the Work of the Project, including the following:
1. Project Description.
2. Time of Completion.
3. Work under Other Contracts.
4. Work Day.
5. Work Sequence.
6. Contractor's Use of Premises.
7. Owner Occupancy.
8. Miscellaneous Provisions.

1.3 PROJECT DESCRIPTION

A. The Project consists of demolition of the Former Bridge Street School Building, 90 Bridge Street, Suffield, Connecticut, as shown on Contract Documents prepared by ATC Group Services (ATC), dated September 23, 2020.

B. The following generally describes the proposed scope of work. Refer to the complete set of Drawings and Specifications for more complete information.
1. Site Work: Cutting, capping and removal of utilities and equipment, preparation, filling, and grading.
2. Demolition: Building demolition including removal of superstructure, concrete footings, foundation walls and piers and slab-on-grad including basement slab.
3. Removals: Remove stairs, ramps, equipment pads and retaining walls, pavement and associated construction.
4. Hazardous Materials Abatement: Removal of asbestos-containing materials, lead containing materials, and removal of additional building components requiring special handling and disposal.
5. Waste Management: LEED requirements for construction waste management recycling and disposal.

C. Removal of all debris caused by this Contract.

D. Protection for the public, building, grounds and the environment from damage during this contract is the responsibility of the Contractor for this project at all times.

1.4 TIME OF COMPLETION

A. Work required by the project shall commence immediately upon receipt of a Notice to Proceed.
1. Substantial Completion as defined in the Contract Documents must be achieved and evidenced by Certificate of Substantial Completion no later than December 18, 2020.

1.5 WORK UNDER OTHER CONTRACTS

A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this contract. Coordinate the work of this contract with work performed under separate contracts.

1.6 WORK DAY

A. The normal workday shall be between 7:00 a.m. to 4:30 p.m. Monday through Friday, excluding State granted Holidays. Permission must be requested and approved in writing to perform work outside the normal working hours or on a State Holiday.

B. In addition to reasons determined by the Town of Suffield, approval of deviations in work hours is dependent upon the Town of Suffield.
   1. No person shall be employed to work or permitted to work outside the normal workday hours on any work provided for under this Contract. The observance of such limitations of hours of work may be suspended during an emergency, upon approval of the Town of Suffield.

C. If the Contractor determines that work on this project must be performed during a time other than normal working hours, **COSTS FOR ANY PREMIUM TIME MUST BE INCLUDED IN THE BASE BID**.

1.7 WORK SEQUENCE

A. The Work will be conducted to provide the least possible interference to the activities of the Town of Suffield personnel, adjacent property owners and the public, and to permit the safe abatement, demolition and debris removal. Work shall include all labor and material, shown on the drawings and/or as specified hereinafter. The intent is to abate and demolish the Former Bridge Street School building and includes but is not limited to the following:
   1. Equipment mobilization and construction of work zones.
   2. Removal of hazardous materials from building interiors and exteriors.
   3. Building demolition, with loading and transport of demolition materials at appropriate intervals.
   4. Restoration of site in the vicinity of the building or structure.

B. Access and fire egress to the surrounding buildings must remain at all times throughout the duration of the project. Proper barricades and traffic control devices must be installed and maintained by the Contractor.

1.8 CONTRACTOR USE OF PREMISES

A. General: Limit use of the premises to construction activities in areas indicated.
   1. Confine operations to areas within Contract limits indicated or as directed by the Town of Suffield. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.
   2. Keep driveways and entrances serving the premises clear, clean and available to the Town of Suffield at all times. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.

3. Burial of Waste Materials: Do not dispose of organic and hazardous material on site, either by burial or by burning. All waste materials are to be removed from site unless approved for use as fill material by the Town of Suffield.

B. Contractor shall restrict use of construction related trucks on local roads.

1.9 OWNER OCCUPANCY

A. Owner Occupancy: The site or building will not be occupied during the entire construction period. Cooperate with the Town of Suffield during construction operations to minimize conflicts and facilitate site usage/maintenance.
   1. A Certificate of Substantial Completion will be executed at the completion of the project.
   2. A demolition permit must be obtained from the Town of Suffield, Connecticut. All demolition must comply with the State of Connecticut Demolition Code (Connecticut General Statutes Part IV).
   3. Certifications: The Contractor at completion of construction shall provide to the Town of Suffield a "Certificate of Substantial Compliance with the State Building and Fire Safety Codes" bearing original signatures of an officer of the company stating: "This is to CERTIFY that in my professional opinion the complete structure/renovations described above is in substantial compliance with the approved construction documents on file with the Town of Suffield. Minor deviations and special stipulations are noted below (if any)".

1.10 SALVAGEABLE MATERIALS

A. The following items have been identified for salvage. Carefully remove these items to avoid damage, and deliver them to the location indicated or directed by the Town of Suffield.
   1. Gas Heaters
   2. Flag Pole
   3. Building Signs
   4. All Moveable Stored Furniture, Equipment and Materials within Building

B. The Town of Suffield reserves the right to remove any or all building components at any time prior to start of work. Once all items desired by the Town of Suffield have been removed, the items remaining are to become the property of the contractor and shall be removed from the site.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 10 00

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division - 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements governing handling and processing allowances.
   1. Selected work is shown and specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer determination of actual quantities of materials and equipment to a later date when confirmatory information is available. Additional requirements, if necessary, will be issued by Change Order.

B. Types of allowances required include the following:
   1. Lump sum allowances.
   2. Unit-cost allowances.

C. Related Requirements:
   1. Section 02 82 33 “Removal and Disposal of Asbestos-Containing Material” for identification of asbestos-containing materials.
   2. Section 33 01 00 “Basic Site Materials and Methods” for identification of unsuitable soil materials.

1.3 SUBMITTALS

A. Submit proposals for work included in allowances, in the form specified for Change Orders.

B. Submit invoices or delivery slips to indicate actual quantities of materials removed from the site for use in fulfillment of each allowance.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 VERIFICATION

A. Verify actual quantities of materials in the field for each allowance to ensure that each allowance item is valid. Quantities and locations of allowable items shall be verified with the Town of Suffield Representative or Consultant.

B. Unused allowance amount is to be returned to the Town of Suffield.

PART 4 - SCHEDULES

4.1 SCHEDULE OF ALLOWANCES

A. Bids shall include Lump Sum Allowances for the following:
   1. Unsuitable Soil Removal and Disposal
   2. Landscape Seeding

B. Bids shall include Unit-cost Allowances for the following:
   1. Pipe, Pipe Fitting and Duct Insulation
   2. Underground Pipe and Conduit System
   3. Underground Pipe and Pipe Insulation
   4. Underground Asbestos Cement (Transite) Pipe
   5. Asbestos Contaminated Soil
   6. Excavation of Unsuitable or Contaminated Material
   7. Asbestos Waterproofing

END OF SECTION 01 20 00

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division - 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for unit prices.
   1. A unit price is an amount stated on the Proposal Form or in the Specifications as a price per unit of measurement for materials or services that will be added to or deducted from the Contract Sum by Change Order in the event the quantities of Work required by the Contract Documents are increased or decreased.
   2. Unit prices include all necessary material, overhead, profit and applicable taxes.
   3. Refer to individual Specification Sections for construction activities requiring the establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

B. Schedule: A "Unit Price Schedule" is included at the end of this Section. Specification Sections referenced in the Schedule contain requirements for materials and methods described under each unit price.
   1. The Town reserves the right to reject the Contractor's measurement of work-in-place that involves use of established unit prices, and to have this Work measured by an independent surveyor acceptable to the Contractor at the Town’s expense.
   2. This schedule reflects those unit prices to be bid upon by the Contractor. Other unit prices, where established, are included in the body of the Specifications.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

PART 4 - SCHEDULES

4.1 UNIT PRICE SCHEDULE

A. Item No. 1 – Asbestos Pipe, Pipe Fitting and Duct Insulation
   1. Prices include removal, transportation, and waste disposal of material located above hard ceilings and in walls which could not be identified prior to construction.
   2. Unit of Measurement: Linear foot of pipe, pipe fitting and duct insulation removed and disposed of.

B. Item No. 2 – Asbestos Underground Pipe and Conduit System:
   1. Description: Underground Pipe and Conduit System in accordance with Section 02 82 33 "Removal and Disposal of Asbestos-Containing Material."

2. Unit of Measurement: Linear foot of underground pipe and conduit system removed and disposed of.

C. Item No. 3 – Asbestos Underground Pipe and Pipe Insulation:
   1. Description: Underground Pipe Insulation in accordance with Section 02 82 33 "Removal and Disposal of Asbestos-Containing Material".
   2. Unit of Measurement: Linear foot of underground pipe and pipe insulation removed and disposed of.

D. Item No. 4 – Underground Asbestos Cement (Transite) Pipe:
   1. Description: Underground asbestos cement (transite) pipe in accordance with Section 02 82 33 "Removal and Disposal of Asbestos-Containing Material".
   2. Unit of Measurement: Linear foot of underground asbestos cement (transite) pipe removed and disposed of.

E. Item No. 5 –Asbestos Contaminated Soil:
   1. Description: Underground asbestos cement (transite) pipe in accordance with Section 02 82 33 "Removal and Disposal of Asbestos-Containing Material".
   2. Unit of Measurement: Cubic yard of asbestos-contaminated soil removed and disposed of.

F. Item No. 6 – Excavation of Unsuitable or Contaminated Material:
   1. Description: Over excavation and disposal of unsuitable or contaminated soil and placement and compaction of granular fill or general fill material to 95% compaction.in accordance with Section 33 01 00 "Basic Site Materials and Methods."
   2. Unit of Measurement: Ton of unsuitable or contaminated soil removed, disposed of and replaced.

G. Item No. 7 – Asbestos Waterproofing:
   1. Description: Asbestos waterproofing in accordance with Section 02 82 33 "Removal and Disposal of Asbestos-Containing Material".
   2. Unit of Measurement: Square foot of asbestos waterproofing removed and disposed of.

END OF SECTION 01 22 00

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division - 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for handling and processing Contract modifications.

1.3 MINOR CHANGES IN THE WORK

A. The Town will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time.

1.4 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Work Changes Proposal Request, will issue a Change Order for signatures of Owner and Contractor on AIA Document G701 or similar.

1.5 CONSTRUCTION CHANGE DIRECTIVE

A. Change Directive: may issue a Change Directive on AIA Document G714 or similar. Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
   1. Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Change Directive.
   1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 26 00

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division - 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Site Plans, Safety Plans, Construction Reports, Product Data, Samples and other submittals.

B. Related Requirements:
   1. Section 01 78 39 “Project Record Documents” for submitting record Drawings, record Specifications, and record Product Data.

1.3 DEFINITIONS

A. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access the files.

B. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.4 SUBMTTAL ADMINISTATIVE REQUIREMENTS

C. Consultant’s Digital Data Files: Electronic digital data files of the Contract Drawings will be provided by Consultant for Contractor’s use in preparing submittals.
   1. Consultant can furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Site Drawings and project record drawings.
      a. Consultant makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.

D. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
   1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
   2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
   3. Submit action submittals and informational submittal required by the same Specification Section as separate packages under separate transmittals.
   4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

a. Consultant and the Town reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

E. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 5 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 5 days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by the Town's consultants or other parties is indicated, allow 5 days for initial review of each submittal.
5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to the Town and to the Town's consultants, allow 10 days for review of each submittal. Submittal will be returned to the Town before being returned to Contractor.

F. Paper Submittals: Place a permanent label or title block on each submittal item of identification.
1. Indicate name of firm or entity that prepared each submittal on label or beside title block.
2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken.
3. Include the following information for processing and recording action taken:
    a. Project name.
    b. Date.
    c. Name of Consultant.
    d. Name of Contractor.
    e. Name of subcontractor.
    f. Name of supplier.
    g. Name of manufacturer.
    h. Submittal number or other unique identifier, including revision identifier.
    i. Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06 10 00.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 06 10 00.01.A).
    j. Number and title of appropriate Specification Section.
    k. Drawing number and detail references, as appropriate.
    l. Location(s) where product is to be installed, as appropriate.
    m. Other necessary identification.
4. Additional Paper Copies: Unless additional copies are required for final submittal and unless Consultant observes noncompliance with provisions in the contract Documents, initial submittal may serve as final submittal.
    a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to the Town.
5. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. The Town will discard submittals received from sources other than Contractor.
    a. Transmittal Form for Paper Submittals: Use.

b. Transmittal Form for Paper Submittals: Provide locations on form for the following information:
c. Project name.
d. Date.
e. Destination (To).
f. Source (From).
    1) Name and Address of Consultant.
g. Name of Contractor.
h. Name of firm or entity that prepared submittal.
i. Names of subcontractor, manufacturer, and supplier.
j. Category and type of submittal.
k. Submittal purpose and description.
l. Specification Section number and title.
m. Specification paragraph number or drawing designation and generic name for each multiple items.
n. Drawing number and detail references, as appropriate.
o. Indication of full or partial submittal.
p. Transmittal number, numbered consecutively.
q. Submittal and transmittal distribution record.
r. Remarks.
s. Signature of transmitter.

G. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
1. Assemble complete submittal package into a single indexed file incorporation submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.
    a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-06 10 00.01).Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-06 10 00.01.A).
3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken.

PART 2 - PRODUCTS

2.1 SUBMITAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
1. Submit electronic submittals via email as PDF electronic files.
    a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
2. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
    a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
   1. Submit Product Data in the following format:
      a. PDF electronic file.

C. Site Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Site Drawings on reproductions of the Contract Documents or standard printed data.
   1. Submit Site Drawings in the following format:
      a. PDF electronic file.

D. Site Drawings: Prepare Project-specific information, drawn accurately. Do not base Site Drawings on reproductions of the Contract Documents or standard printed data.
   1. Submit Site Drawings in the following format:
      a. PDF electronic file.

E. Safety Plans: Prepare Project-specific information, drawn accurately. Do not base Safety Plans on reproductions of the Contract Documents or standard printed data.
   1. Submit Safety Plans in the following format:
      a. PDF electronic file.

F. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location.
   1. Submit product schedule in the following format:
      a. PDF electronic file.

2.2 SITE MOBILIZATION PLAN

. Prior to the start of operations on the site, the Contractor shall submit to the Town and Consultant, a Site Mobilization Plan which shall indicate pertinent dates and times, logistics, traffic flow and compliance with the General Requirements to a level of detail commensurate with the complexity of the construction and the sensitivity of the Owner's ongoing activities on site.
   1. Submit site mobilization plan in the following format:
      a. PDF electronic file.

2.3 SAFETY PLAN

. Prior to, and as a condition of mobilization on site, the Contractor shall submit a Safety Plan consisting of no less than the following information:
   1. Safety Data Sheets for all potentially harmful substances.
   2. A list of Contractor, Subcontractor, and Town personnel to be notified in the event of an emergency.
   3. A list of Contractor's personnel to be notified by the Town in the event of an emergency during "off" hours.
   4. Evacuation plans.
   5. Emergency medical procedures.
   6. Locations of emergency medical equipment.

2.4 DAILY CONSTRUCTION REPORTS

A. Prepare a daily construction report recording the following information concerning events at the site, and submit electronic copies to the Town at weekly intervals:
   1. List of subcontractors at the site.

2. Approximate count of personnel at the site.
3. High and low temperatures, general weather conditions.
4. Accidents and unusual events.
5. Meetings and significant decisions.
6. Stoppages, delays, shortages, and losses.
7. Emergency procedures.
8. Orders and requests of governing authorities.
9. Change Orders received, implemented.
10. Services connected, disconnected.

2.5 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
   1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to the Town.

B. Delegated-Design Services Certification: In addition to Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file, signed and sealed by the responsible design professional, for each product and system specifically assigned to contractor to be designed or certified by a design professional.
   1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field Dimensions. Mark with approval stamp before submitting to the Town.

B. Project Closeout and Maintenance Material Submittals: See requirements in Section 01 70 00 "Execution and Closeout Requirements".

C. Approval Stamp: Stamp each submittal with uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name or reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked and approved for compliance with the Contract Documents.

END OF SECTION 01 33 00

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division - 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for quality control and quality control services.

B. Quality control services include inspections and tests and related actions including reports, performed by independent agencies, governing authorities, and the Contractor.

C. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve the Contractor of responsibility for compliance with Contract Document requirements.

D. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.
   1. Specific quality control requirements for individual construction activities are specified in the Sections that specify those activities. Those requirements, including inspections and tests, cover production of standard products as well as customized fabrication and installation procedures;
   2. Inspections, test and related actions specified are not intended to limit the Contractor's quality control procedures that facilitate compliance with Contract Document requirements;
   3. Requirements for the Contractor to provide quality control services required by the Consultant, Town, or authorities having jurisdiction are not limited by provisions of this Section.

1.3 RESPONSIBILITIES

A. Town Responsibilities: The Town will provide monitoring, inspections, tests and similar quality control services specified to be performed by independent agencies and not by the Contractor, except where they are specifically indicated as the Contractor's responsibility or are provided by another identified entity. Costs for these services are not included in the Contract Sum.
   1. The Town will employ and pay for the services of an independent agency, testing laboratory or other qualified firm to perform services which are the Town's responsibility.

B. Contractor Responsibilities: The Contractor shall notify the Consultant 48 hours before the expected time of testing.
   1. Retesting: The Contractor is responsible for the retesting where results of required inspections, tests or similar services prove unsatisfactory and do not indicate compliance with Contract Document requirements, regardless of whether the original test was the Contractor's responsibility;
      a. Cost of retesting construction revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original construction.

2. Additional Tests: The Contractor is responsible for paying for additional tests if for the Contractor's convenience;
3. Associated Services: The Contractor shall cooperate with agencies performing required inspections, tests and similar services and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include but are not limited to:
    a. Providing access to the Work and furnishing incidental labor and facilities necessary to facilitate inspections and tests;
    b. Taking adequate quantities of representative samples of materials that require testing or assisting the agency in taking samples;
    c. Providing the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency;
    d. Security and protection of samples and test equipment at the Project site.

C. Duties of the Testing Agency: The independent testing agency engaged to perform inspections, sampling and testing of materials and construction specified in individual Specification Sections shall cooperate with the Town and Contractor in performance of its duties, and shall provide qualified personnel to perform required inspections and tests.
1. The agency shall notify the Town Representative promptly of irregularities or deficiencies observed in the Work during performance of its services;
2. The agency is not authorized to release, revoke, alter or enlarge requirements of the Contract Documents, or approve or accept any portion of the Work;
3. The agency shall not perform any duties of the Contractor.

D. Coordination: The Contractor and each agency engaged to perform inspections, tests and similar services shall coordinate the sequence of activities to accommodate required services with a minimum of delay. In addition the Contractor and each agency shall coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.
1. The Contractor is responsible for scheduling times for inspections, tests, taking samples and similar activities.

1.4 SUBMITTALS

A. The independent testing agency shall submit a certified written report of each inspection, test or similar service, to the Town Representative, in electronic form.
1. Report Data: Written reports of each inspection, test or similar service shall include, but not be limited to:
    a. Date of issue;
    b. Project title and number;
    c. Name, address and telephone number of testing agency;
    d. Dates and locations of samples and tests or inspections;
    e. Names of individuals making the inspection or test;
    f. Designation of the Work and test method;
    g. Identification of product and Specification Section;
    h. Complete inspection or test data;
    i. Test results and interpretations of test results;
    j. Ambient conditions at the time of sample-taking and testing;
    k. Comments or professional opinion as to whether inspected or tested Work complies with Contract Document requirements;
    l. Name and signature of laboratory inspector;

m. Recommendations on re-testing.

1.5 QUALITY ASSURANCE

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

B. Comply fully with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Consultant before proceeding.

D. Qualification for Service Agencies: Engage inspection and testing service agencies, including independent testing laboratories, which are pre-qualified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories, and which specialize in the types of inspections and tests to be performed.
   1. Each independent inspection and testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the State in which the Project is located.

1.6 REFERENCES

A. Conform to reference standard by date of issue current on date of Contract Documents where no date is specified with standard.

B. Should specified reference standards conflict with Contract Documents, request clarification from Consultant before proceeding.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

A. General: Upon completion of inspection, testing, sample-taking and similar services, repair damaged construction and restore substrates and finishes to eliminate deficiencies, including deficiencies in visual qualities of exposed finishes. Comply with Contract Document requirements for "Cutting and Patching."

B. Protect construction exposed by or for quality control service activities, and protect repaired construction.

C. Repair and protection is the Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.

END OF SECTION 01 43 00

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division - 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies requirements for temporary services and facilities, including:
1. Utilities.
2. Temporary construction.
3. Construction aids.
4. Barriers and enclosures.
5. Security.
6. Access roads and parking.
7. Temporary controls.
8. Traffic regulation.
9. Project identification and signs.

B. Temporary utilities shall be provided as required to perform the work and includes but not limited to:
1. Temporary electric power.
2. Cellular telephone service.
3. Water.
4. Temporary sanitary facilities.

C. Construction aids required include but are not limited to:
1. Temporary lifts and hoists.

D. Barriers and enclosures required include but are not limited to:
1. Temporary enclosures.
2. Barricades, warning signs and light.
3. Enclosure fence for the site.

E. Security required includes but is not limited to:
1. Security enclosures and lockups.

F. Access roads and parking required include but are not limited to:
1. Temporary roads and paving.
2. Contractors' parking.

G. Temporary controls required include but are not limited to:
1. Waste disposal.
2. Rodent and pest control.
3. Environmental protection including soil erosion and sediment control.
4. Nuisance dust control.
5. Noise control.

H. Project identification and sign include but are not limited to:
   1. Signs include directional and safety signs, provided by the contractor.

1.3 SUBMITTALS

A. Temporary Utilities: Submit reports of tests, inspections, meter readings and similar procedures performed on temporary utilities.

B. Implementation and Termination Schedule: Submit a schedule indicating implementation and termination of each temporary utility within 15 days of the date established for commencement of the Work.

1.4 QUALITY ASSURANCE

A. Regulations: Comply with industry standards and applicable laws and regulations if authorities having jurisdiction, including but not limited to:
   1. Building Code requirements.
   2. Health and safety regulations.
   3. Utility company regulations.
   4. Police, Fire Department and Rescue Squad rules.
   5. Environmental protection regulations.

B. Standards: Comply with NFPA Code 241, "Building Construction and Demolition Operations", ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition", and NECA Electrical Design Library "Temporary Electrical Facilities."
   1. Refer to "Guidelines for Bid Conditions for Temporary Job Utilities and Services", prepared jointly by AGC and ASC, for industry recommendations.
   2. Electrical Service: Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service in compliance with National Electric Code (NFPA 70).

C. Inspections: Arrange for authorities having jurisdiction to inspect, locate and test each temporary utility before use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS

A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Town, change over from use of temporary service to use of the permanent service.

B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities, or permit them to interfere with progress. Do not allow hazardous dangerous or unsanitary conditions, or public nuisances to develop or persist on the site.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Provide new materials; if acceptable to the Consultant, undamaged previously used materials in serviceable condition may be used. Provide materials suitable for the use intended.

B. Lumber and Plywood: Comply with general industry standards for carpentry and materials.
   1. For job-built temporary offices, shops and sheds within the construction area, provide UL labeled, fire treated lumber and plywood for framing, sheathing and siding.
   2. For signs and directory boards, provide exterior type, Grade B-B High Density Concrete Form Overlay Plywood conforming to PS-1, of sizes and thickness indicated.
   3. For fences and vision barriers, provide exterior type, minimum 3/8" thick plywood.
   4. For safety barriers, sidewalk bridges and similar uses, provide minimum 5/8" thick exterior plywood.

C. Tarpaulins: Provide waterproof, fire-resistant, UL labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures provide translucent nylon reinforced laminated polyethylene or polyvinyl chloride fire retardant tarpaulins.

D. Water: Provide potable water approved by local health authorities.

E. Open-Mesh Metal Fencing: Provide 9-gage, galvanized 2-inch mesh, chain link fabric fencing 6-feet high and galvanized steel pipe posts, 3-1/2” diameter terminal posts at corners and gates and 2-1/2" diameter intermediate posts. Provide 1-1/2” diameter top rail and tension wire at fence bottom. Fence posts should be embedded into existing grade 2’-6” minimum where applicable. Provide stations at sidewalks and paved areas.

2.2 EQUIPMENT

A. General: Provide new equipment; if acceptable to the Consultant, undamaged previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.
   1. The Contractor will not be allowed to use any of the Town's shop facilities, equipment, tools or materials unless specifically mentioned in the specifications.

B. Water Hoses: Provide 3/4" heavy-duty, abrasion-resistant, flexible rubber hoses 100 ft. long, with pressure rating greater than the maximum pressure of the water distribution system; provide adjustable shut-off nozzles at hose discharge.

C. Electrical Power: Electrical power is available from adjacent buildings. Properly configured NEMA polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for connection of power tools and equipment.

D. Electrical Power Cords: Provide grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas where construction activities are in progress.

E. Temporary Toilet Units: Provide self-contained single-occupant toilet units of the chemical, aerated recirculation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material.

F. First Aid Supplies: Comply with governing regulations.

G. Fire Extinguishers: Provide hand-carried, portable, UL-rated, class "ABC" dry chemical extinguishers, or a combination of extinguishers of NFPA recommended classes for the exposures.
1. Comply with NFPA 10 and 241 for classification, extinguishing agent and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.1 GENERAL

A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.

B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed, or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITIES

A. General: Electricity and water are available in moderate quantities, when on or adjacent to the premises, for the use of the Contractor without cost. The University reserves the right to require the Contractor to install meters and, if obvious and excessive use is observed, to pay for these utilities.
1. Contractor shall furnish and install all necessary temporary switches, wiring, fixtures, bulbs, piping, valves and other devices as may be required to connect to existing water and electrical systems.

B. Engage the appropriate local utility company to install temporary service or connect to existing service. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment; comply with the company's recommendations.
1. Arrange with the company and existing users for a time when service can be interrupted, where necessary, to make connections for temporary services.
    a. The Town must be notified at least 72 hours in advance of any proposed shutdown to perform Work which requires any type of service interruption in order that all affected departments may be advised and have time to adjust their schedules accordingly.
    b. Any service (steam, water, electricity, etc.) shutdown which will interrupt the continuity of an experiment or be detrimental to a research project or which, in the opinion of the Town, is required for other valid reasons, shall be maintained by safe and adequate temporary means and such temporary piping, wiring and associated devices shall be removed when no longer required.
    c. The Town reserves the right to limit the down time to a specified number of net hours and to set the date for each occasion of complete shutdown.
2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.

3. Obtain easements to bring temporary utilities to the site, where the Town's easements cannot be used for that purpose.

C. Temporary Electric Power Service: Provide temporary emergency power generators if necessary for construction requirements. Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload protected disconnects, automatic ground-fault interrupters and main distribution switch gear.
   1. Except where overhead service must be used, install electric power service underground.
   2. Power Distribution System: Install wiring overhead, and rise vertically where least exposed to damage. Where permitted, wiring circuits not exceeding 125 Volts, AC 20 ampere rating, and lighting circuits may be nonmetallic sheathed cable where overhead and exposed for surveillance.

D. Temporary Lighting: Whenever overhead floor or roof deck has been installed, provide temporary lighting with local switching.
   1. Install and operate temporary lighting that will fulfill security and protection requirements, without operating the entire system, and will provide adequate illumination for construction operations and traffic conditions.
   2. Install exterior yard and sign lights so that signs are visible when Work is being performed.

E. Temporary Telephones: Utilize cell phones for communication.
   1. Provide a list of emergency and important telephone numbers.

F. Temporary Sanitary Facilities include temporary toilets, wash facilities and drinking water fixtures. Comply with regulations and health codes for the type, number, location, operation and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.
   1. Use of the existing sanitary facilities will not be permitted unless specifically authorized by the Town.
   2. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.
   3. Provide toilet tissue, paper towels, paper cups and similar disposable materials for each facility. Provide covered waste containers for used material.
   4. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.
   5. Drinking Water Facilities: If applicable, provide containerized tap-dispenser bottled-water type drinking water units, including paper supply.

G. Temporary Fire Protection: Comply with NFPA 10 "Standard for Portable Fire Extinguishers," and NFPA 241 "Standard for Safeguarding Construction, Alterations and Demolition Operations."
   1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
   2. Store combustible materials in containers in fire-safe locations.
   3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires. Prohibit smoking in hazardous fire exposure areas.
   4. Provide supervision of welding operations, combustion type temporary heating units, and similar sources of fire ignition.

5. No gasoline shall be stored in or close to any building at any time.

3.3 TEMPORARY CONSTRUCTION

A. Provide necessary shoring and building stabilization required to complete all work.

3.4 CONSTRUCTION AIDS

A. Temporary Lifts and Hoists: Provide facilities for hoisting materials and employees. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.5 BARRIERS AND ENCLOSURES

A. Provide earthen embankments and similar barriers in and around excavations and sub-grade construction, sufficient to prevent flooding by runoff of storm water from heavy rains.

B. Temporary Enclosures: Provide temporary enclosure for protection of construction in progress and completed, from exposure, foul weather, other construction operations and similar activities.
   1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects;
   2. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25 square feet or less with plywood or similar materials;
   3. Close openings through floor or roof decks and horizontal surfaces with load-bearing wood-framed construction;
   4. Where temporary wood or plywood enclosure exceeds 100 square feet in area, use L-labeled fire-retardant treated material for framing and main sheathing.

C. Barricades, Warning Signs and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed provide lighting, including flashing red or amber lights.

D. Enclosure Fence: Prior to start of work, install an enclosure fence with lockable entrance gates. Locate where indicated, or enclose the entire site or the portion determined sufficient to accommodate construction operations. The enclosure fence is to include the boundary around the buildings scheduled for demolition; construction lay down area and the access from parking areas and drives. Install in a manner that will prevent people, dogs and other animals from easily entering the site, except by the entrance gates.
   1. Provide open-mesh, chain-link fencing with posts set in a temporary base of suitable strength and design to prevent damage. The construction fence shall permit securing the entire construction site throughout the project.

E. Contractor's Parking Enclosure: Provide open-mesh, chain-link fencing with posts set in a compacted mixture of gravel and earth to delineate the Contractor’s Parking Area demolition lay down area. The limits of the construction area within the enclosure are to include the access from adjacent parking areas and drives. The limits and location of Contractor parking are to be within the site boundaries.

3.6 SECURITY AND PROTECTION

A. Security Enclosure and Lockup: Secure buildings and site at all times Contractor is not working. Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security.
   1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.

3.7 ACCESS ROADS AND PARKING

A. The Contractor shall, under regulations prescribed by the Town Representative, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Town Representative. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.
   1. The Contractor is responsible for maintaining a construction access roadway between the building demolition site public roads. Use of the access road is restricted to construction vehicles and contractor parking.
   2. Contractor shall recondition existing lawn areas damaged by construction activities or parking of contractor's vehicles.

B. Site Access: The Contractor shall install the construction fence to isolate the construction area from occupied areas and adjacent buildings.

3.8 TEMPORARY CONTROLS

A. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 degrees F (27 degrees C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material in a lawful manner.
   1. All removed materials that are salvageable are the property of the Contractor unless otherwise noted in the specifications.
   2. All debris resulting from the performance of this contract will be the property of the Contractor and will be completely removed from the site and disposed of in a legal manner.
   3. Chutes and dumpster type containers designed to keep dust and spillage to a minimum will be used by the Contractor. Dumpsters will be completely covered with a waterproof covering at all times when not in use.

B. Environmental Protection: Provide protection, operate temporary facilities and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways and subsoil might be contaminated or polluted, or that other undesirable effects might result. Submit a project specific Soil Erosion and Sediment Control plan consistent with the requirements as set forth in the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control (DEP Bulletin 34) to the Town for approval. As a minimum, protection shall be provided at the perimeter of the contractor’s work site and all openings to storm drains.

C. Nuisance Dust Control: The following provisions shall apply during demolition or construction phases of work:
   1. It is the intent of this specification to insure that nuisance dusts resulting from demolition or construction activities do not impact adjacent areas or buildings. The Contractor shall take all measures necessary to accomplish this goal. These measures will include as minimum polyethylene sheeting or wet methods of fugitive dust control.
   2. The Contractor shall submit a plan prior to commencement of work that will detail all methods of dust control. This plan shall be approved by the Town Representative prior to commencement of work. Upon approval, this plan shall be distributed to the Town Representative and the Consultant.
   3. Failure to comply shall result in immediate stoppage of work until effective dust control measures are employed.
   4. All construction vehicles hauling debris from the site are to have loads covered prior to leaving the site.
   5. The buildings shall be thoroughly wetted down throughout demolition activities to minimize airborne dust to the surrounding area.

D. Noise Control: The Contractor shall make every effort to minimize noise disruption to occupants of adjacent buildings. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near the site. Examples of noise generating work include, but are not limited to sawing, drilling and hammering and/or jack-hammering.
   1. Avoid use of tools and equipment, which produce harmful noise.

3.10 TRAFFIC CONTROL

A. The Contractor to provide continuous traffic accessibility through the area at all times. Contractor shall limit use of construction related trucks on local roads.

B. The Contractor shall comply with Connecticut Regulation13b-17-28, Safety to Traffic, which requires that "When portions of the traveled way are made dangerous for the movement of vehicles or pedestrians, a sufficient number of uniformed police officers, flagmen, or traffic men, shall be employed by the permittee to direct traffic safely through the area."

C. The requirement to maintain pedestrian and vehicular traffic is further defined in the Connecticut Department of Transportation Specifications Section 9.71, Form 814, which requirements are incorporated herein by reference.

D. The Contractor may contact the Local Police Department, or other private sources to obtain the necessary manpower to comply with these regulations. The Town Representative assigned to the given construction project shall be informed by the Contractor of his traffic control procedures prior to the commencement of construction.

3.11 PROJECT IDENTIFICATION SIGNS AND BANNERS

A. Project Identification Signs and Banners: None required.

B. Temporary Signs: Prepare signs to provide directional and safety information to construction personnel and visitors. Install construction warning/danger signs on the temporary fence around the work site at intervals approved by the University. Install signs where necessary to inform the public

and persons seeking entrance to the Project. Support on posts or framing of preservative treated wood or steel. Do not permit installation of unauthorized signs.

C. Other Signs: Any other signage shall be submitted to the Town Representative for approval.

3.12 OPERATION, TERMINATION AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.

B. Termination and Removal: Unless the Town Representative requests that it be maintained longer, remove each temporary facility when the need has ended, or when replaced by authorized use of a permanent facility, or no later than Substantial Completion.

END OF SECTION 01 50 00

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division - 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes:
1. Installation of temporary erosion and sedimentation control measures.
2. Maintenance of temporary erosion and sedimentation control measures.
3. Monitoring of site condition and installation of supplemental temporary erosion and sedimentation control measures.
4. Sediment removal and disposal.
5. Monitoring, documentation, and recordkeeping.
6. Final Cleanup.

B. Erosion and sediment control techniques include, but are in no way limited to, silt fence, hay bales, drainage structure inserts/filters, mulching with hay/straw, netting/matting, grassing, stone dikes/berms/check-dams, compost blankets and berms, barriers, diversions, traps, basins, and appurtenances which will ensure that erosion and sediment pollution will be either eliminated or maintained within acceptable limits.

C. The measures specified herein are the minimum requirements which Contractor shall comply to control erosion and siltation throughout execution of the Work. Contractor shall provide additional work if necessary to control erosion and siltation throughout the duration of the construction as conditions dictate, or as directed by the Town.

D. Requirements of this section shall comply with the General Permit for Discharge of Stormwater Associated with Industrial Activity.

1.3 SUBMITTALS

A. Submit material specifications and shop drawings for all materials furnished under this Section.

B. Prior to the start of the construction, submit for the construction of erosion and sedimentation control measures.

C. During construction, submit to the Town Representative schedule changes that affect timing of construction.

D. Submit copies of all inspection and maintenance report forms.

1.4 REFERENCES

A. Reference herein to any technical society, organization, group or regulation are made in accordance with the following abbreviations and, unless otherwise noted or specified, all work under this Section shall conform to the latest edition as applicable.

B. Regulations of Connecticut State Agencies (RCSA)
   1. Sections 22a-315-10 through 19, Soil and Water Conservation.

C. Connecticut Department of Energy and Environmental Protection (CT DEEP)
   1. Connecticut Guidelines for Soil Erosion and Sediment Control, DEP Bulletin 34, State of Connecticut Council on Soil and Water Conservation, 2002.
   2. Guidance Document for Preparing a Storm water Pollution Prevention Plan, (DEP-PED-GUID-014), 2011.
   3. General Permit for the Discharge of Storm water and Dewatering Wastewaters Associated with Construction Activities (with modifications), (BMMCA DEEP-WPED-GP-015).

1.5 PERMIT CONDITIONS

A. Contractor is bound to comply with any project-related permits obtained by the Town affecting the performance of the work, including all requirements of such permit and representations contained in permit application as though Contractor were the permittee. Requirements and conditions set forth in Town-obtained project-related permits and permit applications shall be binding on Contractor just as any Specification would be.

1.6 Quality control

A. If applicable, comply with applicable provisions of the Connecticut Department of Energy and Environmental Protection General Permit for the discharge of Storm water and Dewatering Wastewaters Associated with Construction Activities, (BMMCA DEEP-WPED-GP-015) issuance date August 21, 2013 or latest revision thereof. Conditions of such General Permit, other conditions of approval or authorizations, and any Storm water Pollution Control Plans (SWPCP) shall become part of the Contract Documents.

B. Should Sub-contractors be employed to work on the Project, Sub-contractors are bound to comply with project-related permits affecting the performance of the work, including all requirements of such permits and representations contained in permit application as though Sub-contractor were the permittee. Requirements and conditions set forth in project permits and permit applications shall be binding on Sub-contractor to the same extent as the Contractor.

C. Contractor shall be responsible for timely installation and maintenance of all sedimentation control devices necessary to prevent the erosion of soil or movement of sediment from construction activities to off-site areas via surface runoff or underground drainage systems. Measures necessary to prevent the movement of sediment off-site shall be installed, maintained, removed, and cleaned up at the expense of the Contractor.

D. The Town Representative has the authority to order immediate, additional, temporary control measures to prevent contamination of adjacent streams or other watercourses, or other areas of water impoundment and damage by erosion.

E. If the Town Representative observes construction procedures and operations that jeopardize erosion control provisions, they will notify the Contractor. If such construction procedures and operations are not corrected promptly, the Town may suspend the performance of any or all construction until corrections have been made, and such suspension shall not be the basis of any claim by Contractor for additional compensation, nor for an extension of time to complete the Work.

F. Should construction materials be washed away or otherwise rendered ineffective in the opinion of the Town Representative during progression of the Work, Contractor shall replace the installations at no additional cost to the Town.

1.7 COORDINATION WITH PERMANENT EROSION CONTROL PROVISIONS

A. The temporary control provisions shall be coordinated with the permanent erosion control features to the extent practical to ensure economical, effective and continuous erosion control throughout the construction and post construction period.

PART 2 - PRODUCTS

2.1 HAY BALES

A. Hay bales shall be made of cut hay with forty pounds minimum weight and 120 pounds maximum weight. Bales shall be free of rotten or degraded hay, significant splits or voids. Hay bales shall be held together with minimum of two bands of either wire or heavy twine.

B. Stakes to anchor the bales shall be a minimum of 36 inches long and made of hardwood with a minimum dimension of 1 ½ inch by 1 ½ inch normal size. Metal stakes may be used instead of wooden stakes. Metal stakes shall be round, "U", "T", "L", or "C" shaped with a minimum weight of 0.5 pounds per foot.

C. Replace individual hay bales upon loss of 30% of original mass or volume, whichever is less.

2.2 SILT FENCE

A. Woven Polypropylene geotextile having a minimum weight of 3.1 ounces per square yard conforming to the following:

Mechanical and Physical Properties of Silt Fence Geotextile

Mechanical Properties	Test Method	Unit	Minimum Average Roll Value
Weight	ASTM D 3776	Oz/yd^2	5.6
Grab Tensile Strength	ASTM D 4632	Pounds	60
Grab Elongation (Max percent)	ASTM D 4632	Percent (%)	15-30
Trapezoidal Tear	ASTM D 4533	Pounds	30
Puncture	ASTM D 4833	Pounds	30
Mullen Burst	ASTM D 3786	Psi	150-200
Permittivity	ASTM D 4491	Sec^{-1}	0.15

Flow Rate	ASTM D 4491	Gal/min/ft^2	15-20
Apparent Opening Size	ASTM D 4751	(U.S. Sieve)	30-35
UV Resistance (at 500 hours)	ASTM D 4355	% strength retained	70

B. Silt fence shall be constructed of a minimum thirty-six (36) inch wide continuous woven geotextile. The Material shall have a high sediment filtration capacity, high slurry flow and minimum clogging characteristics. Edges of the fabric shall be finished to prevent the outer fibers from pulling away from the geotextile. Geotextile shall be free of defects or flaws that significantly affect its physical and/or filtering properties.

C. Fabric shall be securely fastened to stakes a minimum of 42 inches long and made of hardwood with a minimum dimension of 1 ½ inch by 1 ½ inch normal size such that a 6 to 8 inch length of fabric is unattached at the bottom for anchorage in soil. Metal stakes may be used instead of wooden stakes. Metal stakes shall be round, "U", "T", "L", or "C" shaped with a minimum weight of 0.5 pounds per foot. Stakes shall be spaced not greater than ten feet apart. When required, wire or another type of support shall be constructed between the geotextile fabric and the posts to improve the load carrying capacity of the silt fence.

2.3 CATCH BASIN INSERT

A. Manufactured catch basin insert of woven polypropylene geotextile with integral lifting loops or straps conforming to the following:

Mechanical and Physical Properties of Catch Basin Insert

Mechanical Properties	Test Method	Unit	Minimum Average Roll Value
Grab Tensile Strength	ASTM D 4632	Pounds	350
Grab Elongation (Max percent)	ASTM D 4632	Percent (%)	30
Trapezoidal Tear	ASTM D 4533	Pounds	120
Puncture	ASTM D 4833	Pounds	140
Mullen Burst	ASTM D 3786	Psi	600
Permittivity	ASTM D 4491	Gal/min/ft^2	0.3
Flow Rate	ASTM D 4491	Gal/min/ft^2	150

Apparent Opening Size	ASTM D 4751	(U.S. Sieve)	40
UV Resistance (at 500 hours)	ASTM D 4355	% strength retained	90

Note: Catch basin inserts for catch basins with curb openings shall be equipped with integral curb deflector.

PART 3 - EXECUTION

3.1 GENERAL

A. Install erosion and sedimentation control measures as needed prior to any site disturbance.

B. No work shall be started until erosion control schedules and installation have been accepted by the Town Representative.

C. The Town Representative has the authority to control the surface area of each material exposed by construction operations and to direct Contractor to immediately provide permanent or temporary pollution control measures to prevent contamination of adjacent watercourses or other areas of water impoundment. Every effort shall be made by Contractor to prevent erosion on the site and abutting properties or areas.

D. Contractor shall limit as necessary the surface area of the earth material exposed to sufficiently maintain and protest the slopes to prevent pollution. Where erosion is likely to be a problem, clearing and grubbing operations shall be operations shall be and performed so that grading operations and permanent erosion and sediment control features can follow immediately thereafter, if conditions permit; otherwise temporary control measures will be required between successive construction stages.

E. Erosion control features installed by Contractor shall be maintained by Contractor, and he shall remove such installations only upon completion of the work and the site is stabilized or when authorized to do so by the Town.

F. Contractor shall operate all equipment and perform all construction operations so as to minimize pollution. Contractor shall cease any of his operations which will increase pollution during rainstorms.

G. Failure by Contractor to control erosion, pollution, and siltation shall be cause for the Town to employ outside assistance to provide the necessary corrective measures. The cost of such assistance, including engineering costs, will be charged to the Contractor and appropriate deductions made to Contractors payment.

3.2 HAY BALES

A. Hay bales shall be positioned as necessary to prevent off site movement of sediment produced by, or as a result of, construction activities, or as direct by the Town.

B. Hay bales shall be utilized on all catch basins and drainage facilities on the Project Site to prevent the entry of sediments or other debris. Maintain such protection throughout execution of the work until such drainage facilities have been abandoned/removed.

C. Bales shall be placed lengthwise with ends of adjacent bales tightly abutting one another to form a continuous barrier. Bales shall be entrenched to a depth of 4 inches and backfilled, with backfill placed toward the potential source of runoff and sediment. All bales shall be installed so that bindings are oriented around the sides rather than along the tops and bottoms. Each bale shall be anchored with a minimum of two stakes, driving the first stake in each bale towards the previously laid bale to drive the bales together. Stakes must be driven a minimum of 18 inches into the ground. Loose hay shall be inserted between bales as required to prevent water from escaping between the bales.

3.3 GEOTEXTILE SILT FENCE

A. Install a filter fabric silt fence prior to construction and remove after full surface restoration has been achieved. Install silt fence as necessary to prevent off site movement of sediment produced by, or as a result of, construction activities.

B. Install as follows:
1. Hand shovel excavate a stall trench a minimum of six inches wide by six inches deep on the upslope side of the desired fence line location.
2. Unroll the siltation fence system, position the post in the back of the trench (downhill side), and hammer the post at least 12 inches into the original ground.
3. Fabric rolls shall be spliced at posts. The fabric shall be overlapped six inches, folded over and securely fastened to posts.
4. Lay the bottom 6 inches of the fabric into the trench to prevent undermining by storm water run-off.
5. Backfill the trench and compact. Compactions necessary to prevent the run-off from eroding the backfill.
6. For slope and swale installations, extend the ends of the trench sufficiently up slope such that the bottom end of the fence will be higher than the top of the lowest portion of the fence.

3.4 CATCH BASIN INLET SEDIMENT CONTROL

A. Install catch basin inlet sediment control devices in each exiting catch basin as long as it remains in use in accordance with manufacture’s guidelines at the locations within the construction site.

B. A catch basin sediment filter shall be installed and changed/cleaned per the manufacturer’s recommendations, or as directed by the Town, during construction.

C. New catch basins shall have a filter installed immediately upon completion of construction. In addition, a hay bale, or similar, barrier shall be installed around new basin and maintained in place until binder is placed or disturbed areas draining to it are stabilized.

D. Catch basins with curb openings shall have filter fabric covering the opening and the edges of the fabric shall be secured. A filter boom shall also be placed over the opening.

3.5 INSPECTIONS AND MAINTENANCE

E. Contractor is responsible to maintain the sediment and erosion control features at all times throughout the project duration and until the completion certification and approval has been issued. Inspections and maintenance of temporary erosion and sedimentation controls shall comply with the General Permit for the Discharge of Storm water and Dewatering Wastewaters Associated with Construction Activities (with modifications), (BMMCA DEEP-WPED-GP-015).

F. Regular erosion and sediment control system inspections shall be conducted by Contractor throughout the project duration. At a minimum, Contractor shall conduct daily inspections and maintain erosion control systems in good operation condition. Report the results of the inspection and the recommended maintenance and/or repair requirements to the Town.

G. Additional inspections may be required and/or directed prior to, or immediately following, a storm event >0.1 inches. Repairs shall be made as necessary.

H. In the event that the sedimentation and erosion control measures employed by Contractor prove to be inadequate as determined by the Town Representative, Contractor shall adjust operations to the extent necessary to prevent erosion and sediment transport.

I. Surface water shall be pumped to maintain excavations free of water. Comply with applicable requirements of the Connecticut Department of Energy and Environmental Protection, specifically those requirements related to the management of storm water and dewatering wastewaters associated with construction activities.

J. Hay bales and/or silt fences.
   1. Remove accumulated sediment once it builds up to one-half of the height of the bale or fabric.
   2. Replace damaged or degraded bales as necessary or when directed by the Town Representative.
   3. Replace damaged fabric, or patch with a 2-foot minimum overlap. Overlaps may only be made at fence posts.
   4. Make other repairs as necessary to ensure bales/fence is filtering all runoff.

K. Clean catch basin inlet sediment control devices in accordance with manufacture's guidelines.

L. Any catch basins that collect sediment as a result of Contractor's work shall be thoroughly cleaned out by the Contractor.

END OF SECTION 01 57 13

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division - 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for selection of products for use in Project; delivery, storage, and handling; manufacturers' standard warranty on products.

1.3 DEFINITIONS

A. Products: Items obtained for incorporation into the work. The term product includes "material", "equipment", "system" or other similar terms.
   1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
   2. New Products: Items that have been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 60 00

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division - 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:
   1. Project documentation.
   2. Project record document submittal.
   3. Submittal of warranties.

B. Closeout procedures
   1. Final cleaning.

C. Additional closeout requirements for specific construction activities are included in the appropriate Sections in Divisions 01 through 33.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
   1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
      a. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
   2. Advise the Town of pending insurance change-over requirements.
   3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
   4. Obtain and submit releases enabling the Town unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
   5. Submit closeout documentation, record drawings, maintenance manuals, final project photographs, damage or settlement survey, property survey, and similar final record information.
   6. Complete final clean up requirements.

B. Inspection Procedures: On receipt of a request for inspection, the Consultant will either proceed with inspection or advise the Contractor of unfilled requirements. The Consultant will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
   1. The Consultant will repeat inspection when requested and assured that the Work has been substantially completed.
   2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.4 REVENUE SERVICES REQUIREMENTS

A. Upon receipt of the Certificate of Substantial Completion, the Contractor shall submit the following information required by the Connecticut Department of Revenue Services.
   1. The identity and addresses of all subcontractors performing work on the project.
   2. The Connecticut tax registration numbers of all subcontractors.
   3. The Federal Social Security account numbers, or Federal Employer Identification numbers, or both, if applicable, for the Construction Manager and all subcontractors.

1.5 FINAL ACCEPTANCE

A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
   1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
   2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
   3. Submit a certified copy of the Consultant's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Consultant.
   4. Submit consent of surety to final payment.
   5. Submit a final liquidated damages settlement statement.
   6. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. Re-inspection Procedure: The Consultant will re-inspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Consultant.
   1. Upon completion of re-inspection, the Town Representative with advise of the Consultant will prepare a certificate of final acceptance, or advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
   2. If necessary, re-inspection will be repeated.

1.6 RECORD DOCUMENT SUBMITTALS

A. General: Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Consultant's reference during normal working hours.

B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
   1. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.
   2. Mark new information that is important to the Town, but was not shown on Contract Drawings or Shop Drawings.

3. Note related Change Order numbers where applicable.
4. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.
5. Upon completion of the Work, submit record sets to the Town Representative for transfer of data to the original tracings.

C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Data.

1. Upon completion of the Work, submit record Specifications to the Town Representative for the Town's records.

D. Record Product Data: Maintain one copy of each Product Data submittal. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned later by direct observation. Note related Change Orders and mark-up of record drawings and Specifications.

3. Upon completion of mark-up, submit complete set of record Product Data to the Town Representative for the Town's records.

E. Record Sample Submitted: Immediately prior to the date or dates of Substantial Completion, the Contractor will meet at the site with the Consultant and the Town's personnel to determine which of the submitted Samples that have been maintained during progress of the Work are to be transmitted to the Town for record purposes.

F. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Consultant for the Town's records.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 CLOSEOUT PROCEDURES

A. Environmental Documentation: Provide copies of all abatement and environmental removal and disposal activities as required by applicable Federal, State and Local regulations or requirements and the technical sections of the Project Manual.

3.2 FINAL CLEANING

A. General: General cleaning during construction is required by the General Conditions and included in Sections 01 50 00, "Temporary Facilities and Controls" and 01 74 00 "Cleaning and Waste Management".

B. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.

C. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Town's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

1. Where extra materials of value remaining after completion of associated Work have become the Town's property, arrange for disposition of these materials as directed.

END OF SECTION 01 70 00

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division - 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:
   1. Salvaging nonhazardous demolition waste.
   2. Recycling nonhazardous demolition waste.
   3. Disposing of nonhazardous demolition waste.

B. Related Requirements:
   1. Section 02 41 16.14 "Building Demolition" for disposition of waste resulting from demolition of buildings, structures, and site improvements.
   2. Sections 02 82 33 "Removal and Disposal of Asbestos-Containing Material".
   3. Section 02 84 00 "Removal and Handling of Regulated Material".

1.3 DEFINITIONS

A. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.

B. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

C. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

D. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

E. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.4 PERFORMANCE REQUIREMENTS

A. General: Achieve end-of-Project rates for salvage/recycling of percent by weight of total non-hazardous solid waste generated by the Work. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials, including the following:

1. Demolition Waste:
   a. Asphalt paving.
   b. Concrete.
   c. Concrete reinforcing steel.
   d. Steel

1.5 ACTION SUBMITALS

A. Waste Management Plan: Submit plan within 7 days of date established for commencement of the Work.

1.6 INFORMATION SUBMITALS

A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Include the following information:
   1. Material category.
   2. Generation point of waste.
   3. Total quantity of waste in tons.
   4. Quantity of waste salvaged, both estimated and actual in tons.
   5. Quantity of waste recycled, both estimated and actual in tons.
   6. Total quantity of waste recovered (salvaged plus recycled) in tons.
   7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.

B. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

C. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

D. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

E. LEED Submittal: LEED letter template for Credit MR 2, signed by Contractor, tabulating total waste material, quantities diverted and means by which it is diverted, and statement that requirements for the credit have been met.

F. Qualification Data: For waste management coordinator.

1.7 QUALITY ASSURANCE

A. Waste Management Conference: Conduct conference at Project site as needed. Review methods and procedures related to waste management including, but not limited to, the following:
   1. Review and discuss waste management plan including responsibilities of waste management coordinator;
   2. Review requirements for documenting quantities of each type of waste and its disposition;
   3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays;

4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities;
5. Review waste management requirements for each trade.

1.8 WASTE MANAGEMENT PLAN

A. General: Develop a waste management plan according to ASTM E 1609 and requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Distinguish between demolition and construction waste. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.

B. Waste Identification: Indicate anticipated types and quantities of demolition waste generated by the Work. Use. Include estimated quantities and assumptions for estimates.

C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
   1. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
   2. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
   3. Handling and transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.

D. Cost/Revenue Analysis: Indicate total cost of waste disposal as if there was no waste management plan and net additional coast or net savings resulting from implementing waste management plan. Include the following:
   1. Estimated cost of disposal (cost per unit). Include hauling and tipping fees and cost of collection containers for each type of waste.
   2. Total cost of disposal (with no waste management).
   3. Revenue from salvaged materials.
   4. Revenue from recycled materials.
   5. Handling and transportation costs. Include cost of collection containers for each type of waste.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
   1. Comply with operation, termination and removal requirements in Section 01 50 00 “Temporary Facilities and Controls.”

B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.

1. Distribute waste management plan to everyone concerned within seven days of submittal return.
2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold;
2. Comply with Section 01 50 00 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 RECYCLING DEMOLITION WASTE, GENERAL

A. General: Recycle paper and beverage containers used by on-site workers.

B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall be shared equally by the Town and Contractor.

C. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.

D. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.
1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
    a. Inspect containers and bins for contamination and remove contaminated materials if found.
2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from the construction area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from weather.
5. Remove recyclable waste from the Town's Property and transport to recycling receiver or processor.

3.3 RECYCLING DEMOLITON WASTE

A. Asphalt Paving: Break up and transport to asphalt-recycling facility.

B. Concrete: Break up and transport off-site. Remove reinforcement and other metals from concrete and sort with other metals.

C. Metals: Separate metals by type.

3.4 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
   1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
   2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Burning of waste materials is not permitted.

C. Burying: Burying of waste materials onsite is not permitted.

D. Disposal: Remove waste Materials from Town's property and legally dispose of them.

END OF SECTION 01 74 00

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division - 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for project record documents, including the following:
   1. Record drawings.

B. Related Requirements:
   1. Section 01 70 00 "Execution and Closeout Requirements" for final property survey.

1.3 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:
   1. Number of Copies: Submit copies of record Drawings as follows:
      a. Initial Submittal:
         1) Submit PDF electronic files of scanned record prints and one of file prints.
         2) The Town Representative will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
      b. Final submittal:
         1) Submit PDF electronic files of scanned record prints and two set(s) of prints.

B. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.

C. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit annotated PDF electronic files and directories of each submittal.

D. Reports: Submit written report weekly indicating items incorporated into project record documents concurrent with progress of the Work, including revision, concealed conditions, field changes, product selections, and other notations incorporated.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and shop Drawings, incorporating new and revised drawings as modifications are issued, if applicable.
   1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provided information for preparation of corresponding marked-up record prints.

a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
b. Accurately record information in an acceptable drawing technique.
c. Record data as soon as possible after obtaining it.
d. Record and check the markup before enclosing concealed installations.
e. Cross-reference record prints to corresponding archive photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:
   a. Changes made by Change Order or Construction Change Directive.
   b. Changes made following Town's written orders.
3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark important additional information that was either shown schematically or omitted from original Drawings.
5. Note Construction Change Directive numbers, alternate numbers, Change order numbers, and similar identification, where applicable.

B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Town. When authorized, prepare a full set of corrected digital files of the Contract drawings, as follows:
1. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
2. Refer instances of uncertainty to the Town for resolution.
3. Consultant can furnish Contractor one set of digital files of the Contract Drawings for use in recording information.
   a. See Section 01 33 00 "Submittal Procedures" for requirements related to use of digital data files.

C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
2. Identification: As follows:
   a. Project name.
   b. Date.
   c. Designation "PROJECT RECORD DRAWINGS"
   d. Name of Consultant.
   e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

B. Format: Submit record Specifications as scanned PDF electronic file(s) of marked-up paper copy of Specifications.

2.3 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

B. Format: Submit miscellaneous record submittals as PDF electronic file.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.

B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Town's reference during normal working hours.

END OF SECTION 01 78 39

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division - 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Related Requirements:
1. Section 01 10 00 "Summary" for use of the premises and phasing requirements.
2. Section 01 57 13 "Temporary Erosion and Sedimentation Controls" to prevent contamination of adjacent watercourses or other areas of water impoundment.
3. Section 01 74 00 "Cleaning and Waste Management" for overall site housekeeping and waste disposal.
4. Section 01 78 39 "Project Record Documents" for documentation of features identified during building demolition and site work including locations of identified capped and removed utilities.
5. Section 02 82 33 "Removal and Disposal of Asbestos-Containing Material", Section 02 84 00, "Removal and Handling of Regulated Material" and Section 02 41 19, "Selective Demolition for Hazardous Materials".
6. Section 33 01 00 "Basic Site Materials and Methods" for cutting, capping and removal of utilities.

B. General requirements:
1. Demolition of building and site improvements, site grading and other associated work as described in the Contract Documents. The work includes the removal of all construction, including items not specifically identified, in and around the building required to permit building demolition.
2. Demolition of superstructure, foundations, footings, slabs-on-grade, stairs, ramps, equipment pads, pavement, and other concrete construction associated with the Former Bridge Street School building.
3. Removal of walls, pavement, curbing, walks, trees and landscape features indicated or required to complete building demolition.
4. Disconnection, capping and removal of utility lines as indicated or required. Removal includes utility lines outside and within the building line.
5. Temporary facilities and protection including protective barriers, dust control, water runoff control, and traffic control.
6. Bulk heading of storm sewers and sanitary sewers as indicated or required. Cutting and capping of water and steam service. Cutting of disconnected electric and communication lines.
7. Removal of underground liquefied petroleum gas (LPG) tank and associated piping.
8. Site filling and grading. Grading of the demolition site to blend with adjacent grades.
9. Protect and maintain existing walkways, lawn, planting areas and fencing.
10. Site Cleanup.

1.3 SUBMITTALS

A. Submit for Consultants' review and information the below listed data not less than 5 working days prior to start of activity:
   1. Proposed demolition schedule including removal sequence. Update and resubmit every two weeks showing progress to date.
   2. Details of methods and procedures proposed for demolition and other Work of this Contract.
   3. Plan of barricades, fences, and other temporary work. Show stockpile or staging locations for concrete, structural steel and salvage items.
   4. Plan showing location of temporary offices and staging areas.
   5. Safety plan for worker protection and protection of adjacent properties with particular attention to protection for pedestrians using sidewalks.
   6. Name, location and evidence of current licensing or legal approval of disposal facility to receive construction and demolition waste and hazardous wastes. Submit manifests of shipments. The following minimum information shall be included:
      a. Facility name and address.
      b. Name, title and telephone number of contact person.
      c. Copies of waste licenses or permits to confirm that they are permitted to accept the waste materials.
      d. Lists matching each facility with the materials from the project to be sent to each, and specify whether the facility is a recycling, treatment, storage, or disposal facility.
      e. Confirmation from facility that they will accept the types and quantities of wastes being generated from the Work.

1.4 PROJECT RECORD DOCUMENTS

A. Submit under provisions of Section 01 78 39 "Project Record Documents".

B. Accurately record actual locations of bulk-headed, capped and removed utilities and pits containing utility services.

C. Submit record copies of all permits, regulatory agency approvals, and waste disposal manifests pertaining to the work of this Section.

1.5 QUALIFICATIONS

A. Contractor must have current State of Connecticut Demolition License, specializing in performing the Work of this Section with a minimum five years documented experience and in addition shall have successfully completed at least three projects similar to those for this project.

1.6 REGULATORY REQUIREMENTS

A. Conform to applicable Federal, State of Connecticut and Local codes and ordinances for demolition of structures, safety of adjacent structures, dust control, runoff control, traffic control, and handling, transporting and disposal of construction demolition and hazardous waste materials.

B. Obtain required permits from authorities and utilities and pay all associated fees.

C. Notify the Town and affected Utility companies of utility terminations and disconnections. Prior to starting work confirm with affected utility companies supplying electric power, telephone, gas, and water services that utilities have been disconnected.

D. Do not close or obstruct roadways, sidewalks, or public hydrants without written permission from the Town.

1.7 SEQUENCING

A. Sequence work to allow demolition to immediately follow asbestos abatement in a continuous process. Demolition should not be delayed for salvage or other activities.

1.8 SCHEDULING

A. Work may progress at contractor's discretion unless otherwise limited by ordinances, regulations or Town operations. Minimum continuous work week is to be based on a 5 day work schedule of not less than 8 hours per day.

B. The normal workday shall be between 7:00 a.m. and 4:30 p.m. Monday through Friday, excluding State granted Holidays. Permission must be requested and approved in writing to perform work outside the normal working hours or on a State Holiday.

1.9 SALVAGEABLE MATERIALS

A. The following items have been identified for salvage. Carefully remove these items to avoid damage, and deliver them to a location indicated or directed by the Town.
1. Gas Heaters,
2. Flag Pole,
3. Building Signs,
4. All Moveable Stored Furniture, Equipment and Materials within Building

B. The Town reserves the right to remove or request removal of any other building components or materials at any time prior to start of work. Once all items desired by the Town have been removed, the items remaining are to become the property of the contractor and shall be removed during demolition.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PREPARATION

A. Provide, erect, and maintain temporary fences and barriers and security devices at locations to protect adjacent properties and pedestrian traffic. Access to all areas adjacent to the Construction Site shall be maintained at all times. Temporary fence shall not interfere with normal operations and deliveries.

B. Protect existing lawn and landscaping materials and existing construction noted to remain. The Contractor is responsible for repair of damage to existing construction, to the satisfaction of the Town.

C. Mark the location of utilities to be bulk-headed. Proceed with bulk-heading in advance of demolition unless permission to do otherwise is granted by the Town.

3.2 GENERAL DEMOLITION REQUIREMENTS

A. Testing for asbestos-containing material (ACM) identified interior and exterior materials containing greater than one percent (>1%) asbestos which must be removed prior to building demolition.

B. Conduct demolition to minimize interference with adjacent structures.

C. Cease operations immediately if adjacent structures appear to be in danger.

D. Conduct operations with minimum interference to public or private accesses. Do not conduct operations in sidewalk or street without the Town's approval, and without implementation of adequate security and safety measures.

E. After working hours secure the site from unauthorized access.

F. Wet down building components with water to minimize dust. Provide hoses and water connections for this purpose. Provide control of associated water runoff.

G. Demolition shall follow an orderly sequence and shall incorporate measures to prevent the disturbance or contamination of the surrounding waterways and property. The Contractor shall employ methods as necessary to remove the building superstructure without disturbance to the environment. Demolition work practices shall be submitted to the Town for approval prior to implementation.

3.3 REMOVAL OF REGULATED MATERIALS

A. Regulated materials and materials requiring special handling and removal have been identified. These materials shall be removed from the building prior to commencement of any demolition activity. Identification of these materials and a description of procedures to remove and dispose or recycle these materials are given in related specification sections.

B. Exposure levels for lead in the construction industry are regulated by 29 CFR 1926.62. Construction activities disturbing surfaces containing lead-based paint (LBP) which are likely to be employed, such as sanding, grinding, welding, cutting and burning, have been known to expose workers to levels of lead in excess of the Permissible Exposure Limit (PEL). Conduct all work specified in the technical sections of this specification in conformance with these regulations. In addition, construction debris/waste may be classified as hazardous waste. Disposal of hazardous waste material shall be in accordance with 40 CFR Parts 260 through 271 and Connecticut Hazardous Waste Management Regulations Section 22a-209-1; 22a-209-8(c); 22a-449(c)-11; and 22a-449(c)-100 through 110. This facility was constructed prior to 1978 and is likely to have painted surfaces containing lead-based paint.

C. Testing for lead-based paint (LBP) identified surfaces containing lead greater than the toxic level of lead as defined by the State of Connecticut, Department of Public Health. A composite of building

materials was collected and submitted for Toxicity Characteristic Leaching Procedure (TCLP) sample analysis. The test result **did not** exceed the regulatory limit of 5.0 mg/L for leachable lead content; therefore, according to regulations the construction and demolition (C&D) waste generated may be disposed of at a facility authorized to accept C&D waste.

3.4 DEMOLITION

A. Bulkhead designated sanitary and storm sewers and cut and cap water, steam and condensate systems as indicated or required. Except where noted otherwise, remove buried utilities which have been capped or bulk headed as part of the project scope.

B. Remove foundation walls, piers, concrete or stone/brick footings, concrete floor slabs or equipment pads complete. Remove and dispose of all building superstructure and other above ground features.

C. Backfill excavated areas, open pits, holes and below grade foundations in accordance with the requirements of Section 33 01 00. Fill, compact and grade to drain to catch basins to remain. Grade uniformly and blend to make grade changes gradual.

D. Remove demolished materials from the site. Do not burn or bury materials on site. Leave the site in clean condition.

E. Remove temporary work.

3.5 DISPOSAL

A. Contractor is encouraged to salvage material, and equipment for reuse and to recycle solid waste including items such as specified in Section 22a-241b-2 of the Regulations of Connecticut State Agencies (RCSA).

B. Construction and demolition waste remaining after salvage and recycling is to be disposed of at a landfill approved by the State of Connecticut, Department of Energy and Environmental Protection (DEEP), or other authorized waste disposal site, for the disposal of construction and demolition waste.

C. Hazardous wastes such as items defined in Section 22a-151(9) of the RCSA and equipment fluids are to be disposed of or sent to a DEEP approved reprocessing facility and are to be stored, treated, transported or otherwise managed as defined in RCSA Section 22a-115(1).

END OF SECTION 02 41 16.14

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. Coordinate selective demolition for Hazardous Materials with work included in other sections.

B. Work included in this section is to be performed to permit removal of ACM, Lead and Mold or to perform other Hazardous Materials removal activities.

C. Selective demolition work included in this section is to be performed prior to, but as part of hazardous material abatement, and includes the removal of non-hazardous material to access concealed hazardous material scheduled for removal. Work having a high probability of disturbing hazardous materials shall be conducted after engineering controls are in place and have proven to be effective. This work includes, but is not limited to, removal of the following building components or materials:
   1. Plaster or gypsum wallboard partition or ceiling.
   2. Fixed or suspended acoustic ceiling.
   3. Concrete masonry unit (CMU) walls.
   4. Terracotta walls.
   5. Carpet.
   6. Built-in equipment and cabinetry.
   7. HVAC system components.
   8. Electrical system components.
   9. Alarm system components.

D. Building demolition or removal of building mechanical and electrical systems, except as required to access or permit removal of ACM or Hazardous Materials, is not included in this section.

1.2 SUBMITTALS

A. Submit for Environmental Consultants' review and information the below listed data not less than five (5) working days prior to start of activity.
   1. Proposed selective demolition schedule including removal sequence. Update and resubmit every two weeks showing progress to date, if applicable.
   2. Details of methods and procedures proposed for selective demolition.
   3. Safety plan for worker protection and protection of adjacent construction.

1.3 REGULATORY REQUIREMENTS

A. Conform to all applicable federal, state and local laws, regulations, codes and ordinances for demolition of structures, safety of adjacent structures, dust control, runoff control, traffic control; and handling, transporting and disposal of construction demolition and Hazardous Materials in accord with EH&S Requirements.

B. Lock out /Tag out electrical power, including all receptacles and light fixtures in accordance with the Owner lock out/tag out program. Isolate and remove alarm system components on surfaces to be demolished under this section. Coordinate all power and alarm system isolation with the Owner.

C. Do not close or obstruct access to or egress from occupied areas of the building.

1.4 SEQUENCING

A. Sequence work with asbestos abatement included in Section 028213 in a continuous process. Demolition or removal activities which could disturb ACM shall be performed after establishment of engineering controls specified in Section 028213.

B. Demolition or removal activities which could disturb LCP shall be performed after establishment of engineering controls in accordance with Section 028310.

1.5 SALVAGEABLE MATERIALS

A. The items identified within the Project Work Plan that are not scheduled for reuse have been identified for salvage. Carefully remove these items to avoid damage, and deliver them to the on-Site location where indicated or directed. Items will be identified prior to start of removal activities.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PREPARATION

A. Provide, erect, and maintain temporary barriers, including Work Area containment at locations necessary to protect adjacent construction and eliminate unauthorized entry into the work area. Provide appropriate signage to identify building evacuation routes during construction.

3.2 DEMOLITION REQUIREMENTS

A. Perform demolition to the extent specified, indicated or necessary to access concealed ACM and to remove Lead, and other Hazardous Materials specified herein. Conduct demolition and removal activities to minimize interference with adjacent construction building materials scheduled to be retained.

B. Cease operations immediately if adjacent construction appears to be in danger and notify the Owner and Environmental Consultant. Do not resume operations until directed by the Owner.

C. Properly wet down building components removed under this section with water to minimize dust. Provide control of associated water runoff.

D. Remove demolition materials that do not contain asbestos, lead, or any other Hazardous Materials and place in construction debris waste containers. Should the on-Site Environmental Consultant identify contamination from adjacent building materials containing asbestos, lead, or other Hazardous Materials, the materials must be decontaminated or removed as Hazardous Material debris.

Should any Hazardous Material spill occur during selective demolition for the removal of Hazardous Materials, notify the Owner and on-Site Environmental Consultant immediately.

END OF SECTION 024119

PART 1 - GENERAL

1.1 DEFINITIONS

A. Abatement – Any set of measures designed to eliminate an asbestos hazard in accordance to State and/or Federal regulations associated with hazardous materials.

B. Accessible - A space easily accessed, and which can be entered or seen without demolition.

C. Agency - The authoritative force, usually at the state level, or their representative.

D. AHERA - Asbestos Hazard Emergency Response Act - U. S. EPA regulation 40 CFR Part 763 under Section 203 of Title II of the Toxic Substances Control Act (TSCA), 15 U.S.C. § 2643. This rule mandates inspections, accreditation of persons involved with asbestos, and final air clearances following abatement in public and private schools, and public and commercial buildings.

E. AIHA – American Industrial Hygiene Association

F. Alternative Work Practice (AWP) - CTDPH approved deviation from Asbestos Standards (Sections 19a-332a-1 to 19a-332a-16 inclusive). AWP methods may be used if pre-approved by CTDPH or with the approval of CTDPH, the Design Consultant and State's Project Monitor when not pre-approved. Approval of AWP procedures shall not relieve the Contractor from any codes, regulations or standards required by this specification.

G. Asbestos Abatement Site Supervisor – Any individual who is employed or engaged by an asbestos contractor to supervise an asbestos abatement project.

H. Asbestos-Containing Waste Materials – Mill tailings or any waste that contains commercial asbestos and is generated by a source subject to the provisions of this subpart. This term includes filters from control devices, friable asbestos waste material, and bags or other similar packaging contaminated with commercial asbestos. As applied to demolition and renovations operations, this term also includes regulated asbestos-containing material waste and materials contaminated with asbestos including disposable equipment and clothing.

I. Asbestos Control Area - An area where asbestos abatement operations are performed which is isolated by physical boundaries, which assist in the prevention of the uncontrolled release of asbestos dust, fibers, or debris. Two examples of an Asbestos Control Area are a "full containment" and a "glove-bag."

J. Asbestos Materials - Asbestos-containing materials (ACM), presumed asbestos-containing materials (PACM), and asbestos-contaminated materials.

K. Asbestos Project Designer – Any accredited person who determines how asbestos abatement work should be conducted and who prepares, for purposes of an abatement project, plans, designs, procedures, work scope or other substantive directions or criteria.

L. Authorized Asbestos Disposal Facility - A location approved by the CTDEEP for handling and disposing of asbestos waste or by an analogous or federal regulatory agency if the material is disposed of outside the State of Connecticut.

M. Category I Non-Friable Asbestos-Containing Material (ACM) - Asbestos-containing packing, gaskets, resilient floor coverings and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified in Appendix A, subpart F, 40 CFR Part 763, section 1, Polarized Light Microscopy.

N. Category II Non-Friable Asbestos Materials - Any material, excluding Category I non-friable Asbestos Materials, containing more than 1 percent asbestos as determined using the method specified in Appendix A, subpart F, 40 CFR Part 763, section 1, Polarized Light Microscopy that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

O. Class I Asbestos Work - Activities involving the removal of TSI (thermal system insulation) and surfacing Asbestos Materials.

P. Class II Asbestos Work - Activities involving the removal of Asbestos Materials, which is not TSI or surfacing material. This includes, but is not limited to the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastic.

Q. Class III Asbestos Work - Repair and maintenance operations, where Asbestos Materials, including TSI and surfacing material, is likely to be disturbed.

R. Class IV Asbestos Work - Maintenance and custodial activities during which employees contact Asbestos Materials and activities to clean up waste and debris containing Asbestos Materials.

S. Clean Room – an uncontaminated room having facilities for the storage of employees' street clothing and uncontaminated materials and equipment.

T. Competent Person - In addition to the definition in 29 CFR § 1926.32(f), one who is capable of identifying existing asbestos hazards in the work place and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR §1926.32(f): in addition for Class I and Class II work who is specially trained in a training course which meet the criteria of 40 CFR Part 763 (Appendix C to Subpart E - Asbestos Model Accreditation Plan).

U. Concealed Space - Space, which is out of sight. Examples of a concealed space include area above hard ceilings; below floors; between double walls; furred-in areas; pipe and duct shafts; and similar spaces which cannot be examined without invasive removal of building components or disturbance of finishes.

V. Critical Barrier - A layer of six (6) mil polyethylene sheeting taped securely over windows, doorways, diffusers, grilles and any other openings between the Work Area and uncontaminated areas outside of the Work Area.

W. CTDEEP - The Connecticut Department of Energy and Environmental Protection, 79 Elm Street, Hartford, CT 06106.

X. CTDPH - The Connecticut Department of Public Health, 410 Capitol Avenue, P.O. Box 340308, Hartford, CT 06134-0308.

Y. Demolition - The wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

Z. Differential Pressure - A difference in the static air pressure between the Work Area and occupied areas, and is developed by the use of HEPA filtered exhaust fans. This differential is generally in the range of 0.02 to 0.04 inches of water column.

AA. Encapsulation - The treatment of asbestos-containing materials to prevent the release of fibers as the encapsulant creates a membrane over the surface (bridging encapsulant) or penetrates the material and binds its components together (penetrating encapsulant).

BB. Engineering Controls - Controls to include, but not be limited to, pressure differential equipment, decontamination enclosures, critical barriers and related procedures.

CC. Environmental Consultant - The certified and licensed company contracted or employed by the building owner or contractor to supervise and/or conduct air monitoring, analysis schemes and design of abatement projects.

DD. Equipment Decontamination Enclosure System - The portion of a Decontamination Enclosure System designed for controlled transfer of materials and equipment into or out of the Work Area, typically consisting of a Washroom and a Holding Area.

EE. Equipment Room (change room) – a contaminated room located within the decontamination area that is supplied with impermeable bags or containers for the disposal of contaminated protective clothing and equipment.

FF. Exposed - Open to view.

GG. Fiber - A particulate form of asbestos five microns or longer, with a length-to-diameter ratio of at least 3 to 1.

HH. Finished Space - Space used for habitation or occupancy where rough surfaces are plastered, paneled or otherwise treated to provide a pleasing appearance.

II. Fixed Critical Barrier - Barrier constructed of 2" x 4" wood or metal framing 16" O.C., with 1/2" plywood on the occupied side and two layers of six (6) mil polyethylene sheeting on the Work Area side to prevent unauthorized access or air flow.

JJ. Fixed Object - A piece of equipment or furniture in the Work Area, which cannot be removed from the Work Area, as, determined by the State.

KK. Friable Asbestos-Containing Material (ACM) - Material containing more than one percent asbestos which has been applied on ceilings, walls, structural members, piping, duct work, or any other part of a building, which when dry may be crumbled, pulverized or reduced to powder by hand pressure. The term includes non-friable asbestos-containing material after such previously non-friable material becomes damaged to the extent that when dry it may be crumbled, pulverized or reduced to powder by hand pressure.

LL. Friable Asbestos-Containing Building Material (ACBM) - Any friable Asbestos Material that is in or on interior structural members or other parts of a school or public or commercial building.

MM. Glove-Bag Technique - A method with limited applications for removing small amounts of friable Asbestos Material from HVAC ducts, short piping runs, valves, joints, elbows, and other non-planar surfaces in a non-contaminated work area. Information on glove-bag installation, equipment and supplies, and work practices is contained in 29 CFR § 1926.1101. The glove-bag assembly is a manufactured or fabricated device consisting of a glove-bag (typically constructed of six (6) mil polyethylene or polyvinyl chloride plastic), two inward projecting long sleeves, an internal tool pouch, and an attached, labeled receptacle for asbestos waste. The glove-bag is constructed and installed in such a manner that it surrounds the object or material to be removed and contains all asbestos fibers released during the process. This technique requires AWP application and may only be used if pre-approved by CTDPH or with the approval of the Design Consultant, State's Project Monitor and CTDPH when not pre-approved.

NN. HEPA Filter Equipment - High-efficiency particulate air (HEPA) filtered vacuum and/or exhaust ventilation equipment with a filter system capable of trapping and retaining asbestos fibers. Filters shall be of 99.97 percent efficiency for retaining fibers of 0.3 microns in diameter or larger.

OO. Inaccessible - A space not accessible, and which cannot be entered or seen without demolition.

PP. Inspection - An activity undertaken in a school building, or a public or commercial building, to determine the presence or location, or to assess the condition of, friable or non-friable Asbestos Materials or suspected Asbestos Materials, whether by visual or physical examination, or by collecting samples of such materials.

QQ. Lock-down - The procedure of spraying polyethylene sheeting and building materials with an encapsulant type sealant to seal in non-visible asbestos-containing residue.

RR. Major Fiber Release Episode - Any uncontrolled or unintentional disturbance of Asbestos Materials, resulting in a visible emission, which involves the falling or dislodging of more than 3 square or 3 linear feet of friable Asbestos Materials.

SS. Mini-Containment - A procedure using a single layer of polyethylene sheeting to contain the Work Area. Access to the mini-containment is controlled by an air lock, which also serves as a Holding Area. This procedure requires AWP application and may only be used if pre-approved by CTDPH or with the approval of the Design Consultant, State's Project Monitor and CTDPH when not pre-approved.

TT. Minor Fiber Release Episode - Any uncontrolled or unintentional disturbance of Asbestos Materials, resulting in a visible emission, which involves the falling or dislodging of 3 square or linear feet or less of friable Asbestos Materials.

UU. Movable Object - A piece of equipment or furniture in the Work Area, which can be removed from the Work Area, as, determined by the State.

VV. Negative Initial Exposure Assessment - A demonstration by the employer which complies with the criteria in 29 CFR § 1926.1101(f)(2)(iii) that employee exposure during an operation is expected to be consistently below the PEL.

WW. Negative Pressure Enclosure (NPE) – a containment constructed of polyethylene sheeting to contain the Work Area and creates a vacuum atmosphere that restricts contaminants from exiting the enclosure.

XX. Non-Friable Asbestos-Containing Material - Material containing more than 1 percent asbestos as determined using the method specified in Appendix A, subpart F, 40 CFR Part 763, section 1, Polarized Light Microscopy that when dry cannot be crumbled, pulverized or reduced to powder by hand pressure.

YY. OSHA – Occupational Safety and Health Administration

ZZ. Owner or Operator of a Demolition or Renovation Activity - Any person who owns, leases, operates, controls or supervises the facility being demolished or renovated or any person who owns, leases, operates, controls or supervises the demolition or renovation, or both.

AAA. Permissible Exposure Limits (PELS) - (1) Time-weighted Average Limit (TWA). The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fibers per cubic centimeter (f/cc) of air as an eight (8) hour time-weighted average (TWA). (2) Excursion Limit. The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1.0 fibers per cubic centimeter of air (1 f/cc) as averaged over a sampling period of thirty (30) minutes.

BBB. Pre-Clean - The process of cleaning an area before asbestos abatement activities begin to ensure all dust and debris in the area considered asbestos containing are properly contained and disposed of. This increases the likelihood the area will pass aggressive air sampling clearance requirements after asbestos-containing materials have been removed.

CCC. Presumed Asbestos-Containing Material - TSI and surfacing material found in buildings constructed no later than 1980. The designation of PACM may be rebutted pursuant to 29 CFR § 1926.1101 (k)(5).

DDD. Project Monitor - The certified and licensed individual contracted or employed by the building owner or contractor to supervise and/or conduct air monitoring and analysis schemes. This individual is responsible for recognition of technical deficiencies in procedures during both planning and on-site phases of an abatement project. Requirements for Project Monitor are defined in the Connecticut Department of Public Health Regulations (Sections 20-440-1 to 20-440-9 and 20-441). In addition to these requirements, this person shall be listed in the American Industrial Hygiene Association's Asbestos Analysts Registry.

EEE. Regulated Area - Area established by the employer to demarcate areas where Class I, II and III work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; a work area within which airborne concentrations of asbestos exceed or there is a reasonable possibility they may exceed the PEL.

FFF. Regulated Asbestos-Containing Material (RACM) - (a) Friable asbestos material, (b) Category I non-friable Asbestos Materials that has become friable, (c) Category I non-friable Asbestos Materials that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non-friable Asbestos Materials that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

GGG. Renovation - Altering a facility or one or more facility components in any way, including the stripping or removal of Asbestos Materials from a facility component. Operations in which load-supporting members are wrecked or taken out are demolition.

HHH. Repair - Overhauling, rebuilding, reconstructing or reconditioning of structures or substrates where asbestos, tremolite, anthophyllite or actinolite is present.

III. Response Action (Work) - A method including removal, encapsulation, enclosure, repair and operation and maintenance that protects human health and the environment from Hazardous Material exposure.

JJJ. Shower Room – a contaminated room having facilities for the washing of persons and equipment prior to moving into the clean room.

KKK. Small-Scale, Short Duration (SSSD) - Tasks such as but not limited to:

1. Removal of small quantities of asbestos containing insulation on pipes.
2. Removal of small quantities of asbestos-containing insulation on beams or above ceilings.
3. Replacement of an asbestos-containing gasket on a valve.
4. Installation or removal of a small section of drywall.
5. Installation of electrical conduits through or proximate to asbestos-containing materials.
6. Removal of small quantities of Asbestos Materials only if required in the performance of another maintenance activity not intended as asbestos abatement.
7. Removal of asbestos containing TSI not to exceed amounts greater than those which can be contained in a single glove-bag.
8. Minor repairs to damaged TSI, which do not require removal.
9. Repairs to a piece of asbestos-containing wallboard.
10. Repairs involving encapsulation, enclosure, or removal, to small amounts of friable Asbestos Materials only if required in the performance of emergency or routine maintenance activity and not intended solely as asbestos abatement. Such work may not exceed amounts greater than those may, which can be contained in a single prefabricated mini-enclosure. Such an enclosure shall conform spatially and geometrically to the localized work area, in order to perform its intended containment function.

LLL. Spot Repair – Any asbestos abatement performed within a facility involving not more than three (3) linear feet or three (3) square feet of asbestos-containing material.

MMM. Thermal System Insulation – material in a building applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain, or water condensation, or for other purposes.

NNN. Time Weighted Average (TWA) – The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fibers per cubic centimeter of air as and eight (8) hour TWA.

OOO. Unfinished Space - Space used for storage, utilities or work area where appearance is not a factor. Examples of an unfinished space include crawlspace; pipe tunnel and similar spaces.

PPP. Visible Emissions - Any emissions, which are visually detectable without the aid of instruments, coming from Asbestos Materials or asbestos-containing waste material or from any asbestos milling, manufacturing, or fabricating operation. This does not include condensed, uncombined water vapor.

QQQ. Visible Residue - Any debris or dust on surfaces in areas within the Work Area where asbestos abatement has taken place and which is visible to the unaided eye. All visible residue is assumed to contain asbestos.

RRR. Waste Generator - Any owner or operator of a source whose act or process produces asbestos-containing waste material.

SSS. Waste Shipment Record - The shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing waste material.

TTT. 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 afterwards thoroughly decontaminated or disposed of, as asbestos-contaminated waste.

UUU. Work Area - Specific area or location where the actual work is being performed or such other area of a facility, which the Commissioner determines, may be hazardous to public health because of such asbestos abatement.

VVV. Worker Decontamination Enclosure System - The portion of a Decontamination Enclosure System designed for controlled passage of workers and authorized visitors, typically consisting of a Clean Room, a Shower Room and an Equipment Room.

Refer to Definitional Section under Abatement Specification, Section 010100 for additional definitions.

1.2 SCOPE

A. The work specified herein shall include the abatement of Asbestos Materials by persons who are knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of Asbestos Materials, and the subsequent cleaning of the affected environment. The Contractor shall have a Competent Person in control on the job site at all times and an Asbestos Abatement Site Supervisor during asbestos abatement work. This person must comply with applicable federal, state and local EH&S Requirements that mandate work practices, and be capable of performing the work of this contract.

B. The Asbestos Contractor shall be licensed by the State of Connecticut in accordance with State of Connecticut Regulations, Sections 20-440-1 through 9 and 20-441. Should any portion of the work be subcontracted, the subcontractor must also be licensed in accordance with these regulations. Site supervisors and workers shall be certified in accordance with Sections 20-437 and 20-438 of the Connecticut General Statutes and Section 20-440-5 of the Regulations of Connecticut State Agencies. The licensing and certification requirements are available from the Environmental Health Services Division, CTDPH, 410 Capitol Avenue, P.O. Box 340308, Hartford, CT 06134-0308.

C. The Owner will retain the services of an Environmental Consultant for protection of its interests and those using the building. Abatement monitoring will be conducted throughout asbestos abatement activities.

D. Restore all Work Areas and auxiliary areas utilized during abatement to conditions equal to or better than original. Any damage caused during the performance of abatement activities shall be repaired by the Contractor (e.g., paint peeled off by barrier tape, nail holes, water damage, removal of ceiling tiles or concrete blocks, broken glass, etc.) at no additional expense to the Owner. The Contractor is responsible for protecting all objects in Work Areas that are permanent fixtures or too large to remove.

E. The Contractor shall be responsible for the following general requirements:
   1. Obtain all approvals and permits, and submit all notifications required.
   2. Provide, erect, and maintain all planking, bracing, shoring, barricades, and warning signs.
   3. Unless otherwise specified, all equipment, fixtures, piping and debris resulting from demolition shall become the property of the Contractor and shall be removed from the premises.
   4. Materials to be reused shall be removed with the utmost care to prevent damage of any kind. All material to be reused shall be stored as directed. The Contractor shall coordinate with the Owner as to the storage location.
   5. Materials not scheduled for reuse shall be removed from the site and disposed of in accordance with all applicable federal, state and local EH&S Requirements.
   6. Provide OSHA required personal monitoring to ensure adequate respiratory protection for each worker.

F. Protect and preserve in operating condition, all utilities traversing the building and site. Damage to any utility due to work under this Contract shall be repaired to the satisfaction of the Owner at no cost to the Owner.

1.3 DESCRIPTION OF WORK

A. The Contractor shall supply all labor, materials, equipment, services, insurance, and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these specifications.

B. Coordinate asbestos abatement work with Owner representatives and Environmental Consultant.

C. All abatement workers will provide all necessary certifications and photo identification for the record.

D. The Owner or Environmental Consultant has the authority to order all work to stop if he determines that work is not being performed per state and federal regulations, or the health and safety of workers and building occupants is or may be at risk. There will be no additional fees billed to the Owner because of a stop work order.

E. The asbestos abatement work shall include the removal of exposed and concealed asbestos-containing materials (ACM) as specified herein. ACM to be abated include the following:

SUMMARY OF ASBESTOS-CONTAINING MATERIALS ***Former Bridge Street School*** ***Suffield, CT***		
Material	***Locations***	***Estimated Quantity***
Pipe Insulation (Aircell)	Crawlspace Areas, Plumbing Walls	500 LF
Pipe Fitting Insulation	Boiler Room, Crawlspace Areas, Coal Storage Room, Bathrooms, Classroom 8 and 9, Basement Storage Room, Plumbing Walls	250 Each
Duct Insulation	Attic	3,360 SF
9”x9” Floor Tile w/Black Mastic	Teacher’s Room, Kitchen, Storage 3, Storage 4, Classroom 9	1,770 SF
Black Mastic for 12”x12” Floor Tile	Main Corridor, East Stairwell, Front Stairwell, Basement Hall, Classroom 8	3,000 SF
Sheet Flooring	Classroom 6	6 SF
Joint Compound	Boys Bathroom, Girls Bathroom, Basement Storage Room, Basement Hall, Classroom 5, Classroom 6	2,050 SF
Sink Undercoating – Pink	All First Floor Classrooms	6 Each
Sink Putty – Tan	All First Floor Classrooms	6 Each
Interior Door Light Glazing	Classroom Doors	16 Each
Exterior Window Caulk	Exterior Wood and Metal Windows	Approximately 55 Windows (1,100 LF)
Exterior Door Caulk	Exterior Wood and Metal Doors	Approximately 8 Doors (200 LF)
Boiler Breeching Insulation	Boiler Room	100 SF
Boiler Flue Cement	Boiler Room	2 SF
Boiler Components	Boiler Room	1 Boiler
Original Electrical Wire Insulation	Seen in Attic Projection Room	Unknown
Roof Flashing and Flashing Tar	Flat Roofs, Shed Roof, Chimney	300 LF (900 SF)
Black Tar Associated with Slate Roof Shingles	Slate Roof	2,000 SF

SUMMARY OF ASBESTOS-CONTAINING MATERIALS ***Former Bridge Street School*** ***Suffield, CT***		
Material	***Locations***	***Estimated Quantity***
Contaminated Dirt	Crawlspace	(Estimated at 750 CF)

Location:
Town of Suffield
(Former Bridge Street School)
90 Bridge Street
Suffield, CT 06078

F. Building floor plans indicating locations of asbestos containing material is included with this specification. Quantities shall be field verified by Contractor. ACM roofing materials are not identified on the drawings.

G. A copy of ATC's sampling reports, including a building floor plan indicating affected areas, is available upon request.

H. A copy of existing surveys, sampling reports, including a building floor plan indicating affected areas, will be available for each project.

1.4 REFERENCES

A. The current issue of each document shall govern. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.

1. OSHA

29 CFR § 1910.1001 - Asbestos, Tremolite, Anthophyllite, and Actinolite.
29 CFR § 1926.21 - Safety Training and Education.
29 CFR § 1926.32 - Definitions.
29 CFR § 1926.51 - Sanitation.
29 CFR § 1926.55 - Gases, vapors, fumes, dusts, and mists.
29 CFR § 1926.59 - Hazard Communication.
29 CFR § 1926.62 – Lead Exposure in Construction.
29 CFR § 1926.200 - Accident Prevention Signs and Tags.
29 CFR § 1926.417 - Lockout and Tagging of Circuits.
29 CFR § 1926.1101 - Asbestos.

2. EPA

40 CFR Part 61, Subpart M - National Emission Standards for Hazardous Air Pollutants; Asbestos NESHAP Revision; Final Rule.
40 CFR Part 763, Subpart E - Asbestos School Hazard Emergency Response Act (ASHERA).

40 CFR Part 763, Subpart G - Worker Protection Rule.
40 CFR Part 763, Appendix C to Subpart E - Asbestos Model Accreditation Plan (MAP).

3. CTDPH

Section 19a-332a-1 through 19a-332a-16 - Standards for Asbestos Abatement.
Section 19a-332e-1 through 19a-332a-8 – Civil Penalties for Violation of Asbestos Abatement Laws.
Section 20-440-1 through 20-440-9 - Licensure and Training Requirements for Persons Engaged in Asbestos Abatement and Asbestos Consultation Services.
Section 20-441 – Refresher Training.

4. American National Standards Institute (ANSI)

ANSI Z9.2 - Fundamentals Governing the Design and Operation of Local Exhaust Systems.
ANSI Z88.2 - Respiratory Protection.

5. American Society of Testing and Materials (ASTM)

ASTM E 84 - Surface Burning Characteristics of Building Materials.
ASTM E 96 - Water Vapor Transmission of Materials.
ASTM E 119 - Fire Tests of Building and Construction Materials.
ASTM E 736 - Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members.
ASTM E 1368 - Visual Inspection of Asbestos Abatement Projects.
ASTM E 1494 - Encapsulants for Spray- or Trowel- Applied Friable Asbestos-Containing Building Materials.

6. Underwriters Laboratories, Inc. (UL)

UL 586 - High-Efficiency, Particulate, Air Filter Units.

1.5 DOCUMENTATION

A. Submit two copies of the following documentation to the Owner and Environmental Consultant to ensure compliance with the applicable regulations. An up-to-date copy shall be retained at the work site at all times.

B. Manufacturer's Catalog Data:
1. Local Exhaust Equipment
2. Vacuum Equipment
3. Respirators
4. Pressure Differential Automatic Recording Instrument
5. Surfactant
6. Chemical Encapsulant
7. Polyethylene Sheeting
8. Airless Sprayers
9. Portable Shower Units
10. Adhesive Removal Chemicals
11. SDS for All Materials Delivered to the Site

12. Letters of Compatibility for Encapsulants and Over coating Materials

C. Statements:
1. State Notification
2. Worker Medical Certification
3. Worker Training Certification
4. Worker Respirator Fit Testing
5. OSHA Laboratory Certification
6. Landfill Approval
7. Safety Plan
8. Respirator Protection Plan
    a. Initial Exposure Assessment
    b. Copies of all required notifications, approvals and permits for the removal, disposal and transport of Asbestos Materials.
    c. Documentation from a physician certifying that all employees who may be exposed to airborne asbestos in excess of the background level have been provided with an opportunity to be medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health affects. In addition, document that personnel have received medical monitoring required in 29 CFR § 1926.1101. They shall also be informed of the specific types of respirators the employee shall be required to wear and the work he/she will be required to perform as well as special work place conditions such as high temperature, high humidity and chemical contaminants which to which he/she may be exposed.
    d. Documentation certifying that all employees have received training in the proper handling of materials that contain asbestos; understand the health implications and risks involved, including the illnesses possible from exposure to airborne asbestos fibers; understands the use and limits of respiratory equipment to be used; and understands the results of monitoring of airborne quantities of asbestos as related to health and respiratory equipment as indicated in 29 CFR § 1926.1101 on an initial and annual basis.
    e. Documentation of respiratory fit testing for all employees who must enter the Work Area. This fit testing shall be in accordance with qualitative procedures as detailed in 29 CFR § 1926.1101.
    f. Establish and supervise in accordance with 29 CFR § 1926.21, a program for the education and training of workers in the recognition, avoidance and prevention of unsafe conditions and the regulations applicable to the work environment to control or eliminate any hazards or other exposure to illness or injury. Include any site-specific information to address health and safety procedures unique to this project.
    g. Establish a written Respiratory Protection Plan in accordance with 29 CFR § 1910.134. This plan shall establish procedures governing the selection and use of respirators and shall include such information as training in the proper use of respirators; medical examination of workers to determine whether or not they may be assigned an activity where respiratory protection is required; training in proper use and limitations of respirators; respirator fit testing; regular inspection and evaluation of the continued effectiveness of the program; and other elements included in the standard.
    h. Establish a written Hazard Communication Plan in accordance with 29 CFR § 1910.1200(e) and 29 CFR § 1926.59(e). This plan shall establish procedures describing how the facility will comply with the standard; describe how SDS's will be obtained and made available for each hazardous chemical used in the work area; describe how information and training will be provided to employees; include a list of

all toxic chemicals known to be present in the work place, cross-referenced to the SDS file; explain how workers will be informed of hazards connected with non-routine tasks such as dealing with accidental spills and leaks; explain how workers will be informed of hazards associated with chemicals contained in unlabeled pipes; and, contain information on how other contract employees will be informed about hazards their employees may encounter while working in the facility.

i. Demonstrate that employee's exposure will be below the PELs. For Class I asbestos work until the employer conducts exposure monitoring and documents that employees on that job will not be exposed in excess of the PELs, or otherwise makes a negative exposure assessment, the employer shall presume that employees are exposed in excess of the TWA and excursion limit.

D. Records:
1. Sign-in/out Logs
2. Daily Contractor Logs
3. Personal Air Sampling Results
4. Waste Shipment Records
5. Pressure Differential Recording Data
6. NPE Inspection and Smoke Test Logs
7. Rental Equipment Statements
   a. When rental equipment is to be used in removal areas or to transport waste materials, submit a copy of written notification provided to the rental company informing them of the nature of use of the rented equipment

1.6 PERSONNEL PROTECTION

A. Respiratory protection shall meet the requirements of OSHA as required in 29 CFR § 1910.134 and 29 CFR § 1926.1101. Provide appropriate respiratory protection for each worker and ensure usage during potential asbestos exposure. Select respirators from among those jointly approved as being acceptable for protection by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part 11. Provide an adequate supply of filter elements for respirators in use.

B. Minimum respiratory protection shall be as follows:

Airborne concentration of asbestos, or conditions of use.	Required Respirator
Not in excess of 10 f/cc (100 x PEL)	Any powered air purifying respirator equipped with high efficiency filters or any supplied-air respirator operated in continuous flow mode.
Not in excess of 100 f/cc (1000 x PEL)	Full face piece supplied air respirator operated in pressure demand mode.

Greater than 100 f/cc (>1000 x PEL) or unknown concentration	Full face piece supplied air respirator operated in pressure demand mode, equipped with an auxiliary positive pressure self-contained breathing apparatus.

a. Respirators assigned for higher airborne fiber concentrations may be used at lower concentrations, or when required respirator use is independent of concentration.

b. A high-efficiency filter means a filter that is at least 99.97 percent efficient against mono-dispersed particles of 0.3 microns in diameter or larger.

C. Provide and require all workers to wear protective clothing in Work Areas where asbestos fiber concentrations exceed permissible limits established by OSHA. Protective clothing shall include impervious coveralls with elastic wrists and ankles, head covering, gloves and foot coverings. Ensure all contaminated protective clothing remains in the Equipment Room for reuse or disposal of as contaminated waste.

D. Ensure that all workers and authorized persons enter and leave the Asbestos Control Area through the Worker Decontamination Enclosure System.

1.7 EQUIPMENT REMOVAL PROCEDURE

A. Clean surfaces of contaminated containers and equipment thoroughly by vacuuming with HEPA filtered equipment and wet wiping before moving such items into the Equipment Decontamination Enclosure System for final cleaning and removal to uncontaminated areas. Ensure that personnel do not leave the Asbestos Control Area through the Equipment Decontamination Enclosure System.

1.8 SEQUENCE OF WORK

A. Proceed in accordance with the sequence of work as mutually agreed upon with the Owner and Environmental Consultant. Work shall be divided into convenient Work Areas, each of which is to be completed as a separate unit. The following sequence of work shall be used for the asbestos abatement work:

1. A visual inspection of the Work Area to determine pre-existing damage to facility components.
2. Release of area to the Contractor.
3. All temporary utilities required for the project shall be onsite and operational prior to the initiation of asbestos work.
4. Selective demo under NPE to access asbestos-containing materials by the Contractor.
5. Abatement of all asbestos-containing materials by the Contractor.
6. Visual inspection and re-occupancy air clearance by the Owner’s Project Monitor for completeness.
7. Cleanup by the Contractor.

1.9 DELIVERY, STORAGE AND HANDLING

A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description. Do not use damaged or deteriorating materials. Material that becomes contaminated with asbestos shall be decontaminated or disposed of as asbestos waste.

1.10 BUILIDING OTHERWISE OCCUPIED REQUIREMENTS

A. No asbestos removal activities are permitted in occupied areas without the approval of the Owner and the Environmental Consultants Project Designer.

B. Notification to the faculty, staff and public occupants will be sent out by the Owner, ten (10) days prior to the start of abatement activities notifying them of the asbestos abatement project scheduled. The notice will also be posted at all entries to the building during abatement activities.

C. Asbestos removal shall be conducted in accordance with applicable EH&S requirements and Project Specifications/Work Plan.

D. The abatement contractor shall provide the documentation included in paragraph 1.5.C to the Environmental Consultant ten (10) days prior to start of asbestos removal activities in each work area for review. No asbestos removal is permitted in an occupied area.

E. The Owners Environmental Consultant will conduct air sampling when onsite at prescribed locations throughout the project. Samples will be collected and read via phase contrast microscopy (PCM) twice per shift. All air samples in occupied areas shall be analyzed at the site prior to the end of the shift, by an analyst currently listed on the AIHA Asbestos Analysts registry and the Connecticut DPH Laboratory Certification Program. The results of the analysis of all samples shall be made available prior to return of building occupants on the next day following the date of collection of the samples.

F. If any air sample analyzed by NIOSH 7400 method is either overloaded with particulate and cannot be analyzed or, if upon analysis the sample fiber concentration exceeds 0.007 f/cc, the area outside the established asbestos work area can be considered contaminated with asbestos. The Project Designer shall conduct an assessment of the potential contamination and the asbestos contractor shall re-establish engineering controls, isolation barriers, abatement work practices, etc. and clean the affected area. An area of the building evacuated due to air sampling data as described above shall not be occupied until: i) the area is cleaned via wet wipe techniques using amended water and HEPA vacuum procedures by the asbestos contractor; and ii) air sampling and analysis of the area satisfies the DPH criteria for re-occupancy.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Fire retardant polyethylene sheeting in roll size to minimize the frequency of joints shall be delivered to job site with factory label indicating four (4) or six (6) mil.

B. Polyethylene disposable bags shall be six (6) mil with pre-printed label. Disposable bags shall be black.

C. Tape shall be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finish or unfinished surfaces. Tape must be capable of adhering under both dry and wet conditions.

D. Surfactant (wetting agent) shall consist of fifty (50) percent polyoxyethylene ether and fifty (50) percent polyoxyethylene ester, or equivalent, and shall be mixed with water to provide a concentration one (1) ounce surfactant to five (5) gallons of water or as directed by the manufacturer.

E. Containers must be impermeable and shall be both air and watertight. Containers shall be labeled in accordance with OSHA Standard 29 CFR § 1926.1101 and EPA 40 CFR Part 61.152 as appropriate.

F. Labels and signs shall conform to OSHA Standard 29 CFR § 1926.1101.

G. Encapsulants shall be of a bridging or penetrating type which has been approved by the Asbestos Project Designer. Usage shall be in accordance with manufacturer's printed technical data. Encapsulant must be compatible with new materials being installed. Encapsulant may be clear or white.

H. Glove-bag assembly shall be manufactured of six (6) mil transparent polyethylene or PVC with two (2) inward projecting long sleeve gloves, an internal pouch for tools, and an attached labeled receptacle for waste. Glove-bag use must be approved by the CTDPH through an AWP.

I. Mastic removal chemicals are prohibited.

2.2 TOOLS AND EQUIPMENT

A. Tools and equipment shall be suitable for asbestos removal.

B. Protective clothing, respirators, filter cartridges, air filters and sample filter cassettes shall be provided in sufficient quantities for the project.

C. Electrical equipment, protective devices, emergency generators and power cables shall conform to all applicable codes.

D. Shower stalls and plumbing shall include sufficient hose length and drain system or an acceptable alternate. Showers shall be equipped with hot and cold or warm running water. One shower stall shall be provided for each eight workers.

E. Exhaust air filtration units shall be equipped with HEPA filters capable of providing sufficient air exhaust to create a minimum pressure differential of 0.02 inches of water column, and to allow a sufficient flow of air through the area. An automatic warning system shall be incorporated into the equipment to indicate pressure drop or unit failure. No air movement system or air filtering equipment shall discharge unfiltered air outside the Asbestos Control Area.

F. All air filtration exhaust tubes shall be exhausted to the exterior of the building.

G. Pressure differential automatic recording instruments shall be provided to ensure exhaust air filtration devices provide the minimum pressure differential required between the Work Area and occupied areas of the facility.

H. Spray equipment shall be capable of mixing wetting agent with water and capable of generating sufficient pressure and volume. Hose length shall be sufficient to reach all of the Asbestos Control Area.

I. Vacuum units, of suitable size and capabilities for the project, shall have HEPA filters capable of trapping and retaining at least 99.97 percent of all monodispersed particles of 0.3 microns in diameter or larger.

J. Mechanical mastic removal equipment shall be suitable for the application and be used only with HEPA shroud attachments.

K. Ladders and/or scaffolds shall be of adequate length, strength and sufficient quantity to support the work schedule.

L. Other materials such as lumber, nails and hardware necessary to construct and dismantle the decontamination enclosures and the barriers that isolate the Work Area shall be provided as appropriate for the work.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS FOR ASBESTOS ABATEMENT

A. A Competent Person and Asbestos Abatement Site Supervisor shall be on the job at all times to ensure the establishment and maintenance of the work areas and proper work practices are followed through completion of the project.

B. Containerize Asbestos Materials removed daily. Do not allow Asbestos Materials to remain on the floor overnight, allowing it to dry out. Fill disposal containers (six (6) mil polyethylene bags or fiber drums) as removal proceeds, seal filled containers, and apply caution labels and clean containers before removal to decontamination system. Bags shall be securely sealed to prevent accidental opening and leakage by taping in gooseneck fashion. Bags may be placed in drums for staging and transportation to the disposal site. Bags shall be decontaminated by Wet Cleaning and HEPA vacuuming before being placed in clean drums and sealed with locking ring tops. Wet clean each container thoroughly before moving to a holding area or to the waste storage container.

C. If at any time during asbestos removal, should the Project Monitor suspect contamination of areas outside the Work Area, the Contractor shall stop all abatement work, take steps to decontaminate these areas, eliminate causes of such contamination, and notify the Owner. Unprotected individuals shall be prohibited from entering contaminated areas until air sampling and visual inspections determine decontamination.

3.2 PREPARATION OF WORK AREA

A. Prior to beginning work, the Owner, Consultant and Contractor shall perform a visual survey of each Work Area and list all pre-existing damage to building components when applicable. The Contractor shall submit to the Owner and/or General Contractor a list, of pre-existing damaged areas.

B. Establish Regulated Areas with warning tape and signs meeting the requirements of OSHA 29 CFR § 1910.1001 and 29 CFR § 1926.1101 at each Regulated Area. In addition, signs shall be

posted at all approaches to Regulated Areas so that an employee may read the sign and take the necessary protective steps before entering the area. Additional signs may require posting following construction of work place enclosure barriers.

C. Utilize engineering controls and personnel protective equipment (PPE) while installing enclosures and supports when Asbestos Materials may be disturbed.

D. When feasible, shut down and lock out electrical power, including all receptacles and light fixtures. Protect receptacles and light fixtures remaining in the Work Area with six (6) mil polyethylene sheeting and seal with tape. Coordinate all power and fire alarm isolation with the General Contractor and/or Owner.

E. Provide temporary power and lighting and ensure safe installation, including ground fault protection, of temporary power sources and equipment in compliance with applicable electrical code and OSHA requirements. The Contractor is responsible for proper connection and installation of electrical wiring for equipment required to complete asbestos removal.

F. Shut down and isolate heating, cooling, and ventilating air systems to prevent contamination and fiber dispersal to other areas of the building. Seal all vents.

G. Pre-clean movable objects within the proposed Work Areas using HEPA filtered vacuum equipment and/or Wet Cleaning methods as appropriate and remove such objects from Work Areas to a temporary location.

H. Pre-clean fixed objects within the proposed Work Areas, using HEPA filtered vacuum equipment and/or Wet Cleaning methods as appropriate, and enclose with two layers of six (6) mil polyethylene sheeting sealed with tape. Objects which must remain in the Work Area and which require special ventilation or enclosure include electrical equipment, pumps, compressors, control panels and meter equipment.

I. Clean the proposed Work Areas using HEPA filtered vacuum equipment and/or Wet Cleaning methods as appropriate. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters.

J. Seal off all windows, doorways, skylights, ducts, grilles, diffusers and any other openings between the Work Area and the uncontaminated areas outside of the Work Area with critical barriers. Doorways and corridors, which will not be used for passage during work, must be sealed with fixed critical barriers.

K. Cover floor and wall surfaces with polyethylene sheeting sealed with tape. Polyethylene shall be applied alternately to floors and walls. Cover floors first, with a layer of six (6) mil polyethylene sheeting, so that polyethylene extends at least twelve (12) inches up on walls. Cover walls with a layer of four (4) -mil polyethylene sheeting to twelve (12) inches beyond the wall floor intersection, thus overlapping the floor material by a minimum of twenty-four (24) inches. Repeat the process for the second layer of polyethylene. There shall be no seams in the plastic sheet at wall-to-floor joints.

L. Conspicuously label and maintain emergency and fire exits from the Asbestos Control Area satisfactory to fire officials.

3.3 WORKER DECONTAMINATION ENCLOSURE SYSTEM

A. Establish contiguous to the Work Area, a Worker Decontamination Enclosure System consisting of an Equipment Room, Shower Room and Clean Room in series. Access to the Work Area shall only be through this enclosure.

B. Access between rooms in the Worker Decontamination Enclosure System shall be through double flap-curtained openings (air locks). Other effective designs are permissible. The Clean Room, Shower Room and Equipment Room located within the Worker Decontamination Enclosure, shall be completely sealed ensuring sole source of airflow into the Asbestos Control Area originates from the outside-uncontaminated areas.

C. The Clean Room shall be adequately sized to accommodate workers and shall be equipped with a suitable number of hooks, lockers, shelves, etc., for workers to store personal articles and clothing. Changing areas of the Clean Room shall be suitably screened from areas occupied by the public.

D. The Shower Room shall be of sufficient capacity to accommodate the number of workers. Supply warm water to showers. Provide one shower for each eight workers. No worker or other person shall leave an Asbestos Control Area without showering.

3.4 EQUIPMENT DECONTAMINATION ENCLOSURE SYSTEM

A. Establish contiguous to the Work Area, an Equipment Decontamination Enclosure System consisting of two (2) totally enclosed chambers divided by a double flap curtained opening. Other effective designs are permissible. This enclosure must be constructed to ensure that no personnel enter or exit through this unit.

3.5 SEPARATION OF WORK AREAS FROM OCCUPIED AREAS

A. Occupied areas and/or building space not within the Asbestos Control Area shall be separated from asbestos abatement Work Areas by means of airtight barriers. Barriers at openings with dimensions exceeding two (2) feet in both directions shall be blocked with fixed critical barriers.

B. Do not impair required building exits from any occupied building area. Where normal exits have been blocked by the asbestos work, provide temporary exit signs directing building occupants to the nearest available exit location.

C. Before beginning work within the enclosure and at the beginning of each shift, the NPE shall be inspected for leaks, and any leaks sealed.

D. Create a pressure differential in the range of 0.02 to 0.04 inches of water column between the Work Area and occupied areas by the use of acceptable pressure differential equipment. Provide a sufficient quantity of units to exhaust the volume of air within the Asbestos Control Area a minimum of four (4) times per hour. Continuously monitor the pressure differential between the Work Area and occupied areas utilizing recording type equipment to ensure exhaust air filtration equipment maintains a minimum pressure differential of 0.02 inches of water column.

3.6 REMOVAL OF FRIABLE ASBESTOS MATERIAL

A. Remove friable including non-friable Asbestos Materials identified in accordance with the requirements of this Section.

B. Removal of existing walls, partitions, suspended acoustic ceilings, hard gypsum wallboard and plaster ceilings/walls, fluorescent light fixtures, alarm system components and other ceiling mounted items that interfere with asbestos abatement shall be accomplished after engineering controls have been established.

C. Spray friable materials with amended water, using airless spray equipment capable of providing a "mist" application to reduce the release of fibers during the removal operation. In order to maintain indoor asbestos concentrations at a minimum, remove the wet asbestos in manageable sections. Materials shall not be allowed to dry out. Material drop shall not exceed 8 feet. For heights up to 15 feet, provide inclined chutes or scaffolding to intercept drop. For heights exceeding 15 feet provide enclosed dust-proof chutes.

D. 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 (wire brushes are not permitted). During this work, the surfaces being cleaned shall be kept wet.

3.7 REMOVAL OF NON-FRIABLE RESILIENT FLOORING AND ASSOCIATED MASTIC

A. Resilient flooring shall be removed by approved methods, which minimize the release of asbestos fibers. Mastic may be removed by mechanical means. Chemical removal is prohibited. Mechanical equipment equipped with HEPA shroud attachments may be used to remove flooring mastic. Ensure surfaces have been adequately wetted to prevent dust emissions prior to operation of mechanical mastic removal equipment.

3.8 REMOVAL OF NON-FRIABLE MISCELLANEOUS MATERIAL

A. Non-friable miscellaneous materials shall be removed by approved methods, which minimize the release of asbestos fibers. Materials shall be wetted with amended water prior to removal. Double wrap Asbestos Materials in 6-mil polyethylene sheeting or bags and remove for disposal.

3.9 REMOVAL OF WINDOWS/DOORS FROM BUILDING EXTERIOR

A. Cover floor surfaces with polyethylene sheeting sealed with tape. Polyethylene shall extend a sufficient distance from the work to collect loose material which may fall to the floor during the window removal process. Cover roof surfaces with polyethylene sheeting sealed with tape. Polyethylene shall extend a minimum of 10-feet from building exterior. Install polyethylene sheet over the inside of the window opening and seal with tape. Install labeled barrier tape around work area with proper signage.

B. The windows are to be removed from the opening by methods to minimize damage, wrapped in two (2) layers of 6-mil polyethylene sheeting and labeled for proper disposal. 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 residue (wire brushes are not permitted). During this work, the surfaces being cleaned shall be kept wet.

3.10 ALTERNATIVE WORK PRACTICE (AWP) PROCEDURES

A. The procedures described in this specification are to be utilized at all times. AWP methods may be used if pre-approved by CTDPH. Should the Asbestos Contractor desire to use AWP procedures, which have not been pre-approved by CTDPH, submittal for approval is required.

B. AWP procedures shall provide equivalent or greater protection than the procedures that they replace. Should the Asbestos Contractor desire to use AWP procedures, a CTDPH licensed asbestos project designer must submit in writing a description of the proposed methods to the Environmental Consultant for review. If the procedure is acceptable to the Environmental Consultant, an AWP application may then be forwarded to CTDPH for approval. Failure to secure AWP acceptance or approval shall not be a basis of a claim for additional compensation.

3.11 CLEAN-UP PROCEDURE

A. Remove and containerize all visible accumulations of Asbestos Materials which may have been splattered or collected on the polyethylene wall covering. Carefully remove the cleaned outer layer of polyethylene from the walls, fold inward as material is being removed, and place in disposal containers. Any debris, which may have leaked behind the outer layer, shall be removed by HEPA vacuuming and/or Wet Cleaning.

B. Remove contamination from the exteriors of the negative air machines, scaffolding, ladders, extension cords, hoses and other equipment inside the Work Area. Cleaning may be accomplished by brushing, HEPA vacuuming and/or Wet Cleaning.

C. The Project Monitor shall conduct a thorough visual inspection utilizing a high-intensity flashlight, with the containment barriers in place, to detect visible accumulations of dust or bulk Asbestos Materials remaining in the Work Area. Should dust, debris or residue be detected, the Contractor shall repeat the cleaning, at the Contractor's expense, until the area is in compliance. The visual inspection will detect incomplete work, damage caused by the abatement activity, and inadequate cleanup of the work site. At the conclusion of the final visual inspection, the Contractor and Project Monitor shall certify that they have visually inspected the Work Area (all surfaces including pipes; beams, ledges, walls, ceiling and floor plastic sheet, decontamination unit, etc.) and have found no dust, debris or residue.

D. Once the area has been re-cleaned, any equipment, tools or materials not required for completion of the work, shall be removed from the Work Area. Negative air filtration devices shall remain in place and operating for the remainder of the clean-up operation.

E. Apply a lock-down encapsulant to all surfaces within the Work Area from which asbestos has been removed and the cleaned inner layer of polyethylene.

F. After clearance air sampling is conducted and fiber concentrations are below 0.01 f/cc or less than 70 structures per cubic centimeter. Remove all remaining polyethylene, including critical barriers, and Decontamination Enclosure System(s) leaving negative air filtration devices in operation. HEPA vacuum and/or wet wipe any visible residue, which is uncovered during this process.

3.12 CLEARANCE AIR SAMPLING

A. Re-occupancy clearance air sampling will be conducted by the Project Monitor in accordance with the re-occupancy clearance criteria as set forth in the Regulations of Connecticut State Agencies, Section 19a-333-7.

B. Post-abatement clearance air monitoring requirements are as follows:
   1. Air sampling will not begin until at least 2 hours after Wet Cleaning has been completed and no visible water or condensation remain.
   2. Sampling equipment will be placed at random around the Work Area. If the Work Area contains the number of rooms equivalent to the number of required samples based on floor area, a sampler shall be placed in each room. When the number of rooms is greater than the number of samples, a representative number of rooms will be selected.
   3. The representative samplers placed outside the Work Area but within the building will be located to avoid any air that might escape through the isolation barriers and will be approximately 25 feet from the entrance to the Work Area, and 15 feet from the isolation barriers.
   4. The following aggressive air sampling procedures will be used within the Work Area during all air clearance monitoring:
      a. Before starting the sampling pumps, direct the exhaust from forced air equipment (such as a 1 horsepower leaf blower) against all walls, ceilings, floors, ledges and other surfaces in the Work Area. This should take at least 5 minutes per 1000 SF of floor area.
      b. Start the sampling pumps and sample for the required time.
      c. Turn off the pump when sampling is complete.
   5. Air volumes taken for clearance sampling shall be sufficient to accurately determine (to a 95 percent probability) fiber concentrations to 0.01 f/cc of air or be less than 70 structures per cubic centimeter as determined by an accredited laboratory.
   6. Each homogeneous Work Area, which does not meet the clearance criteria, shall be thoroughly re-cleaned using HEPA vacuuming and/or Wet Cleaning, with the negative pressure ventilation system in operation. New samples shall be collected in the Work Area as described above. The process shall be repeated until the Work Area passes the test, with the cost of repeat sampling being borne entirely by the Contractor.
   7. For an asbestos abatement project with more than one homogeneous Work Area, the release criterion shall be applied independently to each Work Area.

C. Continuous air sampling during construction will be conducted by the Project Monitor. Re-occupancy clearance testing will be in accordance with CTDPH requirements.

3.13 CONTRACTOR RESPONSIBILITY

A. Conduct air sampling, as necessary, to assure that workers are using appropriate respiratory protection in accordance with OSHA Standard 29 CFR § 1926.1101. Perform monitoring to determine accurately the airborne concentrations of asbestos to which employees may be exposed. Determinations of employee exposure shall be made from breathing zone air samples that are representative of the 8-hour TWA and 30-minute short-term exposures of each employee. Documentation of air sampling results must be recorded at the work site within twenty-four (24) hours of receipt of results, and shall be available for review until the job is complete.

3.14 DISPOSAL OF ASBESTOS

A. Disposal of Asbestos Materials shall occur at an authorized site and must be in compliance with the requirements of, and authorized by the CTDEEP's Office of Solid Waste Manage mentor other designated agency having jurisdiction over solid waste disposal.

B. Disposal approval shall be obtained prior to commencement of asbestos removal.

C. Warning signs must be attached to vehicles used to transport Asbestos Materials. Warning signs shall be posted during loading and unloading of disposal containers. The signs must be posted so that they are plainly visible.

D. Waste removal dumpsters and cargo areas of transport vehicles shall be lined with a layer of six (6) mil polyethylene sheeting to prevent contamination from leaking or spilled containers. Floor sheeting shall be installed first, and shall be extended up sidewalls 12-inches. Wall sheeting shall overlap floor sheeting 24-inches and tape into place.

E. A copy of the completed Waste Shipment Record shall be provided to the Owner and Environmental Consultant.

3.15 ACTION CRITERIA

A. If air samples collected outside of the Work Area during abatement activities indicate airborne fiber concentrations greater than original background levels or greater than 0.010 f/cc, as determined by Phase Contrast Microscopy, whichever is larger, an examination of the Work Area perimeter shall be conducted and the integrity of barriers shall be restored. Cleanup of surfaces outside the Work Area using HEPA vacuum equipment or Wet Cleaning techniques shall be done prior to resuming abatement activities.

END OF SECTION 028213

PART 1 - INTRODUCTION

1.1 DEFINITIONS

A. "Abatement" means any set of measures designed to eliminate lead hazards in accordance with standards established pursuant to Sections 20-474 through 20-482 and subsections (e) and (f) of Section 19a-88 of the Connecticut General Statutes and regulations of Connecticut State Agencies sections 19a-111-1 through 19a-111-11 and 20-478-1 and 20-478-2 including, but not limited to, the encapsulation, replacement, removal, enclosure or covering of paint, plaster, soil or other material containing toxic levels of lead and all preparation, clean-up, disposal and re-occupancy clearance testing.

B. "Abatement area" means a room or area isolated with containment in accordance with subdivision 19a-111-4(c)(2) of the regulations of Connecticut State Agencies where lead abatement is occurring.

C. "Accessible surface" means any surface which is below five (5) feet in height or is exposed in such a way that a child can come in contact with the surface.

D. “AIHA” American Industrial Hygiene Association.

E. "Apparent lead concentration" (ALC) means the average of at least three displayed lead concentration readings taken using a direct reading type x-ray fluorescence analyzer.

F. "Approved training course" or "approved refresher training course" means a training course or a refresher training course, respectively, approved by the department pursuant to Section 20-477 of the Connecticut General Statutes.

G. "Atomic absorption spectrophotometer" (AAS) means an instrument which measures the lead content in parts per million (ppm) using a lead source lamp, a flame capable of measuring the absorbed energy and converting it to concentration.

H. "Biological monitoring" means the analysis of a person's blood and/or urine, to determine the level of lead contamination in the body.

I. "Certificate" means a document issued by the department indicating successful completion of an approved training course.

J. "Certified historic property" means any building, structure, or site which has been determined historic by the Connecticut Historical Commission. Historic properties must be included in or eligible for inclusion in the national or state registers of historic places.

K. "Certified industrial hygienist" means a person possessing a certificate from the American Board of Industrial Hygiene which indicates that they have specific academic credentials, five years professional experience in industrial hygiene, and have passed an examination given by the American Board of Industrial Hygiene.

L. "Certified lead inspector risk assessor" means any lead consultant who completes an appropriate approved training course and obtains a certificate as a lead inspector risk assessor from the department. A certified lead inspector risk assessor conducts inspections and collects and interprets information to assess the level of risk from lead hazards.

M. "Certified lead abatement supervisor" means any person who completes an appropriate approved training course and obtains a certificate as a lead abatement supervisor from the department. A lead abatement supervisor oversees lead abatement activities.

N. "Certified lead abatement worker" means any person who completes an appropriate approved training course and obtains a certificate as a lead abatement worker from the department. A lead abatement worker performs lead abatement activities.

O. "Certified lead inspector" means any lead consultant who completes an appropriate approved training course and obtains a certificate as a lead inspector from the department. A certified lead inspector conducts inspections to determine the presence of lead in paint, other surface coverings and various environmental media. The terms "lead inspector" and "inspector" mean "certified lead inspector" or "code enforcement official" as defined in subsection (20) of this section unless specifically noted otherwise.

P. "Certified lead planner-project designer" means any lead consultant who completes an appropriate approved training course and obtains a certificate as a lead planner-project designer from the department. A certified lead planner-project designer designs lead abatement and management activities.

Q. "Chewable surface" means any projection one half (0.50) inch or greater from an interior or exterior surface up to five (5) feet in height that can be mouthed by a child. The chewable surface includes window sills, door frames, stair rails and stairs, two (2) inches back from any edge, and any other exterior and interior surface that may be readily chewed by children. Baseboards with an exposed horizontal edge may have quarter round molding applied to the top so that only vertical edges forming outside corners, if present, constitute a chewable surface.

R. "Child" means a person under the age of six (6).

S. "Child day care services" means a program of supplementary care in accordance with section 19a-77(a) of the Connecticut General Statutes.

T. "Child day care center" means a program of supplementary care in accordance with section 19a-77(a)(1) of Connecticut General Statutes.

U. "Code enforcement agency" means the local health department responsible for enforcing the public health code or the local housing agency responsible for enforcing housing code regulations or any other agency designated by the appropriate authority to enforce either the public health code or housing code regulations.

V. "Code enforcement official" means the director of health or a person authorized by him to act on his behalf, the local housing code official or a person authorized by him to act on his behalf, or an agent of the commissioner.

W. "Commissioner" means the commissioner of public health.

X. "Common area" means a room or area that is accessible to all tenants in a building (e.g. hallway, boiler room).

Y. "Containment" means a process for protecting workers, residents, and the environment by controlling exposures to lead dust and debris created during abatement.

Z. "Confirmatory testing" means analysis using atomic absorption spectrophotometry (AAS), graphite furnace atomic absorption spectrophotometry (GFAAS), inductively coupled plasma atomic emission spectrophotometry (ICP-AES), or x-ray fluorescence spectrum analysis spectrometry with a 240 second spectrum analyzer test.

AA. "Corrected lead concentration" (CLC) means the difference between the average displayed lead concentration readings (using a direct reading type x-ray fluorescence analyzer) taken on a painted surface and the average of three readings taken on a bare substrate (substrate contribution).

BB. "Department" means the department of public health.

CC. "Defective surface" means peeling, flaking, chalking, scaling or chipping paint; paint over crumbling, cracking or falling plaster, or plaster with holes in it; paint over a defective or deteriorating substrate; or paint that is damaged in any manner such that a child can get paint from the damaged area.

DD. "Director" means the director of the state program for childhood lead poisoning prevention.

EE. "Dwelling" means every building or shelter used or intended for human habitation, including exterior surfaces and all common areas thereof, and the exterior of any other structure located within the same lot, even if not used for human habitation.

FF. "Dwelling unit" means a room or group of rooms within a dwelling arranged for use as a single household by one or more individuals living together who share living and sleeping facilities.

GG. "Elevated blood lead level" means a blood lead concentration equal to or greater than twenty (20) micrograms per deciliter (ug/dl) or as defined by Connecticut General Statutes section 19a-111.

HH. "Encapsulation" means resurfacing or covering surfaces, and sealing or caulking with durable materials, so as to prevent or control chalking, flaking substances containing toxic levels of lead from becoming part of house dust or accessible to children.

II. "Entity" means any person, partnership, firm, association, corporation, sole proprietorship or any other business concern, state or local government agency or

political subdivision or authority thereof, or any religious, social or union organization, whether operated for profit or otherwise.

JJ. "Epidemiological investigation" means an examination and evaluation to determine the cause of elevated blood lead levels. An epidemiological investigation will include an inspection conducted by a lead inspector to detect lead-based paint and report of findings. This investigation must also include evaluation of other sources such as soil, dust, pottery, gasoline, toys, or occupational exposures, to determine the cause of elevated blood lead levels. The investigation may also include isotopic analysis of lead-containing items.

KK. "Family day care home" means a program of supplementary care in accordance with section 19a-77(a)(3) of Connecticut General Statutes.

LL. "Graphite furnace atomic absorption spectrophotometer" (GFAAS) means an instrument that functions the same as an AAS, with one exception, i.e., the flame is replaced by an electrically heated chamber, a graphite tube, into which the sample is deposited.

MM. "Group day care home" means a program of supplementary care in accordance with section 19a-77(a)(2) of Connecticut General Statutes.

NN. "High efficiency particulate air" (HEPA) means a type of filtering system capable of filtering out particles of 0.3 microns or greater diameter from a body of air at 99.97% efficiency or greater.

OO. "High phosphate detergent" is detergent which contains at least five (5%) percent tri-sodium phosphate (TSP).

PP. "Inductively coupled plasma-atomic emission spectrophotometer" (ICP-AES) is an instrument which measures lead in ppm using a heat source (plasma torch) to dissociate and ionize lead atoms thereby emitting energy. This emission energy is measured and converted to concentration by the detector.

QQ. "Intact surface" means a defect-free surface with no loose, peeling, chipping or flaking paint. Painted surfaces must be free from crumbling, cracking or falling plaster and must not have holes in them. Intact surfaces must not be damaged in any way such that a child can get paint from the damaged area.

RR. "Isotopic analysis" means a physicochemical method which differentiates between chemical elements having different atomic weight and electrical charge.

SS. "Lead-based" refers to paints, glazes, and other surface coverings, containing a toxic level of lead.

TT. "Lead abatement plan" means a written plan that identifies the location of intact and defective lead-based paint and describes how defective lead-based surfaces will be abated and how the environment, health, and safety will be protected. The plan also identifies the location of soil containing lead and describes sampling protocol used and abatement options.

UU. "Lead consultant" means any person who performs lead detection, risk assessment, abatement design or related services in disciplines including, but not necessarily limited to, inspector, inspector risk assessor and planner-project designer.

VV. "Lead management plan" means a written plan that describes how an intact surface with lead-based paint will be monitored to ensure that defective paint surfaces will be identified and abated.

WW. "Licensed lead abatement contractor" means any entity that contracts to perform lead hazard reduction by means of abatement including, but not limited to, the encapsulation, replacement, removal, enclosure or covering of paint, plaster, soil or other material containing toxic levels of lead and obtains a license from the department to conduct such abatement work. The contractor utilizes certified lead abatement supervisors to oversee such lead abatement activities and certified lead abatement workers to perform such abatement activities. The terms "lead abatement contractor" and "abatement contractor" mean "licensed lead abatement contractor" unless specifically noted otherwise.

XX. "Licensed lead consultant contractor" means any entity that contracts to perform lead hazard reduction consultation work utilizing an inspector, inspector risk assessor and/or planner-project designer and obtains a license from the department to conduct such consultation work. The terms "lead consultant contractor" and "consultant contractor" mean "licensed lead consultant contractor" unless specifically noted otherwise.

YY. “(LWP) Lead Work Plan” is a written plan established in accordance with the OSHA Lead Standard for the Construction Industry (29 CFR §1926.62) to protect workers from occupational exposure to lead.

ZZ. “NIOSH” National Institute for Occupational Safety and Health; NIOSH is part of the U.S. Centers for Disease Control and Prevention, in the U.S. Department of Health and Human Services. It has the mandate to assure “every man and woman in the Nation safe and healthful working conditions and to preserve our human resources.”

AAA. “OSHA Action Level” for lead means an airborne lead concentration equal to or greater than is 30 ug/m^3. The AL is based on an 8-hour Time-Weighted Average (TWA)

BBB. “OSHA Permissible Exposure Limit” for lead means an airborne lead concentration equal to or greater than is 50 ug/m^3. The PEL is based on an 8-hour Time-Weighted Average (TWA)

CCC. "Owner" means any person, partnership, firm, association, corporation, sole proprietorship or any other business concern, state or local government agency or political subdivision or authority thereof, or any religious, social or union organization, whether operated for profit or otherwise, who, alone or jointly with others owns, holds, or controls the whole or any part of the deed or title to any property. No holder of an easement, mortgagee, bank or lender holding the mortgage, shall be considered an owner except when the holder of an easement, mortgagee, banker, or lender takes physical possession of the property.

DDD. "Paint removal" means a strategy of abatement which entails stripping lead paint from surfaces.

EEE. "Replacement" means a strategy of abatement which entails the removal of components such as windows, doors and trim that contain toxic levels of lead and installing new components which are lead free.

FFF. “RRP Rule” is an EPA Standard 40 CFR Part 745, Lead Renovation, Repair and Painting Program.

GGG. "Secretary of Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings" means the guidelines and methods approved by the state and federal governments for alterations to historic properties (36 CFR section 67).

HHH. "State laboratory for lead and lead poisoning detection" means the laboratory established by the commissioner, for the purpose of analyzing blood specimens from persons for the presence of lead; and analyzing samples of paint, plaster, soil and other materials, within the laboratory or on site with mobile units, for toxic levels of lead.

III. "State program" means the childhood lead poisoning prevention program established by the department.

JJJ. "Substrate" means the underlying surface which remains after paint is removed.

KKK. "Substrate equivalent lead" (SEL) means the average of at least three displayed lead concentration readings with a direct reading type x-ray fluorescence analyzer after paint is removed from the substrate.

LLL. "Target housing" means any housing constructed prior to 1978, except any zero-bedroom dwelling unit or any housing for the elderly or persons with disabilities unless a child resides or is expected to reside in such dwelling unit or housing.

MMM. "Toxic level of lead" means a level of lead that:

(A) when present in paint offered for sale for use on or in a residential dwelling contains more than 0.06 percent lead by weight as measured by atomic absorption spectrophotometry (AAS), graphite furnace atomic absorption spectrophotometry (GFAAS), or inductively coupled plasma atomic emission spectrophotometry (ICP-AES) or another accurate and precise testing method that has been approved by the commissioner, by a laboratory approved by the department for lead analysis.

(B) when present in a dried paint, plaster or other accessible surface on or in a residential dwelling contains equal to or greater than 0.50 percent lead by dry weight as measured by atomic absorption spectrophotometry (AAS), graphite furnace atomic absorption spectrophotometry (GFAAS), inductively coupled plasma-atomic emission spectrophotometry (ICP-AES) or another accurate and precise testing method that has been approved by the commissioner, by a laboratory approved by the department for lead analysis, or equal to or greater than 1.0 milligrams lead per square centimeter of surface as measured on site by an X-ray fluorescence analyzer or another accurate and precise testing method that has been approved by the commissioner.

NNN. "Treatment" means any method, technique or process designed to change the physical chemical, or biological character or composition of any hazardous waste so as to render it non-hazardous, or to recover it, or to make it safer to transport, store or dispose of, or to make it amenable for recovery, storage, or volume reduction.

OOO. "TSP" means tri-sodium phosphate. A TSP solution contains at least 5% TSP or its equivalent.

PPP. "X-ray fluorescence analyzer (XRF)" means an analytical instrument that measures lead concentration of dried paint on surfaces or in a laboratory sample in milligrams per square centimeter (mg/cm[2]) using a radioactive source within the instrument.

Refer to Definitional Section under Abatement Specification, Section 010000 for additional definitions

1.2 PURPOSE

A. This LWP has been established in accordance with the OSHA Lead Standard for the Construction Industry (29 CFR §1926.62) to protect workers from occupational exposure to lead. Based on survey data, lead paint has been detected on interior and exterior surfaces/components. OSHA requires the initial implementation of all aspects of 29 CFR § 1926.62 for any work which may potentially disturb coatings containing any detectable amount of lead.

1.3 APPLICABILITY

A. This LWP covers all potential lead work and applies to all workers performing or involved in any presumed lead exposure tasks on the job site or buildings managed by the Town of Suffield. The following work activities shall be considered presumed lead exposure tasks until and unless the results of initial air monitoring (see Part 2) indicate otherwise:

1) Manual scraping of painted surfaces
2) Power tool cleaning of painted surfaces
3) Burning/cutting/welding of painted surfaces
4) Compressed air blasting of painted surfaces
5) Demolition of painted surfaces (e.g. brick, concrete, plaster, or gypsum)
6) Clean-up of paint chips and other potentially lead-containing dust or debris
7) Miscellaneous job tasks which may potentially disturb painted surfaces (e.g. drilling, bolt removal, saw-cutting, etc.)

B. The above list should not be considered complete. Any other work activity that may potentially disturb painted surfaces must be brought to the attention of the Owner and Construction Manager.

1.4 SCOPE

A. This LWP is intended to provide a general outline and overview of lead work practices onsite. For detailed and specific information regarding any of the practices or procedures addressed by this LWP, refer to the OSHA Lead Standard for the Construction Industry (29 CFR 1926.62) and USEPA Standard 40 CFR Part 745 (RRP

Rule). Based on survey data, lead paint has been detected on interior and exterior surfaces/components and may include the following (refer to project specific reports for Lead-Based Paint):

1. Window/door components
2. Structural steel
3. Glazed masonry/ceramic components
4. Walls/Ceilings
5. Ceramic/porcelain bath fixtures
6. Exterior building components

1.5 DESCRIPTION OF WORK

A. The Contractor shall supply all labor, materials, equipment, services, insurance (with specific coverage for work on lead) and incidentals which are necessary or required to perform the Work in accordance with applicable state and federal regulations and these specifications.

B. The construction work may include the removal of lead paint from interior or exterior surfaces. Damaged lead paint shall be stabilized completely, allowing the substrate to be prepared and repainted by others without further impact to lead paint.

C. The construction work may include demolition/removal of components which contain lead. Components should be removed intact when feasible. Demolition involving lead-bearing components should be performed so as to minimize dust generation and in compliance with OSHA.

D. A Competent Person shall be on the job at all times to ensure the establishment of proper separation of the Work Area from occupied areas, and proper work practices are followed through project completion.

E. Post warning signs meeting the requirements of OSHA 29 CFR § 1926.62 at each Work Area. In addition, signs shall be posted at all approaches to areas so that employees and the public may observe the sign and take the necessary protective steps before entering the Work Area.

F. Where applicable remove loose and deteriorated paint from surfaces by hand scraping and wet sanding. Perform wet scraping by using a spray bottle or sponge attached to a paint scraper. Wet scraping shall be utilized to prepare surfaces prior to re-painting. Scraper blades should be kept sharp.

G. The Contractor shall utilize paint removal methods that do not damage substrate or adjacent materials that are scheduled to remain.

H. Heat methods for paint removal shall operate at approximately fifteen (15) amps and not exceed 700ºF to prevent vaporizing lead paint per CTDPH. Heat methods shall not damage wood substrate or adjacent materials that are scheduled to remain.

PART 2 - AIR MONITORING

2.1 EXPOSURE MONITORING

A. For destructive lead activities the Contractor is responsible for performing personal air monitoring for lead exposure. The OSHA Action Level (AL) for lead is 30 micrograms per cubic meter of air (ug/m^3). The OSHA Permissible Exposure Limit (PEL) for lead is 50 ug/m^3. Both the AL and the PEL are based on an 8-hour Time-Weighted Average (TWA). Workers exposed to airborne concentrations of lead exceeding the AL require training and medical surveillance. Workers exposed to airborne concentrations of lead exceeding the PEL require respiratory protection, protective work clothing and must comply with all other requirements of the OSHA Lead Standard for the Construction Industry (29 CFR § 1926.62).

B. Initial personal air sampling will be conducted in the breathing zone in order to evaluate worker exposures to airborne lead dust. A minimum of one (1) air sample will be collected for each of the presumed lead exposure tasks listed in Section 1.2 and for any other work activities subsequently classified as presumed lead exposure tasks. Air samples will be collected over 8-hour periods of time in order to allow for a direct comparison to the AL and PEL. The results of this initial exposure monitoring will then be used to determine compliance requirements for each of the presumed lead exposure tasks as follows:

8-Hour TWA Lead Exposure	Job Task Compliance Requirements	Additional Air Sampling
Less than 30 ug/m^3	None (job task considered non-lead work)	None
Between 30 ug/m^3 and 50 ug/m^3	Training and medical surveillance	1 per worker every 6 months
Greater than 50 ug/m^3	All aspects of 29 CFR § 1926.62	1 per worker every 3 months

C. Air samples will be collected in the workers' breathing zones using portable air sampling pumps operating at flow rates of approximately two (2) to three (3) liters per minute (Lpm). Air sampling pumps will be calibrated both before and after each sampling period. Air samples will be analyzed by an AIHA-accredited laboratory using the NIOSH 7082 Method or equivalent.

PART 3 - WORKER PROTECTION

3.1 TRAINING

A. All workers initially performing presumed lead exposure tasks will be required to receive OSHA Lead Awareness Training and/or certification associated with the RRP Rule. Once the results of initial air monitoring are received, any other workers who will be performing job tasks where exposures to airborne lead dust have been determined to exceed the AL of 30 ug/m^3 will also be required to receive this training prior to performing those job tasks.

3.2 MEDICAL SURVEILLANCE

A. All workers initially performing presumed lead exposure tasks will also be required to receive medical surveillance. Medical surveillance includes clearance to wear respiratory protection and blood-testing for blood lead level (BLL). Once the results of initial air monitoring are received, any other workers who will be performing job tasks where exposures to airborne lead dust have been determined to exceed the OSHA Action Level (AL) of 30 ug/m^3 will also be required to receive this medical surveillance prior to performing those job tasks.

B. The AL for lead in blood is 40 micrograms per deciliter (ug/dL). The OSHA Medical Removal Limit (MRL) for lead in blood is 50 ug/dL. Any worker whose initial BLL exceeds the AL of 40 ug/dL will not be permitted to perform any presumed lead exposure tasks. Once the results of initial air monitoring are received, any workers performing job tasks where exposures to airborne lead dust have been determined to exceed the AL of 30 ug/m^3 will be required to receive additional blood-testing every two months for the first six months and then every six months thereafter, provided their BLL remains below the AL of 40 ug/dL. Any worker whose BLL exceeds the AL of 40 ug/dL must continue to receive blood-testing every two months until two consecutive results indicate a BLL less than the AL of 40 ug/dL. Any worker whose BLL exceeds the MRL of 50 ug/dL must be medically removed from lead work until two consecutive blood-testing results show a BLL below the AL of 40 ug/dL.

3.3 ENGINEERING AND WORK PRACTICE CONTROLS

A. All feasible engineering and work practice controls will be implemented during projects in an effort to reduce worker exposures to airborne lead dust below the PEL. Job-specific engineering and work practice controls applicable, include the following:

Job Task	Engineering / Work Practice Controls
Burning / Cutting / Welding	Localized Paint Removal/Abatement
Power Tool Cleaning	Local Exhaust Ventilation (i.e. HEPA Vacuum Shrouds)
Manual Scraping / Demolition	Wet Misting
Compressed Air Blasting	Dust Collection / Ventilation
Clean-Up	HEPA Vacuums / Wet Methods

3.4 RESPIRATORY PROTECTION

A. Respiratory protection will be initially required for all workers performing presumed lead exposure tasks. Workers performing burning, cutting, welding or compressed air blasting will be initially required to wear Powered Air-Purifying Respirators (PAPR). For all other presumed lead exposure tasks, workers will be required to wear either half-face or full-face negative-pressure Air-Purifying Respirators (APR). All workers must receive medical clearance and fit-testing prior to wearing any respiratory protection. Once the results of initial air monitoring are received, appropriate respiratory protection for each job task will be determined based on exposures as follows:

8-Hour TWA Lead Exposure	Respiratory Protection Required
Less than 50 ug/m^3	None
Between 50 ug/m^3 and 500 ug/m^3 w/HEPA	Half-face/Full-face negative-pressure APR
Between 500 ug/m^3 and 50,000 ug/m^3	PAPR w/HEPA

B. Regardless of the results of initial air monitoring, any worker who requests respiratory protection will be provided with a respirator. All respirators will be equipped with High-Efficiency Particulate Air (HEPA) filters, also known as P-100 filters. Workers are responsible for periodic inspection and routine cleaning of their respirators. For additional details and specifics regarding respiratory protection, refer to the OSHA Respiratory Protection Standard (29 CFR § 1910.134).

3.5 PROTECTIVE WORK CLOTHING AND PERSONAL PROTECTIVE EQUIPMENT

A. All workers performing presumed lead exposure tasks will initially be required to wear an outer layer of protective work clothing. Protective work clothing will consist of either a disposable Tyvek suit or cloth coveralls. Once the results of initial air monitoring are received, protective work clothing will only be required for job tasks where exposures to airborne lead dust have been determined to exceed the PEL of 50 ug/m^3. Additional personal protective equipment (PPE) such as hard hats, safety glasses, ear plugs, work boots, fall protection, etc. will be issued to workers in accordance with the contractors' general health and safety plans and programs.

3.6 HYGIENE PRACTICES AND PROCEDURES

A. No food, beverages, tobacco products or cosmetics will be allowed inside any of the regulated Work Areas. Workers performing any presumed lead exposure tasks must remove their outer layer of protective work clothing before leaving the Work Area in order to prevent potential lead contamination from leaving the Work Area. At a minimum, a hand-wash station consisting of clean water, soap and clean towels will be provided for workers to wash their hands and faces prior to eating, drinking, smoking or leaving the job site. If the results of initial air monitoring show any exposures to airborne lead dust exceeding the PEL of 50 ug/m^3, then a decontamination unit consisting of a clean side and a dirty side separated by a shower area will also be provided to allow workers to shower at the end of the work shift before leaving the job site.

PART 4 - ENVIRONMENTAL PROTECTION

4.1 PREPARATION OF WORK AREAS

A. Provide drop cloths to catch falling paint chips and chemical removal agents, if approved, at exterior Work Areas.

B. Cover floor/ground of Work Area following pre-cleaning, with one layer of six (6) mil polyethylene sheeting, duct taped securely at the perimeter.

C. Stored items or fixed objects within the Work Area which cannot be removed from the area prior to abatement activities shall be covered with one layer of six (6) mil polyethylene sheeting, secured with duct tape.

D. Remove the lead paint by methods which will provide the least disturbance to the substrate material and the environment.

E. Building components which have been removed in their entirety shall be recycled where feasible.

F. For waste generated during exterior abatement place 6-mil polyethylene sheeting on the ground extending out from the foundation at least five (5) feet and an additional three (3) feet for each story to a maximum of twenty (20) feet. Secure at the foundation by placing weights on the plastic.

G. Cover all shrubs and bushes to prevent damage from lead waste or dust during exterior abatement.

H. Shut all windows on the face of the building where lead paint removal is occurring. Seal all air conditioner intake grates and vents on the face of the building where lead paint removal is occurring.

4.2 CLEAN-UP AND DECONTAMINATION

A. Clean-up of paint chips and other potential lead-containing dust and debris will be accomplished using HEPA vacuums and wet methods. Dry sweeping or shoveling of any such material is prohibited. Equipment used in the performance of any presumed lead exposure tasks will be decontaminated by HEPA vacuuming and/or wet wiping prior to removal from the Work Area.

4.3 WASTE MANAGEMENT

A. Waste management activities are the responsibility of the Contractor; waste characterization testing shall be performed by the Environmental Consultant. All potential lead-containing construction waste will be collected, stored and isolated for testing by the Environmental Consultant to determine whether or not the waste is hazardous. Such waste includes paint chips, dust and debris, as well as used polyethylene sheeting, respirator filters and disposable PWC. The Environmental Consultant is responsible for composite sampling and analysis of construction waste via Toxicity Characteristic Leachate Procedure (TCLP) to determine lead concentrations. If the results of the TCLP analysis exceed the EPA regulatory limit of 5.0 parts per million (ppm) for leachable lead content, then the waste will be considered hazardous. All Hazardous Material must be handled, transported, stored and disposed in accordance with all applicable EH&S Requirements., including those of the DOT and the EPA.

B. All potential lead-containing waste water will be collected, filtered, stored and tested to determine whether or not the waste water is contaminated. Such waste water includes waste water generated during wet removal or clean-up operations (e.g., pressure-washing or wet-misting), as well as waste water from hand-wash stations and decontamination units (i.e. showers). Consult state or local regulatory guidelines for allowable concentrations of lead in wastewater. Regardless of whether the waste water is contaminated or not, the local sewer/water authority should be contacted prior to disposal of the waste water into any Public Owned Treatment Works in order to ensure compliance with any local regulations.

END OF SECTION 028310

PART 1 - GENERAL

DEFINITIONS

A. Electronic Waste (E-Waste) - Any of the following hazardous wastes that are managed under the universal waste requirements of Connecticut General Statutes §§ 22a-629 thru 22a-640, § 22a-638 and § 22a-630(d)1 of the Regulations of Connecticut State Agencies:
   1. Computers
   2. Monitors
   3. Printers
   4. Electronic Ballasts

B. "RCRA" - or the "Resource Conservation and Recovery Act" is the federal law that sets standards to ensure that hazardous wastes are stored, handled, recycled and disposed of safely.

C. Regulated Hazardous Materials – any State or Federally regulated materials that are considered dangerous to environmental or human health, which include but not limited to; asbestos, lead, and polychlorinated biphenyls.

D. Spill – Means intentional or unintentional spills, leaks and other uncontrolled discharges when the release results in any quantity of PCB oil or other hazardous or universal waste, or petroleum product running off or about to run off the external surface of the equipment or other source as well as the contamination resulting from those releases.

E. Universal Waste – Any of the following hazardous wastes that are managed under the universal waste requirements of 40 CFR Part 273:
   1. Batteries
   2. Thermostats and Switches
   3. Lamps

Refer to Definitional Section under Abatement Specification, Section 010000 for additional definitions

DESCRIPTION OF WORK

F. Coordinate removal and handling of Regulated Hazardous Materials with work included in other sections (e.g. asbestos, lead based paint, Mold).

G. The removal of various building components containing materials which may be considered hazardous or will require special handling and disposal. This removal work includes the following materials:
   1. Materials containing lead
   2. Fluorescent and High Intensity Discharge (HID) lamps
   3. Lead-acid battery electrolyte
   4. Fluorocarbons
   5. Equipment coolant
   6. Equipment containing petroleum products

7. Mercury
8. PCB and Non-PCB containing ballasts
9. Electronic Components

Identified regulated materials within the Former Bridge Street School are as follows:

TABLE 4-1
REGULATED MATERIALS
Former Bridge Street School
Suffield, CT

Component	*Locations*	*Estimated Quantity*
Fluorescent Bulb	All Rooms, All Corridors, All Stairwells, All Bathrooms	245
Lighting Ballast (No PCB's)	All Rooms, All Corridors, All Stairwells, All Bathrooms	127
Emergency/Exit Lamp	Main Corridor, Stairwell, Kitchen	6
Fire Extinguishers	Main Corridor	3
Computers	Kitchen, Classroom 2	63
Computer Monitors	Kitchen	21
Tires	Storage 4	2
Above Ground Storage Tanks (Oil)	Coal Room	2

Contractor shall confirm quantities and materials to be removed.

REFERENCES

H. The current issue of each document shall govern. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.

1. EPA
   40 CFR Part 260 - Hazardous Waste Management Systems: General.
   40 CFR Part 261 - Identification and Listing of Hazardous Waste.
   40 CFR Part 262 - Generators of Hazardous Waste.
   40 CFR Part 263 - Transporters of Hazardous Waste.
   40 CFR Part 264 - Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.
   40 CFR Part 265 - Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.
   40 CFR 268 - Land Disposal Restrictions.

2. CTDEEP
   Section 22a-449(c)-100 through 22a-449(c) 110 and 22a-449(c)-119 of the Regulations of

Connecticut State Agencies - Connecticut Hazardous Waste Regulations.
Section 22a-629 through Section 22a-640 CGS Connecticut E-Waste Law.
Section 22a-638 and Section 22a-630(d)1 RCSA – Standards for the Recycling of Covered. Electronic devices and Annual Registration Renewal Fee for Manufacturers.

SUBMITTALS

I. Submit for Consultants' review and information the below listed data not less than five (5) working days prior to start of activity.
   1. Safety plan for worker protection and protection of adjacent construction.
   2. Spill cleanup contingency plan.
   3. Name, location and evidence of current licensing or legal approval of disposal facility to receive construction/demolition waste, special and hazardous wastes. Submit manifests and record documentation of shipments. The following minimum information shall be included:
      a. Facility name and address.
      b. Name, title and telephone number of contact person.
      c. Copies of waste licenses or permits to confirm that they are permitted to accept the waste materials.
      d. Lists matching each facility with the materials from the project to be sent to each, and specify whether the facility is a recycling, treatment, storage, or disposal facility.
      e. Confirmation from facility that they will accept the types and quantities of wastes being generated from the Work.
   4. Submit a plan for the removal and disposal of Hazardous Materials to ensure compliance with EH&S Requirements. This removal work includes the following materials:
      a. Materials containing lead
      b. Fluorescent and HID lamps
      c. PCB and non-PCB containing ballasts
      d. Lead-acid battery electrolyte, NiCad Batteries
      e. Fluorocarbons
      f. Equipment coolant
      g. Equipment containing petroleum products
      h. Mercury-containing thermostats and switches

REGULATORY REQUIREMENTS

J. Conform to EH&S Requirements for handling, recycling and disposal of hazardous or universal waste materials.

K. Lock out /Tag out electrical power, including all devices and light fixtures in accordance with the Owner's lock out/tag out program. Isolate and remove system components as indicated or required. Coordinate all power and alarm system isolation with the Owner and Environmental Consultant.

L. Do not close or obstruct access to or egress from occupied areas of the building.

SEQUENCING

M. Sequence removal and handling of regulated materials with work included in other sections. Removal activities which could disturb Asbestos Materials shall be performed after establishment of engineering controls as specified in Section 028213.

SALVAGEABLE MATERIALS

N. Items identified within the Work Plan that are not scheduled for reuse have been identified for salvage. Carefully remove these items to avoid damage, and deliver them to the on-site location indicated or directed.

PROJECT CONDITIONS

O. The project areas will be tested for Hazardous Materials by the Environmental Consultant. A copy of the results of previous inspections is available for review.

P. The results of previous inspections were obtained only for the Owner's use and is offered, in good faith for information only, solely for the purpose of placing the Contractor in receipt of all information known to the Owner at this time. Unless otherwise provided, any inspection results provided are not to be considered a part of the Contract Documents. The Owner does not warrant or represent that the information contained in these results is complete or accurate but only that it constitutes a disclosure of the information known to the Owner at this time regarding these conditions.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

PREPARATION

A. Provide, erect, and maintain temporary barriers, including Work Area containment at locations necessary to protect adjacent construction and eliminate unauthorized entry into the Work Area. Provide appropriate signage to identify building evacuation routes during construction.

REMOVAL REQUIREMENTS

B. Perform removals to the extent specified, indicated or necessary to access concealed Regulated Hazardous Materials and to remove other Hazardous Materials specified herein. Conduct demolition and removal activities to minimize interference with adjacent construction scheduled to be retained.

C. Cease operations immediately if adjacent construction appears to be in danger. Notify the Owner. Do not resume operations until directed by the Owner.

D. Should any spill occur during the removal of Hazardous Materials, notify the Owner immediately. Cleanup of spills shall be in accordance with the approved spill cleanup contingency plan.

MATERIALS CONTAINING LEAD

E. Exposure levels for lead in the construction industry are regulated by 29 CFR § 1926.62. Construction activities disturbing surfaces containing lead-based paint (LBP) which are likely to be employed, such as sanding, grinding, welding, cutting and burning, have been known to expose workers to levels of lead in excess of the Permissible Exposure Limit (PEL). Conduct demolition and removal work specified in conformance with these regulations. In addition, construction debris/waste may be classified as hazardous waste. Disposal of hazardous waste material shall be in accordance with 40 CFR Parts 260 through 271 and Regulations of Connecticut State Agencies Section 22a-209-1; 22a-209-8(c); 22a-449(c)-11; and 22a-449(c)-100 through 110. The Contractor is encouraged to recycle metals resulting from removal work to the maximum extent possible.

F. Should materials containing LBP be scheduled for demolition and disposal, collect composite samples of building components, representative of debris to be generated by renovation activities, and submission to a licensed laboratory for Toxicity Characteristic Leaching Procedure (TCLP) analysis. The result of this test will indicate whether the resulting debris generated from building renovation activities will be characterized as hazardous.

G. Workers involved in renovation activities which may disturb LBP must employ lead-safe work practices.

H. To the extent, testing for lead-based paint has been conducted at the facility scheduled for renovation, demolition, reconstruction, alteration, remodeling, or repair, results of LBP testing will be made available by Owner or the Environmental Consultant for review for each project. Under no circumstances shall this information be the sole means used by the Contractor for determining the extent of LBP. The Contractor shall be responsible for verification of all field conditions affecting performance of the Work.

RECYCLING OF FLUORESCENT AND HID LAMPS

I. All fluorescent and HID lamps shall be recycled to the maximum extent possible. Lamps shall be removed from fixtures intact.

J. The Contractor shall manage lamps in the following manner:
   1. Do not break or crush lamps.
   2. Store lamps in packaging or containers that are designed to minimize breakage during storage and shipping.
   3. Broken lamps shall be placed in 55-gallon drums and handled, sotred, recycled and/or disposed of as hazardous waste.
   4. Use bill of lading that contains the following information when shipping to the recycler:
      a. Generator Name and Telephone Number
      b. Recycling Facility Name and Address
      c. EPA Generator ID No.
      d. EPA Manifest Doc. No.
      e. CT Manifest Doc. No.

FLUORESCENT AND HID BALLASTS

K. All light fixture ballasts and capacitors shall be removed using appropriate techniques and PPE.

L. Prior to removal, the Contractor shall uncover and inspect the label on the ballast. All ballasts designated as “NO PCBS” shall be marked with green paint; all other ballasts and capacitors shall be assumed to contain PCBs and shall be marked with red paint. Similar color coding shall be used for the receiving drums. If ballasts containing diethylhexyl phthalate (DEHP) are identified, dispose of them as Hazardous Material. Electronic ballasts shall be removed and properly recycled as e-waste.

M. Removal shall be performed using approved methods and tools that will minimize damage to the light fixture, and ensure a quick, neat removal with the ballast or capacitor intact and undamaged.

N. All ballasts designated as "No PCBs" and that do not contain DEHP, shall be segregated and removed for disposal as construction waste.

LEAD-ACID BATTERY ELECTROLYTE

O. Remove electrolyte solution from lead-acid batteries. Do not dump electrolyte solution onto the ground or into storm drains or sanitary sewers. Use one of the following alternatives for disposal of waste electrolyte solution:
   1. An industrial waste treatment plant approved for neutralizing and disposing of battery acid electrolyte solution.
   2. Transport the electrolyte solution to a state approved hazardous waste disposal site. The method of transportation and equipment shall comply with EH&S Requirements.

FLUOROCARBONS

P. Removal or relocation of equipment containing fluorocarbons shall be performed in such a way as to prevent release of gases to the atmosphere. Refrigerant materials shall be recycled or removed by approved methods.

EQUIPMENT COOLANT

Q. Removal or relocation of equipment containing coolant fluids such as glycol or other anti-freeze agents shall be performed in such a way as to prevent leaks or spills. Coolant fluids shall be recycled or removed by approved methods.

EQUIPMENT CONTAINING PETROLEUM PRODUCTS

R. Carefully drain piping and equipment containing petroleum products. Remove and dispose of oil, hydraulic fluids, and contaminated piping and equipment in accordance with EH&S Requirements.

MERCURY

S. Thermostats, switches, gauges and miscellaneous laboratory equipment shall be checked at the time of removal to determine if these items contain mercury. Removal of laboratory equipment and cabinetry shall be performed in such a way as to prevent fluid leaks or spills. Fluids associated with these items, including associated plumbing piping, shall be evaluated for mercury prior to disposal. Waste generated by this process shall be recycled or disposed of in accordance with EH&S Requirements.

DISPOSAL

T. Contractor is encouraged to salvage material, and equipment for reuse and to recycle solid waste including items such as specified in Section 22a-241b-2 of the Regulations of Connecticut State Agencies.

U. Construction and demolition waste remaining after salvage and recycling is to be disposed of at a landfill approved by the CTDEEP for the disposal of construction and demolition waste.

SCHEDULE OF HAZARDOUS MATERIALS

V. The schedule of identified Hazardous Materials is included with the project Work Plan. The contractor shall coordinate the removal of all building components containing Hazardous Materials or non-Hazardous Materials requiring special handling and disposal or recycling.

W. The quantities of Hazardous Materials listed in the Work Plans are provided for informational purposes only. Contractor shall verify onsite quantities themselves. No additional compensation will be provided for quantities in excess of those verified by the Contractor.

END OF SECTION 028400

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division - 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Related Requirements:
1. Section 01 10 00 “Summary” for use of the premises and phasing requirements.
2. Section 01 22 00 “Unit Prices” for verification of actual quantity of material removed.
3. Section 01 57 13 “Temporary Erosion and Sedimentation Controls” to prevent contamination of adjacent watercourses or other areas of water impoundment.
4. Section 01 74 00 “Cleaning and Waste Management” for overall site housekeeping and waste disposal.
5. Section 01 78 39 “Project Record Documents” for identification of features identified during building demolition and site work.
6. Section 02 82 33 “Removal and Disposal of Asbestos-Containing Material” for building utility components consisting of regulated materials. Section 02 41 19 “Selective Demolition for Hazardous Materials for cutting, capping and removal of utilities.
7. Section 02 41 16.14 “Building Demolition” for cutting, capping and removal of utilities.

B. Cut and cap all mechanical services, drain lines, electric and phone utilities to the building prior to demolition.

C. Fill foot print of the building and any excavations created to complete building demolition and utility removal work. The excavations shall be filled and graded to maintain a safe site.

1.3 REFERENCES

A. The term Standard Specifications used in this Section refers to the State of Connecticut, Department of Transportation "Standard Specifications for Roads, Bridges, and Incidental Construction," latest edition.

1.4 DEFINITIONS

A. Original Grade: The grade that exists at the time of Contract Award.

B. Rough Grade: The completed surface of required excavations greater than 13' foot in width.

C. Rock: Any boulder of 1 cubic yard or more in Volume (1/2 cubic yard for boulder in trenches) or rock in definite ledge formation, which requires the use of mechanical equipment or explosives for removal.

D. Excavation: The removal of material encountered to subgrade elevations and the reuse or disposal of materials removed.

E. Earth Excavation: The removal of all materials other than 'water' and 'rock'.

F. Mass Excavation: The removal of material from an open area whose minimum horizontal dimensions exceeds 13'.

G. Rock Excavation: The removal of materials meeting the definition of rock. Removal of any materials not meeting the definition of rock shall be considered Earth Excavation.

H. Trench Excavation: The removal of material from areas 13 feet or less in its minimal horizontal dimensions and below the elevation of rough grade or original grade, whichever is lower.

I. Unauthorized Excavation: The removal of materials beyond indicated subgrade elevations or dimensions without direction by the Consultant. Unauthorized excavation shall be at the Contractor's expense.

J. Base Course: The layer placed between the sub base and surface pavement in a paving system.

K. Sub base Course: The layer placed between the subgrade and base course in a paving system or the layer placed between the subgrade and surface of a pavement or walk.

L. Subgrade: the uppermost surface of an excavation or the top surface of a fill or backfill immediately below sub base, drainage fill, or topsoil materials.

M. Borrow: Soil material obtained off-site when sufficient approved soil material is not available from excavations.

N. Drainage Fill: Course of washed granular material supporting slab-on-grade placed to cut off upward capillary flow of pore water.

O. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below ground surface.

P. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within building lines.

1.5 QUALITY ASSURANCE

A. Codes and Standards: Perform earthwork complying with requirements of authorities having jurisdiction.

B. Pre-installation Conference:
1. Before commencing work at the site, meet with representatives of the governing authorities, Town, consultants, independent testing agency, and other concerned entities. Review procedures and responsibilities including testing and inspection procedures and requirements. Notify participants at least 3 working days prior to convening conference. Record discussions and agreements and furnish a copy to each participant.

1.6 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt existing utilities serving adjacent facilities or others except when permitted in writing by the Town’s Representative and then only after acceptable temporary utility services have been provided.

1. Provide a minimum 48 hours' notice to the Town's Representative and receive written notice to proceed before interrupting any utility.

1.7 UNIT PRICES

A. Unit Prices, for general requirements applicable to unit prices for site construction.

B. Earth and Rock Excavation Assumptions
1. Unless otherwise specified elsewhere in these documents, Contractors are to assume that all excavation is earth; however, if rock is encountered, it will remain in place unless otherwise directed by the Town and prices will be negotiated in accordance with of the General Conditions.

C. Earth Excavation In Trenches -Basis of Horizontal and Vertical Measurement
1. The basis of measurements and allowance limits for earth excavation in trenches is identical to that indicated for rock excavation in trenches, except that there will be no allowance for 12" below the required elevation. In addition the following will prevail:
a. Maximum allowable widths for earth excavation in trenches without shoring:

Trench Depth Classification	**Add to Nominal ID of Pipe or to Footing Width**
0'-6'	3'
Over 6'-10"	5'
Over 10'-15'	7'

Over 15' deep the width of the trench shall be on the individual case. The final depth of trench will determine the actual width for payment.

D. Unit Prices – Earth and Rock Excavation: (Basis for Payment)
1. Prices include backfill with excavated material if it is suitable. Prices also include all excavation and disposal of all surplus or unsuitable material. Where replacement with the excavated materials is prohibited or a particular backfill material is specified, the cost of the delivered replacement material in a volume equal to the above excavation pay limits minus the volume of the items installed in the trench shall be

EARTH EXCAVATION - HAND	UNIT	$ADD	$DEDUCT
1) In trenches 0'-6' deep	CY	50.00	35.00
2) In trenches below 6' deep, prices must be negotiated before work is started	CY		

EARTH EXCAVATION - MACHINE	UNIT	$ADD	$DEDUCT
1) Open Area, all Depths	CY	6.50	4.50
2) In trenches 0' -6' deep	CY	10.00	8.25
6'-10'deep	CY	14.00	10.00
Over 6'-15'deep	CY	20.00	16.50

E. Unit Prices – Unsuitable Soil
   1. Prices include removal, transportation and disposal of waste material deemed unsuitable to remain due to materials composition or contamination.

1.8 SUBMITTALS

A. Submit for Town's review and one (1) copy of the information the below listed data not less than 5 working days prior to start of activity.
   1. Manufacturer's standard catalog data for materials and products proposed for use.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide approved borrow soil materials from off-site when sufficient approved soil materials are not available from excavations.

B. Satisfactory Soil Materials: ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, and SM; free of rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter.

C. Unsatisfactory Soil Materials: ASTM D 2487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH, and PT.

D. Backfill and Fill Materials: Satisfactory soil materials.

E. Sub-base and Base Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand, ASTM D 2940, with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No.200 sieve.

F. Engineered Fill: Sub-base or base materials.

G. Bedding Material: Sub-base or base materials with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No.200 sieve.

H. Drainage Fill: Washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel, ASTM D 448, coarse aggregate grading size 57, with 100 percent passing a 1-1/2-inch sieve and not more than 5 percent passing a No.8 sieve.

I. Filtering Material: Evenly graded mixture of natural or crushed gravel or crushed stone and natural sand, with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No.50 sieve.

J. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 SOIL MATERIALS TO WITHIN 3 FEET OF FINISH GRADE

A. All demolition material is to be removed from the site except as approved by the Consultant and the Town. The Contractor shall furnish certification, with analytical supporting data, that the

material furnished is natural soil as defined by Sections 22a-133k-1, 2 and 3 of the Regulations of Connecticut State Agencies (RCSA) free of contaminants.

B. General: Provide approved borrow soil materials from off-site when sufficient approved soil materials are not available from excavations. Gradation requirements shall be determined by AASHTO T11 and T27.

1. Borrow material shall from on-site or off-site sources shall contain salt levels less than 1.0 milliohms/cm as measured by electrical conductivity (EC2) of a 1:2 soil-water suspension (Test minus sieve #4 material.). Borrow material with levels of salt in excess of this level will be considered unsuitable material and shall be removed from the site by the Contractor at no additional cost to the Town.
2. Borrow material from on-site and off-site sources shall contain levels of heavy metals or PCB less than the following levels:

Toxic Elements	Maximum Concentration (mg/kg dry weight)
Arsenic	30
Boron	300
Cadmium	14
Chromium	1000
Copper	1000
Lead	300
Mercury	10
Molybdenum	10
Nickel	200
Selenium	36
Zinc	2500
PCBs	1

3. Borrow material with levels of heavy metals and PCBs in excess of these levels will be considered unsuitable material and shall be removed by the Contractor from the site and disposed of legally at no additional cost to the Town.
4. Satisfactory Soil Materials: ASTM D 2487 soil classification groups GW, GP, SW, and SP; free of rock or gravel larger than 2 in. in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter.
5. Unsatisfactory Soil Materials: ASTM D 2487 soil classification groups GC, GM, SC, SM, ML, MH, CL, CH, OL, OH, and PT.

2.3 SOIL MATERIALS FOR FILLS DEEPER THAN 3 FEET FROM FINISH GRADE

A. General: Provide approved borrow soil materials from on-site or off-site sources that meet the following requirements:

1. Soil materials shall be free from rocks greater than 4inches in diameter or length, which have largest dimension no greater than ¾ lift thickness, or are no greater than ½ ft.^{3} in volume. Do not use any foreign matter, such as construction debris, trash, wood, roots, leaves, sod, organic matter, or soft clay and silt. Sound pieces of building stone, masonry, and concrete from on-site sources subject to the same size limitations as stone, may be employed in backfill. Individual pieces shall be mixed into general backfill material, leaving no voids between pieces. Backfill shall be clean, non-organic material, of non-swelling character, capable of being readily compacted to form a solid, stable

embankment. Pieces of bituminous pavement shall be excluded from the backfill unless their use is expressly permitted by the Town, in which case they shall be broken up as directed. Materials containing ice or frozen lumps shall not be employed.

2. Frozen Material:
   a. Do not backfill with or on frozen materials.
   b. Remove, or otherwise treat as necessary, previously placed material that has frozen prior to placing backfill.
3. Wet Material:
   a. Do not mechanically or hand compact material that is, in the opinion of the Engineer, too wet.
   b. Do not continue backfilling until the previously placed and new materials have dried sufficiently to permit proper compaction.

2.4 CONCRETE

A. Concrete for bulkheads and other miscellaneous use shall be 2,500 psi, minimum compressive strength at 28 days, with ½" maximum size coarse aggregate.

2.5 BLACK STEEL PIPE

A. Pipe: Standard weight, hot dipped galvanized, black steel pipe conforming to ASTM A53, Grade A or B. Pipe shall have screwed ends.

B. Screwed Fittings: Cast iron screwed, Class 125 meeting ANSI B16.4. Fittings shall be galvanized.

2.6 COPPER TUBING

A. Pipe: Type K, soft annealed copper tubing meeting ASTM B88.

B. Flared Fittings: cast bronze, flared pressure fittings meeting ANSI B16.26.

2.7 CAST IRON SOIL PIPE

A. Pipe: hub and spigot centrifugally cast, service weight, with factory-applied tar coating inside and outside, meeting ASTM A74 or Commercial Standard CS-188-59.

B. Fittings: hub and spigot conforming to same standards as pipe.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by site operations.

B. Protect sub grades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.

C. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

D. Protect all trees scheduled to remain within the work site.

3.2 DEWATERING

A. Prevent surface water and subsurface or groundwater from entering excavations, from ponding on prepared subgrade, and from flooding Project site and surrounding area.

B. Protect sub-grade and foundation soils from softening and damage by rain or water accumulation.

3.3 EXCAVATION

A. Classified Excavation: Excavation is classified and includes excavation to required subgrade elevations. Excavation will be classified as earth excavation or rock excavation as follows:
   1. Earth excavation includes excavation of pavements and other obstructions visible on surface; underground structures, utilities, and other items indicated to be demolished and removed; together with soil and other materials encountered that are not classified as rock or unauthorized excavation.
      a. Intermittent drilling, blasting, or ripping to increase production and not necessary to permit excavation of material encountered will be classified as earth excavation.
   2. Rock excavation includes removal and disposal of rock material and obstructions encountered that cannot be removed by the following heavy-duty rock excavating equipment without systematic drilling, blasting, or ripping.
      a. Rock material includes boulders 1/2 cu. yd. or more in volume and rock in beds, ledges, un-stratified masses, and conglomerate deposits.
      b. Excavations more than 10 feet in width and pits more than 30 feet in either length or width are defined as pen excavations.
   3. Do not excavate rock until it has been classified and approved by the Town.

3.4 STABILITY OF EXCAVATONS

A. Comply with local codes, ordinances, and requirements of authorities having jurisdiction to maintain stable excavations.

3.5 BACKFILL

A. Backfill excavations promptly, but not before completing the following:
   1. Acceptance of construction below finish grade.
   2. Surveying locations of underground utilities for record documents.
   3. Testing, inspecting, and approval of underground utilities.
   4. Concrete formwork removal.
   5. Removal of trash and debris from excavation.
   6. Removal of temporary shoring and bracing and sheeting.
   7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

3.6 GRADING

A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade cross sections, lines, and elevations indicated or required.
   1. Provide smooth transition between existing grades and new grade.
   2. Cut soft spots, fill low spots, and trim high spots to conform to required surface tolerances.

B. Site Grading: Slope grades to direct water toward catch basins to prevent ponding.

3.7 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and re-establish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction due to subsequent construction operations or weather conditions.
   1. Scarify or remove and replace material to depth directed by the Consultant; reshape and re-compact at optimum moisture content to the required density.

C. Settling: Where settling occurs during the Project correction period, remove finished surfacing, backfill with additional approved material, compact, and reconstruct surfacing.
   1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.

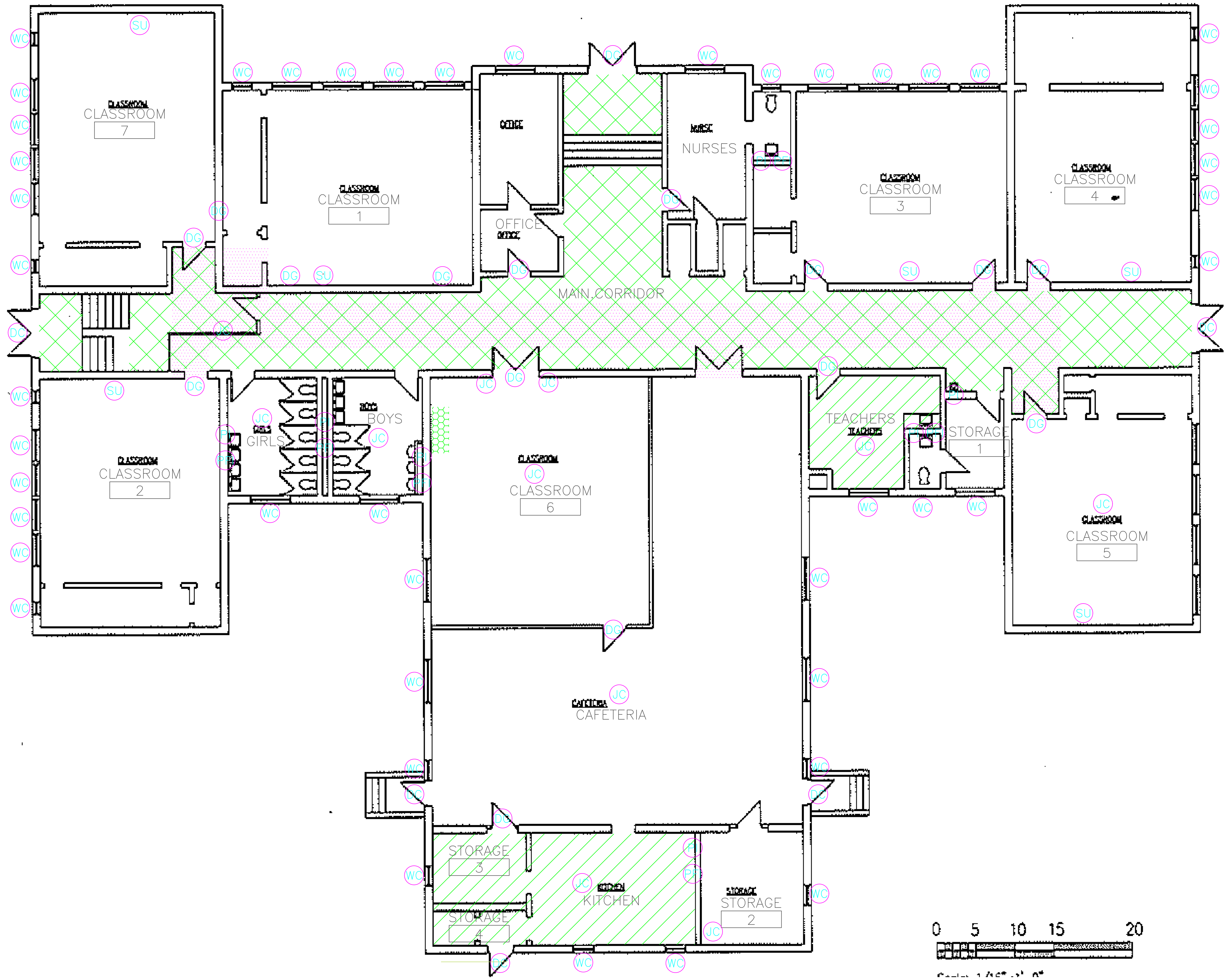
3.8 RESTORATION

A. Contractor shall recondition any existing pavement or lawn areas damaged by construction activities, including storage of materials and equipment and movement of vehicles.

3.9 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off property.

END OF SECTION 33 01 00



SYMBOL	MATERIAL DESCRIPTION
(diagonal hatch)	ACM FLOOR TILE AND MASTIC
(cross hatch)	ACM MASTIC
(hexagon hatch)	ACM SHEET FLOORING
(dotted)	ACM DUCT INSULATION
(orange hatch)	ACM CONTAMINATED DIRT 2"–4" DEEP
PI	ACM PIPE INSULATION
PFI	ACM PIPE FITTING INSULATION
WC	ACM WINDOW CAULK
DC	ACM DOOR CAULK
SU	ACM SINK UNDERCOAT AND PUTTY
DG	ACM DOOR LIGHT GLAZE
BI	ACM BREECHING INSULATION
JC	ACM JOINT COMPOUND
●	ACM PIPE FITTING CLUSTERS IN CRAWLSPACE

HAZARDOUS MATERIALS REMOVAL NOTES

1. COORDINATE ALL ASBESTOS REMOVAL ACTIVITIES WITH DEMOLITION PHASING AND SEQUENCING. COORDINATE THE LOCATION OF DEMOLITION AND REMOVAL OF EXISTING CONSTRUCTION PRIOR TO ASBESTOS REMOVAL ACTIVITIES.

2. REMOVE ALL ACM IDENTIFIED AS REQUIRED FOR DEMOLITION WORK.

3. PIPE FITTING LOCATIONS SHOWN ARE AREAS OF KNOWN ACM MATERIAL AND DOES NOT REPRESENT INDIVIDUAL PIPE FITTINGS.

4. ASBESTOS SLATE SHINGLE TAR IS ESTIMATED AT THE PEAKS AND EVES OF THE ROOF. ACM FLASHING AND FLASHING TAR IS LOCATED ON THE FLAT ROOF AREAS.

5. ALL JOINT COMPOUND IN THE BUILDING IS ACM.

6. ALL EXHAUST AIR FILTRATION DEVICES SHALL BE VENTED EXTERIOR TO THE BUILDING.

7. PROVIDE A SUITABLE QUANTITY OF EXHAUST FILTRATION DEVICES TO PROVIDE A MINIMUM OF FOUR (4) AIR CHANGES PER HOUR.

8. ESTABLISH ENGINEERING CONTROLS PRIOR TO ANY REMOVAL, DEMOLITION OR ABATEMENT ACTIVITIES THAT MAY DISTURB ACM.

9. CRAWLSPACE DIRT IS CONTAMINATED WITH ASBESTOS DEBRIS. DIRT CONTAMINATION IS ESTIMATED AT 2"–4" DEEP IDENTIFIED BY HATCHED AREAS.

10. THE USE OF ANY WATER PRESSURE SYSTEM OR APPLICATION TO REMOVE ACM IS PROHIBITED.

11. PERFORM SELECTIVE DEMOLITION FOR HAZARDOUS MATERIALS TO THE EXTENT INDICATED OR NECESSARY TO ACCESS AND REMOVED THE ACM PRIOR TO BUILDING DEMOLITION WORK. THE WORK INCLUDES BUT IS NOT LIMITED TO REMOVAL OF INTERIOR WALLS AND PARTITIONS, EXTERIOR WALLS, FLOOR SLABS AND FLOORING MATERIALS, SUSPENDED AND HARD CEILINGS AND MISCELLANEOUS COMPONENTS NOT SPECIFICALLY DESCRIBED.

12. ALL DEBRIS AND WASTE MATERIALS GENERATED BY SELECTIVE DEMOLITION FOR HAZARDOUS MATERIALS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY IN ACCORDANCE WITH APPLICABLE REGULATIONS.

drawing title: FIRST FLOOR

REVISIONS

mark	date	description

TOWN OF SUFFIELD
FORMER BRIDGE STREET SCHOOL

DRAWING PREPARED BY

ATC Group Services LLC
290 Roberts Street – Suite 301
East Hartford, CT 06108
Tel.(860)282-9924 Fax.(860)282-9826

ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING

project:
ASBESTOS LOCATION DRAWING
FORMER BRIDGE STREET SCHOOL
90 BRIDGE STREET
SUFFIELD, CONNECTICUT 06078

date: 09/23/20
scale: NTS
drawn by: SJJ
approved by:
drawing no. ASB–1
CAD no.
project no. 05944.20.004

SYMBOL	MATERIAL DESCRIPTION
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(cross hatch)	ACM MASTIC
(hexagon hatch)	ACM SHEET FLOORING
(dotted)	ACM DUCT INSULATION
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DG	ACM DOOR LIGHT GLAZE
BI	ACM BREECHING INSULATION
JC	ACM JOINT COMPOUND
●	ACM PIPE FITTING CLUSTERS IN CRAWLSPACE

HAZARDOUS MATERIALS REMOVAL NOTES

1. COORDINATE ALL ASBESTOS REMOVAL ACTIVITIES WITH DEMOLITION PHASING AND SEQUENCING. COORDINATE THE LOCATION OF DEMOLITION AND REMOVAL OF EXISTING CONSTRUCTION PRIOR TO ASBESTOS REMOVAL ACTIVITIES.

2. REMOVE ALL ACM IDENTIFIED AS REQUIRED FOR DEMOLITION WORK.

3. PIPE FITTING LOCATIONS SHOWN ARE AREAS OF KNOWN ACM MATERIAL AND DOES NOT REPRESENT INDIVIDUAL PIPE FITTINGS.

4. ASBESTOS SLATE SHINGLE TAR IS ESTIMATED AT THE PEAKS AND EVES OF THE ROOF. ACM FLASHING AND FLASHING TAR IS LOCATED ON THE FLAT ROOF AREAS.

5. ALL JOINT COMPOUND IN THE BUILDING IS ACM.

6. ALL EXHAUST AIR FILTRATION DEVICES SHALL BE VENTED EXTERIOR TO THE BUILDING.

7. PROVIDE A SUITABLE QUANTITY OF EXHAUST FILTRATION DEVICES TO PROVIDE A MINIMUM OF FOUR (4) AIR CHANGES PER HOUR.

8. ESTABLISH ENGINEERING CONTROLS PRIOR TO ANY REMOVAL, DEMOLITION OR ABATEMENT ACTIVITIES THAT MAY DISTURB ACM.

9. CRAWLSPACE DIRT IS CONTAMINATED WITH ASBESTOS DEBRIS. DIRT CONTAMINATION IS ESTIMATED AT 2"–4" DEEP IDENTIFIED BY HATCHED AREAS.

10. THE USE OF ANY WATER PRESSURE SYSTEM OR APPLICATION TO REMOVE ACM IS PROHIBITED.

11. PERFORM SELECTIVE DEMOLITION FOR HAZARDOUS MATERIALS TO THE EXTENT INDICATED OR NECESSARY TO ACCESS AND REMOVED THE ACM PRIOR TO BUILDING DEMOLITION WORK. THE WORK INCLUDES BUT IS NOT LIMITED TO REMOVAL OF INTERIOR WALLS AND PARTITIONS, EXTERIOR WALLS, FLOOR SLABS AND FLOORING MATERIALS, SUSPENDED AND HARD CEILINGS AND MISCELLANEOUS COMPONENTS NOT SPECIFICALLY DESCRIBED.

12. ALL DEBRIS AND WASTE MATERIALS GENERATED BY SELECTIVE DEMOLITION FOR HAZARDOUS MATERIALS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY IN ACCORDANCE WITH APPLICABLE REGULATIONS.

drawing title: BASEMENT FLOOR

REVISIONS

mark	date	description

TOWN OF SUFFIELD
FORMER BRIDGE STREET SCHOOL

DRAWING PREPARED BY

ATC
ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING

ATC Group Services LLC
290 Roberts Street – Suite 301
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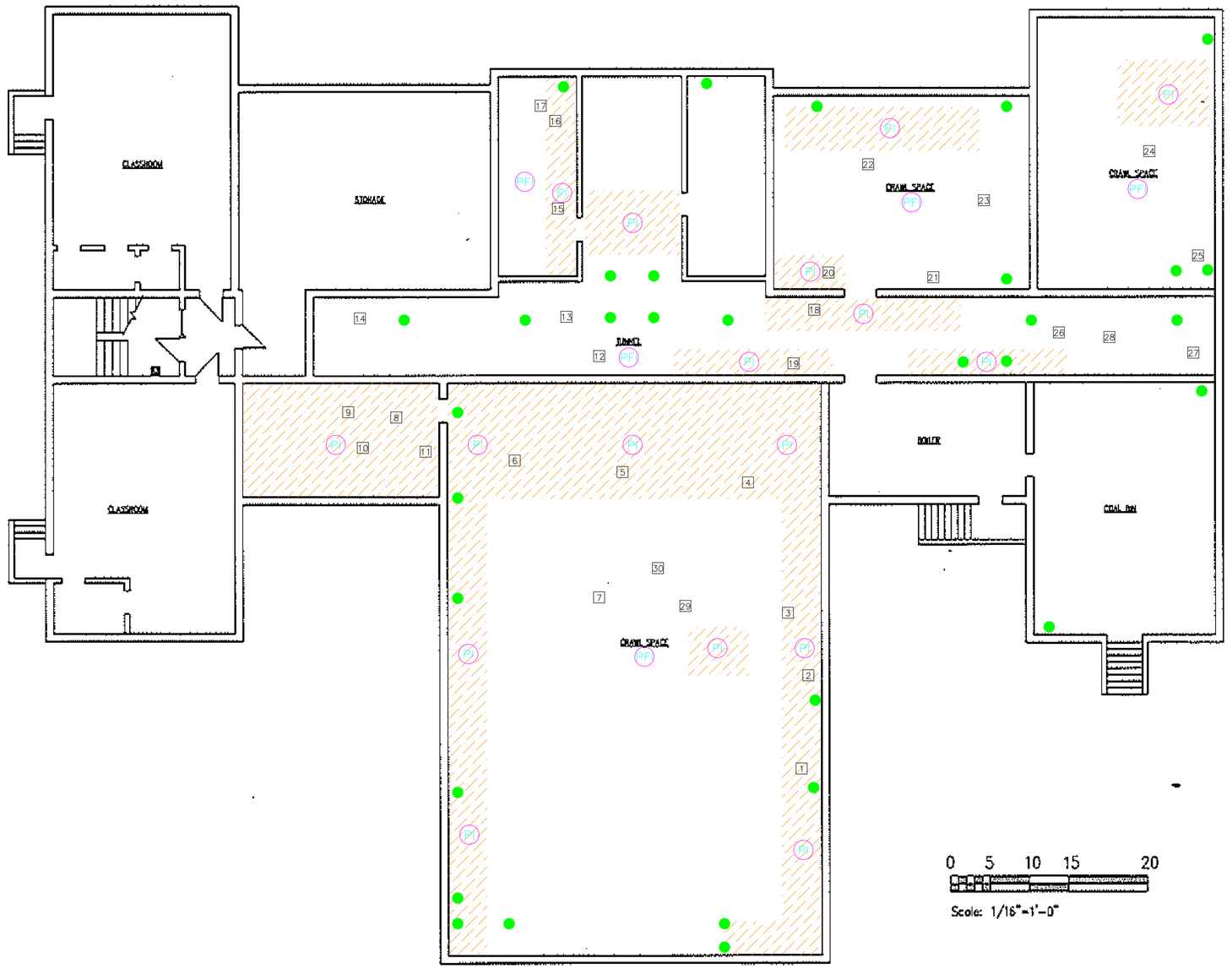
date: 09/23/20
scale: NTS

project: ASBESTOS LOCATION DRAWING
FORMER BRIDGE STREET SCHOOL
90 BRIDGE STREET
SUFFIELD, CONNECTICUT 06078

drawn by: SJJ
approved by:
CAD no.:
project no.: 05944.20.004
drawing no.: ASB–2

SYMBOL	MATERIAL DESCRIPTION
	ACM FLOOR TILE AND MASTIC
	ACM MASTIC
	ACM SHEET FLOORING
	ACM DUCT INSULATION
	ACM CONTAMINATED DIRT 2"–4" DEEP
PI	ACM PIPE INSULATION
PF	ACM PIPE FITTING INSULATION
WC	ACM WINDOW CAULK
DC	ACM DOOR CAULK
SU	ACM SINK UNDERCOAT AND PUTTY
DG	ACM DOOR LIGHT GLAZE
BI	ACM BREECHING INSULATION
JC	ACM JOINT COMPOUND
●	ACM PIPE FITTING CLUSTERS IN CRAWLSPACE



0 5 10 15 20

Scale: 1/16"=1'-0"

HAZARDOUS MATERIALS REMOVAL NOTES

1. COORDINATE ALL ASBESTOS REMOVAL ACTIVITIES WITH DEMOLITION PHASING AND SEQUENCING. COORDINATE THE LOCATION OF DEMOLITION AND REMOVAL OF EXISTING CONSTRUCTION PRIOR TO ASBESTOS REMOVAL ACTIVITIES.

2. REMOVE ALL ACM IDENTIFIED AS REQUIRED FOR DEMOLITION WORK.

3. PIPE FITTING LOCATIONS SHOWN ARE AREAS OF KNOWN ACM MATERIAL AND DOES NOT REPRESENT INDIVIDUAL PIPE FITTINGS.

4. ASBESTOS SLATE SHINGLE TAR IS ESTIMATED AT THE PEAKS AND EVES OF THE ROOF. ACM FLASHING AND FLASHING TAR IS LOCATED ON THE FLAT ROOF AREAS.

5. ALL JOINT COMPOUND IN THE BUILDING IS ACM.

6. ALL EXHAUST AIR FILTRATION DEVICES SHALL BE VENTED EXTERIOR TO THE BUILDING.

7. PROVIDE A SUITABLE QUANTITY OF EXHAUST FILTRATION DEVICES TO PROVIDE A MINIMUM OF FOUR (4) AIR CHANGES PER HOUR.

8. ESTABLISH ENGINEERING CONTROLS PRIOR TO ANY REMOVAL, DEMOLITION OR ABATEMENT ACTIVITIES THAT MAY DISTURB ACM.

9. CRAWLSPACE DIRT IS CONTAMINATED WITH ASBESTOS DEBRIS. DIRT CONTAMINATION IS ESTIMATED AT 2"–4" DEEP IDENTIFIED BY HATCHED AREAS.

10. THE USE OF ANY WATER PRESSURE SYSTEM OR APPLICATION TO REMOVE ACM IS PROHIBITED.

11. PERFORM SELECTIVE DEMOLITION FOR HAZARDOUS MATERIALS TO THE EXTENT INDICATED OR NECESSARY TO ACCESS AND REMOVED THE ACM PRIOR TO BUILDING DEMOLITION WORK. THE WORK INCLUDES BUT IS NOT LIMITED TO REMOVAL OF INTERIOR WALLS AND PARTITIONS, EXTERIOR WALLS, FLOOR SLABS AND FLOORING MATERIALS, SUSPENDED AND HARD CEILINGS AND MISCELLANEOUS COMPONENTS NOT SPECIFICALLY DESCRIBED.

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drawing title: CRAWLSPACE AREAS

REVISIONS

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TOWN OF SUFFIELD
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DRAWING PREPARED BY

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