Project Manual & Specifications

Citizens Block – Hazardous Waste Remediation, Selective Demolition and Roof Replacement

Rehabilitation of the Citizens Block
28 - 34 Park Place
Vernon, Connecticut

August 1, 2019

THE ARCHITECTS
Robert B. Hurd, AIA

56 Arbor Street, Suite 403, Hartford, CT 06106 Phone: (860) 232-2707

This page intentionally left blank

PROJECT DIRECTORY

PROJECT:	Citizens Block - Hazardous Waste Remediation, Selective Demolition & Roof Replacement 28 – 34 Park Place Vernon, CT 06066
OWNER:	Town of Vernon Memorial Building 14 Park Place Vernon, CT 06066 Phone: 860-870-3599
ARCHITECT of RECORD:	THE ARCHITECTS 56 Arbor Street Suite 403 Hartford, CT 06106 Phone: 860-232-2707
ASSOCIATE ARCHITECT:	Crosskey Architects LLC 750 Main Street Suite 150 Hartford, CT 06103 Phone: 860-724-3000
INDUSTRIAL HYGENIST:	Eagle Environmental Inc. 8 South Main Street Suite 3 Terryville, CT 06786 Phone: 860-589-8257
STRUCTURAL ENGINEER:	Cirrus Structural Engineering, LLC 19 Lower Woodland Terrace Columbia, CT 06237 Phone: 860-337-0200
MECHANICAL/ ELECTRICAL ENGINEER:	Long Consulting 26 Mill Plain Road Suite 2E Danbury, CT 06811 Phone: 203-663-3703

This page intentionally left blank

TABLE OF CONTENTS

DIVISION 8 - DOORS & WINDOWS

Division Not Included

DIVISION 9 – FINISHES

Division Not Included

DIVISION 10 - SPECIALTIES

Division Not Included

DIVISION 11 - EQUIPMENT

Division Not Included

DIVISION 12 - FURNISHINGS

Division Not Included

DIVISION 13 – SPECIAL CONSTRUCTION

Division Not Included

DIVISION 14 – CONVEYING EQUIPMENT

Division Not Included

DIVISION 21 – FIRE SUPPRESSION

Division Not Included

DIVISION 22 – PLUMBING

Division Not Included

DIVISION 23 – MECHANICAL

Division Not Included

DIVISION 26 – ELECTRICAL

Division Not Included

DIVISION 27 – COMMUNICATIONS

Division Not Included

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY (ESS)

Division Not Included

DIVISION 31 – EARTHWORK

Division Not Included

DIVISION 32 – EXTERIOR IMPROVEMENTS

Division Not Included

DIVISION 33 – UTILITIES

Division Not Included

END OF SECTION

LIST OF DRAWINGS

GENERAL INFORMATION SHEETS

G-000	Cover Sheet
G-001	General Information

HAZARDOUS MATERIAL ABATEMENT

HM-1	Overall Abatement Plans

STRUCTURAL DRAWINGS

S-101	Roof Framing Plan

ARCHITECTURAL DRAWINGS

AD-100	Overall Demolition Plans
A-101	Roof Plan
A-500	Roof Details

END OF SECTION

This page intentionally left blank

INVITATION TO BID

Notice to Bidders: Bidders may submit bids for the Hazardous Waste Removal, Selective Demolition and Roof Replacement for the Citizens Block located at 28-34 Park Place in Vernon, CT as described in the following Invitation to Bid.

This page intentionally left blank

INVITATION TO BID

LEGAL NOTICE
TOWN OF VERNON
CONTRACT # 2055–8/30/19
CITIZENS BLOCK – HAZARDOUS WASTE REMEDIATION,
SELECTIVE DEMOLITION AND ROOF REPLACEMENT
28 – 34 PARK PLACE, VERNON, CT

The Town of Vernon, Connecticut is seeking qualified, licensed contractors for hazardous waste remediation, selective demolition and roof replacement work at the Citizen's Block, 28-34 Park Place, Vernon, Connecticut. A firm must have demonstrated experience in providing such service and adhere to standards and requirements typical for such service. Further, all bidders must have demonstrated experience with projects in which the Secretary of the Interior's Standards for the Treatment of Historic Buildings governed the work.

There will be a mandatory walk-through at the project site, 28-34 Park Place, Vernon, CT on Thursday, August 22, 2019 at 10:00 AM.

A certified check or bid bond in the amount of five percent (5%) of the total bid must accompany each proposal. Electronic copies of the RFP are available without charge from the office of the town administrator from 9:00 AM until 4:30 PM, Monday through Wednesday, 9:00 AM until 7:00 PM on Thursday, and 9:00 AM until 1:00 PM on Friday; or anytime online at http://www.vernon-ct.gov/legal-notices with reference to Contract # 2055-8/30/19.

All questions about the proposals should be directed to Michael J. Purcaro, Town Administrator, by e-mail at mpurcaro@vernon-ct.gov, with copies to Robert Kleinhans, Director of Public Works, by e-mail at rkleinhans@vernon-ct.gov, no later than 3:30 PM on September 10, 2019. Answers to all received questions shall be posted by September 13, 2019 on the Town's website under the bid section at http://www.vernon-ct.gov/legal-notices with reference to Contract # 2055-8/30/19.

Two (2) copies of all proposals should be submitted in a sealed envelope, with "**BID DOCUMENT – DO NOT OPEN – CONTRACT # 2055-8/30/19**" clearly marked on the outside of the envelope, to: Michael J. Purcaro, Town Administrator, Town of Vernon, Memorial Building, 14 Park Place, 3rd Floor, Vernon, Connecticut 06066 by **11:00 AM on Thursday, September 19, 2019**; at which time proposals shall be opened and read aloud publicly. E-mailed bids will not be accepted.

The selected firm must meet all municipal, state and federal AA and EEO practices and requirements. MBEs/WBEs/SBEs are encouraged to apply. The Town reserves the right to reject any or all proposals in whole or part, to award any one service or group of services or all services, to negotiate with any or all companies submitting proposals, and to enter into an agreement with any company for any services mentioned in this RFP; if it is deemed to be in the best interest of the Town.

Confidentiality: If Respondent believes that any information in its proposal should be treated as confidential, that material shall be clearly marked. The Town shall endeavor to protect confidential materials from disclosure to non-Town employees to the extent required by State or Federal law. In no event will the Town be responsible for the inadvertent disclosure of your response to this RFP.

Michael J. Purcaro
Town Administrator

This page intentionally left blank

INSTRUCTIONS TO BIDDERS

1.1 GENERAL INSTRUCTIONS

These instructions are standard for all proposals issued by the Town of Vernon, Connecticut for the purchase of all supplies, materials, equipment and the furnishing of certain services. The Town may delete, supersede or modify any of these standard instructions for a particular proposal by indicating such change in a section entitled "Special Instructions to Bidders".

1) The attached proposal is signed by the bidder with full knowledge of, and agreement with, the general specifications, conditions and requirements of this bid.

2) Proposals must be submitted on the enclosed form with any required bid security.

3) Bids shall be submitted in sealed envelopes, which shall be addressed to the Town Administrator, 14 Park Place, Vernon, Connecticut 06066 and shall be clearly marked "**BID DOCUMENT - DO NOT OPEN - CONTRACT # 2055-8/30/19**".

4) Bids received later than the time and date specified in the "Invitation to Bid" will not be considered. Withdrawals of bids, received later than the time and date set for the bid opening, will not be considered.

5) All deliveries of commodities hereunder shall comply in every respect with all applicable laws of the Federal Government and the State of Connecticut.

6) The bidder shall insert the price per stated unit and extend a total price for each item. IN THE EVENT THAT THERE IS A DISCREPANCY BETWEEN THE UNIT PRICE AND THE TOTAL PRICE EXTENSION, THE UNIT PRICE WILL GOVERN.

7) In accordance with the provisions of Section 12-412(a) of the Connecticut General Statutes, the Town of Vernon is exempt from the payment of Federal or State tax and such tax or taxes shall not be included in bid prices.

8) Unless otherwise stated herein, all deliveries made under this contract must consist of new merchandise.

9) The Town reserves the right to reject any and all bids, wholly or in part; to waive technical defects, and to make awards in the manner deemed to be in the best interests of the Town.

10) The Town will not accept any additional charges for freight or shipping.

11) The successful bidder must carry Workers' Compensation Insurance, a minimum of $2,000,000, Bodily Injury Liability Insurance, a minimum of $2,000,000 Property Liability Insurance and a minimum motor vehicle liability insurance in the amount of $2,000,000 Single Limit, or comparable coverage’s.

12) All bids must be accompanied by bid security in the sum of not less than five percent (5%) of the total bid and shall be in the form of a bid bond, a certified check, a treasurer's or cashier's check drawn on a National or State bank or trust company and shall be made payable to the "Town of Vernon".

The bid security shall secure the execution of the contract by the successful bidder.

Should any bidder to whom an award is made fail to enter into a contract within ten (10) days, exclusive of Saturdays, Sundays and legal holidays, after notice of the award has been mailed to the bidder, the amount so received from the bidder through his/her bond shall become the property of the Town of Vernon, Connecticut as liquidated damages for failure.

The bid security, exclusive of the successful bidder, will be returned upon execution of the contract, but in no case later than forty-five (45) days after the opening of the bids.

The bid security of the successful bidder shall be held until such time as all conditions of the proposal have been met.

1.2 SPECIAL INSTRUCTIONS TO BIDDERS

1) Read all specifications carefully.

2) All insurance documents must be submitted with the executed contract. Town of Vernon must be listed as Certificate Holder and Additional Insured.

3) Deviations: Any and all deletions, variations and exceptions to the specifications must be stated in writing at time of bidding and must be attached to the "Proposal" section of contract.

4) Not responsible for defects to electronically-mailed contracts.

5) This project will be partially funded by a grant from the State of Connecticut and from Town of Vernon resources. The work will be subject to the Connecticut Commission on Human Rights requirements and State Prevailing Wages. A copy of the current wage rates will be provided to all prospective bidders.

6) All bidders must have demonstrated experience with projects in which the Secretary of the Interior's Standards for the Treatment of Historic Buildings governed the work.

7) **Attendance at the pre-bid site meeting is mandatory. Failure to attend will disqualify a prospective bidder**.

END OF SECTION

BID FORM

Notice to Bidders: Bidders are to submit bids for the Hazardous Waste Removal, Selective Demolition and Roof Replacement for the Citizens Block located at 28-34 Park Place in Vernon, CT on the following Bid Form. Failure to comply will disquaily a prospective bidder.

This page intentionally left blank

BID FORM

TOWN OF VERNON
CONTRACT # 2055–8/30/19
CITIZENS BLOCK – HAZARDOUS WASTE REMEDIATION,
SELECTIVE DEMOLITION AND ROOF REPLACEMENT
28 – 34 PARK PLACE, VERNON, CT

TO: Town of Vernon
Memorial Building
14 Park Place
Vernon, CT 06066

Sirs:

THE UNDERSIGNED HEREBY DECLARES that:

A. No person or persons other than those named herein are interested in this Proposal or in the Contract proposed to be taken; that it is made without any connection with any other person or persons making any proposal for the same work, and is in all respects fair and without collusion or fraud; that no person acting for or employed by the Town of Vernon (the Town) is now or will hereafter be directly or indirectly interested therein, or in any portion of the profits thereof in any manner which is unethical or contrary to law;

B. He has read the information contained herein relating to the work;

C. That in the event a Contract, as contemplated by this Proposal, is awarded to him, he will enter into a written Contract with the Town, and agrees that in case he fails to do so, the Town may determine that the bidder has abandoned the Contract, and thereupon the acceptance of this Proposal and the award shall be null and void, and that the proposal guarantee may be forfeited in whole or in part to the Town as the Town may determine, and he will, by such Contract, agree to furnish all materials herein required, within the time stipulated by the Town, will perform all services and will assume all liabilities and obligations connected therewith, all in accordance with the Contract, Specifications, and Instructions to Bidders, all of which are made a part hereof, and will accept in full payment therefore the following sums, to wit:

BID PROPOSAL

The undersigned representative of_____
hereby submits the following bid proposal on the equipment and/or work as specified:

1) Total cost to supply all labor, materials and equipment of same on Town of Vernon site.

_____DOLLARS

$_____

Name, address and insurance information of installer if subcontracted.

_____

2) WORK SHALL BE COMPLETED 90 CALENDAR DAYS FROM CONTRACT AWARD. EXTENSION SUBJECT TO WRITTEN APPROVAL BY DIRECTOR OF PUBLIC WORKS.

3) BID BOND ATTACHED: YES_____ NO_____

4) Bidder shall submit the name, address, responsible party and phone number of four or more municipalities and/or organizations where comparable work was completed. If none, state so.

1)_____

2)_____

3)_____

4)_____

5) The bidder shall submit unit prices for the following work:
   (a) For roof deck replacement $ _____ per square foot
   (b) See Section 01 02 60 for Hazardous Materials Abatement Unit Prices.

6) The bidder shall submit the CHRO Contract Compliance Regulations "Notification to Bidders" Rev. 09/17/07 as a required attachment to the bid form.

7) The undersigned declares that the signer of this proposal is:
   (a) INDIVIDUAL doing business as
   (b) PARTNERSHIP doing business as
   (c) CORPORATION entitled

organized under the laws of the State of _____ and having its principal offices at _____. The names of all partners of a partnership or the principal offices of a corporation will be submitted upon request.

_____
Signature of Authorized Representative

_____
Print Name and Title

_____
Print Firm Name

_____
Print Street Address

_____
Print City, State and Zip Code

_____
Contact Name

_____
Area Code and Telephone Number

I, _____, hereby certify that I do not hold any executive or appointive office in the government of the Town of Vernon; furthermore, I do not anticipate holding or seeking office in the Town of Vernon for the duration of this contract. I further certify that the firm, which I represent, as named above, is an Equal Opportunity Employer.

_____ _____
Date Signature

COMMISSION ON HUMAN RIGHTS AND OPPORTUNITIES
CONTRACT COMPLIANCE REGULATIONS
NOTIFICATION TO BIDDERS
(Revised 09/17/07)

The contract to be awarded is subject to contract compliance requirements mandated by Sections 4a-60 and 4a-60a of the Connecticut General Statutes; and, when the awarding agency is the State, Sections 46a-71(d) and 46a-81i(d) of the Connecticut General Statutes. There are Contract Compliance Regulations codified at Section 46a-68j-21 through 43 of the Regulations of Connecticut State Agencies, which establish a procedure for awarding all contracts covered by Sections 4a-60 and 46a-71(d) of the Connecticut General Statutes.

According to Section 46a-68j-30(9) of the Contract Compliance Regulations, every agency awarding a contract subject to the contract compliance requirements has an obligation to "aggressively solicit the participation of legitimate minority business enterprises as bidders, contractors, subcontractors and suppliers of materials." "Minority business enterprise" is defined in Section 4a-60 of the Connecticut General Statutes as a business wherein fifty-one percent or more of the capital stock, or assets belong to a person or persons: "(1) Who are active in daily affairs of the enterprise; (2) who have the power to direct the management and policies of the enterprise; and (3) who are members of a minority, as such term is defined in subsection (a) of Section 32-9n." "Minority" groups are defined in Section 32-9n of the Connecticut General Statutes as "(1) Black Americans . . . (2) Hispanic Americans . . . (3) persons who have origins in the Iberian Peninsula . . . (4)Women . . . (5) Asian Pacific Americans and Pacific Islanders; (6) American Indians . . ." An individual with a disability is also a minority business enterprise as provided by Section 4a-60g of the Connecticut General Statutes. The above definitions apply to the contract compliance requirements by virtue of Section 46a-68j-21(11) of the Contract Compliance Regulations.

The awarding agency will consider the following factors when reviewing the bidder's qualifications under the contract compliance requirements:

(a) the bidder's success in implementing an affirmative action plan;
(b) the bidder's success in developing an apprenticeship program complying with Sections 46a-68-1 to 46a-68-17 of the Administrative Regulations of Connecticut State Agencies, inclusive;
(c) the bidder's promise to develop and implement a successful affirmative action plan;
(d) the bidder's submission of employment statistics contained in the "Employment Information Form", indicating that the composition of its workforce is at or near parity when compared to the racial and sexual composition of the workforce in the relevant labor market area; and
(e) the bidder's promise to set aside a portion of the contract for legitimate minority business enterprises. See Section 46a-68j-30(10)(E) of the Contract Compliance Regulations.

INSTRUCTIONS AND OTHER INFORMATION

The following BIDDER CONTRACT COMPLIANCE MONITORING REPORT must be completed in full, signed, and submitted with the bid for this contract. The contract awarding agency and the Commission on Human Rights and Opportunities will use the information contained thereon to determine the bidders compliance to Sections 4a-60 and 4a-60a CONN. GEN. STAT., and Sections 46a-68j-23 of the Regulations of Connecticut State Agencies regarding equal employment opportunity, and the bidder's good faith efforts to include minority business enterprises as subcontractors and suppliers for the work of the contract.

1) Definition of Small Contractor

Section 4a-60g CONN. GEN. STAT. defines a small contractor as a company that has been doing business under the same management and control and has maintained its principal place of business in Connecticut for a one year period immediately prior to its application for certification under this section, had gross revenues not exceeding ten million dollars in the most recently completed fiscal year, and at least fifty-one percent of the ownership of which is held by a person or persons who are active in the daily affairs of the company, and have the power to direct the management and policies of the company, except that a nonprofit corporation shall be construed to be a small contractor if such nonprofit corporation meets the requirements of subparagraphs (A) and (B) of subdivision 4a-60g CONN. GEN. STAT.

2) Description of Job Categories (as used in Part IV Bidder Employment Information) (Page 2)

MANAGEMENT: Managers plan, organize, direct, and control the major functions of an organization through subordinates who are at the managerial or supervisory level. They make policy decisions and set objectives for the company or departments. They are not usually directly involved in production or providing services. Examples include top executives, public relations managers, managers of operations specialties (such as financial, human resources, or purchasing managers), and construction and engineering managers.

BUSINESS AND FINANCIAL OPERATIONS: These occupations include managers and professionals who work with the financial aspects of the business. These occupations include accountants and auditors, purchasing agents, management analysts, labor relations specialists, and budget, credit, and financial analysts.

MARKETING AND SALES: Occupations related to the act or process of buying and selling products and/or services such as sales engineer, retail sales workers and sales representatives including wholesale.

LEGAL OCCUPATIONS: In-House Counsel who is charged with providing legal advice and services in regards to legal issues that may arise during the course of standard business practices. This category also includes assistive legal occupations such as paralegals, legal assistants.

COMPUTER SPECIALISTS: Professionals responsible for the computer operations within a company are grouped in this category. Examples of job titles in this category include computer programmers, software engineers, database administrators, computer scientists, systems analysts, and computer support specialists

ARCHITECTURE AND ENGINEERING: Occupations related to architecture, surveying, engineering, and drafting are included in this category. Some of the job titles in this category include electrical and electronic engineers, surveyors, architects, drafters, mechanical engineers, materials engineers, mapping technicians, and civil engineers.

OFFICE AND ADMINISTRATIVE SUPPORT: All clerical-type work is included in this category. These jobs involve the preparing, transcribing, and preserving of written communications and records; collecting accounts; gathering and distributing information; operating office machines and electronic data processing equipment; and distributing mail. Job titles listed in this category include telephone operators, bill and account collectors, customer service representatives, dispatchers, secretaries and administrative assistants, computer operators and clerks (such as payroll, shipping, stock, mail and file).

BUILDING AND GROUNDS CLEANING AND MAINTENANCE: This category includes occupations involving landscaping, housekeeping, and janitorial services. Job titles found in this category include supervisors of landscaping or housekeeping, janitors, maids, grounds maintenance workers, and pest control workers.

CONSTRUCTION AND EXTRACTION: This category includes construction trades and related occupations. Job titles found in this category include boilermakers, masons (all types), carpenters, construction laborers, electricians, plumbers (and related trades), roofers, sheet metal workers, elevator installers, hazardous materials removal workers, paperhangers, and painters. Paving, surfacing, and tamping equipment operators; drywall and ceiling tile installers; and carpet, floor and tile installers and finishers are also included in this category. First line supervisors, foremen, and helpers in these trades are also grouped in this category..

INSTALLATION, MAINTENANCE AND REPAIR: Occupations involving the installation, maintenance, and repair of equipment are included in this group. Examples of job titles found here are heating, ac, and refrigeration mechanics and installers; telecommunication line installers and repairers; heavy vehicle and mobile equipment service technicians and mechanics; small engine mechanics; security and fire alarm systems installers; electric/electronic repair, industrial, utility and transportation equipment; millwrights; riggers; and manufactured building and mobile home installers. First line supervisors, foremen, and helpers for these jobs are also included in the category.

MATERIAL MOVING WORKERS: The job titles included in this group are Crane and tower operators; dredge, excavating, and lading machine operators; hoist and winch operators; industrial truck and tractor operators; cleaners of vehicles and equipment; laborers and freight, stock, and material movers, hand; machine feeders and offbearers; packers and packagers, hand; pumping station operators; refuse and recyclable material collectors; and miscellaneous material moving workers.

PRODUCTION WORKERS: The job titles included in this category are chemical production machine setters, operators and tenders; crushing/grinding workers; cutting workers; inspectors, testers sorters, samplers, weighers; precious stone/metal workers; painting workers; cementing/gluing machine operators and tenders; etchers/engravers; molders, shapers and casters except for metal and plastic; and production workers.

3) Definition of Racial and Ethnic Terms (as used in Part IV Bidder Employment Information) (Page 3)

White (not of Hispanic Origin)- All persons having origins in any of the original peoples of Europe, North Africa, or the Middle East. Black(not of Hispanic Origin)- All persons having origins in any of the Black racial groups of Africa. Hispanic- All persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.	Asian or Pacific Islander- All persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes China, India, Japan, Korea, the Philippine Islands, and Samoa. American Indian or Alaskan Native- All persons having origins in any of the original peoples of North America, and who maintain cultural identification through tribal affiliation or community recognition.

BIDDER CONTRACT COMPLIANCE MONITORING REPORT

PART I - Bidder Information

Company Name Street Address City & State Chief Executive	Bidder Federal Employer Identification Number_____ Or Social Security Number_____
Major Business Activity (brief description)	Bidder Identification (response optional/definitions on page 1) -Bidder is a small contractor. Yes__ No__ -Bidder is a minority business enterprise Yes__ No__ (If yes, check ownership category) Black___ Hispanic___ Asian American___ American Indian/Alaskan Native___ Iberian Peninsula___ Individual(s) with a Physical Disability___ Female___
Bidder Parent Company (If any)	- Bidder is certified as above by State of CT Yes__ No__
Other Locations in Ct. (If any)	

PART II - Bidder Nondiscrimination Policies and Procedures

1. Does your company have a written Affirmative Action/Equal Employment Opportunity statement posted on company bulletin boards? Yes__ No__	7. Do all of your company contracts and purchase orders contain non-discrimination statements as required by Sections 4a-60 & 4a-60a Conn. Gen. Stat.? Yes__ No__
2. Does your company have the state-mandated sexual harassment prevention in the workplace policy posted on company bulletin boards? Yes__ No__	8. Do you, upon request, provide reasonable accommodation to employees, or applicants for employment, who have physical or mental disability? Yes__ No__
3. Do you notify all recruitment sources in writing of your company's Affirmative Action/Equal Employment Opportunity employment policy? Yes__ No__	9. Does your company have a mandatory retirement age for all employees? Yes__ No__
4. Do your company advertisements contain a written statement that you are an Affirmative Action/Equal Opportunity Employer? Yes__ No__	10. If your company has 50 or more employees, have you provided at least two (2) hours of sexual harassment training to all of your supervisors? Yes__ No__ NA__
5. Do you notify the Ct. State Employment Service of all employment openings with your company? Yes__ No__	11. If your company has apprenticeship programs, do they meet the Affirmative Action/Equal Employment Opportunity requirements of the apprenticeship standards of the Ct. Dept. of Labor? Yes__ No__ NA__
6. Does your company have a collective bargaining agreement with workers? Yes__ No__ 6a. If yes, do the collective bargaining agreements contain non-discrim ination clauses covering all workers? Yes__ No__ 6b. Have you notified each union in writing of your commitments under the nondiscrimination requirements of contracts with the state of Ct? Yes__ No__	12. Does your company have a written affirmative action Plan? Yes__ No__ If no, please explain. 13. Is there a person in your company who is responsible for equal employment opportunity? Yes__ No__ If yes, give name and phone number. _____ _____

PART V - Bidder Hiring and Recruitment Practices (Page 5)

1. Which of the following recruitment sources are used by you? (Check yes or no, and report percent used)				2. Check (X) any of the below listed requirements that you use as a hiring qualification		3. Describe below any other practices or actions that you take which show that you hire, train, and promote employees without discrimination
SOURCE	YES	NO	% of applicants provided by source	(X)		
State Employment Service					Work Experience	
Private Employment Agencies					Ability to Speak or Write English	
Schools and Colleges					Written Tests	
Newspaper Advertisement					High School Diploma	
Walk Ins					College Degree	
Present Employees					Union Membership	
Labor Organizations					Personal Recommendation	
Minority/Community Organizations					Height or Weight	
Others (please identify)					Car Ownership	
					Arrest Record	
					Wage Garnishments	

Certification (Read this form and check your statements on it CAREFULLY before signing). I certify that the statements made by me on this BIDDER CONTRACT COMPLIANCE MONITORING REPORT are complete and true to the best of my knowledge and belief, and are made in good faith. I understand that if I knowingly make any misstatements of facts, I am subject to be declared in non-compliance with Section 4a-60, 4a-60a, and related sections of the CONN. GEN. STAT.

(Signature)	(Title)	(Date Signed)	(Telephone)

This page intentionally left blank

AGREEMENT

Notice to Bidders: Town of Vernon Standard Form Agreement where the basis of payment is a Stipulated Sum, shall form the basis of Contract between the Owner and Contractor. The Agreement to be used for the Hazardous Waste Removal, Selective Demolition and Roof Replacement for the Citizens Block located at 28-34 Park Place in Vernon, CT is as follows;

This page intentionally left blank

AGREEMENT

TOWN OF VERNON
CONTRACT # 2055–8/30/19
CITIZENS BLOCK – HAZARDOUS WASTE REMEDIATION,
SELECTIVE DEMOLITION AND ROOF REPLACEMENT
28 – 34 PARK PLACE, VERNON, CT

This agreement, made and concluded by and between the Town of Vernon, a Municipal corporation organized and existing under the laws of the State of Connecticut, acting herein by its Town Administrator duly authorized, hereinafter designated the "Town" and _____ hereinafter designated the "Contractor".

A. WITNESSETH, That said Contractor has agreed, and by these presents does for his, their, or its heirs, executors, administrators, successors, and assigns covenant, promise and agree to and with the said Town, for the consideration hereinafter mentioned and contained, and under the penalty expressed in bonds hereunto annexed, that the said Contractor shall and will, at his, its, or their own proper charge, cost and expense furnish all materials in accordance with this contract and the specifications which are a part hereof, viz.;

CITIZENS BLOCK – HAZARDOUS WASTE REMEDIATION, SELECTIVE DEMOLITION AND ROOF REPLACEMENT AT 28-34 PARK PLACE, VERNON, CT all to be in accordance with the terms of the proposal for said material submitted to the Town Administrator of the Town, and made part of this contract.

B. TOWN ADMINISTRATOR TO BE JUDGE. The Town Administrator of the Town and his duly authorized representatives, hereinafter referred to as the "Administrator" shall be judge of the character, nature and fitness of all the materials furnished under this contract.

C. CONTRACTOR RESPONSIBLE FOR WHOLE WORK. The Contractor shall be responsible for the entire work until its final acceptance, and any unfaithful or imperfect work or defective material that may be discovered at any time before said final acceptance shall be immediately corrected or removed by said Contractor on requirement of the Administrator.

D. DEFECTS IN MATERIAL. In the case the nature of the defect(s) is such that it is not expedient to have them corrected, the Administrator shall have the right to deduct from the amount due the Contractor on the final settlement of the accounts such sum of money as he considers a proper equivalent for the difference between the value of the materials specified and that furnished, or a proper equivalent for the damage.

E. PARTIAL PAYMENT NOT ACCEPTANCE. It is also agreed that this is an entire contract for one whole and complete work, and that no partial payments on account by the Town, nor the presence of the Administrator or inspectors, or their supervision or inspection of work or materials, shall constitute an acceptance of any part of the work before its entire completion and final acceptance.

F. COMMENCEMENT AND COMPLETION OF WORK. The Contractor shall furnish the material contracted for within the time stated therefore in the specifications for this work.

F. EXTENSION OF TIME. If the Contractor is delayed in the prosecution or completion of the work by or on account of any act or omission of the Town, or by strikes or causes beyond control of the Contractor, he shall be entitled to such reasonable extension of time for the completion of the work as may be decided upon by the Administrator, provided, however, that no claim for an extension of time for any reason shall be allowed, unless, within three days after such delay occurs, notice in writing of the fact of said delay, its causes, and the extension claimed, shall be given by the Contractor to the Administrator.

G. TIME LIMITS. All time limits stated in the Contract Documents are of the essence of the Contract.

H. CONTRACTOR'S DUTIES AND LIABILITIES. The Contractor shall comply with all local, state and national laws and regulations, and with all Town ordinances in the prosecution of the work, and shall secure all necessary permits and licenses.

I. CONTRACTOR LIABLE FOR DAMAGES.

a. The Contractor shall indemnify and save harmless the Town, its officer, agents and servants against and from all damages, costs and expenses which they or any of them may suffer by, from or out of any and all claims for payment for materials or labor used or employed in the execution of this contract, and also for injuries or damages received or sustained to person or property, or both, in consequence of or resulting from any work performed by said Contractor, or of or from any negligence in guarding said work, or of or from any act or omission of said Contractor, and said Contractor shall also indemnify and save harmless said Town from all claims under the Workmen's Compensation Act arising under or out of this contract.

b. Employees' Compensation Insurance shall be as provided by Connecticut law and custom.

c. See specifications for required types of insurance.

d. Sub-contractors must be protected by insurance the same as the principal contractor.

e. It is agreed between the parties hereto that the amount of insurance set forth above does not in any way limit the liability of the Contractor to the Town by virtue of his promise to hold the Town harmless so that in the event that any claim results in a settlement or judgment in any amount above said limits, the Contractor shall be personally liable to the Town for the difference.

f. Certificates of the insurance company or companies, must be submitted to the Administrator before the Contractor starts work. Should any insurance expire or be terminated during the period in which the same is required by this contract, the Administrator shall be notified thirty (30) days in advance and such expired or terminated insurance must be replaced with new insurance and a new certificate furnished to the Administrator.

g. Failure to provide the required insurance and certificates may, at the option of the Town, be held to be a willful violation of this Contract.

J. PATENTS. The Contractor shall defend any suits or proceedings brought against the Town

for alleged infringements of patents by or by reason of any material furnished under this contract, and shall pay any damages or costs that may be awarded against the Town as a result of such suits, free of all expense to the Town.

K. AVOIDANCE OF CONTRACT. If this Contract shall be assigned without the written consent of the Administrator, or if at any time the Administrator shall be of the opinion that the work on said material is necessarily or unreasonably delayed, or that the Contractor is willfully violating any of the conditions or agreements of this contract, or that the progress of the work is, in his opinion, being so delayed that said material cannot be supplied within the required time, the Administrator may give written notice, postage prepaid, to the Contractor, at his business address, to that effect. If the Contractor shall not, within ten days after the mailing of such notice, take appropriate measures, in the judgment of the Administrator, to insure the satisfactory completion of the work, he may notify the Contractor in writing, to discontinue all work on said material under this contract; and it is hereby agreed that the Contractor shall thereupon at once stop work and cease to have the right or claim to possession of the material; and the Town may, by means of such other agents or contractors as shall to it seem advisable, complete the work herein described, or such part thereof as it may deem necessary, and may take possession of and use such materials, except as otherwise provided. The Contractor shall not remove any portion of the materials after receiving such notice as aforesaid. And said Town is hereby authorized and empowered to apply sums of money due or to become due to said Contractor under this Contract by way of reduction in damages, and as part payment of such additional expense incurred by the Town as aforesaid.

L. PAYMENTS. The Town will pay and the Contractor will receive, as full compensation for furnishing such materials, the amount stated in the proposal, or the sums of money computed at the several unit prices stated in the proposal submitted by the Contractor to the Administrator. A copy of the proposal is made a part of this Contract. The Town may make such deductions from these sums as are provided for in this Contract.

M. FINAL COMPLETION AND FINAL PAYMENT. Upon receipt of written notice that the work is ready for final inspection and acceptance and upon receipt of Final Application for Payment, the Administrator will promptly make such inspection and, when he finds the work acceptable under the Contract Documents and the contract fully performed, he will promptly issue a final Certificate of Payment stating that to the best of his knowledge, information and belief, and on the basis of his observations and inspections, the work has been completed in accordance with the terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor, and noted in said final Certificate, is due and payable. The Administrator's final Certificate for Payment will constitute a further representation that the conditions precedent to the Contractor's being entitled to final payment as set forth herein had been fulfilled.

The acceptance of final payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and identified by the Contractor as unsettled at the time of the final Application for Payment

N. NO INTEREST TO BE PAID. No interest is to be allowed or paid by the Town upon any monies retained under the provisions of this contract.

O. CONTENTS OF CONTRACT. The information for bidders, the proposal, the specifications,

together with special provisions following herewith, and the bond and any and all additions which may be inserted or attached to any, or all of the sections as listed above, together with the drawings named in the information for bidders are made a part of this Contract.

P. AUTHORITY AND DUTIES OF INSPECTOR. An Inspector is a representative (but not a duly authorized representative as referred to in Article B of this Contract) of the Administrator assigned to make any and all necessary inspections of the work performed and materials furnished by the Contractor. Inspectors shall be authorized to inspect all work done on materials furnished. Such inspection may extend to all or any part of the work and to the preparation of the materials to be used. In case of dispute arising between the Contractor and the Inspector as to materials furnished or the manner of performing the work, the Inspector shall have the authority to reject material or suspend the work until the question at issue can be referred to and decided by the Administrator. The Inspector shall not be authorized to revoke, alter, enlarge, relax or release any requirements of the specifications nor to approve or accept any portion of the work, nor to issue instruction contrary to the plans and specifications. The Inspector shall not act as foreman or perform other duties of the Contractor nor interfere with the management of the work by the Contractor. Any advice which the Inspector may give the Contractor shall in no way be construed as binding the Administrator of the Town in any way nor releasing the Contractor from the fulfillment of the terms of the Contract.

Q. FAIR EMPLOYMENT PRACTICES. The Contractor hereby agrees that neither he nor his subcontractors will refuse to hire or employ or to bar or to discharge from employment an individual or to discriminate against him in compensation or in terms, condition or privilege of employment because of race, color, religious creed, age, sex, national origin or ancestry, except in the case of bona fide occupational qualification or need.

The Contractor further agrees that neither he nor his subcontractors will discharge, expel or otherwise discriminate against any person because he has opposed any unfair employment practice or because he has filed a complaint or testify or assisted in any proceeding under Section 31-127 of the Connecticut General Statutes. The advertisement of employment opportunities will be carried out in such manner as not to restrict such employment so as to discriminate against individuals because of their race, color, religious creed, age, sex, national origin or ancestry, except in the case of a bona fide occupational qualification or need.

The terms stated above are taken from Section 31-126 of the Connecticut General Statutes, "Unfair Employment Practices".

R. LAWS AND JURISDICTION. The parties hereto agree that this contract is subject to the laws and jurisdiction of the State of Connecticut.

S. COMPLIANCE WITH THE IMMIGRATION REFORM AND CONTROL ACT OF 1986. The Contractor hereby agrees that he is aware of and has complied with the hiring and documentation requirements of the Immigration Reform and Control Act of 1986.

The Contractor agrees that it has asked for and examined documentation in order to verify the legal employability of its employees and has executed the appropriate forms attesting thereto pursuant to the Act.

The Contractor further agrees to indemnify and hold the Town harmless from any costs and/or

penalties incurred, including but not limited to fines, attorney's fees and costs arising from a claim of violation of said Act.

T. DISPUTES. The parties agree that any dispute will be submitted to the Superior Court, Judicial District of Tolland, at Rockville, Connecticut.

U. ANTI-TRUST PROVISIONS. The Contractor or Subcontractor offers and agrees to assign to the Town all right, title and interest in and to all causes of action it may have under Section 4 of the Clayton Act, 15 U.S.C. Section 15, or under Chapter 624 of the General Statutes of Connecticut, arising out of the purchase of services, property or intangibles of any kind pursuant to a public purchase contract or subcontract. This assignment shall be made and become effective at the time the Town awards or accepts such contract, without further acknowledgement by the parties.

IN WITNESS WHEREOF, the parties hereto set their hands and seal this

_____ day of _____, 2019.

Signed in the presence of:

_____

_____

THE TOWN OF VERNON:

By:_____
Michael J. Pucaro
Town Administrator

IN WITNESS WHEREOF, the parties hereto set their hands and seal this

_____ day of _____, 2019.

Signed in the presence of:

_____

_____

By:_____
Name:
Title:

This page intentionally left blank

PREVAILING WAGE RATES

Notice to Bidders: Each contractor that is awarded a contract after October 1, 2002 for the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project that falls under the provisions of section 31-53 of the general statutes shall utilize hourly wage rates as published by the Labor Commissioner, for the duration of such contract. The adjusted prevailing wage rate schedule to be used for this project are as follows;

This page intentionally left blank

Important Information:

For use with Building, Heavy/Highway, and Residential

Welders: Rate for craft to which welding is incidental.

*Note: Hazardous waste removal work receives additional $1.25 per hour for truck drivers.

**Note: Hazardous waste premium $3.00 per hour over classified rate.

ALL Cranes: When crane operator is operating equipment that requires a fully licensed crane operator to operate he receives an extra $4.00 premium in addition to the hourly wage rate and benefit contributions:

1) Crane handling or erecting structural steel or stone; hoisting engineer (2 drums or over)
2) Cranes (100 ton rate capacity and over) Bauer Drill/Caisson
3) Cranes (under 100 ton rated capacity)

Crane with boom including jib, 150 feet - $1.50 extra.

Crane with boom including jib, 200 feet - $2.50 extra.

Crane with boom including jib, 250 feet - $5.00 extra.

Crane with boom including jib, 300 feet - $7.00 extra.

Crane with boom including jib, 400 feet - $10.00 extra.

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

- Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyperson instructing and supervising the work of one apprentice in a specific trade.

Connecticut General Statute Section 31-55a: Annual Adjustments to wage rates by contractors doing state work

- The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.
- Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.
- It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.
- The annual adjustments will be posted on the Department of Labor's Web page: www.ctdol.state.ct.us.
- The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.
- All subsequent annual adjustments will be posted on our Web Site for contractor access.

Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage.

- All Persons who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.
- All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)
- Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR 5.5 (a) (1) (ii)).

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

Building Rates

County	Town	Classification	Hourly Rate	Hourly Benefit
Tolland	Vernon	1a) Asbestos Worker/Insulator (Includes application of insulating	$38.25	27.96

As of: July 1, 2019

Building Rates

County	Town	Classification	Hourly Rate	Hourly Benefit
		materials, protective coverings, coatings, & finishes to all types of mechanical systems; application of firestopping material for wall openings & penetrations in walls, floors, ceilings		
Tolland	Vernon	1b) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters.**See Laborers Group 7**		
Tolland	Vernon	1c) Asbestos Worker/Heat and Frost Insulator	$40.21	29.30
Tolland	Vernon	2) Boilermaker	$38.34	26.01
Tolland	Vernon	3a) Bricklayer, Cement Mason, Concrete Finisher (including caulking), Stone Masons	$34.72	32.55 + a
Tolland	Vernon	3b) Tile Setter	$34.90	25.87
Tolland	Vernon	3c) Terrazzo Mechanics and Marble Setters	$31.69	22.35
Tolland	Vernon	3d) Tile, Marble & Terrazzo Finishers	$26.70	21.75
Tolland	Vernon	3e) Plasterer	$33.48	32.06
Tolland	Vernon	------LABORERS------		
Tolland	Vernon	4) Group 1: Laborers (common or general), acetylene burners, carpenter tenders, concrete specialists, wrecking laborers, fire watchers.	$30.75	20.84
Tolland	Vernon	4a) Group 2: Mortar mixers, plaster tender, power buggy operators, powdermen, fireproofer/mixer/nozzleman (Person running mixer and spraying fireproof only).	$31.00	20.84
Tolland	Vernon	4b) Group 3: Jackhammer operators/pavement breaker, mason tender (brick), mason tender (cement/concrete), forklift operators and forklift operators (masonry).	$31.25	20.84
Tolland	Vernon	4c) **Group 4: Pipelayers (Installation of water, storm drainage or sewage lines outside of the building line with P6, P7 license) (the pipelayer rate shall apply only to one or two employees of the total crew who primary task is to actually perform the mating of pipe sections) P6 and P7 rate is $26.80.	$31.75	20.84
Tolland	Vernon	4d) Group 5: Air track operator, sand blaster and hydraulic drills.	$31.50	20.84

As of: July 1, 2019

Building Rates

County	Town	Classification	Hourly Rate	Hourly Benefit
Tolland	Vernon	4e) Group 6: Blasters, nuclear and toxic waste removal.	$33.75	20.84
Tolland	Vernon	4f) Group 7: Asbestos/lead removal and encapsulation (except it's removal from mechanical systems which are not to be scrapped).	$31.75	20.84
Tolland	Vernon	4g) Group 8: Bottom men on open air caisson, cylindrical work and boring crew.	$29.03	20.84
Tolland	Vernon	4h) Group 9: Top men on open air caisson, cylindrical work and boring crew.	$28.49	20.84
Tolland	Vernon	4i) Group 10: Traffic Control Signalman	$18.00	20.84
Tolland	Vernon	5) Carpenter, Acoustical Ceiling Installation, Soft Floor/Carpet Laying, Metal Stud Installation, Form Work and Scaffold Building, Drywall Hanging, Modular-Furniture Systems Installers, Lathers, Piledrivers, Resilient Floor Layers.	$33.53	25.66
Tolland	Vernon	5a) Millwrights	$34.04	26.09
Tolland	Vernon	6) Electrical Worker (including low voltage wiring) (Trade License required: E1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	$40.00	27.67+3% of gross wage
Tolland	Vernon	7a) Elevator Mechanic (Trade License required: R-1,2,5,6)	$53.37	33.705+a+b
Tolland	Vernon	-----LINE CONSTRUCTION----		
Tolland	Vernon	Groundman	$26.50	6.5% + 9.00
Tolland	Vernon	Linemen/Cable Splicer	$48.19	6.5% + 22.00
Tolland	Vernon	8) Glazier (Trade License required: FG-1,2)	$37.18	21.05 + a
Tolland	Vernon	9) Ironworker, Ornamental, Reinforcing, Structural, and Precast Concrete Erection	$36.67	35.77
Tolland	Vernon	----OPERATORS----		
Tolland	Vernon	Group 1: Crane handling or erecting structural steel or stone, hoisting engineer 2 drums or over, front end loader (7 cubic yards or over), work boat 26 ft. and over and Tunnel Boring Machines. (Trade License Required)	$40.97	24.80 + a
Tolland	Vernon	Group 2: Cranes (100 ton rate capacity and over); Excavator over 2 cubic yards; Piledriver ($3.00 premium when operator controls hammer); Bauer Drill/Caisson. (Trade License Required)	$40.64	24.80 + a

As of: July 1, 2019

Building Rates

County	Town	Classification	Hourly Rate	Hourly Benefit
Tolland	Vernon	Group 3: Excavator; Backhoe/Excavator under 2 cubic yards; Cranes (under 100 ton rated capacity), Grader/Blade; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar);Grader Operator; Bulldozer Fine Grade. (slopes, shaping, laser or GPS, etc.). (Trade License Required)	$39.88	24.80 + a
Tolland	Vernon	Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper).	$39.48	24.80 + a
Tolland	Vernon	Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24	$38.87	24.80 + a
Tolland	Vernon	Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller; Pile Testing Machine.	$38.87	24.80 + a
Tolland	Vernon	Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	$38.55	24.80 + a
Tolland	Vernon	Group 7: Asphalt roller, concrete saws and cutters (ride on types), vermeer concrete cutter, Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24	$38.20	24.80 + a
Tolland	Vernon	Group 8: Mechanic, grease truck operator, hydroblaster; barrier mover; power stone spreader; welding; work boat under 26 ft.; transfer machine.	$37.79	24.80 + a
Tolland	Vernon	Group 9: Front end loader (under 3 cubic yards), skid steer loader regardless of attachments, (Bobcat or Similar): forklift, power chipper; landscape equipment (including Hydroseeder).	$37.34	24.80 + a
Tolland	Vernon	Group 10: Vibratory hammer; ice machine; diesel and air, hammer, etc.	$35.24	24.80 + a
Tolland	Vernon	Group 11: Conveyor, earth roller, power pavement breaker (whiphammer), robot demolition equipment.	$35.24	24.80 + a
Tolland	Vernon	Group 12: Wellpoint operator.	$35.18	24.80 + a
Tolland	Vernon	Group 13: Compressor battery operator.	$34.58	24.80 + a
Tolland	Vernon	Group 14: Elevator operator; tow motor operator (solid tire no rough terrain).	$33.41	24.80 + a
Tolland	Vernon	Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	$32.99	24.80 + a
Tolland	Vernon	Group 16: Maintenance Engineer/Oiler.	$32.32	24.80 + a

As of: July 1, 2019

Building Rates

County	Town	Classification	Hourly Rate	Hourly Benefit
Tolland	Vernon	Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	$36.76	24.80 + a
Tolland	Vernon	Group 18: Power safety boat; vacuum truck; zim mixer; sweeper; (Minimum for any job requiring a CDL license).	$34.26	24.80 + a
Tolland	Vernon	------PAINTERS (Including Drywall Finishing)------		
Tolland	Vernon	10a) Brush and Roller	$33.62	21.05
Tolland	Vernon	10b) Taping Only/Drywall Finishing	$34.37	21.05
Tolland	Vernon	10c) Paperhanger and Red Label	$34.12	21.05
Tolland	Vernon	10e) Blast and Spray	$36.62	21.05
Tolland	Vernon	11) Plumber (excluding HVAC pipe installation) (Trade License required: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2)	$43.62	32.06
Tolland	Vernon	12) Well Digger, Pile Testing Machine	$37.26	24.05 + a
Tolland	Vernon	13) Roofer (composition)	$36.70	19.85
Tolland	Vernon	14) Roofer (slate & tile)	$37.20	19.85
Tolland	Vernon	15) Sheetmetal Worker (Trade License required for HVAC and Ductwork: SM-1,SM-2,SM-3,SM-4,SM-5,SM-6)	$37.98	38.31
Tolland	Vernon	16) Pipefitter (Including HVAC work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4, G-1, G-2, G-8 & G-9)	$43.62	32.06
Tolland	Vernon	------TRUCK DRIVERS------		
Tolland	Vernon	17a) 2 Axle	$29.51	24.52 + a
Tolland	Vernon	17b) 3 Axle, 2 Axle Ready Mix	$29.62	24.52 + a
Tolland	Vernon	17c) 3 Axle Ready Mix	$29.67	24.52 + a
Tolland	Vernon	17d) 4 Axle, Heavy Duty Trailer up to 40 tons	$29.72	24.52 + a
Tolland	Vernon	17e) 4 Axle Ready Mix	$29.77	24.52 + a

As of: July 1, 2019

Building Rates

County	Town	Classification	Hourly Rate	Hourly Benefit
Tolland	Vernon	17f) Heavy Duty Trailer (40 Tons and Over)	$29.98	24.52 + a
Tolland	Vernon	17g) Specialized Earth Moving Equipment (Other Than Conventional Type on-the-Road Trucks and Semi-Trailers, Including Euclids)	$29.77	24.52 + a
Tolland	Vernon	18) Sprinkler Fitter (Trade License required: F-1,2,3,4)	$43.92	15.84 + a
Tolland	Vernon	19) Theatrical Stage Journeyman	$25.76	7.34

As of: July 1, 2019

Connecticut Department of Labor
Wage and Workplace Standards Division
FOOTNOTES

⇨ Please Note: If the "Benefits" listed on the schedule for the following occupations includes a letter(s) (+ a or + a+b for instance), refer to the information below.

Benefits to be paid at the appropriate prevailing wage rate for the listed occupation.

If the "Benefits" section for the occupation lists only a dollar amount, disregard the information below.

Bricklayers, Cement Masons, Cement Finishers, Concrete Finishers, Stone Masons
(Building Construction) and
(Residential- Hartford, Middlesex, New Haven, New London and Tolland Counties)

a. Paid Holiday: Employees shall receive 4 hours for Christmas Eve holiday provided the employee works the regularly scheduled day before and after the holiday. Employers may schedule work on Christmas Eve and employees shall receive pay for actual hours worked in addition to holiday pay.

Elevator Constructors: Mechanics

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day, plus the Friday after Thanksgiving.

b. Vacation: Employer contributes 8% of basic hourly rate for 5 years or more of service or 6% of basic hourly rate for 6 months to 5 years of service as vacation pay credit.

Glaziers

a. Paid Holidays: Labor Day and Christmas Day.

Power Equipment Operators
(Heavy and Highway Construction & Building Construction)

a. Paid Holidays: New Year's Day, Good Friday, Memorial day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday. Holidays falling on Saturday may be observed on Saturday, or if the employer so elects, on the preceding Friday.

Ironworkers

a. Paid Holiday: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

Laborers (Tunnel Construction)

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. No employee shall be eligible for holiday pay when he fails, without cause, to work the regular work day preceding the holiday or the regular work day following the holiday.

Roofers

a. Paid Holidays: July 4th, Labor Day, and Christmas Day provided the employee is employed 15 days prior to the holiday.

Sprinkler Fitters

a. Paid Holidays: Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day, provided the employee has been in the employment of a contractor 20 working days prior to any such paid holiday.

Truck Drivers

(Heavy and Highway Construction & Building Construction)

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas day, and Good Friday, provided the employee has at least 31 calendar days of service and works the last scheduled day before and the first scheduled day after the holiday, unless excused.

SECTION 01 01 00 - HAZARDOUS MATERIALS GENERAL CONDITIONS

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.

B. Related Sections:

1. Section 010260: Hazardous Materials Unit Prices
2. Section 020750: Selective Demolition for Hazardous Materials Abatement
3. Section 020800: Asbestos Abatement
4. Section 020820: Universal Waste Reclamation
5. Section 020900: Lead Paint Awareness
6. Section 021100: PCB Remediation

1.2 SECTION INCLUDES

A. HMAC Qualifications

B. HMAC Use of Site and Premises

C. Work Phasing

D. Owner's Operations

E. Close Out and Punch List

F. Cleaning

G. Additional General Requirements

1.3 HAZARDOUS MATERIALS ABATEMENT CONTRACTOR (HMAC) QUALIFICATIONS

A. All bidders shall submit a record of prior experience in asbestos, lead and PCB abatement projects, listing no less than three (3) completed jobs in the past year, with all projects of similar size and scope. The Hazardous Materials Abatement Contractor (HMAC) shall list the experience and training of the site supervisor and all on-site workers. The information that shall be included is as follows:

1. Project Name and Address
2. Owner's Name and Address
3. Architect/Consultant/Construction Manager
4. Contract Amount
5. Date of Completion
6. Extras and Change Orders

B. The HMAC selected must appear on the approved list of Asbestos and Lead Abatement contractors on file at the State of Connecticut Department of Public Health (CTDPH).

C. Submit a written statement regarding whether the HMAC has ever been found out-of-compliance

with federal or state asbestos and/or lead regulations pertaining to worker protection, removal, transport, or disposal.

D. Award of this Contract may not necessarily be based solely on the submitted lowest Base Bid amount. The Owner reserves the right to award this Contract to the Bidder who best meets all HMAC qualifications.

1.4 HMAC USE OF SITE AND PREMISES

A. Limit use of Site and premises as follows:

1. Owner occupancy.
2. Work by Owner.
3. Use of Site and premises by public.

B. Coordinate use of the premises under the direction of the Owner.

C. Assume full responsibility for protection and safekeeping of products under this Contract.

D. The HMAC shall not interfere with general Site operations. The HMAC shall coordinate parking for employees with the Owner.

E. The HMAC shall coordinate location of waste container(s) with Owner operations.

1.5 WORK PHASING

A. Work under this project may be performed in phases to accommodate Owner's/Architect's requirements and remaining construction phases. Coordinate abatement schedule and operations with the Owner/Consultant and other trades.

B. The HMAC shall become familiar with the phasing of this work and shall include the required mobilization and re-mobilization as necessary to support the work phasing.

1.6 OWNER'S OPERATIONS

A. Schedule the Work to accommodate this requirement.

B. Maintain means of egress.

C. Coordinate Work with the Owner, the Architect, and the Owner's Consultant.

D. Maintain the fire alarm and fire detection systems active at all time during construction.

E. Maintain permanent means of egress during construction. Provide and maintain temporary means of egress as required by Fire Marshall.

1.7 CLOSEOUT AND PUNCH LIST

A. The HMAC shall carefully check his/her own work and that of any Subcontractor as the work is being performed. Unsatisfactory work shall be corrected immediately.

B. When the HMAC determines that he is substantially complete, that is, has less than one percent of his Contract remaining to be completed, he shall prepare for submission to the Owner's Consultant, a list

of items to be completed or corrected. The failure to include any items on such list does not alter the responsibility of the HMAC to complete all work in accordance with the Contract Documents.

C. Upon receipt of the HMAC's list of items to be completed or corrected, the Owner's Consultant will promptly make a thorough inspection and prepare a "punch list" setting forth in accurate detail any items on the HMAC's list and any additional items that are not acceptable.

D. When the "punch list" has been prepared, the Owner's Consultant will arrange a meeting with the HMAC to identify and explain all punch list items and answer questions on the work that must be completed before final acceptance.

E. The HMAC shall correct all "punch list" items or shall cause the correction of the "punch list" items within a time frame to be established when the "punch list" is made. The time frame for the completion of the "punch list" shall not exceed the completion date of the Contract. Should the "punch list" not be completed within the specified time frame, the Owner may invoke the rights given under the General Conditions.

F. The Owner's Consultant shall not be expected to inspect any area more than once for the preparation of the "punch list" items. If, during an inspection, the Owner's Consultant discovers five (5) or more deficient conditions, then the area shall be declared "Not Ready" for Inspection.

G. All inspections and sampling required for hazardous materials abatement compliance will be performed by the Owner's Consultant.

1.8 CLEANING

A. Throughout the construction period, the HMAC shall maintain the building and the site free of rubbish, debris, surplus materials, and other items not required for the Work. Remove such material from the site daily to prevent accumulations. Remove all construction debris from work areas, and remove all hazardous waste and asbestos waste as required by the most current federal, state, and local regulations and the requirements of the specifications.

1.9 ADDITIONAL GENERAL REQUIREMENTS

A. The HMAC shall employ a competent and English-speaking Abatement Supervisor with at least three (3) years of experience on projects of similar scope and magnitude. The Supervisor shall be responsible for all work involving hazardous materials abatement as described in the specifications and defined in the applicable regulations, and have full time daily supervision of the same. The Supervisor shall be the "Competent Person" as defined by OSHA regulations.

B. The HMAC shall allow the work of this contract to be inspected, if required, by local, state, federal, and any other authorities having jurisdiction over such work. The HMAC shall immediately notify the Owner and Owner's Consultant and shall maintain written evidence of such inspection for review by the Owner and Consultant.

C. The HMAC shall incur the cost of all fines resulting from regulatory non-compliance as issued by federal, state, and local agencies. The HMAC shall incur the cost of all work requirements mandated by federal, state, and local agencies as a result of regulatory non-compliance or negligence.

D. The HMAC shall immediately notify the Owner and Owner's Consultant of the delivery of all permits, licenses, certificates of inspection, of approval or occupancy, etc., and any other such instruments required under codes by authorities having jurisdiction, regardless to who issued, and shall cause them to be displayed to the Owner and Owner's Consultant for verification and recording.

E. The HMAC shall not conduct sampling of any building materials for PCB without written authorization from the Owner and the Owner's Consultant. If unauthorized testing is performed, the HMAC accepts all responsibility and costs associated with the removal, cleanup and disposal of additional materials not in the Project Scope of Work if dictated by state and federal regulations.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 02 60 - HAZARDOUS MATERIALS ABATEMENT UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

A. A unit price is an amount proposed by Bidders and stated on the Bid Form 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 project Scope of Work is altered.

B. Unit prices shall include costs of all materials, all direct or indirect expenses of the Hazardous Materials Abatement Contractor (HMAC) or Sub-Contractors, profit, insurance, bonding, and any applicable taxes. For deleted work, the net credit to the contract shall be 10% less.

C. Unit prices shall be used for work outside of the base bid and to quantify actual value of quantity allowances.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 UNIT PRICE SCHEDULE

A. Unit Prices in accordance with the following schedule will apply to this Contract. Unit prices include labor, disposal, and all necessary fees.

Item No. 1 – ASBESTOS CONTAINING FLOOR TILE/SHEET FLOORING AND ASSOCIATED MASTIC/ADHESIVE (All Layers to Substrate), REMOVAL AND DISPOSAL AS ASBESTOS WASTE.

$_____ per square foot.

Item No. 2 – ASBESTOS CONTAINING MUDDED INSULATION ON MUDDED FITTING, REMOVAL AND DISPOSAL AS ASBESTOS WASTE WITHIN EXISTING CONTAINMENT.

$_____ per fitting.

Item No. 3 – ASBESTOS CONTAINING THERMAL SYSTEM INSULATION <3 LF/3 SF, REMOVAL AND DISPOSAL AS ASBESTOS WASTE UTILIZING SPOT REPAIR PROCEDURES.

$_____ per glovebag.

Item No. 4 – ASBESTOS CONTAINING THERMAL SYSTEM INSULATION, REMOVAL AND DISPOSAL AS ASBESTOS WASTE.

$_____ per linear feet.

Item No. 5 - ASBESTOS CONTAINING JOINT COMPOUND ON SHEETROCK, REMOVAL AND DISPOSAL OF ENTIRE WALL/CEILING SYSTEM AS ASBESTOS WASTE.

$_____ per square feet.

Item No. 6 - ASBESTOS CONTAINING WALL PANEL ADHESIVE, REMOVAL AND DISPOSAL AS ASBESTOS WASTE.

$_____ per square feet.

Item No. 7 - ASBESTOS CONTAINING VINYL COVE BASE ADHESIVE, REMOVAL AND DISPOSAL AS ASBESTOS WASTE.

$_____ per linear feet.

Item No. 8 - ASBESTOS CONTAINING DUCT PAPER INSULATION, REMOVAL AND DISPOSAL AS ASBESTOS WASTE.

$_____ per square feet.

Item No. 9 - ASBESTOS CONTAINING LIGHT FIXTURE PAPER, REMOVAL AND DISPOSAL AS ASBESTOS WASTE.

$_____ per fixture.

Item No. 10 - ASBESTOS CONTAINING CLOTH GASKET IN WALL HEATER ASSEMBLY, REMOVAL AND DISPOSAL AS ASBESTOS WASTE.

$_____ per fixture.

Item No. 11 - ASBESTOS CONTAINING TEXTURED CEILING PAINT, REMOVAL AND DISPOSAL AS ASBESTOS WASTE.

$_____ per square feet.

Item No. 12 - ASBESTOS CONTAINING CHIMNEY FLUE CEMENT, REMOVAL AND DISPOSAL AS ASBESTOS WASTE.

$_____ per square feet.

Item No. 13 - ASBESTOS CONTAINING FLEX CONNECTOR, REMOVAL AND DISPOSAL AS ASBESTOS WASTE.

$_____ per connector.

Item No. 14 - ASBESTOS CONTAINING TRANSITE PANEL ADHESIVE, REMOVAL AND DISPOSAL AS ASBESTOS WASTE.

$_____ per square feet.

Item No. 15 - ASBESTOS CONTAINING FLASHING CEMENT, REMOVAL AND DISPOSAL AS ASBESTOS WASTE.

$_____ per square feet.

Item No. 16 - ASBESTOS CONTAINING ROOF FIELD, REMOVAL AND DISPOSAL AS ASBESTOS WASTE.

$_____ per square feet.

Item No. 17 - ASBESTOS CONTAINING WALL FLASHING, REMOVAL AND DISPOSAL AS ASBESTOS WASTE.

$_____ per square feet.

Item No. 18 – WOOD WINDOW SASH WITH PRESUMED PCB CONTAINING WINDOW GLAZING COMPOUND AND COATED WITH LEAD-BASED PAINT, REMOVAL AND DISPOSAL AS HAZARDOUS LEAD WASTE AND PCB BULK PRODUCT WASTE.

$_____ per sash.

Item No. 19 - ASBESTOS AND PRESUMED PCB CONTAINING CAULK, REMOVAL AND DISPOSAL AS ASBESTOS AND PCB BULK PRODUCT WASTE.

$_____ per linear feet.

Item No. 20 – NON-ASBESTOS AND PRESUMED PCB CONTAINING CAULK, REMOVAL AND DISPOSAL AS PCB BULK PRODUCT WASTE.

$_____ per linear feet.

Item No. 21 – PREPARATION OF A SMALL CONTAINMENT (for abating asbestos >3 SF/3 LF but <260 LF/160 SF) WITH DECONTAMINATION UNIT (including remobilization, if necessary).

$_____ per containment.

Item No. 22 – PREPARATION OF A LARGE CONTAINMENT (for abating asbestos >260 LF/160 SF) WITH DECONTAMINATION UNIT (including remobilization, if necessary).

$_____ per containment.

Item No. 23 - DISPOSAL OF DEMOLITION DEBRIS AS HAZARDOUS LEAD WASTE.

$_____ per cubic yard.

Item No. 24 - DISPOSAL OF DEMOLITION DEBRIS AS HAZARDOUS LEAD AND ASBESTOS WASTE.

$_____ per cubic yard.

END OF SECTION

This page intentionally left blank.

SUMMARY

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Work Covered by Contract Documents
B. Work Restrictions

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:
    1. Selective Demolition of existing construction within the existing building in the basement, first and second floors including four existing chimneys.
    2. Complete demolition of a rear shed addition and exterior stairways and platforms.
    3. Removal and replacement of the existing roof including patching of roof deck a 4 chimneys and one skylight.

B. Type of Contract: Stipulated Sum - Town of Vernon Agreement outlined in specification section 00 60 01 Agreement.

1.3 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.
    1. Comply with limitations on the use of public streets and with other requirements of authorities having jurisdiction.

B. On-site Work Hours: Limit work in the existing building to normal business working hours of 8:00am to 5:00pm, Monday through Friday, unless otherwise indicated.
    1. Weekend Hours: 9:00am to 5:00pm
    2. Hours for noisy activities shall be limited to the hours of 10:00am to 4:00pm.

C. Noise Vibration and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.

D. Non Smoking Building: Smoking is not permitted within the building or within 25 feet of entrances, operable windows or outdoor-air intakes.

E. Controlled Substances: Use of Tobacco Products and other controlled substances within the existing building is not permitted.

F. Employee Screening: Comply with Owner’s requirements for drug and background screening of Contractor Personnel working on Project Site.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION

This page intentionally left blank

SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Requirements:
   1. Section 01 60 00 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.2 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1.3 ACTION SUBMITTALS

A. Substitution Requests: Submit five copies, or via electronic format, of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
   1. Substitution Request Form: Use form that can be found after this section.
   2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
      a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
      b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
      c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
      d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
      e. Samples, where applicable or requested.
      f. Certificates and qualification data, where applicable or requested.
      g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
      h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
      i. Research reports evidencing compliance with building code in effect for Project.
      j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.

k. Cost information, including a proposal of change, if any, in the Contract Sum.
l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
n. Sample of Warranty (ies) with side-by-side comparison with that specified.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor through Construction Manager of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
   a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
   b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
   1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied:
      a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
      b. Requested substitution will not adversely affect Contractor's construction schedule.
      c. Requested substitution has received necessary approvals of authorities having jurisdiction.
      d. Requested substitution is compatible with other portions of the Work.
      e. Requested substitution has been coordinated with other portions of the Work.
      f. Requested substitution provides specified warranty.
      g. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Not allowed.

PART 3 – EXECUTION

(Not Used)

END OF SECTION

This page intentionally left blank

SUBSTITUTION REQUEST

(After the Bidding/Negotiating Phase)

Substitution Request Number: _____

From: _____

Project: _____

Date: _____

Contract For: _____

To: _____

Re: _____

Specification Title: _____ Description: _____

Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____

Manufacturer: _____ Address: _____ Phone: _____

Trade Name: _____ Model No.: _____

Installer: _____ Address: _____ Phone: _____

History: ☐ New product ☐ 1-4 years old ☐ 5-10 years old ☐ More than 10 years old

Differences between proposed substitution and specified product: _____

☐ Point-by-point comparative data attached (Required for Review)

Reason for not providing specified item: _____

Similar Installation:

Project: _____ Address: _____

Owner: _____

Date Installed: _____

Proposed substitution affects other parts of Work: ☐ No ☐ Yes; explain _____

Savings to Owner for accepting substitution: ($ _____).

Proposed substitution changes Contract Time: ☐ No ☐ Yes [Add] [Deduct] _____ days.

Supporting Data Attached: ☐Drawings ☐Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

SUBSTITUTION REQUEST

(After the Bidding/Negotiating Phase - continued)

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

_____

Telephone: _____

Attachments: ☐

A/E's REVIEW AND RECOMMENDATION

☐ Approve Substitution - Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
☐ Approve Substitution as noted - Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
☐ Reject Substitution - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: _____ Date: _____

OWNER'S REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures. Prepare Change Order.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures. Prepare Change Order.
☐ Substitution rejected - Use specified materials.

Signed by: _____ Date: _____

Additional Comments: ☐Contractor ☐Subcontractor ☐Supplier ☐Manufacturer ☐A/E

CONTRACT MODIFICATION PROCEDURES

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Schedule of Values.
B. Application for Payment.
C. Change procedures.
D. Defect Assessment.
E. Measurement and Payment - Unit Prices.
F. Requests for Information
G. Inspections for substantial completion and final completion

1.2 RELATED SECTIONS

A. Owner - Contractor Agreement:
B. Section 01 33 00 - Submittals: Schedule of Values.
C. Section 01 60 00 – Product Requirements: Product substitutions and alternates.

1.3 SCHEDULE OF VALUES

A. Submit typed schedule on AIA Form G703 - Application and Certificate for Payment Continuation Sheet. Contractor's standard form or electronic media printout will be considered.

B. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement.

C. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the major specification Section. Split line items into subcategories for materials and labor. Identify bonds, insurance and site mobilization costs.

D. Include in each line item, the amount of each Allowance specified in this Section.

E. Revise schedule with each Application for Payment, to list approved change orders.

1.4 APPLICATIONS FOR PAYMENT

A. Submit one copy of each application on AIA Form G702 - Application and Certificate for Payment.

B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.

1.5 CHANGE PROCEDURES

A. The Architect/Engineer will advise of minor changes in the Work not involving an adjustment to Contract Sum/Price or Contract Time as authorized and will issue supplemental instructions.

B. The Architect/Engineer may issue a Proposal Request, which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change, the period of time during which the requested price will be considered valid. Contractor will prepare and submit an estimate within seven days.

C. The Contractor may propose a change by submitting request for change to the Architect/Engineer, describing the proposed change and its full effect on the Work. Include a statement describing the reason for the change, and the effect on the Contract Sum/Price and Contract Time with full documentation in the form of unit costs and quantities for Material and Labor. Document any requested substitutions in accordance with Section 01 60 00.
    1. Stipulated Sum/Price Change Order: Based on Proposal Request and Contractor's fixed price quotation.
    2. Unit Price Change Order: For pre-determined unit prices and quantities, the Change Order will be executed on a fixed unit price basis. For unit costs or quantities of units of work, which are not pre-determined, execute Work under a Construction Change Authorization. Changes in Contract Sum/Price or Contract Time will be computed as specified for Time and Material Change Order.

D. Construction Change Authorization: Architect/Engineer may issue a directive, on AIA Form G713 Construction Change Authorization signed by the Owner, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in Contract Sum/Price or Contract Time. Contractor will promptly execute the change.

E. Change Order Forms: AIA G701 Change Order.

F. Execution of Change Orders: Architect will issue change orders for signature of parties as provided in the Conditions of the Contract.

G. **Contractor shall reimburse Owner for Architect's time spent reviewing proposed change orders more than twice (original and 1 revision) for the same item or scope of work.**

H. Contractor shall reimburse Owner for Architect's time spent evaluating an extensive number of claims submitted by the Contractor in connection with the Work.

1.6 DEFECT ASSESSMENT

A. Replace the Work, or portions of the Work, not conforming to specified requirements.

B. If, in the opinion of the Architect, it is not practical to remove and replace the Work, the Architect will direct an appropriate remedy or adjust payment.

1.7 MEASUREMENT AND PAYMENT - UNIT PRICES

A. Authority: Measurement methods are delineated in the individual specification sections.

B. Take measurements and compute quantities. The Architect will verify measurements and quantities.

C. Unit Quantities: Quantities and measurements indicated in the Bid Form are for contract purposes only. Actual quantities provided shall determine payment.

D. Payment Includes: Full compensation for required labor, products, tools, equipment, plant and facilities, transportation, services and incidentals; erection, application or installation of

an item of the Work; overhead and profit.

1.8 REQUESTS FOR INFORMATION

A. Contractor shall reimburse Owner for Architect's time spent responding to the Contractor's requests for information where such information is available to the Contractor from a careful study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor prepared coordination drawings, or prior Project correspondence or documentation.

B. Refer to Section 01 31 00.

1.9 INSPECTIONS FOR SUBSTANTIAL COMPLETION AND FINAL COMPLETION

A. Contractor shall reimburse Owner for Architect's time spent inspecting any portion of the Work more than twice to determine final completion or to determine whether such portion of the Work is substantially complete in accordance with the requirements of the Contract Documents."

PART 2 – PRODUCTS

(Not Used)

PART 3 – EXECUTION

(Not Used)

END OF SECTION

This page intentionally left blank

PROJECT MANAGEMENT AND COORDINATION

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Coordination.
B. Requests for Information
C. Pre-construction conference.
D. Site mobilization conference.
E. Progress meetings.
F. Pre-installation conferences.

1.2 COORDINATION

A. Coordinate scheduling, submittals, and Work of the various Sections of Specifications to assure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

B. Verify that utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

C. Coordinate space requirements and installation of mechanical and electrical work, which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

D. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

E. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion.

F. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.3 REQUESTS FOR INFORMATION (RFIs)

A. Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

B. RFI to include a detailed, legible description of item needing information or interpretation and the following:
    1. Project Date
    2. Date
    3. Name of Contractor
    4. Name of Architect
    5. RFI number, numbered sequentially
    6. RFI subject
    7. Specification Section number, title and related paragraphs as appropriate.

8. Drawing number and detail references, as appropriate.
9. Field dimensions and conditions, as appropriate.
10. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or Contract Sum, Contractor shall state impact in the RFI.
11. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

C. Architect will review each RFI, determine action required and respond. Allow ten working days for Architect's response for each RFI. RFIs received by Architect after 1:00pm EST will be considered as received the following day. If it is necessary for a Consultant to review an RFI allow for fifteen working days for both Architect and Consultant response for each RFI.

D. Architect's action may include a request for additional information, in which Architect's time for response will date from the time of receipt of additional information.

E. Architect's action that may result in a change to the Contract Time or Contract Sum may be eligible for Contractor to submit a Change Proposal in accordance with 01 26 00 Contract Modification Procedures.
   1. If Contractor believe the RFI response warrants change in Contract Time of Contract Sum, notify the Architect in writing within ten business days or receipt of the RFI response.

1.4 PRECONSTRUCTION CONFERENCE

A. Owner will schedule a conference after Notice of Award.

B. Attendance Required: Owner, Architect/Engineer & Contractor.

C. Agenda:
   1. Execution of Owner-Contractor Agreement.
   2. Submission of executed bonds and insurance certificates.
   3. Distribution of Contract Documents.
   4. Submission of list of Subcontractors, list of Products, schedule of values, and progress schedule.
   5. Designation of personnel representing the parties in Contract, and the Architect/Engineer.
   6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders and Contract closeout procedures.
   7. Scheduling.
   8. Use of premises by Owner and Contractor.
   9. Owner's requirements.
   10. Construction facilities and controls provided by Owner.
   11. Temporary utilities provided by Owner.
   12. Security and housekeeping procedures.
   13. Procedures for maintaining record documents.

1.5 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at maximum weekly intervals.

B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings. Architect will record meetings and distribute copies within seven days to Contractor, Owner, participants, and those affected by decisions made.

C. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner, Architect/Engineer as appropriate to agenda topics for each meeting.

D. Agenda:
   1. Review minutes of previous meetings.
   2. Review of Work progress.
   3. Field observations, problems, and decisions.
   4. Identification of problems, which impede planned progress.
   5. Review of submittals schedule and status of submittals.
   6. Review of off-site fabrication and delivery schedules.
   7. Maintenance of progress schedule.
   8. Corrective measures to regain projected schedules.
   9. Planned progress during succeeding work period.
   10. Coordination of projected progress.
   11. Maintenance of quality and work standards.
   12. Effect of proposed changes on progress schedule and coordination.
   13. Other business relating to Work.

1.6 PREINSTALLATION CONFERENCES

A. When required in individual specification Section, convene a pre-installation conference at work site prior to commencing work of the Section.

B. Require attendance of parties directly affecting, or affected by, work of the specific Section.

C. Notify Architect/Engineer four days in advance of meeting date.

D. Prepare agenda, preside at conference, record minutes, and distribute copies within two days after conference to participants, with two copies to Architect/Engineer.

E. Review conditions of installation, preparation and installation procedures, and coordination with related work.

PART 2 – PRODUCTS

(Not Used)

PART 3 – EXECUTION

(Not Used)

END OF SECTION

This page intentionally left blank

SUBMITTAL PROCEDURES

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 includes administrative and procedural requirements for submittals required for performance of the Work, including but not limited to the following:
   1. Submittal schedule.
   2. Shop Drawings.
   3. Product Data.
   4. Samples.
   5. Quality assurance submittals.
   6. Proposed "Substitutions/Equals".
   7. Warrantee samples.

B. Administrative Submittals: Refer to other Division 01 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to, the following:
   1. Permits.
   2. Applications for Payment.
   3. Performance and payment bonds.
   4. Contractor’s construction schedule.
   5. Insurance certificates.
   6. List of subcontractors.

C. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Section 01 26 00 "Contract Modification Procedures" specifies requirements for submittal of requests for equals and substitutions.
   2. Section 01 26 00 "Contract Modification Procedures " specifies requirements for submittal of the Schedule of Values.
   3. Division 01 Section 01 31 00 " Project Management and Coordination " specifies requirements for submittal and distribution of meeting and conference minutes.
   4. Division 01 Section 01 77 00 "Contract Closeout" specifies requirements for submittal of Project Record Documents and warranties at project closeout.

1.3 DEFINITIONS

A. Coordination Drawings show the relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in the space provided or to function as intended and as identified in the Specification Divisions 02 - 48.
   1. Preparation of Coordination Drawings is specified in Section 01 31 00 "Project Management and Coordination" and may include components previously shown in detail on Shop Drawings or Product Data.

B. Field samples are full-size physical examples erected on-site to illustrate finishes, coatings, or finish materials. Field samples are used to establish the standard by which the Work will be judged.

C. Mockups are full-size assemblies for review of construction, coordination, testing, or operation; they are not Samples.

1.4 SUBMITTAL PROCEDURES

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
   1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
   2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
      a. The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.
      b. The Architect reserves the right to reject incomplete submitted packages.
   3. Processing: To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for re-submittals.
      a. Allow **fourteen (14) days** for initial review. Allow additional time if the Architect must delay processing to permit coordination with subsequent submittals.
      b. If an intermediate submittal is necessary, process the same as the initial submittal.
      c. Allow **fourteen (14) days** for reprocessing each submittal.
      d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Architect sufficiently in advance of the Work to permit processing.

B. Submittal Preparation: Place a permanent label, title block or 8-1/2 inches x 11 inches cover page approved by the Architect, on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
   1. The minimum number of copies required for each submittal shall be determined at the pre-construction conference or by the Construction Administrator.
   2. Provide a space approximately 4 inches by 5 inches on the label, beside the title block or on the cover page on Shop Drawings to record the Contractor's review and approval markings and the action taken.
   3. Include the following information on the label for processing and recording action taken.
      a. Project Name.
      b. Date.
      c. Name and address of the Architect, Construction Administrator, and Owner Representative.
      d. Name and address of the Contractor.
      e. Name and address of the subcontractor.
      f. Name and address of the supplier.

g. Name of the manufacturer.
h. Number and title of appropriate Specification Section.
i. Drawing number and detail references, as appropriate.
j. Indicate either initial or resubmittal.
k. Indicate deviations from Contract Documents.
l. Indicate if "equal" or "substitution".

C. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Architect using a transmittal form. Copy the Construction Administrator on the transmittal. The Architect will return all submittals to the Contractor after action is taken with a complete copy of the submittal package and one complete copy of the submittal package. The Architect will not accept submittals received from sources other than the Contractor.

1. On the transmittal, record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.

1.5 SUBMITTAL SCHEDULE

A. After development and review by the Owner and Architect acceptance of the Contractor's Construction or CPM schedule prepare a complete schedule of submittals. Submit the schedule to the Construction Administrator within thirty (30) days of Contract Award.

1. Coordinate Submittal Schedule with the list of subcontracts, Schedule of Values, and the list of products as well as the Contractor’s Construction or CPM Schedule.
2. Prepare the schedule in chronological order. Provide the following information:

a. Schedule date for the initial submittal.
b. Related section number.
c. Submittal category (Shop Drawings, Product Data, or Samples).
d. Name of Subcontractor.
e. Description of the part of Work covered.
f. Scheduled date for resubmittal.
g. Scheduled date for the Architect’s final release of approval.

B. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or modifications to submittals noted by the Architect and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's Contractor’s Construction or CPM Schedule.
2. Initial Submittal: Submit concurrently with start-up construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.

a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

C. 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 submittals 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. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

D. 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 fifteen 15 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 with related submittals not yet received. Additional time will be required if processing must be delayed to permit review of related subsequent submittals.
    2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
    3. Resubmittal Review: Allow fifteen (15) days for review of each resubmittal.
    4. Mass Submittals: Six (6) or more submittals in one (1) day or twenty (20) or more submittals in one (1) week. If “Mass Submittals” are received, Architect’s review time stated above may be extended as necessary to perform proper review. Architect will review “Mass Submittals based upon priority determined by Architect after consultation with Owner and Contractor.

E. Distribution: Following response to the initial submittal, print and distribute copies to the Construction Administrator, Architect, Owner, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the Project meeting room and field office.
    1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

F. Schedule Updating: Revise the schedule after each meeting or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

1.6 SHOP DRAWINGS

A. Submit newly prepared information drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract

Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not a Shop Drawing.

B. Shop Drawings include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates and similar Drawings. Include the following information:
   1. Dimensions.
   2. Identification of products and materials included by sheet and detail number.
   3. Compliance with specified standards.
   4. Notation of coordination requirements.
   5. Notation of dimensions established by field measurement.
   6. Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 36 by 48 inches.
   7. Submit one (1) reproducible media and seven (7) prints as directed by the Construction Administrator. The Contractor's submittal shall identify the specification section and/or drawing number applicable to the submittal.
   8. Details shall be large scale and/or full size.

C. The Contractor shall review the Shop Drawings, stamp with this approval, and submit them with reasonable promptness and in orderly sequence so as to cause no delay in his Work or in the Work of any subcontractor. Shop Drawings shall be properly identified as specified for item, material, workmanship, and project number. At the submission, the Contractor shall inform the Architect, in writing of any deviation in the shop drawings from the requirements of the Contract Documents.

D. The Architect will review and comment on shop drawings with reasonable promptness so as to cause no delay, but only for conformance with the design concept of the project and with the information given in the Contract Documents. Refer to Article 5 of the General Conditions. Shop Drawings received by the Architect that indicate insufficient study of drawings and specifications, illegible portions or gross errors, will be rejected outright. Such rejections shall not constitute an acceptable reason for granting the Contractor additional time to perform the work.

E. The Contractor shall make any corrections required by the Architect and shall resubmit the required number of corrected copies of Shop Drawings until fully reviewed.

F. Upon final review submit four (4) additional prints, same as submitted, for use by the Construction Administrator.

G. The Architect's review and comments on Shop Drawings shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents.

H. Only final reviewed Shop Drawings are to be used on the Project site.

I. The Work installed shall be reviewed in accordance with the Shop Drawings and the drawings and specifications. Final Review of the Shop Drawings by the Architect shall constitute acceptance by the Owner and the Architect of a variation or departure that is clearly identified. If the contractor believes notations made by the A/E increases the value or scope of the CD's, the contractor must provide written notice to the CA within seven (7) days of this issue. Final reviewed Shop Drawings shall not replace or be used as a vehicle

to issue or incorporate change orders or substitutions. Substitutions shall be submitted in accordance with Division 01 Section 01 25 00 "Substitution Procedures".

1.7 PRODUCT DATA

A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information, schedules, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.
   1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products that are not required, mark copies to indicate the applicable information. Include the following information:
      a. Manufacturer's printed recommendations.
      b. Compliance with trade association standards.
      c. Compliance with recognized testing agency standards.
      d. Application of testing agency labels and seals.
      e. Notation of dimensions verified by field measurement.
      f. Notation of coordination requirements.
   2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
   3. Preliminary Submittal: Submit a preliminary single copy of Product Data where selection of options is required.
   4. Submittals: Submit seven (7) copies of each required submittal; submit five (5) copies where required for maintenance manuals. The Architect will retain one (1) and will return the other marked with action taken and corrections or modifications required.
      a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
   5. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.
      a. Do not proceed with installation until a copy of Product Data is in the Installer's possession.
      b. Do not permit use of unmarked copies of Product Data in connection with construction.

1.8 SAMPLES

A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.
   1. Store, mount or display Samples on site in the manner to facilitate review of qualities indicated. Prepare Samples to match the Architect's sample. Include the following:
   a. Specification Section number and reference.
      b. Generic description of the Sample.
      c. Sample source.
      d. Product name or name of the manufacturer.
      e. Compliance with recognized standards.
      f. Availability and delivery time.

2. Submit Samples for review of size, kind, color, pattern, and texture. Submit Samples for a final check of these characteristics with other elements and a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
    a. Where variation in color, pattern, texture, or other characteristic is inherent in the material or product represented, submit at least three (3) multiple units that show approximate limits of the variations.
    b. Refer to other Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.
    c. Refer to other Sections for Samples to be returned to the Contractor for incorporation in the Work. Such Samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of Sample submittals.
    d. Samples not incorporated into the Work, or otherwise designated as the Owner's property, are the property of the Contractor and shall be removed from the site prior to Substantial Completion.
3. Preliminary Submittals: Submit a full set of choices where Samples are submitted for selection of color, pattern, texture, or similar characteristics from a range of standard choices, unless otherwise noted in specification section.
    a. The Architect will review and return preliminary submittals with the Architects notation, indicating selection and other action.
4. Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation, and similar characteristics, submit three (3) sets. The Architect will return one (1) set marked with the action taken.
5. Maintain sets of Samples, as returned, at the Project Site, for quality comparisons throughout the course of construction.
    a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
    b. Sample sets may be used to obtain final acceptance of the construction associated with each set.

B. Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.
    1. Field samples are full-size examples erected on-site to illustrate finishes, coatings, or finish materials and to establish the Project standard.
        a. Comply with submittal requirements to the fullest extent possible. Process transmittal forms to provide a record of activity.

1.9 QUALITY ASSURANCE SUBMITTALS

A. Submit quality-control submittals, including design data, certifications, manufacturer's instructions, manufacturer's field reports, and other quality-control submittals as required under other Sections of the Specifications.

B. Certifications: Where other Sections of the Specifications require certification that a product, material, or installation complies with specified requirements, submit a notarized certification from the manufacturer certifying compliance with specified requirements.
    1. Signature: Certification shall be signed by an officer of the manufacturer or other individual authorized to sign documents on behalf of the company.

C. Inspection and Test Reports: Requirements for submittal of inspection and test reports from independent testing agencies are specified in Division 01 Section 01 40 00 "Quality Control."

1.10 ARCHITECT'S ACTION

A. Except for submittals for the record or information, where action and return is required, the Architect will review each submittal, mark to indicate action taken, and return promptly.
   1. Compliance with specified characteristics is the Contractor's responsibility.

B. Action Stamp: The Architect will stamp each submittal with a uniform, action stamp. The Architect will mark the stamp appropriately to indicate the action taken, as follows:
   1. **Furnish as Corrected**: When the Architect marks a submittal "**Furnish as Corrected**," the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents. Submit corrected copies for record. Final payment depends on that compliance.
   2. Returned for Resubmittal: When the Architect marks a submittal "Rejected, or Revise and Resubmit," do not proceed with Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the notations; resubmit without delay. Repeat if necessary to obtain different action mark.
      a. Do not use, or allow others to use, submittals marked "**Rejected**, or **Revise and Resubmit**" at the Project Site or elsewhere where Work is in progress.
   3. Other Action: Where a submittal is for information or record purposes or special processing or other activity, the Architect will return the submittal marked "**Reviewed**."

C. Unsolicited Submittals: The Architect will discard unsolicited submittals without action.

PART 2 – PRODUCTS

(Not Applicable)

PART 3 – EXECUTION

(Not Applicable)

END OF SECTION

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Temporary Utilities: Electricity, lighting, heat, telephone service, water, and sanitary facilities.

B. Temporary Controls: Barriers, enclosures and fencing, protection of the Work, and water control.

C. Construction Facilities: Access roads, truck access routes, parking, progress cleaning, and project signage.

1.2 TEMPORARY ELECTRICITY

A. Cost: By Contractor; Provide and pay for power service required from Utility source.

B. Provide temporary electric feeder from electrical service at location as directed.

C. Contractor will pay cost of energy used.

D. Provide power outlets for construction operations, with branch wiring and distribution boxes located at each floor. Provide flexible power cords as required.

E. Provide main service disconnect and overcurrent protection at convenient location, feeder switch at source distribution equipment.

F. Permanent convenience receptacles may be utilized during construction.

G. Provide adequate distribution equipment, wiring, and outlets to provide single-phase branch circuits for power and lighting.

1.3 TEMPORARY LIGHTING

A. Provide and maintain incandescent lighting for construction operations to achieve a minimum lighting level of 2 watt/sq ft.

B. Provide and maintain 1 watt/sq ft lighting to exterior staging and storage areas after dark for security purposes.

C. Provide and maintain 0.25 watt/sq ft H.I.D. lighting to interior work areas after dark for security purposes.

D. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.

E. Maintain lighting and provide routine repairs.

F. Permanent building lighting may be utilized during construction.

1.4 TEMPORARY VENTILATION

A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

1.5 TELEPHONE & FACSIMILE SERVICE

A. Provide, maintain and pay for telephone and facsimile service to field office at time of project mobilization.

1.6 TEMPORARY WATER SERVICE

A. Provide, maintain and pay for suitable quality water service required.

B. Extend branch piping with outlets located so water is available by hoses with threaded connections. Provide temporary pipe insulation to prevent freezing.

1.7 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures.

1.8 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.

B. Provide protection for plant life designated to remain. Replace damaged plant life.

C. Protect non-owned vehicular traffic, stored materials, site and structures from damage.

D. Provide temporary roofing as required.

1.9 TEMPORARY FENCING

A. Construction: Commercial grade chain link fence.

B. Provide 6-foot high fence around construction sites; equip with vehicular and pedestrian gates with locks.

1.10 EXTERIOR ENCLOSURES

A. Provide temporary insulated weather-tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification Sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

B. Provide temporary roofing as required.

1.11 SECURITY

A. Provide security and facilities to protect Work, and operations from unauthorized entry, vandalism, or theft.

1.12 ACCESS ROADS/TRUCK ACCESS ROUTES

A. Construct and maintain temporary roads accessing public thoroughfares to serve construction area.

B. Extend and relocate as Work progress requires. Provide detours necessary for unimpeded traffic flow.

C. Provide and maintain access to fire hydrants, free of obstructions.

D. Provide means of removing mud from vehicle wheels before entering streets.

E. Existing on-site roads may be used for construction traffic.

1.13 PARKING

A. Arrange for temporary parking to accommodate construction personnel.

B. When site space is not adequate, provide additional off- site parking.

1.14 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Remove waste materials, debris, and rubbish from site periodically and dispose off-site.

1.15 PROJECT IDENTIFICATION

A. Temporary Signs - Provide two (2) project signs of exterior grade plywood and wood frame construction, painted, with die cut vinyl, self-adhesive letters and self-adhesive logo, to Owner's design and colors.

B. Erect on site at location established by Architect/Engineer.

C. No other signs are allowed without Owner permission except those required by law.

1.16 FIELD OFFICES

A. Office: Weather-tight, with lighting, electrical outlets, heating, cooling and ventilating equipment, and equipped with sturdy furniture, drawing rack and drawing display table.

B. Provide space for Project meetings, with table and chairs to accommodate 6 persons.

C. Locate office on site in existing building or job trailer.

A. .

PART 2 – PRODUCTS

(Not Used)

PART 3 – EXECUTION

(Not Used)

END OF SECTION

This page intentionally left blank

PRODUCT REQUIREMENTS

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Products.
B. Transportation and handling.
C. Storage and protection.
D. Product options.
E. Substitutions.

1.2 PRODUCTS

A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.
B. Provide interchangeable components of the same manufacturer, for similar components.

1.3 TRANSPORTATION AND HANDLING

A. Transport and handle Products in accordance with manufacturer's instructions.
B. Promptly inspect shipments to assure that Products comply with requirements, quantities are correct, and Products are undamaged.
C. Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

1.4 STORAGE AND PROTECTION

A. Store and protect Products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive Products in weather-tight, climate controlled enclosures.
B. For exterior storage of fabricated Products, place on sloped supports, above ground.
C. Provide off-site storage and protection when site does not permit on-site storage or protection.
D. Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.
E. Store loose granular materials on solid flat surfaces in a well-drained area. Provide mixing with foreign matter.
F. Provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.
G. Arrange storage of Products to permit access for inspection. Periodically inspect to assure Products are undamaged and are maintained under specified conditions.

1.5 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.
B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.
C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

1.6 SUBSTITUTIONS

A. Architect/Engineer will consider requests for Substitutions only within 15 days after date of Owner-Contractor Agreement.
B. Substitutions may be considered when a Product becomes unavailable through no fault of the Contractor.
C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
D. A request constitutes a representation that the Contractor:
    1. Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.
    2. Will provide the same warranty for the Substitution as for the specified Product.
    3. Will coordinate installation and make changes to other Work, which may be required for the Work to be complete with no additional cost to Owner.
    4. Waives claims for additional costs or time extension, which may subsequently become apparent.
    5. Will reimburse Owner for review and/or redesign services associated with approval by architect, engineer and other authorities.

E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
F. Substitution Submittal Procedure:
    1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
    2. Submit shop drawings, Product data, and certified test results attesting to the proposed Product equivalence.
    3. The Architect will notify Contractor, in writing, of decision to accept or reject request.

PART 2 – PRODUCTS

(Not Used)

PART 3 – EXECUTION

(Not used)

END OF SECTION

CONTRACT CLOSEOUT

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Closeout Procedures.
B. Final Cleaning.
C. Project Record Documents.
D. Warranties.

1.2 RELATED SECTIONS
A. Section 01 50 00 - Construction Facilities and Temporary Controls: Progress cleaning.

1.3 CLOSEOUT PROCEDURES
A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Architect/Engineer's inspection.

B. Provide submittals to Architect/Engineer and Owner that are required by governing or other authorities.

C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.4 FINAL CLEANING
A. Execute final cleaning prior to final inspection.

B. Clean debris from roofs, gutters, downspouts, and drainage systems.

C. Clean site; sweep paved areas, rake clean landscaped surfaces.

D. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.5 PROJECT RECORD DOCUMENTS
A. Maintain on site, one set of the following record documents; record actual revisions to the Work:
   1. Contract Drawings.
   2. Specifications.
   3. Addenda.
   4. Change Orders and other Modifications to the Contract.
   5. Reviewed shop drawings, product data, and samples.
   6. Store Record Documents separate from documents used for construction.
   7. Record information concurrent with construction progress.

B. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates utilized.

3. Changes made by Addenda and Modifications.

C. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:
   1. Measured depths of foundations in relation to finish first floor datum.
   2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
   3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
   4. Field changes of dimension and detail.
   5. Details not on original Contract Drawings.

D. Delete Architect/Engineer title block and seal from all documents.

E. Submit documents to Architect/Engineer with claim for final Application for Payment.

1.6 WARRANTIES

A. Provide notarized copies.

B. Execute and assemble documents from Subcontractors, suppliers, and manufacturers.

C. Provide Table of Contents and assemble in three D side ring binder with durable plastic cover.

D. Submit prior to final Application for Payment.

E. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

PART 2 – PRODUCTS

(Not used)

PART 3 – EXECUTION

(Not used)

END OF SECTION

SECTION 02 07 50 - SELECTIVE DEMOLITION FOR HAZARDOUS MATERIALS ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. Related Sections:

1. Section 010100: Hazardous Materials General Requirements
2. Section 010260: Hazardous Materials Unit Prices
3. Section 020800: Asbestos Abatement
4. Section 020820: Universal Waste Reclamation
5. Section 020900: Lead Paint Awareness
6. Section 021100: PCB Remediation

1.2 SUMMARY

A. The Hazardous Materials Abatement Contractor (HMAC) shall be responsible for performing selective demolition, as directed by the Owner's Consultant/Construction Manager, to determine the presence of concealed materials throughout the work area(s) and to access known hazardous materials scheduled for removal. The selective demolition shall include but not be limited to select walls and cabinets to access flooring product that may exist underneath, localized areas of walls and ceilings for evaluation of interstitial wall and ceiling spaces for concealed ACM and other areas that are deemed necessary to demolish by the Owner's Consultant/Architect.

B. The HMAC shall be responsible for removing all furniture, floor-mounted cabinets, sinks, and book shelves in order to access thermal system insulation present behind those units concurrently with asbestos containing materials abatement. Also, provide selective demolition of partition walls and suspended ceilings, as necessary, to access all asbestos-containing materials specified for removal. The HMAC shall be responsible for removing and disconnecting all plumbing fixtures in order to gain access to thermal system insulation within walls. The HMAC shall obtain required permits to accomplish this work at no additional cost to the Owner.

C. The HMAC shall be responsible for the selective demolition of all trim, fixtures, railings, millwork, acoustical ceiling systems, mechanical equipment, electrical equipment, plumbing equipment and fixtures, walls, ceilings and miscellaneous items necessary to perform asbestos removal activities.

D. Coordinate all selective demolition work with the Construction Manager.

1.3 PROJECT CONDITIONS

A. Occupancy:

1. Areas of the building in which selective demolition will occur will be unoccupied during work.
2. All demolition work that may impact asbestos containing materials adjacent to, above or beneath shall be performed within a negative pressure enclosure.

B. Existing Conditions:

1. After the project has begun, the HMAC is responsible for the condition of the structures to be selectively demolished and surfaces to remain.

2. Unforeseen Conditions: Should unforeseen conditions be encountered that affect design or function of project, investigate and fully submit an accurate, detailed, written report to the office of the Architect/Consultant. While awaiting a response, reschedule operations if necessary to avoid delay of overall project.

C. Work under this project may be performed in phases to accommodate Owner's/Architect's requirements and remaining construction phases. Coordinate abatement schedule and operations with the Owner/Architect/Consultant and other trades.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and sealed.

B. Insofar as is practicable, arrange operations to reveal unknown or concealed conditions for examination and verification before removal or demolition.

C. Verify actual conditions to determine, in advance, whether removal or demolition of any element will result in structural deficiency, overloading, failure, or unplanned collapse.

1. Demolish and remove connections to all electrical, gas and plumbing fixtures required to remove asbestos-containing materials.
2. Demolish all building materials as required to access asbestos and presumed PCB containing materials for abatement and remediation. Selective demolition that impacts asbestos-containing materials shall be performed with engineering controls in place.

3.2 PREPARATION

A. Traffic: Do not obstruct walks or public ways without the written permission of governing authorities and of the Owner. Where routes are permitted to be closed, provide alternate routes if required.

B. Protection:

1. Provide for the protection of persons passing around or through the area of demolition.
2. Perform demolition so as to prevent damage to adjacent improvements and facilities to remain.
3. Protect walls, floors, and other new or existing work from damage during demolition operations and abatement work.

3.3 POLLUTION CONTROLS

A. Control as much as practicable the spread of dust and dirt.

B. Observe environmental regulations.

C. Do not allow water usage that results in freezing or flooding.

D. Do not allow adjacent improvements to remain to become soiled by demolition operations.

3.4 DEMOLITION - GENERAL

A. Remove: Items indicated to be removed shall be removed by the HMAC.

B. Existing to Remain: Construction or items indicated to remain shall be protected against damage during demolition operations. Where practical, and with the Owner's permission, the HMAC may elect to remove items to a suitable storage location during demolition and then properly clean and reinstall the items.

C. Perform work in a systematic manner.

D. Demolish and remove existing structures only to the extent required, as indicated in the Contract Documents.

E. Perform selective demolition using methods that are least likely to damage work to remain and which will provide proper surfaces for patching.

F. Remove debris daily.

G. Use any methods permitted by governing regulations and the requirements of the Contract Documents.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. Promptly dispose of materials resulting from demolition operations. Non-contaminated material may be disposed of as construction waste. Do not allow materials to accumulate on site.

B. All rubbish and waste material from the Work shall be neatly stacked or kept in suitable containers and removed from the premises daily. The premises shall be kept clean and in an orderly condition at all times to the satisfaction of the Owner and the Consultant.

C. Transport materials resulting from demolition operations and legally dispose of off-site.

D. Off-site disposal location shall not be within one-half mile of any portion of the project site or within sight of the project site.

E. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.

F. All disposal containers, receptacles, dumpsters shall be properly labeled and sealed from the onset of waste accumulation. Exterior waste containers shall be locked.

3.6 CLEANING

A. Throughout the abatement and remediation period, the HMAC shall maintain the building and Site free of rubbish, debris, surplus materials, and other items not required for the Work.

B. Remove such material from the site daily to prevent accumulations. Remove all construction debris from work areas, and remove all hazardous waste and asbestos waste as required by the most current federal, state, and local regulations and the requirements of the specifications.

END OF SECTION

This page intentionally left blank

SECTION 02 08 00 - ASBESTOS ABATEMENT

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.

B. Related Sections:

1. Section 010100: Hazardous Materials General Requirements
2. Section 010260: Hazardous Materials Unit Prices
3. Section 020750: Selective Demolition for Hazardous Materials Abatement
4. Section 020900: Lead Paint Awareness
5. Section 020820: Universal Waste Reclamation:
6. Section 021100: PCB Remediation

1.2 GENERAL PROVISIONS

A. Portions of the existing Citizens Block Building, located at 28-34 Park Place in Vernon, Connecticut, will be impacted to accommodate renovations. The project includes the demolition of the rear two-story structure and complete renovation of the remaining building.

B. Asbestos containing material (ACM) testing has identified building materials in areas scheduled for renovation and demolition that contain asbestos. The work covered in this section includes the minimum procedures that shall be employed during the abatement of the ACM.

C. Refer to other Sections of these Specifications to determine the type and extent of work therein affecting the work of this Section, whether or not such work is specifically mentioned herein.

D. Christopher Liberti of Eagle Environmental, Inc. is the designer of this Specification. Mr. Liberti is a State of Connecticut Department of Public Health (CTDPH) Licensed Asbestos Project Designer (License #000261).

E. Refer to the Base Bid Scope of Work within this Specification and Hazardous Building Materials Abatement Plan HM–1.

1.3 PROJECT DESCRIPTION

A. The work to be performed includes but is not limited to the proper removal, handling, and disposal of all ACM contained within the areas of renovation and demolition at the building located at 28-34 Park Place in Vernon, Connecticut. Detailed description of materials and locations of ACM scheduled for removal are shown on Table I below and on the Hazardous Building Materials Abatement Plan HM-1.

B. The Base Bid asbestos abatement work shall include but not be limited to the ACM identified in the following Table 1 - Table of ACM. The Table provides information on the magnitude of the project. It is the sole responsibility of the Hazardous Materials Abatement Contractor (HMAC) to visit the site, review the Contract Documents and determine the quantities of ACM to be removed when developing their bid. Locations and estimated quantities of specific items noted in paragraph A above include:

TABLE I – BASE BID - TABLE OF ACM

LOCATION(S)	MATERIAL	ESTIMATED QUANTITY
0-11, 0-12	Transite panels at ceiling and walls	750 SF
0-17, 1-19, 1-31, 1-33, 1-34, 2-47, 3-72, 3-84, 3-87	Vinyl sheet flooring and associated adhesive	850 SF
ST-09, ST-15, 1-18, 1-19, 1-20, 1-21, 1-24, 1-25, 1-26, 1-27, 1-28, 1-29, 1-30, 1-31, 2-36, 2-43, 2-49A, 2-54, 2-55, 2-56, 2-57, 2-58, 2-59, 3-63, 3-67, 3-78, 3-78A, 3-80, 3-80A, 3-81A, 3-91	9”x9” floor tiles and associated mastic	6000 SF
3-79, 3-81, 3-82, 3-92A, 3-92B, 3-94, 3-95	Residual 9”x9” floor tile mastic under paint, plywood and additional layers of flooring	625 SF
2-60, 2-61	12”x12” floor tiles and associated mastic	780 SF
3-63, 3-78, 3-78A, 3-79, 3-80, 3-80A, 3-81, 3-81A, 3-83, 3-83A, 3-83B, 3-87, 3-88, 3-89, 3-89A, 3-89B, 3-90, 3-91, 3-92, 3-92A, 3-92B, 3-93, 3-94, 3-95	Sand textured ceiling paint	1850 SF
ST-35, 2-36, 2-37, 2-38, 2-39, 2-40, 2-41, 2-42, 2-43, 2-44, 2-45, 2-46, 2-47, 2-48, 2-49, 2-49A, 2-50, 2-51, 2-52, 2-53, 2-54, 2-55, 2-56, 2-57, 2-58, 2-59, 2-60, 2-61, 3-63, 3-67, 3-69, 3-70, 3-71, 3-72, 3-73, 3-75, 3-76, 3-77, 3-78, 3-78A, 3-79, 3-80, 3-80A, 3-81, 3-81A, 3-82, 3-83, 3-83A, 3-83B, 3-84, 3-85, 3-86, 3-87, 3-88, 3-89, 3-89A, 3-89B, 3-90, 3-91, 3-92, 3-92A, 3-92B, 3-93, 3-93A, 3-94, 3-95	Joint compound on sheetrock walls and ceilings	23,500 SF
1-32	Wall panel adhesive	60 SF
1-22, 1-23, 1-24	Residual vinyl cove base adhesive and associated vinyl cove base	60 LF
1-28	Thermal system insulation and associated fittings	20 LF
1-31, 1-32	Paper insulation at ceiling mounted heater	3 at 8 SF EA
2-41, 3-81, 3-86, 3-88, 3-93	Cloth gasket at wall heater assembly	10 at 1 LF EA
2-59 Closet	Paper insulation on duct on HVAC unit	2 at 2 SF EA
2-39	Sink anti-condensate coating - black	1 sink

LOCATION(S)	MATERIAL	ESTIMATED QUANTITY
0-14, 2-42	Chimney flue cement	2 at 1 SF EA
2-54, 2-55, 2-57	Light fixture paper	3 fixtures
0-14	Woven flex connector between sections of duct work	1 at 6 LF, 1 at 5 LF
Main Roof	Roof fields	5525 SF
Main Roof	Flashing felts at chimney	4 at 4 SF EA
Main Roof	Flashing tar at vents	13 at 1 SF EA
Main Roof	Flashing tar at roof edges/parapet walls	375 SF
Lower Roof	Flashing tar at roof wall junction	35 LF
Lower Roof	Flashing tar at lower roof edges	75 SF
Façade D	Residual wall flashing at former overhang roofs	5 SF
Façades B, C, D	Wood window frame caulk*	160 LF
Façades B, C, D	Door caulk*	85 LF

* Caulk to be removed and disposed of as asbestos and presumed polychlorinated biphenyls (PCB) Bulk Product Waste.

C. The intent of the project is to remove all identified and assumed ACM from the building to facilitate the renovation project. Work under this project may be performed in phases to accommodate Owner's/Architect's requirements and construction phases. Coordinate abatement schedule and operations with the Owner/Architect/Owner's Consultant and other trades to include, if any, remobilization fees to support the phasing.

D. The HMAC shall determine the quantities of asbestos-containing materials requiring removal prior to submission of bid. Any discrepancies must be submitted in writing in RFI format to the Architect/Construction Manager for interpretation prior to submission of bid. The quantities provided above are estimates only.

E. The HMAC shall be responsible for select wall and ceiling demolition, the removal of counters, cabinets, fixtures, electrical, mechanical, plumbing systems and miscellaneous items to facilitate asbestos removal. The HMAC shall be responsible for accessing all plumbing walls to confirm the presence of and quantities of thermal system insulation within. Refer to Section 020750 Selective Demolition for Hazardous Materials Abatement for additional requirements.

F. The HMAC is directed to review Section 021100 PCB Remediation and 020900 Lead Paint Awareness for additional requirements affecting the work of this Section.

1.4 QUALITY ASSURANCE

A. The HMAC shall be licensed by the State of Connecticut Department of Public Health (DPH) to perform asbestos abatement.

B. The Asbestos Abatement Supervisor(s) and Asbestos Abatement Workers shall be accredited in accordance with EPA regulation 40 CFR Part 763, subpart E, Appendix C; and shall be licensed by the State of Connecticut Department of Public Health.

1.5 APPLICABLE CODES

A. The HMAC shall be solely responsible for conducting this project and supervising all work in a manner that will be in conformance with all federal, state and local regulations and guidelines pertaining to asbestos abatement. Specifically, the HMAC shall comply with the requirements of the following:

1. USEPA NESHAP Regulations (40 CFR 61, Subpart M);
2. OSHA Asbestos Regulations (29 CFR 1910.1001 and 1926.1101);
3. Connecticut DEEP Regulations (Section 22a-209-8 (I) and Section 22a-220 of the Connecticut General Statutes);
4. Connecticut DPH Standards for Asbestos Abatement Sections 19a-332a-1 to 19a-332a-16;
5. Connecticut DPH Licensure and Training Requirements Section 20-440-1 to Section 20-440-9.
6. Connecticut Basic Building Code (BOCA);
7. Connecticut Fire Safety Code (NFPA);
8. Local health and safety codes, ordinances or regulations pertaining to asbestos remediation and all national codes and standards including ASTM, ANSI, and Underwriter's Laboratories.

1.6 EXEMPTIONS

A. This project was designed by a State of Connecticut Department of Public Health licensed Asbestos Abatement Designer. Any deviation from these specifications requires the written approval and authorization from the Designer.

B. Any deviations from CTDPH Standards for Asbestos Abatement Sections 19a-332a-1 through 19a-332a-16 must be requested in writing and must be approved in writing by CTDPH.

1.7 NOTIFICATIONS, POSTINGS AND PERMITS

A. The HMAC shall make the following notifications and provide the submittals to the following agencies prior to the commencement of removal work. This notification is required ten (10) days (10 calendar days for CTDPH and 10 business days for USEPA) prior to the start of the abatement project:

1. State of Connecticut
   Department of Public Health
   Indoor Air Program, MS #12 AIR
   410 Capitol Avenue
   P.O. Box 340308
   Hartford, CT 06134-0308
2. USEPA New England Headquarters
   5 Post Office Square, Suite 100
   Boston, Massachusetts 02109-3912

   Note: Effective December 14, 2017, EPA needs to be notified directly for all asbestos abatement projects involving >160 square feet or >260 linear feet or 35 cubic feet of ACM.

B. The minimum information included in the notification includes:

1. Name and address of building owner/operator
2. Building location
3. Building size, age, and use

4. Amount of friable asbestos
5. Work schedule, including proposed start and completion date
6. Asbestos removal procedures to be used
7. Name and location of disposal site for generated asbestos waste, residue, and debris

C. Ten day notifications shall be posted for each individual phase of the project.

1.8 WORK SITE SAFETY PLAN

A. The HMAC shall establish a set of emergency procedures and shall post them in a conspicuous place at the work site. The safety plan should include provisions for the following:

1. Evacuation of injured workers.
2. Emergency and fire exit routes from all work areas.
3. Emergency first aid treatment.
4. Local telephone numbers for emergency services including ambulance, fire, and police.
5. A method to notify workers in the event of a fire or other emergency requiring evacuation of the building.
6. 24 hour site security program.

B. The HMAC is responsible for training all workers in these procedures.

1.9 ALTERNATIVE WORK PRACTICES (AWP)

A. There are currently no approved AWPs for this project.

B. Any deviations from these specifications require the written approval and authorization from the Owner and the Owner's Consultant.

C. Any deviations from CTDPH Standards for Asbestos Abatement Sections 19a-332a-1 through 19a-332a-16 must be requested in writing and must be approved in writing by CTDPH.

1.10 RE-OCCUPANCY CLEARANCE

A. Re-occupancy air sampling will be required within all interior work areas.

B. The Owner shall be responsible for payment of the sampling and analysis of initial final air clearance samples only. The HMAC shall be responsible for payment of all costs associated with the collection and analysis of additional final air clearance samples for areas that failed the initial test.

C. Phase Contrast Microscopy (PCM) air samples will be analyzed by the Owner's Consultant. Transmission Electron Microscopy (TEM) samples will be analyzed by an accredited laboratory on a 24-hour turnaround time. The turnaround time starts once the samples are received at the laboratory.

1.11 CONTROL OVER REMOVAL WORK

A. All HMAC work procedures shall be monitored by the HMAC's "Competent Person" to ensure that areas outside the designated work locations do not become contaminated. The following controls shall be implemented each working day to help ensure this:

1. Prior to work on any given day, the HMAC's designated "Competent Person" shall evaluate job tasks with respect to safety procedures and requirements specified to prevent contamination of the building or the employees. This includes a visual survey of the work area and the decontamination enclosure systems.

B. The HMAC shall maintain control of and be responsible for access to all work areas to ensure the following requirements:

1. Nonessential personnel are prohibited from entering the area;
2. All authorized personnel entering the work area shall sign the work area entry log;
3. All authorized personnel entering the work area shall read the "worker protection procedures" which are posted at the entry points to the enclosure system, and shall be equipped with properly fitted respirators and protective clothing;
4. All personnel who are exiting from the decontamination enclosure system shall be properly decontaminated;
5. Asbestos waste that is taken out of the work area must be properly bagged and labeled in accordance with these specifications. The surface of the bags shall be decontaminated. Asbestos waste leaving the enclosure system must be transported off site or immediately placed in locked, posted temporary storage on site, and be removed within 24 hours of the project conclusion.
6. Any material, equipment, or supplies that are brought out of the decontamination enclosure system shall be cleaned and decontaminated by wet cleaning and/or HEPA vacuuming of all surfaces.

1.12 SITE SECURITY

A. The HMAC shall be responsible for the security of regulated areas. Post asbestos abatement warning signs at entrances to the work area including the waste load out and worker decontamination chamber. The HMAC shall have a supervisor monitoring the entrance of the worker decontamination chamber during abatement work.

B. The supervisor shall maintain a work area access log for each work area. The access log shall document each person that enters the work area, the time entered and the time exited. Copies of the work area access logs shall be provided to the Owner’s Consultant during the course of the project.

1.13 PERSONNEL PROTECTION

A. Prior to commencing work, instruct all workers in all aspects of personnel protection, work procedures, emergency procedures use of equipment including procedures unique to this project.

B. Respiratory protection shall meet the requirements of OSHA as required in 29 CFR 1910.134, 29 CFR 1926.11, 29 CFR 1926.62 and the requirements of the CTDPH Standards for Asbestos Abatement (19a-332a-1 through 16). A formal respiratory protection program must be implemented in accordance with 29 CFR 1926.1101 and 29 CFR 1910.134. The HMAC shall conduct exposure assessment air sampling, analysis and reporting to ensure the workers are using appropriate respiratory protection.

C. The HMAC shall provide appropriate respiratory protection for each worker and ensure usage during potential asbestos exposure.

D. The HMAC shall provide respirators from among those approved as being acceptable for protection by the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part II.

E. The HMAC shall provide an adequate supply of filter for respirators in use.

F. Minimum respiratory protection shall be as follows:

Air borne Asbestos Level:	Required Respirator:
Not in excess of 1 f/cc (10 x PEL)	Half mask air purifying or otherwise as required respirator other than a disposable respirator, equipped with HEPA P 100 filters.
Not in excess of 5 f/cc (50 x PEL)	Full facepiece air purifying respirator equipped with HEPA P 100 filters.
Not in excess of 10 f/cc (100 x PEL)	Any powered air purifying respirator equipped with HEPA P 100 filters or any supplied air respirator operated in continuous flow mode.
Not in excess of 100 f/cc (1000 x PEL)	Full facepiece supplied air respirator operated in pressure demand mode.
Greater than 100 f/cc (1000 x PEL)	Full facepiece supplied air respirator unknown operated in pressure demand mode, equipped with an auxiliary positive pressure self-contained breathing apparatus.

Notes:

1. Respirators assigned for higher airborne fiber concentrations may be used at lower concentrations.
2. A high efficiency filter means a filter that is at least 99.97 percent efficient against mono-dispersed particles of 0.3 micrometers in diameter or larger.
3. In addition to the selection criteria in paragraph 1.15F, the HMAC shall provide a tight-fitting powered air purifying respirator equipped with high efficiency filters or a full facepiece supplied air respirator operated in the pressure demand mode equipped with HEPA egress cartridges or an auxiliary positive pressure self- contained breathing apparatus for all employees within the regulated area where Class I work is being performed for which a negative exposure assessment has not been produced and the exposure assessment indicates the exposure level will not exceed 1 f/cc as an 8-hour time weighted average. A full facepiece supplied air respirator operated in the pressure demand mode equipped with an auxiliary positive pressure self-contained breathing apparatus shall be provided under such conditions if the exposure assessment indicates exposure levels above 1 f/cc as an 8 hour time weighted average.
4. If compresses air is used for supplied air respirators, this air will meet the requirements for grade D breathing air as described by the Compresses Gas association commodity Specification G-7.1-1966. The compressor will be equipped with the necessary safety devices and sorbends/filters, and be situated to avoid entry of contaminated air. In addition, the compressor will be equipped with alarms to indicate failure or overheating, and additional alarms for indicating the presence of carbon monoxide. Air line couplings will be incompatible with outlets for other gas system to prevent inadvertent servicing of air line respirators with non-respirable gases.

G. The HMAC shall provide and require all workers to wear protective clothing in Work Areas where asbestos fiber concentration exceeds permissible limits established by the OSHA or where contamination exists. Protective clothing shall include impervious coveralls with elastic wrists and ankles, head covering, gloves and foot coverings.

H. The HMAC shall ensure that all authorized persons entering contaminated areas are equipped with proper respirators and protective clothing.

1.14 WORKER PROTECTION PROCEDURES

A. The HMAC shall monitor airborne asbestos concentrations in the workers' breathing zone to establish conditions and work procedures for maintaining compliance with OSHA Regulations 29 CFR 1910.1001 and 1926.1001.

B. The HMAC's air sampling professional shall document all air sampling results and provide all air sampling reports as soon as feasible. OSHA air monitoring results shall be posted at a conspicuous location at the job site.

C. All personnel air sampling shall be conducted in accordance with methods described in OSHA standards 29 CFR 1910.1001 and 1926.1101.

1.15 SUBMITTALS

A. The HMAC will submit two (2) copies of the following submittals to the Owner's Representative ten (10) calendar days prior to the commencement of removal work:

1. HMAC's construction schedule
2. Shop drawings showing work area configuration with decontamination facility and negative air exhaust locations
3. Waste generator label to be used including facility address, Owner's information and name of HMAC
4. Waste shipment and disposal form to be used with generator information completed
5. Waste hauling contractor and associated licenses
6. Asbestos abatement training (initial and current refresher), licenses, medical and respirator fit-test records of each employee who may be on the project site
7. The qualifications of the hygiene firm that the HMAC proposes to use for this project to analyze HMAC employee OSHA exposure monitoring samples
8. Copies of all notifications and permits
9. Copies of the written respirator plan compliant with the most current issue of OSHA 1910.134
10. Copies of all SDS sheets for materials to be used on site
11. Work Site Safety Plan
12. Negative Exposure Assessment, if any
13. HMAC's State of Connecticut Asbestos Contractor license
14. State and EPA Asbestos Notifications

B. The HMAC will submit the following to the Consultant during the work:

1. Results of all personal air sampling
2. Certificate of training (initial and current refresher), medical, and fit-test records for new employees to start work (24 hours in advance of work).
3. HMAC site logs and containment access logs
4. Revised Notifications, if any.

C. The following shall be submitted to the Consultant at the completion of work:

1. Completed copies of Waste Shipment Records (WSR).
2. Remaining personal air sampling results and site logs.

1.16 DEFINITIONS

A. ABATEMENT - Procedures to control fiber release from asbestos-containing materials; includes removal, encapsulation, and enclosure.

B. AIRLOCK - A system for permitting ingress and egress while assuring air movement to a contaminated area from an uncontaminated area. Two curtained doorways spaced a minimum of six feet apart can form an airlock.

C. AIR MONITORING - The process of measuring the fiber concentration of an area or of a person.

D. AIR SAMPLING PROFESSIONAL – A licensed professional capable of developing air sampling protocols and conducting air monitoring and analysis. This individual should be an industrial hygienist, an environmental scientist, or an engineer with experience in asbestos air monitoring and worker protection equipment and procedures. This individual should have demonstrated proficiency in conducting air sample collection in accordance with 29 CFR 1910.1001 and 1926.1101.

E. ADEQUATELY WETTED - means sufficiently mixed or coated with water, amended or an aqueous solution; or the use of removal encapsulant to prevent dust emissions.

F. AMENDED WATER - Water to which a surfactant has been added.

G. ASBESTOS - The name given to a number of naturally occurring fibrous silicates. This includes the serpentine forms and the amphiboles and includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite, or any of these forms that have been chemically altered.

H. ASBESTOS ABATEMENT - Means the removal, encapsulation, enclosure, renovation, or repair of asbestos-containing materials except activities that are related to the removal or repair of asbestos cement pipe and are performed by employees of a water company as defined in Section 25-32a of the Connecticut General Statutes.

I. ASBESTOS ABATEMENT SITE SUPERVISOR - Means any licensed individual who is employed or engaged by an HMAC to supervise an asbestos abatement project.

J. ASBESTOS ABATEMENT WORKER - Means any employee of an HMAC who engages in asbestos abatement.

K. ASBESTOS CONSULTANT - Any person who engages in any activity directly involved with asbestos consultation services and who has been issued a certificate by the commissioner and a license by the department.

L. ASBESTOS CONTAINING MATERIAL (ACM) - A material composed of asbestos of any type and in an amount greater than one percent be weight, either alone or mixed with other fibrous or nonfibrous material.

M. ASBESTOS CONTRACTOR - Any person or entity engaged in asbestos abatement whose employees actually perform asbestos abatement work.

N. ASBESTOS CONTROL AREA - An area where asbestos abatement operations are performed which is isolated by physical boundaries to prevent the spread of asbestos dust, fibers, or debris.

O. ASBESTOS FIBERS - Those particles with a length greater than five (5) microns and a length to diameter ratio of 3: 1 or greater.

P. ASBESTOS PERMISSIBLE EXPOSURE LIMIT (PEL) - The maximum airborne concentration of asbestos fibers to which an employee is allowed to be exposed. The current level established by OSHA is 0.1 fibers per cubic centimeter of air as an eight (8) hour time weighted average and 1.0 fibers/cc averaged over a sampling period of 30 minutes as an excursion limit. The HMAC is responsible for maintaining work areas in a manner that this standard is not exceeded.

Q. ASBESTOS PROJECT MONITOR - The licensed asbestos consultant who is certified as a project monitor and who functions as an on-site representative of the facility Owner or other persons by over-seeing the activities of the asbestos abatement contractor.

R. AUTHORIZED VISITOR - Any person authorized by the Owner to enter the building.

S. BUILDING OWNER - For this Contract only, the building Owner is the Town of Vernon.

T. CLEAN ROOM - An uncontaminated area or room, which is a part of the workers' decontamination enclosure with provisions for storage of workers' street clothes and protective equipment.

U. CLEARANCE SAMPLING - Final air sampling performed aggressively after the completion of the abatement project in a regulated area. Five (5) air samples collected by the asbestos abatement project monitor inside the work area, and having a fiber concentration of less than 0.010 fibers/cc of air will denote acceptable clearance sampling by Phase Contrast Microscopy. Five air samples collected by the asbestos abatement project monitor having an average asbestos concentration of less than 70 asbestos structures mm/sq. will denote acceptable clearance sampling for Transmission Electron Microscopy.

V. COMMISSIONER - Means the Commissioner of the Connecticut Department of Health Services or his/her authorized agent.

W. COMPETENT PERSON - A representative of the HMAC who is capable of identifying an asbestos hazard and who has the authority to take prompt corrective measures to eliminate the hazard during asbestos removal.

X. CONFINED SPACE - A work zone where access and egress are restricted, a potential for gaseous vapors to accumulate exist, or a potential for low oxygen content exists.

Y. DECONTAMINATION ENCLOSURE SYSTEM - A series of connected areas, with curtained doorways between any two adjacent areas, for the decontamination of workers and equipment. A decontamination enclosure system always contains at least one airlock and is adjacent and connected to the regulated area, where possible.

Z. DEPARTMENT - The Department of Public Health.

AA. EPA - Means the U.S. Environmental Protection Agency.

BB. ENCAPSULANT - A liquid material that can be applied to asbestos-containing material that controls the possible release of asbestos fibers from the materials by either creating a membrane over the surface (bridging encapsulant) or penetrating the material and binding its components together (penetrating encapsulant).

CC. ENCAPSULATION - A specified asbestos remediation strategy involving the application of an encapsulant to asbestos containing materials to control the release of asbestos fibers into the air.

DD. EQUIPMENT DECONTAMINATION ENCLOSURE - That portion of a decontamination enclosure system designed for controlling the transfer of materials and equipment, typically consisting of a washroom and a holding area.

EE. EQUIPMENT ROOM - A contaminated area or a room, which is part of the workers' decontamination enclosure with, provisions for storage of contaminated clothing and equipment.

FF. FACILITY - Means any private or public building or structure including but not limited to those used for institutional, residential (including single family homes), commercial or industrial purposes and vessels while ashore or in dry-dock.

GG. FIXED OBJECT - A unit of equipment or furniture in the work areas which cannot be removed from the work area.

HH. FRIABLE ASBESTOS MATERIAL - Any material that contains more than 1% asbestos by weight, that can be crumbled, pulverized or reduced to powder by hand pressure.

II. GLOVE BAG - An impervious plastic bag-like enclosure affixed around asbestos containing material, with glove-like appendages through which materials and tools may be handled.

JJ. HAZARDOUS MATERIALS ABATEMENT CONTRACTOR (HMAC) - Means the Asbestos Contractor, Lead Based Paint Abatement Contractor and or PCB/DEHP and Mercury Vapor Lighting Removal Contractor.

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

LL. HEPA VACUUM EQUIPMENT - Vacuum equipment with a HEPA filter system for filtering the effluent air from the unit.

MM. HOLDING AREA - An air-locked chamber in the equipment decontamination enclosure located between the washroom and an uncontaminated area.

NN. INSPECTOR (ASBESTOS ABATEMENT PROJECT MONITOR)- An individual, retained by the Building Owner, who is a "qualified asbestos abatement project monitor" as defined by the State of Connecticut Department of Public Health, and who will be responsible for monitoring the HMAC during the asbestos abatement project.

OO. MOVABLE OBJECT - A unit of equipment or furniture in the work area, which can be removed from the work area.

PP. NEGATIVE AIR FILTRATION EQUIPMENT - A portable local exhaust system equipped with HEPA filtration used to create negative pressure in a regulated area (negative with respect to adjacent unregulated areas) and capable of maintaining a constant, low velocity air flow into regulated areas from adjacent unregulated areas.

QQ. OWNER'S REPRESENTATIVE -The Asbestos Consultant for the project.

RR. NESHAPS - National Emissions Standard for Hazardous Air Pollutants regulations enforced by the EPA.

SS. PLASTICIZE - To cover floors and walls with plastic sheeting as specified herein.

TT. SEPARATION BARRIER - A rigid barrier sealed with two (2) layers of six (6) mil polyethylene sheeting installed between an occupied area and the asbestos abatement work area.

UU. SHOWER ROOM - A room between the clean room and the equipment room in the workers' decontamination enclosure with hot/cold running water and suitably arranged for employee showering during decontamination. The shower room is located in an airlock between the contaminated area and the clean area.

VV. STRIPPING - Removing asbestos materials from any structural member, pipe surface, HVAC, or other equipment.

WW. WASHROOM - A room between the work area and the holding area in the equipment decontamination enclosure with provisions for storage of contaminated clothing and equipment.

XX. WET CLEANING - The process of reducing asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools, which have been dampened by amended water, and by then disposing of these cleaning items as asbestos contaminated waste.

YY. WORK AREA - Designated rooms, spaces, or areas of the project in which asbestos abatement actions are occurring and which may become contaminated as a result of such abatement actions. The work area must be totally self-contained by sealing, plasticizing and equipping the area with a decontamination enclosure system.

ZZ. WORKER DECONTAMINATION ENCLOSURE SYSTEM - That portion of a decontamination enclosure system designated for controlled passage of workers, other personnel, and authorized visitors, typically consisting of a clean room, a shower room, and an equipment room.

AAA. WORK STOPPAGE CLEANUP PROCEDURE - A process following the issuance of a written stop work order, whereby the HMAC thoroughly cleans and decontaminates the work area, the decontamination enclosure system, and any other areas of the building affected by the removal project, to the satisfaction of the Asbestos Project Monitor.

BBB. WORK ZONE - The area of the decontamination enclosure system where asbestos is being removed.

1.17 PRECONSTRUCTION MEETING

A. The HMAC shall be required to attend a preconstruction meeting with his/her site supervisor, and any subcontractor they employ on site for the purpose of reviewing the contract requirements.

PART 2 - MATERIALS AND EQUIPMENT

2.1 MATERIALS

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.

B. Damaged or deteriorating materials shall not be used and shall be removed from the premises. Material that becomes contaminated with asbestos shall be decontaminated or disposed of as asbestos waste.

C. Polyethylene sheet in a roll size to minimize the frequency of joints shall be delivered to job site with factory label indicating 4 or 6 mil.

D. Polyethylene disposable bags shall be true six (6) mil with preprinted labels.

E. Tape shall be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheets to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water.

F. 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 of one (1) ounce surfactant to five (5) gallons of water or as directed by manufacturer.

G. Impermeable containers are to be used to receive and retain any asbestos-containing or contaminated materials until disposal at an acceptable disposal site. (The containers shall be

labeled in accordance with OSHA Standard 29 CFR 1926-1101.) Containers must be both air and watertight.

H. Labels and signs, as required by OSHA Standard 29 CFR 1926.1001 will be used.

I. Encapsulant shall be bridging or penetrating type which has been found acceptable to Eagle Environmental. Usage shall be in accordance with manufacturer's printed technical data.

J. Disposal labels shall be preprinted on self-adhesive labels with the generator name, abatement site and HMAC's name and address. Labels shall not be photocopied and applied with spray adhesive.

2.2 TOOLS AND EQUIPMENT

A. Provide suitable tools for asbestos removal, encapsulation and enclosure.

B. The HMAC shall have air monitoring equipment of type and quantity to monitor operations and conduct personnel exposure surveillance per OSHA requirements.

C. The HMAC shall have available sufficient inventory on site for materials necessary for the job including protective clothing, respirators, filter cartridges, polyethylene sheeting of proper size and thickness, tape, and air filters.

D. The HMAC shall provide temporary electrical power sources such as generators (when required).

E. The HMAC shall have available shower stalls and sufficient hose length and a drain system equipped with 5-micron filters.

F. Exhaust air filtration system units shall contain HEPA filter(s) capable of sufficient air exhaust to create negative pressure of 0.02 inches of water within the enclosure with respect to the outside area. Equipment shall be checked for proper operation by smoke tubes or a differential pressure gauge before the start of each shift and at least twice during the shift. Adequate exhaust air shall be provided for a minimum of four (4) air changes per hour within the enclosure. No air movement system or air filtering equipment shall discharge unfiltered air outside.

G. Vacuum units, of suitable size and capacities for project, shall have HEPA filter(s) capable of trapping and retaining at least 99.97 percent of all monodispersed particles of 0.3 micrometers in diameter or larger.

H. The HMAC will have reserve exhaust air filtration system units in order to maintain negative air filtration in the event that a unit malfunctions during use.

I. The HMAC shall have available and use recording manometers to monitor pressure differential between the work area and occupied areas of the building. A minimum negative pressure differential of 0.02 inches of water column shall be maintained.

J. The HMAC shall have available spray equipment capable of mixing a wetting agent with water and capable of generating sufficient pressure and volume and having sufficient hose length to reach all areas with asbestos.

K. HEPA filtered local exhaust ventilation shall be utilized during the installation of enclosures and supports where asbestos-containing materials may be disturbed.

PART 3 - EXECUTION

3.1 INTERIOR WORK AREA PREPARATION - GENERAL

A. Provide GFCI devices, temporary power, and temporary lighting installed in compliance with the applicable electrical codes. All temporary installations are to be made by a licensed electrician.

B. Shut down electrical power, including receptacles and light fixtures. Lock and tag out circuits associated with the electrical components in the work area(s). Under no circumstances during the abatement and ceiling demolition procedures will lighting fixtures be permitted to be energized.

C. Shut down and/or isolate heating, cooling, and ventilation air systems or zones to prevent contamination and fiber dispersal to other areas of the structure. Lock and tag out circuits associated with heating and cooling units. During the work, vents within the work area shall be sealed with duct tape and polyethylene sheeting.

D. Seal off all openings, including but not limited to windows, corridors, doorways, skylights, ducts, grills, diffuser, and any other penetration of the work areas, with polyethylene sheeting minimum of six (6) mils thick sealed with duct tape. This includes doorways and corridors which will not be used for passage during work areas and occupied areas. Install 5 micron water filtration socks in all floor drains prior to sealing.

E. Establish worker decontamination facility, critical barriers and negative air filtration prior to conducting pre-cleaning activities. Pre-clean fixed objects within the work areas, using HEPA vacuum equipment and/or wet cleaning methods as appropriate, and enclose with minimum six (6) mil plastic sheeting sealed with duct tape.

F. Pre-clean movable objects within the work areas, using HEPA vacuum equipment and 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.

G. After HEPA vacuum pre-cleaning, conduct work area preparation in accordance with this Specification section.

H. Where fixed walls are not used, one layer of six (6) mil polyethylene sheeting will be applied to a rigid framework of wood, metal, or PVC.

I. Install two (2) layers of four (4) mil polyethylene wall sheeting over all wall surfaces and critical barrier (where wall materials are not being removed as ACM). All overlaps shall be sealed with tape.

J. Cover all floors in the work area with two layers of six (6)-mil polyethylene sheeting (where flooring materials are not being removed as ACM). Extend the polyethylene flooring a minimum of twelve (12) inches up the walls. Ensure that each layer of the wall sheeting overlaps each layer of the floor sheeting from the top.

K. Maintain emergency and fire exits from the work area, or establish alternative exits satisfactory to fire officials.

L. Create pressure differential between work areas and occupied areas by the use of acceptable negative air pressure equipment. The HMAC shall ensure required negative air pressure is obtained throughout the containment and the total volume of air within the work area is changed every fifteen (15) minutes.

M. Install and maintain a manometer for each negative pressure enclosure where Class I work will

be performed.

N. Post all approaches to each work area with Asbestos Warning signs. Warning signs shall be of size and type that are easily readable and are visible from all approaches to the work areas.

3.2 CONTIGUOUS PERSONNEL DECONTAMINATION SYSTEM

A. The HMAC shall establish contiguous to each work area, a personnel decontamination system consisting of equipment room, shower room and clean room in series. Access between the contaminated and uncontaminated areas shall be through this decontamination enclosure only. The decontamination system shall be constructed of two layers of six-mil polyethylene sheeting. Pre-fabricated "pop-up" decontamination chambers will not be permitted on this project.

B. Access between rooms in decontamination system shall be through double flap-curtained openings. Clean room, shower room and equipment room within decontamination system shall be completely sealed ensuring that the sole source of air flow through this area originates from uncontaminated areas outside the work area.

C. The shower unit shall be equipped with an adequate supply of warm water. A shower filtration pump containing two (2) 5-micron sock filters or the best available technology shall be installed to filter shower water. Filtered shower water shall be discharged into sanitation drains and shall not be discharged into storm drains or onto floor or ground surfaces.

D. The shower room shall have soap and an adequate supply of drying towels. Provide an adequate number of shower units in accordance with OSHA 29 CFR 1926.1101.

E. If the decontamination system will be constructed on the exterior of the building, the entire unit shall be constructed of a solid frame and sturdy wall and ceiling system to prevent unauthorized entry and to keep out the weather. The entrance to the decontamination system shall be lockable and vented to allow for adequate make-up air into containment. The unit shall have a change area for the workers to change into street clothes before exiting.

3.3 REMOTE PERSONNEL DECONTAMINATION SYSTEM

A. The HMAC shall establish a remote personnel decontamination system where contiguous decontamination systems are not feasible. The use of such remote decontamination unit must be indicated in the State Notification. Access between the contaminated and uncontaminated areas shall be through this decontamination enclosure only. The decontamination system shall be constructed of two layers of six-mil polyethylene sheeting. Pre-fabricated "pop-up" decontamination chambers will not be permitted on this project.

B. Access between rooms in decontamination system shall be through double flap-curtained openings. Clean room, shower room and equipment room within decontamination system shall be completely sealed ensuring that the sole source of air flow through this area originates from uncontaminated areas outside the work area.

C. The shower unit shall be equipped with an adequate supply of warm water. A shower filtration pump containing two (2) 5-micron sock filters or the best available technology shall be installed to filter shower water. Filtered shower water shall be discharged into sanitation drains and shall not be discharged into storm drains or onto floor or ground surfaces.

D. The shower room shall have soap and an adequate supply of drying towels. Provide an adequate number of shower units in accordance with OSHA 29 CFR 1926.1101.

3.4 WASTE LOAD OUT SYSTEMS

A. The HMAC shall establish waste load out systems, attached to the work areas. Waste load out systems shall consist of a minimum of two (2) chambers that are of suitable size for transporting waste out of the work area. Waste load out systems shall be constructed of two layers of six-mil polyethylene sheeting.

B. Access between rooms in the waste load out system shall be through double flap-curtained openings. The waste load out system shall be used for decontaminating waste containers, bags, bundles, etc. prior to removal from the work area and transporting waste from the work area to the non-work area.

C. Persons working inside the contaminated work area are not permitted to pass from the work area to the non-work area through the waste load out system. Persons inside the contaminated work area shall not be permitted to enter into the clean area of the waste load out system.

D. The waste load out system shall remain sealed at all times except during decontamination of waste containers and transport of waste from the work area to the non-work area.

3.5 EXTERIOR WORK AREA PREPARATION – NON-FRIABLE ASBESTOS CONTAINING MATERIALS

A. Where exterior non-friable ACM is to be removed outdoors, post asbestos abatement warning signs and erect temporary barricades to create regulated areas. Regulated areas should be kept clear of any persons not fully trained and protected against exposure.

B. Exterior work areas shall be regulated with four-foot high orange construction fencing staked in place. Warning tape shall not be permitted in place of construction fencing. The fencing shall be established around the entire exterior work area leaving no openings in the fence other than at a single access point into the work area.

C. Post asbestos warning signs at twenty (20) foot intervals around the entire exterior regulated work area.

D. Establish temporary water service to support the work of this project. All temporary water service connections shall be made by a licensed plumber.

E. Comply with all OSHA requirements for all work including roof and caulk removal work.

F. Install single six (6) mil drop cloths extending a minimum of ten (10) feet from the exterior wall of the building. Extend polyethylene sheeting outward from the base of the structure in order to collect debris when working from higher elevations. Install single six (6) mil critical barriers over any louver, vent or penetration into the building interior within or directly adjacent to the regulated area.

G. Maintain an operable remote worker decontamination system during exterior abatement work.

H. Maintain a work area access log at each exterior regulated work area. Access into the regulated area shall be established at a designated location.

3.6 ASBESTOS REMOVAL PROCEDURE - GENERAL

A. The HMAC shall have a designated "Competent Person" on the job at all times to ensure establishment of a proper enclosure system and proper work practices throughout the project. At a minimum, the HMAC Competent Person shall perform or supervise the following duties, as applicable:

1. Ensure the integrity of the containment or enclosure.
2. Set up procedures to control entry to and exit from the enclosure.
3. Supervise employee exposure monitoring.

4. Ensure that employees set up, use and remove engineering controls, use work practices and personal protective equipment in compliance with OSHA regulations.
5. Ensure that employees use the worker decontamination facilities and observe decontamination procedures.

B. Abatement work will not commence until all work area preparation is completed in accordance with this technical specification section.

C. Spray asbestos materials with amended water using airless spray equipment or apply removal wetting agent to reduce the release of fibers during removal operation.

D. Spraying of amended water shall be adequate enough to allow the ACM to absorb the water. Actual removal of ACM shall not be allowed until all ACM has become adequately wet.

E. Do not create any visible emissions during asbestos removal. Ensure all ACM is adequately wet prior to removal.

F. Fill disposal containers as removal proceeds. Seal filled containers before moving to waste load out system. Wet clean each container thoroughly, double bag, drum or use other approved containerization methods and apply a caution label before moving to holding area.

G. Remove and containerize all visible accumulations of asbestos-containing and/or asbestos-contaminated debris.

H. Solidify all liquid waste prior to containerization for disposal.

I. Sealed disposal containers and all equipment used in the work area shall be included in the cleanup and shall be removed from work areas, via the waste load out system at an appropriate time in the cleaning sequence.

J. The HMAC shall remove from each containment all abated asbestos containing materials at the end of each work shift.

K. At any time during asbestos removal, should the competent person suspect contamination of areas outside the work area(s), they shall cause to stop all abatement work until steps to decontaminate these areas and eliminate causes of such contamination are completed. Unprotected individuals shall be prohibited from entering suspected contaminated areas until air sampling and visual inspections certify decontamination.

L. Upon acceptance of the work area by the Owner's Representative, the HMAC shall apply an even coating of bridging encapsulant with airless spray equipment to all exposed surfaces contained within the work area. Apply encapsulant in accordance with manufacturer's recommendation.

3.7 MINIMUM SPECIFIC ASBESTOS REMOVAL PROCEDURE – THERMAL SYSTEM INSULATION

A. Minimum specific requirements relative to the removal of thermal system insulation, including mudded pipe fitting cement, pipe insulation, duct paper insulation, gaskets in heaters and insulation in heaters, are as follows.

1. Prior to the removal of any thermal system insulation, the HMAC shall ensure the work area is prepped in accordance with the requirements of Section 3.1 INTERIOR WORK AREA PREPARATION – GENERAL.
2. Prior to starting any removal activities, the HMAC shall perform all required demolition to access all thermal system insulation within each work area. This shall

include the removal of built in cabinets, sheetrock and plaster walls to access thermal system insulation.

3. Overlying wall materials shall only be removed following the completion of work area preparation in accordance with the requirements of Section 3.1 INTERIOR WORK AREA PREPARATION – GENERAL but prior to the start of any asbestos removal work. During demolition, the HMAC shall confirm the presence and condition of thermal system insulation within walls and shall not damage the ACM. If damaged asbestos is encountered, the remaining wall system shall be removed and disposed of as ACM. Demolition debris not contaminated by ACM may be removed from work area as construction debris prior to the start of asbestos removal work. Install additional critical barriers and wall poly as necessary following cabinet demolition.
4. Ceiling mounted heaters shall remain in place and metal shell shall only be removed following the completion of work area preparation in accordance with the requirements of Section 3.1 INTERIOR WORK AREA PREPARATION – GENERAL but prior to the start of any asbestos removal work.
5. HVAC system shall remain in place and duct work shall only be removed following the completion of work area preparation in accordance with the requirements of Section 3.1 INTERIOR WORK AREA PREPARATION – GENERAL but prior to the start of any asbestos removal work.
6. Wall heater assemblies and associated cloth gaskets shall remain in place and shall only be removed following the completion of work area preparation in accordance with the requirements of Section 3.1 INTERIOR WORK AREA PREPARATION – GENERAL but prior to the start of any asbestos removal work.
7. Utilizing an airless sprayer, the HMAC shall adequately wet all thermal system insulation. Thermal system insulation shall include pipe insulation, pipe fittings, contaminated fiberglass insulation on pipes, residual insulation in penetrations and debris on ground, if identified during demolition.
8. Large pieces of thermal system insulation and contaminated materials shall be reduced to manageable sections and made wet prior to packaging for disposal. Metal components shall be placed in nylon mesh bags prior to disposal to prevent metal edges from ripping polyethylene disposal bags.
9. The HMAC shall cut banding, remove thermal systems insulation in sections and package for disposal. Ensure material is adequately wet prior to sealing disposal bag.
10. Remove all thermal system insulation debris from walls and floor penetrations.
11. Remove all visible residues from ducts, heaters, pipes and fittings using nylon scrub pads. Wire brushes are prohibited.
12. Clean all lengths of pipes, fittings, hangars, saddles, supports, threads, ducts and adjacent surfaces until they are free of visible residue.
13. Where pipes enter/exit walls, ceilings, floors, remove all insulation and HEPA vacuum all penetrations.
14. Metal components that remain following asbestos removal shall be visually inspected for residue and debris by the Owner's Consultant prior to any materials being removed from containment for recycling.

3.8 MINIMUM SPECIFIC ASBESTOS REMOVAL PROCEDURE – TRANSITE PANELS

A. Minimum specific requirements relative to the removal of asbestos-containing transite panels at ceilings and walls are as follows:

1. Prior to the removal of any transite panels, the HMAC shall ensure the work area is prepped in accordance with the requirements of Section 3.1 INTERIOR WORK AREA PREPARATION – GENERAL.
2. The HMAC shall continuously mist the panels with amended water, removal encapsulant, or detergent solution, so that entire surface is wet. Do not allow wetting agent to puddle or run off to other areas. If removal encapsulant is used, use in strict accordance with the manufacturer's instructions.

3. Immediately install additional isolation barriers in ceilings and walls if breeches are identified during ceiling removal. HEPA vacuum and wet wipe surfaces prior to installation of isolation barriers.
4. Continuously mist area where materials are being removed. Wet any debris generated as necessary to keep continuously wet.
5. Continuously pick up debris and place in drums lined with two (2) layers of six (6) mil thick disposal bags or in nylon mesh bags. Place nylon mesh bags into six (6) mil thick disposal bags with pre-printed OSHA warning labels. Ensure that all waste is placed in six (6) mil disposal bags during waste load out operations.
6. Remove all fasteners from walls and ceilings for disposal as asbestos waste. Do not hammer fasteners into studs or joists.
7. HEPA vacuum and wet wipe all remaining substrates to removal all residual cement board debris.
8. All liquid wastes shall be solidified once packaged for disposal. No liquid wastes shall be permitted to leave the Site in liquid form.

3.9 MINIMUM SPECIFIC ASBESTOS REMOVAL PROCEDURE – SHEETROCK WITH ASBESTOS CONTAINING JOINT COMPOUND AND TEXTURED CEILING PAINT

A. Minimum specific requirements relative to the removal of asbestos-containing sheetrock wall and ceiling systems are as follows:

1. Prior to the removal of any friable sheetrock, the HMAC shall ensure the work area is prepped in accordance with the requirements of Section 3.1 INTERIOR WORK AREA PREPARATION – GENERAL.
2. The HMAC shall continuously mist the sheetrock, joint compound and textured ceiling paint with amended water, removal encapsulant, or detergent solution, so that entire surface is wet. Do not allow wetting agent to puddle or run off to other areas. If removal encapsulant is used, use in strict accordance with the manufacturer's instructions.
3. Immediately install additional isolation barriers in ceilings and walls if breeches are identified during ceiling removal. HEPA vacuum and wet wipe surfaces prior to installation of isolation barriers.
4. Continuously mist area where materials are being removed. Wet any debris generated as necessary to keep continuously wet.
5. Continuously pick up debris and place in lined drums or in nylon mesh bags. Place nylon mesh bags into six (6) mil thick disposal bags with pre-printed OSHA warning labels. Ensure that all waste is placed in six (6) mil disposal bags during waste load out operations.
6. Remove all fasteners from walls and ceilings. Remove all textured ceiling paint overspray and joint compound residue from electrical boxes, hangers, walls, framing, electrical wires, etc.
7. All liquid wastes shall be solidified once packaged for disposal. No liquid wastes shall be permitted to leave the Site in liquid form.
8. All layers of plaster and associated contaminated materials shall be removed, properly labeled and disposed of as ACM waste.

3.10 MINIMUM SPECIFIC ASBESTOS REMOVAL PROCEDURE – WALL PANEL ADHESIVE AND VINYL COVE BASE ADHESIVES

A. Minimum specific requirements relative to the removal of asbestos-containing non-friable adhesives are as follows:

1. Prior to the removal of any wall panels, vinyl cove base or associated asbestos containing adhesives, the HMAC shall ensure the work area is prepped in accordance with the requirements of Section 3.1 INTERIOR WORK AREA PREPARATION –

GENERAL.

2. The HMAC shall continuously mist the walls with amended water, removal encapsulant, or detergent solution, so that entire surface is wet. Do not allow wetting agent to puddle or run off to other areas. If removal encapsulant is used, use in strict accordance with the manufacturer's instructions.
3. Remove wall paneling and vinyl cove base materials using manual or mechanical methods. Continuously mist work area and wall substrates during removal. Wet any debris generated as necessary to keep continuously wet.
4. Continuously pick up materials and place in lined drums or in nylon mesh bags. Cut wall paneling into manageable pieces for packaging, transport and disposal. Place nylon mesh bags into six (6) mil thick disposal bags with pre-printed OSHA warning labels. Ensure that all waste is placed in six (6) mil disposal bags during waste load out operations.
5. All liquid wastes shall be solidified once packaged for disposal. No liquid wastes shall be permitted to leave the Site in liquid form.
6. Following removal of wall paneling and vinyl cove base, the HMAC shall remove the associated adhesives remaining on the walls. Remove all staining from substrates.

3.11 MINIMUM SPECIFIC ASBESTOS REMOVAL PROCEDURE – FLOOR TILE, VINYL SHEET FLOORING AND ASSOCIATED ADHESIVES

A. Provide selective demolition to remove limited partition walls, furniture, cabinetry and plumbing fixtures to access all floor tiles as specified herein. Refer to Section 020750 Selective Demolition for Hazardous Materials Abatement for additional requirements prior to floor tile removal.

B. Removal of all layers of flooring down to wood substrate, whether or not shown on abatement plan drawings, is included in the base work; no change order will be accepted. 9"x9" floor tiles and residual black floor tile mastic are present under plywood and carpet throughout most of building. Where flooring is indicated for removal, all layers of flooring shall be removed and disposed of as asbestos waste.

C. Minimum specific requirements relative to the removal of asbestos-containing non-friable flooring materials are as follows:

1. Prior to the removal of any non-friable flooring products, the HMAC shall ensure the work area is prepped in accordance with the requirements of Section 3.1 INTERIOR WORK AREA PREPARATION – GENERAL.
2. The HMAC shall continuously mist the non-friable flooring products with amended water, removal encapsulant, or detergent solution, so that entire surface is wet. Do not allow wetting agent to puddle or run off to other areas. If removal encapsulant is used, use in strict accordance with the manufacturer's instructions.
3. Remove flooring materials using manual or mechanical methods. Continuously mist floor in area where flooring is being removed. Wet any debris generated as necessary to keep continuously wet.
4. Continuously pick up flooring materials and place in lined drums or in nylon mesh bags. Place nylon mesh bags into six (6) mil thick disposal bags with pre-printed OSHA warning labels. Ensure that all waste is placed in six (6) mil disposal bags during waste load out operations.
5. All liquid wastes shall be solidified once packaged for disposal. No liquid wastes shall be permitted to leave the Site in liquid form.
6. Flooring materials shall be properly labeled and disposed of as ACM waste.
7. Following removal of floor tiles, the HMAC shall remove the associated flooring adhesives remaining on the floor. The HMAC shall be responsible for removing all adhesives and leveling compound from the floor and shall remove and dispose of these materials as asbestos waste.

3.12 MINIMUM SPECIFIC WORK AREA PREPARATION REQUIREMENTS – SINK UNDERCOATING, LIGHT FICTURE PAPER AND FLEX CONNECTORS

A. Minimum specific requirements relative to the removal of metal sinks with asbestos undercoating, light fixtures with asbestos containing fixture paper and woven flex connectors are as follows.

1. The HMAC may remove the entire sink, light fixture and flex connector following CTDPH guideline dated April 7, 2003 for "intact removal of non-friable ACM".
2. The HMAC shall confirm all electrical and plumbing disconnects are performed prior to removal. Remove light bulbs for reclamation prior to disassembling light fixtures.
3. Install drop cloth and regulate area prior to start of removal work.
4. Sink may be removed by removing clamps holding sink to counter top, removing entire counter top with sink attached or cutting counter top surrounding sink and disposing as asbestos waste. Do not damage sink undercoating during removal.
5. Light fixtures may be removed by unscrewing fixture from mounting bracket and disposing of entire fixture as asbestos waste.
6. Flex connector may be removed by unscrewing connector from adjacent metal ducts or cutting ducts minimum six (6) inches from flex connector. Do not cut woven flex connector. Wet wipe and HEPA vacuum interior and exterior of adjacent ducts following removal and prior to visual inspection by Owner's Consultant.
7. Removed items shall be misted with amended water, removal encapsulant, or detergent solution and immediately packaged for disposal in leak-tight containers with required labeling. Transport immediately to waste disposal container.
8. The Owner's Consultant shall perform a visual inspection of each work area prior to the area being deregulated.

3.13 MINIMUM SPECIFIC REMOVAL PROCEDURE – EXTERIOR NON-FRIABLE CAULK

A. Exterior caulk is presumed to be PCB containing with concentrations greater than 50 parts per million (ppm). Prior to the removal of any exterior non-friable caulk, the HMAC shall ensure the work area is prepared in accordance with the requirements of Section 3.5 EXTERIOR WORK AREA PREPARATION – NON FRIABLE ASBESTOS CONTAINNG MATERIALS and Section 021100 PCB Remediation.

B. Exterior caulk shall be removed in accordance with exterior non-friable ACM removal procedures. Remove non-friable ACM utilizing methods that do not cause the material to become friable.

C. Pre-clean all interior and exterior work areas to remove and containerize all pre-existing asbestos-containing caulk prior to installing drop cloths or floor sheeting. Install a single layer six (6) mil polyethylene barrier over all openings to the interior of the building within work area.

D. Remove all caulk layers down to bare substrate. Ensure full depth of caulk is removed.

E. Keep debris wet and provide immediate cleanup following removal operation.

F. Continuously mist material during removal. Do not create visible emissions during removal operations.

G. Containerize waste in two (2) six (6) mil disposal bags as removal proceeds. Segregate waste for proper disposal. Refer to Plans for locations of caulking material.

H. Door frames, panels, window frames and all other miscellaneous materials which cannot be cleaned of residual caulk and scheduled for demolition shall be disposed of as PCB bulk product waste and asbestos-contaminated waste.

I. Final clean entire work area; HEPA vacuum and wet clean each area where caulk removal occurred so no visible dust or debris remains.

J. Final clean exterior grounds within and outside regulated area as necessary to ensure all debris is removed. Wet and containerize debris for proper disposal.

K. Exterior work areas will be visually inspected and cleared through visual inspection by Owner's Consultant prior to being released to the General Contractor or Owner.

3.14 MINIMUM SPECIFIC REMOVAL PROCEDURE – EXTERIOR NON-FRIABLE ROOF FLASHING CEMENT AND ROOF FIELDS

A. Prior to the removal of any exterior non-friable flashing cement and roofing materials, the HMAC shall ensure the work area is prepped in accordance with the requirements of Section 3.5 EXTERIOR WORK AREA PREPARATION – NON FRIABLE ASBESTOS CONTAINING MATERIALS.

B. The HMAC shall coordinate extents of roof demolition with the General Contractor prior to the start of roofing material removal. Coordinate protection of roofs with General Contractor to prevent water infiltration.

C. Remove exterior non-friable ACM utilizing methods that do not cause the material to become friable such as chipping hammers or hand scrapers.

D. Pre-clean all exterior work areas to remove and containerize all pre-existing exterior non-friable ACM prior to installing drop cloths.

E. Comply with all OSHA requirements.

F. Where flashing cement is scheduled for removal, remove all layers of flashing cement and felts down to bare substrate. Remove materials which cannot be decontaminated and dispose of as asbestos-contaminated waste.

G. Keep debris wet and provide immediate cleanup following removal operation.

H. Continuously mist material during removal. Do not create visible emissions during removal operations.

I. Containerize waste in two (2) six (6) mil disposal bags as removal proceeds. Properly label each bag of waste.

J. All roofing materials removed shall be lowered to the ground and placed in the appropriate waste container by the end of each shift.

K. Where flashing cements on brick at chimney bases, roof edges and roof walls are scheduled for removal, remove all roofing materials down to bare substrate and dispose of as ACM. Do not damage substrates scheduled to remain.

3.15 SPECIFIC REQUIREMENTS – SPOT REMOVAL GLOVEBAG

A. Where less than three (3) linear/square feet of ACM is to be removed by glovebag operation, post asbestos abatement warning signs and erect temporary barricades to create regulated areas. Regulated areas should be kept clear of any persons not fully trained and protected against exposure.

B. Provide GFCI devices and temporary power installed in compliance with the applicable electrical codes.

C. Pre-clean surfaces contaminated with ACM, using HEPA vacuum equipment or wet wiping as appropriate. Where friable asbestos containing materials are present, establish worker decontamination facility, critical barriers and negative air filtration prior to conducting pre-cleaning activities.

D. Install one layer of six (6) mil polyethylene sheeting on the ground below the work inside the regulated area. All overlaps shall be sealed with tape or spray adhesive.

E. Install six (6) mil glovebag in accordance with OSHA 1926.1101.

F. Post all approaches to each work area with asbestos warning signs. Warning signs shall be of size and type that are easily readable and are visible from all approaches to the work areas.

G. A minimum of two (2) workers will be required to perform glovebag removal activities. Perform removal in accordance with OSHA 1926.1101.

H. All applicable OSHA requirements and glovebag manufacturer's recommendations shall be met during glove bag operations. In the case where a glovebag is not feasible, the Contractor will need to build a full negative pressure containment of sufficient size and follow all regulations as it pertains to removal.

1. Mix the surfactant with water in the garden sprayer, following the manufacturer's directions.
2. Have each employee put on a HEPA filtered respirator approved for asbestos and check the fit using the positive/negative fit check.
3. Have each employee put on a disposable full-body suit. Remember, the hood goes over the respirator straps.
4. Check closely the integrity of the glove bag to be used. Check all seams, gloves, sleeves, and glove openings. OSHA requires the bottom of the bag to be seamless.
5. Attach glovebag with required tools per manufacturer's instructions.
6. Using the smoke tube and aspirator bulb, test 10% of glovebags by placing the tube into the water porthole (two-inch opening to glove bag), and fill the bag with smoke and squeeze it. If leaks are found, they should be taped closed using duct tape and the bag should be retested with smoke.
7. Insert the wand from the water sprayer through the water porthole.
8. Insert the hose end from a HEPA vacuum into the upper portion of the glove bag.
9. Wet with removal encapsulant and remove the pipe/cork insulation. Scrub remaining pipes with nylon pads to remove all asbestos residue.
10. If the section of pipe is covered with an aluminum jacket, remove it first using the wire cutters to cut any bands and the tin snips to remove the aluminum. It is important to fold the sharp edges in to prevent cutting the bag when placing it in the bottom.
11. When the work is complete, spray work area and upper portion of the bag and clean; push all residue into the bottom of the bag with the other waste material. Be very thorough. Use adequate water.
12. Put all tools, after washing them off in the bag, in one of the sleeves of glove bag and turn it inside out, drawing it outside of the bag. Twist the sleeve tightly several times to seal it and tape it several tight turns with duct tape. Cut through the middle of the duct tape and remove the sleeve. Put the sleeve in the next glove bag or put it in a bucket of water to decontaminate the tools after cutting the sleeve open.
13. Turn on the HEPA vacuum and collapse the bag completely. Remove the vacuum nozzle, seal the hole with duct tape, twist the bag tightly several times in the middle, and tape it to keep the material in the bottom during removal of the glove bag from the pipe or substrate being abated.
14. Slip a disposal bag over the glove bag (still attached to the pipe or substrate).
15. Remove the tape securing the ends and slit open the top of the glove bag and carefully fold it down into the disposal bag. Double bag and gooseneck waste materials.

16. Each glovebag shall pass a visual inspection by the Owner's Consultant prior to bag removal.

3.16 FINAL CLEANING AND ENCAPSULATION

A. Upon completion of gross removal of all ACM specified for removal, the HMAC shall begin final cleaning of the effected work area. The HMAC shall HEPA vacuum and wet wipe all surfaces contained within the work area.

B. All tools or equipment that are not necessary for final cleaning shall be decontaminated or bagged and removed from the work area enclosure.

C. The HMAC shall begin final cleaning procedures at the furthest and highest most points from the personnel decontamination unit and move towards the unit. The HMAC shall ensure that all exposed building components and or surfaces are thoroughly HEPA vacuumed and wet wiped.

D. The HMAC shall HEPA vacuum and wet wipe any component specified to remain inside the work area enclosure.

E. The HMAC shall thoroughly wet wipe all polyethylene sheeting inside the work area enclosure.

F. Remove and replace all pre-filters on negative air filtration equipment. Decontaminate all negative air filtration equipment including wheels.

G. Remove all waste from Equipment Room in Decontamination System. Decontaminate entire personnel decontamination facility. Pump standing water from shower basin through filtration system

H. Once all surfaces and components within the work area have been thoroughly cleaned, AND THE WORK AREA IS DRY, the HMAC's Competent Person shall perform a visual inspection of all surfaces and components within the work area enclosure. The HMAC's Competent Person shall sign off on the work area stating that all abatement has been completed for that portion of work and that the work area has met the no visible residue criteria.

I. The HMAC's Competent Person shall then request a final visual inspection to be performed by the Owner's Consultant. The Owner's Consultant shall visually inspect all surfaces and components in the work area for residual debris and or dust. Work areas must be dry for final visual inspection. Inspections will not be performed in work areas where there is standing water or wet surfaces. Additional cleaning shall be performed at the HMAC's expense if the Owner's Consultant identifies visual debris and/or dust during the visual inspection. Additional cleaning shall be performed until the work area meets the no visible residue/dust criteria.

J. Upon acceptance of the work area by the Owner's Consultant, the HMAC shall apply an even layer of bridging encapsulant to all surfaces contained within the work area. The Owner's Consultant shall verify the completeness of work area encapsulation.

3.17 EXTERIOR WORK AREAS FINAL CLEANING

A. Upon completion of gross removal of all ACM specified for removal, the HMAC shall begin final cleaning of the effected work area. The HMAC shall wet debris that has accumulated on the drop cloths. And shall roll up the drop cloths ensuring that all debris is contained within the polyethylene sheeting.

B. The HMAC shall HEPA vacuum and wet wipe surrounding surfaces contained within the work area.

C. The HMAC shall begin final cleaning procedures at the furthest and highest most within the regulated work area. The HMAC shall ensure that all exposed building components and or surfaces contained within the work area are thoroughly HEPA vacuumed and wet wiped.

D. Exterior work areas shall not be deregulated until a final visual inspection has been performed by the Asbestos Supervisor and Asbestos Project Monitor.

3.18 WASTE PACKAGING AND REMOVAL PROCEDURE

A. The HMAC shall strictly adhere to the requirements of this section for ACM waste packaging and transporting waste from the work area enclosure to the disposal dumpster.

B. Waste disposal bags and drums shall be affixed with pre-printed OSHA warning labels, DOT labels and NESHAP labels.

C. Each container of ACM waste shall be made adequately wet prior to sealing the container. Bags shall be sealed immediately following additional wetting procedures. Bags of ACM waste shall not be permitted to remain unsealed while in the work area enclosure.

D. Each bag of ACM waste shall be double-bagged during waste load out procedures. The following waste load out procedure shall be strictly adhered to:

1. Wet wipe inner bag or drum to remove all ACM contamination. Ensure the inner bag is sealed.
2. Transport bag or drum to the equipment room located in the worker decontamination enclosure.
3. One worker, equipped with personal protective equipment, shall be inside the clean room of the worker decontamination enclosure.
4. The worker in the clean room of the decontamination enclosure shall open a six-mil disposal bag and hold it open inside the shower room where the inner bag containing the ACM waste shall be placed.
5. The outer bag shall be sealed with duct tape inside the shower room.
6. The double bagged or drummed waste shall be removed from the decontamination enclosure and waste generator labels shall be immediately affixed to the outer bag or drum.
7. Waste generator labels shall be printed self-adhering labels and shall contain the Owner's name, the site location address, and the HMAC's name.
8. The properly labeled waste shall be transported directly to the lined waste container.
9. The waste container shall be double lined with 6-mil polyethylene sheeting.
10. OSHA warning signs shall be secured to the waste container prior to any loading and unloading operations.
11. The waste container shall be kept locked at all times other than loading and unloading.

3.19 DISPOSAL OF ASBESTOS AND ASBESTOS CONTAMINATED WASTE

A. All disposal of asbestos containing and or asbestos contaminated material must be in compliance with requirements of the State of Connecticut Department of Energy and Environmental Protection, State of Connecticut Department of Public Health and the USEPA NESHAP regulations.

B. Caulks and window glazing compounds shall be properly packaged, labeled and disposed of as asbestos and presumed PCB Bulk Product Waste.

C. Disposal approvals shall be obtained from the CTDEEP before commencing asbestos removal

if waste will be disposed of in Connecticut.

D. Waste container storage locations shall be pre-approved by the Owner and Owner's Consultant.

E. A copy of approved disposal authorization shall be provided to the Owner and Owner's Consultant and any required federal, state or local agencies.

F. Copies of all landfill receipts will be retained by the Owner's Consultant as part of the project file. The receipts will be signed by the landfill operator on receipt, and the quantity of asbestos debris leaving the job site and arriving at the landfill acknowledged.

G. All asbestos debris shall be transported in covered, sealed vans, boxes or dumpsters, which are physically isolated from the driver by an airtight barrier. All vehicles must be properly licensed to meet United States Department of Transportation (USDOT) requirements.

H. Friable ACM waste shall be placed in double lined enclosed waste containers equipped with a lockable hasp. Waste containers shall be posted with OSHA warning signs during loading and unloading.

I. All liquid waste generated during the work shall be solidified. At no time will liquid wastes be permitted to be stored on site. Liquid waste generated during this project shall be solidified prior to the end of each work shift.

J. Completed Waste Shipment Records (WSR) signed by the landfill must be returned to the Owner or Owner's Consultant no later than 45 days from the time the waste was transported off-site. Completed waste shipment records that are not received by the Owner within 35 days shall require the HMAC to begin tracking the waste. The HMAC must notify the Owner of intentions on tracking the waste.

K. The HMAC must take appropriate actions as outlined in 40 CFR Part 61 NESHAP regulations when completed WSR are not forwarded to the Owner or Owner's Consultant within 45 days from the time the waste was transported off-site.

3.20 REOCCUPANCY AIR CLEARANCE MONITORING

A. After the presealant visual inspection has passed and all surfaces in the abatement area(s) have dried, reoccupancy air clearance monitoring will be performed. The primary and secondary barriers, worker decontamination enclosure, and negative air filtration units shall remain in place. At no time shall tools, ladders, vacuums or waste remain inside the work area enclosure during final air clearance sampling.

B. Once the work area has dried, the Owner's Consultant shall collect aggressive re-occupancy air clearance samples. Aggressive air monitoring will be used. Selection of the locations of the air samples shall be the responsibility of the Owner's Consultant. Air monitoring volumes shall be sufficient to provide a detection limit of 0.010 f/cc (fiber per cubic centimeter of air) using NIOSH-7400 method by Phase Contrast Microscopy (PCM) or 0.005 s/mm^2 (structures per square millimeter) using Tranmission Electron Microscopy (TEM) method.

C. Areas that do not comply with the re-occupancy air clearance criteria shall continue to be cleaned by and at the HMAC's expense until the specified re-occupancy air clearance criteria is achieved as evidenced by results of air testing as previously specified.

D. Laboratories conducting analysis of final air clearance samples shall be approved by the State of Connecticut Department of Health.

3.21 OWNER'S CONSULTANT RESPONSIBILITY

A. The Owner shall retained the services of a licensed Asbestos Project Monitor to monitor this project. The Owner's Consultant shall collect and analyze air samples to ascertain the integrity of controls, which protect the building from asbestos contamination. Independently, the HMAC shall monitor air quality within the work area to ascertain the protection of employees and to comply with OSHA regulations.

B. The Owner's Consultant shall collect and analyze air samples during a minimum of two time periods:

1. Abatement Period: The Asbestos Abatement Project Monitor may collect samples on a daily basis during the work period. A sufficient number of background samples shall be taken outside of the work area, at the exhaust of the negative pressure filtration equipment, and outside of the building to evaluate the degree of cleanliness or contamination of the building during asbestos removal. Additional samples may be taken inside the work area and decontamination enclosure system, at the discretion of the Asbestos Abatement Project Monitor.

    a. The Asbestos Abatement Project Monitor shall provide a continual evaluation of the air quality of the building during asbestos abatement, using his/her best professional judgments in respect to the State Department of Public Health guideline of 0.010 f/cc or the background air quality established during the pre-abatement period, whichever is higher.
    b. If the Asbestos Abatement Project Monitor determines that the building air quality has become contaminated from the project, he/she shall immediately inform the HMAC to cease all removal operations and implement a work stoppage clean up procedure. The HMAC shall conduct a thorough cleanup of areas of the building designated by the Asbestos Abatement Project Monitor. No further asbestos abatement work shall take place until the Asbestos Abatement Project Monitor has determined that the building's air has been decontaminated.
    c. Abatement air samples shall be collected for a minimum period of ninety minutes at a minimum flow rate of 12 liters per minute, or as required to obtain a volume of 1,000 liters. Samples shall be analyzed by phase contrast microscopy (PCM) using the NIOSH 7400 protocol.

2. Reoccupancy Clearance Period: The Asbestos Abatement Project Monitor shall conduct air sampling following the final cleanup phase of the project, once the "no visible residue" criterion as established by the site supervisor and the Asbestos Abatement Project Monitor has been met.

    a. Phase Contrast Microscopy (PCM) - For work areas containing less than 500 linear feet or 1500 square feet of ACM, post abatement analysis of the samples to determine if reoccupancy clearance standards have been met shall be conducted by PCM. A minimum of five (5) samples shall be collected inside each containment utilizing aggressive methods to comply with State of Connecticut DPH Standard for Asbestos Abatement sections 19a-332a-12, and 19a-332a-13. The project shall be considered complete when the results of samples collected in the work area and analyzed by phase contrast microscopy using the most current National Institute for Occupational Safety and Health (NIOSH) method 7400, to show that the concentration of fibers for each of the five samples is less than or equal to a limit of quantification for PCM (0.010 fibers per cubic centimeter of air).
    b. Transmission Electron Microscopy (TEM) - For work areas containing greater than 500 linear feet or 1500 square feet of ACM, post abatement analysis of

the samples to determine if reoccupancy clearance standards have been met shall be conducted by TEM. A minimum of five (5) samples shall be collected inside containment utilizing aggressive methods to comply with State of Connecticut DPH Standard for Asbestos Abatement sections 19a-332a-12, and 19a-332a-13. An asbestos abatement project shall be considered complete when the average concentration of asbestos fibers of five air samples collected within the work area and analyzed by the TEM method in Appendix A of 40 CFR Part 763 subpart E is less than 70.0 structures per square millimeter (s/mm^2) of filter surface or is not statistically significantly different, as determined by the Z-test calculation found in Appendix A of 40 CFR Part 763, subpart E, from the average asbestos concentration of five air samples collected at the same time outside the work area and analyzed in the same manner, and the average asbestos concentration of the three field blanks described in Appendix A of 40 CFR Part 763, subpart E, is below the filter background level, as defined in Appendix A of 40 CFR Part 763 subpart E, of 70 s/mm^2.

C. Inspections shall be conducted by the Owner's Consultant throughout the progress of the abatement project. Inspections shall be conducted in order to document the progress of the abatement work as well as the procedures and practices employed by the HMAC. The Asbestos Abatement Project Monitor shall perform the following inspections during the course of abatement activities.

1. Precommencement Inspection: Precommencement inspections shall be performed at the time requested by the HMAC. The Asbestos Abatement Project Monitor shall be informed 24 hours prior to the time the inspection is needed. During the course of the precommencement inspection, the Asbestos Abatement Project Monitor shall inspect the containment. This shall include, but not be limited to, inspection of barrier integrity, the worker decontamination, facility, negative air filtration equipment etc. If during the course of the precommencement inspection, deficiencies are found, the HMAC shall perform the necessary adjustments in order to obtain compliance.
2. Work Area Inspections: Work area inspections shall be conducted on a daily basis at the discretion of the Asbestos Abatement Project Monitor. During the course of the work area inspections, the Asbestos Abatement Project Monitor shall observe the HMAC removal procedures, verify barrier integrity, monitor negative air filtration devices, assess project progress, and inform the HMAC of specific remedial activities if deficiencies are noted.
3. Presealant Inspection: Upon the request of the HMAC, The Asbestos Abatement Project Monitor shall conduct a presealant inspection. The presealant inspection shall be conducted after completion of the initial final cleaning procedures, but prior to work area encapsulation. The presealant inspection shall verify that all ACM and residual debris have been removed from the work area. If, during the course of the presealant inspection, the Asbestos Abatement Project Monitor identifies residual dust or debris, the HMAC shall comply with the request of the Asbestos Abatement Project Monitor, in order to render the area is free of visible residue.
4. Final Visual Inspection: Following receipt of acceptable reoccupancy air monitoring results and concurrent with removal of the work area containment, the Asbestos Abatement Project Monitor shall conduct a final visual inspection. If residual dust or debris is identified during the course of the final inspection, the HMAC shall comply with the request of the Asbestos Abatement Project Monitor, in order to render the area free of visible residue.

END OF SECTION

SECTION 02 08 20 - UNIVERSAL WASTE RECLAMATION

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.

B. Related Section:

1. Section 010100: Hazardous Materials General Requirements
2. Section 010260: Hazardous Materials Unit Prices
3. Section 020750: Selective Demolition for Hazardous Materials Abatement
4. Section 020800: Asbestos Abatement
5. Section 020900: Lead Paint Awareness
6. Section 021100: PCB Remediation

1.2 GENERAL PROVISIONS

A. The entire interior of the building located at 28-34 Main Street in Vernon, Connecticut will be gut rehabbed during the renovation project. The reclamation of universal waste products as defined by the State of Connecticut Department of Energy and Environmental Protection (CTDEEP) will be performed in conjunction with the renovation project.

1.3 DESCRIPTION OF WORK

A. The Hazardous Materials Abatement Contractor (HMAC) shall furnish all labor, materials, facilities, equipment, services, employee training and testing, permits and agreements, and waste transport, incineration, and reclamation necessary to perform the work required for universal waste removal and reclamation in accordance with these specifications; EPA, OSHA, NIOSH, State of Connecticut regulations, and other applicable federal, state and local government regulations. Whenever there is a conflict or overlap of the above references, the most stringent provisions are applicable.

B. Collection and reclamation of inert gases in lamp products: The HMAC is responsible for disassembling all interior and exterior light fixtures and removing the associated lamps from the fixtures for proper reclamation. Approximate quantities of lamps requiring reclamation include one thousand six (1006) linear feet of fluorescent light tubes within the areas of renovation.

C. Collection, reclamation and incineration of light ballasts: The HMAC is responsible for removing ballasts that are assumed to contain PCB or DEHP. Approximate quantities of ballasts requiring reclamation include ninety (90) DEHP ballasts within the areas of renovation.

D. Collection, reclamation of lead-acid batteries: The HMAC is responsible for disassembling emergency lighting and signage units to remove all lead-acid batteries for recycling within areas of renovation and demolition. Two (2) batteries within Room 1-28 require reclamation.

E. Collection and reclamation of mercury-containing thermostats: The HMAC is responsible for disassembling all thermostats to collect the mercury ampule for proper disposal. Approximately four (4) thermostats require reclamation.

F. The removal of fixtures from asbestos containing joint compound on walls and joint compound and textured ceiling paints from ceilings shall be performed only after a negative pressure enclosure has been established per Section 020800 Asbestos Abatement.

G. Work under this project may be performed in phases to accommodate Owner's/Architect's requirements and construction phases. Coordinate reclamation schedule and operations with the Owner/Architect/Consultant and other trades.

1.4 APPLICABLE CODES

A. State Regulations

1. Section 22a-449(c)-113 - Regulations of Connecticut State Agencies (RCSA) for disposal of ballast.
2. Section 22a-465 – Regulation of Connecticut State Agencies for remediation of PCB Bulk Remediation Waste.

B. Federal Regulations

1. 29 CFR 1910.120 – Hazardous Waste Operations and Emergency Response
2. 29 CFR 1910.134 – Respiratory Protection
3. 40 CFR 263 – Standards applicable to Transporters of Hazardous Waste
4. 40 CFR 264 – Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities
5. 40 CFR 268 – Land Disposal Restrictions
6. 40 CFR Part 700 - Toxic Substance Control Act (TSCA)
7. 40 CFR Part 761 – PCB Manufacturing, Processing, Distribution in Commerce and Use Prohibition.

1.5 DEFINITIONS: WHERE APPLICABLE OR STATED, TERMS SHALL HAVE THE FOLLOWING DEFINITIONS:

A. Universal Waste shall mean batteries, Mercury-containing thermostats, certain pesticides, lamps (including but not limited to fluorescent, neon and mercury vapor lamps), and used electronics.

B. Large Quantity Generator means a handler can accumulate 5000 kilograms or more of universal waste at any time.

C. Small Quantity Generator means a handler can accumulate not more than 5000 kilograms or more of universal waste at any time.

D. Handler means the Generator of the universal waste product.

1.6 GENERAL REQUIREMENTS

A. The HMAC is subject to approval by the Owner's Consultant and all regulatory agencies with jurisdiction over this work, and may be rejected based on criteria established.

B. The Owner's Consultant requires that documentation be provided for all aspects of work detailing the bidder's qualifications and prior experience on the following criteria:

C. Workers handling universal waste must be informed by their employer of the proper handling and emergency procedures appropriate to the type(s) of universal waste handled at the facility.

PART 2 - PRODUCTS

2.1 TRANSPORTATION AND STORAGE CONTAINERS AND LABELING

A. All containers for universal waste must be closed, structurally sound, compatible with the contents of the universal waste, and must be capable of preventing leakage, spillage or damage that could cause

leakage.

B. All universal waste products must be stored in a container and the container shall be properly labeled. Appropriate labeling is as follows.

1. Universal waste lamps (each lamp) or the container or package in which such lamps are contained must be labeled or marked clearly with any of the following: "Universal Waste - Lamp(s)" or "Waste Lamp(s), or "Used Lamp(s)".
2. Universal waste used electronics (each piece of equipment) or the container; package or pallet in which the used electronics are contained must be labeled or marked clearly with any of the following: "Universal Waste - used electronics" or "Waste Used Electronics, or "Used Electronics".

PART 3 - EXECUTION

3.1 BALLAST REMOVAL

A. The HMAC shall retrieve light ballasts and shall immediately package for reclamation.

B. If the ballasts are found to be leaking, contaminated light fixtures shall be disposed of as DEHP contaminated materials.

C. Workers shall don chemically resistant gloves as exterior surfaces may contain trace quantities of DEHP.

D. If a leaking capacitor is detected during removal, workers shall immediately don chemically resistant protective suits, (i.e. Tyvek), to reduce skin contact with DEHP.

E. HMAC shall have on hand spill containment and absorbent materials in the event a spillage of DEHP-containing fluids occurs. Provide appropriate polyethylene sheeting to protect concrete floor and other surfaces from any spillage.

F. All protective equipment (gloves, suits) and materials contaminated during any cleanup shall be disposed of as DEHP contaminated waste along with the ballast.

G. All ballasts shall be placed in DOT-approved barrels for subsequent transport immediately upon removal. Barrels shall be properly labeled to identify contents and handling hazards.

H. Use new 17C 55-gallon open head steel drums that have been approved for transporting hazardous materials. Used or reconditioned drums may be used only if they have been properly cleaned, tested, and labeled.

I. Drums shall be prepared by placing one to three inches of absorbent material in the bottom of the drum.

J. Drums shall be packed so as to not exceed a total weight of 900 pounds. If proper handling equipment is not available, half fill the drums so that manual handling is possible.

3.2 INERT GAS RECLAMATION

A. All lighting shall be packaged and transported in accordance with the reclamation facilities requirements.

B. Provide Reclamation Certificates following work.

3.3 MERCURY CONTAINING THERMOSTATIC CONTROLS

A. Disassemble thermostatic controls and remove Mercury containing ampoules from thermostat housing.

B. Package, store and ship ampoules in approved containers from recycling facility.

C. Provide Reclamation Certificates following work.

3.4 RECYCLING OF LEAD ACID BATTERIES

A. Disassemble fixtures and remove lead acid batteries.

B. Package, store and ship batteries in approved containers from recycling facility.

C. Provide Reclamation Certificates following work.

END OF SECTION

SECTION 02 09 00 - LEAD PAINT AWARENESS

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.

B. Related Sections:

1.	Section 010100:	Hazardous Materials General Requirements
2.	Section 010260:	Hazardous Materials Unit Prices
3.	Section 020750:	Selective Demolition for Hazardous Materials Abatement
4.	Section 020800:	Asbestos Abatement
5.	Section 020820:	Universal Waste Reclamation
6.	Section 021100:	PCB Remediation

1.2 PROJECT DESCRIPTION

A. The work specified herein covers the proper worker protection, work area preparation and removal and disposal of lead-based paint coated building components associated with the renovation work at the building located at 28-34 Park Place in Vernon, Connecticut. Work covered under this Section does not constitute lead-based paint abatement in accordance with the State of Connecticut Department of Public Health (CTDPH) Lead Poisoning Prevention and Control Regulation.

B. Certain building components at the building were determined to contain levels of lead in paint that may cause worker exposure during renovation and demolition work. Any disturbance to the lead-based painted components resulting from manual demolition or work necessary to facilitate demolition shall be conducted in accordance with this specification.

C. Components within the area of renovation that were determined to contain high levels of lead-based paint (>1.0 mg/cm^2) include wood walls and ceilings, limited wood doors and associated wood trim, wood baseboards, wood window components, metal vent pipes, stair components, limited brick and plaster walls and exterior trim components including wood soffit, cornice, portico and concrete columns. Any painted surfaces that were not tested but will be impacted shall be assumed to be coated with lead-based paint.

D. The personnel performing lead-based paint removal work shall be trained in accordance with the Department of Labor's Occupational Safety and Health Administration (OSHA) 29 CFR 1926.62. Lead in Construction Standard. This Specification is intended to provide general information pertaining to lead in surface coatings at the site and to assist the Hazardous Materials Abatement Contractor (HMAC) in complying with applicable worker protection and disposal laws. It is the sole responsibility of the HMAC to comply with all OSHA worker protection laws and disposal laws.

E. All painted, varnished, shellacked, stained, primed or otherwise coated surfaces should be assumed to contain lead above 0.0 mg/cm2. Trades performing work that impact any painted, varnished, shellacked, stained, primed or otherwise coated surface must comply with the requirements of OSHA 29 CFR 1926.62 Lead in Construction Standard.

F. The HMAC should assume that building components that were not tested but that are like in color and construction date have similar lead paint levels as the components that were tested. In accordance with OSHA 29 CFR 1926.62, the HMAC must assume certain exposure levels for certain tasks in the absence of testing or personal exposure monitoring data. It is the sole responsibility of the HMAC to comply with OSHA 29 CFR 1926.62 for all tasks that disturb paint, varnish, shellac, stain or other surface coatings.

G. All components and surfaces that will be impacted by the work of this project shall be covered by this specification.

H. Metal components removed from the building must be recycled in an approved recycling facility that accepts metal coated with lead-based paint.

I. Several building materials that may have lead paint including joint compound, textured ceiling paint, wall panel adhesive, flooring materials and exterior caulks have also been determined to contain asbestos. Refer to Section 020800 Asbestos Abatement for additional requirement.

J. Exterior caulks and window glazing compound are presumed to contain polychlorinated biphenyls (PCB) greater than fifty (50) parts per pillion (ppm). Exterior painted window sashes and wood window and door components in contact with presumed PCB containing materials shall be removed and disposed of as hazardous lead and PCB bulk product waste.

K. Toxicity Characteristic Leachate Procedure (TCLP) testing of the demolition waste stream has not been performed at this Site. The Owner's Consultant shall perform TCLP testing of demolition debris at the start of work prior to removal of any components from the Site. For purposes of bidding, all exterior painted wood components shall be treated as hazardous lead waste and interior components as non-hazardous construction debris. The HMAC shall comply with all applicable requirements regarding disposal and recycling of metal components coated with lead-based paint, asbestos and presumed polychlorinated biphenyls (PCBs). Following TCLP testing, if hazardous lead waste is determined to be generated during interior demolition work, unit prices will be utilized for the disposal of demolition debris as hazardous lead waste. Confirmation of location and quantities of materials to be removed as hazardous lead waste shall be confirmed with the Owner and Owner's Consultant prior to the start of any demolition work.

1.3 APPLICABLE CODES

A. The HMAC shall be solely responsible for conducting this project and supervising all work in a manner which will be in conformance with all federal, state and local regulations and guidelines pertaining to lead paint abatement. Specifically, the HMAC shall comply with the requirements of the following:

1. Occupational Safety and Health Administration: OSHA

    a. 29 CFR 1910 General Industry Standards
    b. 29 CFR 1910.1025 Lead Standard for General Inventory
    c. 29 CFR 1910.134 Respiratory Protection
    d. 29 CFR 1910.1200 Hazard Communication
    e. 29 CFR 1910.245 Specifications for Accident Prevention (Sign and Tags)
    f. 29 CFR 1926.62 Lead in Construction Final Rule

2. State of Connecticut Department of Energy and Environmental Protection: DEEP

    a. Guidance for the management and disposal of lead contaminated materials generated in the lead abatement renovation and demolition industries.
    b. All applicable hazardous solid waste disposal regulations.

3. USEPA

    a. 40 CFR 745.100 - .119 Final Rule
    b. 40 CFR Part 261 United States Environmental Protection Agency

1.4 DEFINITIONS

A. “Action level” means employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air (30 ug/m (3)) calculated as an 8-hour time-weighted average (TWA).

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

C. “Competent person” means one who is capable of identifying existing and predictable lead hazards in the surroundings or working conditions and who has authorization to take prompt corrective measures to eliminate them.

D. “Containment” means the process of erecting polyethylene barriers to control dust and debris emissions which is intended to keep adjacent areas and environment free of contamination.

E. "HMAC" means the primary contractor and all sub contractors performing the lead removal work.

F. “Exposure assessment” means the process of collecting and analyzing personal air samples to determine a worker’s potential to be exposed to contaminants and to determine the level of respiratory and personal protective equipment that would be suitable to prevent exposure from occurring.

G. HEPA (High Efficiency Particulate Air) 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.

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

I. “Lead” means metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds.

J. PEL (Permissible exposure limit) means the maximum allowable airborne concentration a worker can be exposed to over an eight (8) hour work shift without having to don respiratory and personal protective equipment. The OSHA PEL is 50 ug/m3.

K. RCRA (Resource Conservation Recovery Act): The EPA enforced act, which establishes regulatory levels for hazardous chemicals. There are eight (8) heavy metals of concern for disposal: Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver.

L. Standard means the OSHA Lead in Construction Standard 29 CFR 1926.62.

M. Toxicity Characteristic Leachate Procedure: Is the EPA required sample preparation and analysis for determining the hazard characteristic of a waste generated at a lead abatement site.

1.5 FEES, PERMITS AND LICENSES

A. The HMAC shall comply with the provisions of all permits or applications required by the work specified, as well as make all submittals required under those auspices.

B. The HMAC shall make notifications to the local Police Department and Fire Department regarding the project.

1.6 SEQUENCING AND SCHEDULING

A. The HMAC shall extend full cooperation to Owner in all matters involving the use of Owner's facilities. At no time shall the HMAC cause or allow to be caused conditions that may cause risk or hazards to the general public or conditions that might impair safe use of the facility.

B. The HMAC shall submit a time-line schedule, not date specific, to Owner and Owner's Consultant for integration into the overall project schedule. Coordinate the work of this section with the needs of the Owner and General Contractor. Phasing and scheduling of this project will be at the discretion of the General Contractor and shall not proceed in any area without the express consent of the General Contractor.

C. The HMAC shall coordinate their work with the progress of the work of other trades so that the work shall be completed as soon as conditions permit. Work under this project may be performed in phases to accommodate Owner's/Architect's requirements and construction phases. Coordinate schedule and operations with the Owner/Architect/ Owner's Consultant and other trades.

D. Schedule initial assessment work in areas where the work will not cause an exposure potential to unprotected individuals.

1.7 SUBMITTALS

A. This Section specifies administrative and procedural requirements for submittals required for performance of the Work.

B. The HMAC shall provide the following pre-project submittals prior to initiating work at the Site:

1. Copies of all notifications, permits, applications, licenses and like documents required by federal, state and local regulations obtained or submitted in proper fashion.
2. Copies of medical records for each employee to be used on the project.
3. Record of successful respirator fit testing performed by a qualified individual within the previous year, for each employee to be used on this project with the employee's name and social security number with each record.
4. Proposed respiratory protection program for employees throughout all phases of the job, including make, model and NIOSH approval numbers of respirators to be used.
5. Written description, for the Owner's review and acceptance, of all proposed procedures, methods or equipment to be utilized that differ from the Contract Specifications, including manufacturers' specifications on any equipment not specified for use by this Section; in all instances, the HMAC must comply with all applicable federal, state and local regulations.
6. Proposed electrical safeguards to be implemented by qualified Electrical Contractor, including but not limited to location of GFCI outlets, lighting, and power panels necessary to safely perform the job including a description of electrical hazards safety plan for common practices in the work area.
7. Chain-of-Command of responsibility at work site including supervisors, foremen, and competent person, their names, resumes and certificates of training.
8. List of all supervisors and workers intended to be assigned to the project.
9. The name and address of HMAC's blood lead testing lab, OSHA-CDC listing, and Certification in the state where work site is located.
10. The name and address of HMAC's personal air monitoring and waste disposal lead testing laboratory (ies) including certification(s) of AIHA accreditation for heavy metal analysis, listing of relevant experience in air and debris lead analysis.
11. Safety Data Sheets (SDS) on all materials and chemicals to be used on the project.
12. Lead Based Paint compliance plan.

C. The HMAC shall provide the following post-project submittals at the completion of the work on site:

1. Copies of completed non-hazardous waste manifests.
2. Copies of work area access logs.
3. Copies of supervisor log
4. Copies of all OSHA Compliance air sampling results.

PART 2 - PRODUCTS

2.1 MATERIALS

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.

B. Damaged or deteriorating materials shall not be used and shall be removed from the premises.

C. Fire retardant polyethylene sheet in a roll size to minimize the frequency of joints shall be delivered to job site with factory label indicating 6 mil.

D. Polyethylene disposable bags shall be six (6) mil with pre-printed label. Tie wraps for bags shall be plastic, five (5) inches long (minimum), pointed and looped to secure filled plastic bags.

E. Tape shall be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water.

F. Impermeable containers are to be used to received and retain any lead containing or contaminated materials until disposal at an acceptable disposal site. (The containers shall be labeled in accordance with EPA and DOT standards.)

G. HEPA filtered exhaust systems shall be used during any dust generating deleading operations.

H. 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 INITIAL EXPOSURE ASSESSMENT

A. In order to comply with the requirements of OSHA 29 CFR 1926.62 Lead in Construction regulation, an initial exposure assessment must be performed for each activity that disturbs lead paint covered building materials. If the results of the initial exposure assessment are less than the "Action Level" for lead dust exposure of 30 micrograms per cubic meter of air, the employer is not obligated to comply with most requirements of the regulation. If the results of the initial exposure assessment are greater than the Action Level for lead dust exposure, all requirements of the Standard apply.

1. The Scope of this Section applies to all construction work where an employee may be occupationally exposed to lead. All construction work excluded from the general industry standard for lead 29 CFR 1910.1025(a) (2) is covered by this section. This includes but is not limited to the following.

    a. Demolition or salvage of structures where lead or materials containing lead is present.
    b. Removal or encapsulation of materials containing lead.
    c. New construction, alteration, repair, or renovation of structures, substrates, or portions thereof that contain lead, or materials containing lead.
    d. Lead contamination cleanup
    e. Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed.

B. The HMAC shall assume that the employee is being exposed above the Permissible Exposure Level (PEL) until an initial exposure assessment has been completed for each lead related task being performed.

C. For the purpose of the initial exposure assessment, employee exposure is that exposure which would occur if the employee were not using a respirator.

D. The employer shall collect personal air samples representative of a full shift including at least one sample for each job classification in each work area for each shift or for the shift with the highest exposure level.

E. Until the employer performs an initial exposure assessment as required by the Standard, the employer shall provide appropriate respiratory protection, appropriate personal protective equipment, clean change areas, hand washing facilities, biological monitoring, training under 29 CFR 1926.59, Hazard Communication; 29 CFR 1926.62 – Lead, 29 CFR 1926.21, Safety Training and Education.

F. Where the employer has objective data, demonstrating that a particular product or material containing lead or a specific process, operation or activity involving lead cannot result in employee exposure to lead at or above the Action Level during processing, use or handling, the employer may rely upon such data instead of implementing initial monitoring.

3.2 LEAD-BASED PAINT COMPLIANCE PLAN

A. The HMAC shall be required to submit a lead-based paint compliance plan to the Owner detailing how the HMAC will maintain compliance with this Specification.

B. The HMAC shall describe the work procedures within the compliance plan that will be utilized to prevent contamination to the work site and surrounding environment.

C. The HMAC shall describe the work procedures and engineering controls that will be implemented to ensure that workers are not exposed above OSHA's PEL for lead dust exposure.

D. The HMAC shall describe how compliance with the hazardous waste disposal regulations will be met.

3.3 DUST GENERATING ACTIVITIES – WORK AREA PREPARATION

A. The HMAC shall establish a clean area outside the abatement areas for workers to change into protective clothing and store personal belongings.

B. When dust generating activities are undertaken, the work area shall be isolated from other trades by double flapped curtain doorways. The HMAC shall utilize double flapped curtain doorways for separation of the work area from the non-work area. All ingress to the work area shall be through the double flapped curtain doorways.

C. All HVAC vents and grills shall also be sealed with a single layer of six (6)-mil polyethylene sheeting sealed with duct tape.

D. Windows to the outside of the building shall remain shut during demolition activities.

E. The HMAC shall post lead hazard warning signs in accordance with OSHA 29 CFR 1926.62. It shall be the sole responsibility of the HMAC to ensure that only authorized personnel are permitted to enter the work area. A work area access log shall be maintained at the entrance to the work area. Authorized personnel shall sign in and out of the work area containment.

3.4 NON-DUST ACTIVITIES – WORK AREA PREPARATION

A. The HMAC shall establish a clean area outside the abatement areas for workers to change into protective clothing and store personal belongings.

B. When activities are undertaken that don’t readily create dust, the work area shall be isolated from

other trades by barrier caution tape. A buffer zone of a minimum of ten (10) feet is recommended between lead demolition activities and general trades work.

C. The HMAC shall post lead hazard warning signs in accordance with OSHA 29 CFR 1926.62. It shall be the sole responsibility of the HMAC to ensure that only authorized personnel are permitted to enter the work area. A work area access log shall be maintained at the entrance to the work area. Authorized personnel shall sign in and out of the work area containment.

3.5 PERSONAL PROTECTION

A. Eye protection, head protection, and ear protection shall be provided to each worker.

B. The HMAC shall establish a wash station in close proximity to the work area where workers shall decontaminate their person. The wash station shall be supplied with warm water and soap and an ample supply of drying towels. Wash water shall be tested for proper disposal.

C. All equipment used by workers inside the work area shall be wet wiped or bagged for later decontamination before removal from work area.

D. The HMAC is responsible for using safe procedures to avoid electrical hazards. All temporary electrical wiring will be protected by GFIs.

3.6 PAINT DEMOLITION PROCEDURE

A. Prior to any paint removal or removal of component coated with lead-based paint, the HMAC shall ensure that work area set up has been completed in accordance with applicable work area preparation section. Refer to the architects plans and specifications to determine extent of demolition work.

B. Where possible, the HMAC shall remove components in their full units and shall minimizing breakage to the best extent feasible.

C. The HMAC shall perform all incidental work necessary to facilitate removal of painted components.

D. Dust control measures must be employed during demolition work.

E. The HMAC shall transport painted components to the appropriate waste container as required to keep the work area free from tripping hazards.

3.7 PROHIBITED ACTIVITIES

A. The HMAC shall be prohibited from the following:

1. Sanding lead-based painted components without HEPA dust collection devices and appropriate engineering controls.
2. Open flame paint removal.
3. Torch cutting steel components without appropriate engineering controls.
4. Rivet busting without appropriate engineering controls.
5. Creating visible dust or fumes during lead-based paint removal.

3.8 CLEANING

A. The HMAC shall thoroughly wet sweep the effected work areas. Floors shall be mopped with a 5% high phosphate solution or equivalent.

B. The HMAC shall dispose of the polyethylene sheeting. The Owner’s representative shall perform a visual inspection of the polyethylene sheeting to determine adequacy of cleaning procedures prior to removal.

C. The HMAC shall HEPA vacuum all paint chips from the soil within the work area.

3.9 DISPOSAL OF WASTE MATERIALS

A. Caution Note for Contractors: All materials, whether hazardous or non-hazardous, shall be disposed of in accordance with all laws and the provisions of any or all applicable federal, state, county, or local regulations and guidelines. It shall be the sole responsibility of the HMAC to assure compliance with all laws and regulations relating to this disposal.

B. The HMAC is responsible for performing and paying for all additional waste characterization testing, waste profiling and all other information required by their selected landfill for each shipment of waste.

C. Metal components with lead paint that are not contaminated by other hazardous or regulated materials shall be recycled at an approved recycling facility that accepts lead coated materials.

D. Wood window sashes with presumed PCB-containing window glazing compound shall be removed and disposed of as hazardous lead and PCB bulk product waste.

E. Exterior wood components shall be removed and disposed of as hazardous lead waste.

END OF SECTION

SECTION 02 11 00

PCB REMEDIATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

B. Related Section:

1. Section 010100: Hazardous Materials General Requirements
2. Section 010260: Hazardous Materials Unit Prices
3. Section 020750: Selective Demolition for Hazardous Materials Abatement
4. Section 020800: Asbestos Abatement
5. Section 020820: Universal Waste Reclamation
6. Section 020900: Lead Paint Awareness

1.2 PROJECT DESCRIPTION

A. The building located at 28-34 Park Place in Vernon, Connecticut (Site) will undergo renovations including an interior gut rehabilitation, demolition of the rear addition and roof system replacement.

B. Caulks and window glazing compounds associated with the areas of renovation are assumed to be from the original building construction and presumed to contain polychlorinated biphenyls (PCB) in concentrations of greater than fifty (50) parts per million (ppm). The caulks and glazing compounds are defined as presumed PCB Bulk Product waste under 40 CFR 761.3.

C. Door and window caulks have been determined to be asbestos containing. Wood window and door components have been determined to be coated with lead-based paint.

D. The Hazardous Materials Abatement Contractor (HMAC) shall only remove and dispose of the identified caulks and glazing compounds that will be impacted by the renovation project.

E. The cleanup and disposal of the presumed PCB Bulk Product Waste shall be performed in accordance with the Toxic Substances Control Act (TSCA) 40 CFR §761.62(b) *disposal in a solid waste* landfill.

F. The caulks and glazing compounds have been analyzed for asbestos only. No additional testing of these materials for PCB shall be performed by the HMAC without written authorization from the Owner and the Owner's Consultant. If unauthorized testing is performed, the HMAC accepts all responsibility and costs associated with the removal, cleanup and disposal of additional materials not in the Project Scope of Work if dictated by state and federal regulations.

1.3 SCOPE OF WORK

A. Only caulks and window glazing compounds within the designated work areas of the building were evaluated. All caulks and window glazing compounds that will be encountered with this Project are defined as presumed PCB Bulk Product Waste.

B. Base Bid – Materials scheduled for removal shall include the following locations and quantities:

1. Exterior asbestos containing door and window caulk – 245 linear feet
2. Window glazing compound – 12 window sashes

C. The caulks are asbestos containing materials. The HMAC shall refer to Section 020800 Asbestos Abatement for additional requirements for work area preparation, removal and disposal.

D. The wood door and window components have been coated with lead-based paint. The HMAC shall refer to Section 020900 Lead Paint Awareness for additional requirements for work area preparation, removal and disposal.

E. Waste Dispositions:

1. The HMAC shall remove and dispose of the presumed PCB Bulk Product Waste under §761.62(b)(i), *disposal in a solid waste landfill*. The waste shall be disposed of in a non-hazardous waste landfill permitted by the State in which it is disposed to accept the waste under§761.62(b)(i).
2. Wood window sashes shall be properly packaged and disposed of as hazardous lead and presumed PCB Bulk Product Waste in an approved landfill permitted to accept such waste.

F. Remediation Plans:

1. Hazardous Materials Abatement Plans HM-1.

1.4 GENERAL REQUIREMENTS

A. The HMAC shall furnish all labor, materials, facilities, equipment, installation services, employee training, notifications, permits, licenses, certifications, agreements and incidentals necessary to perform the specified work. Work shall be performed in accordance with the Contract Documents, the latest regulations from the Occupational Safety and Health Administration (OSHA), the EPA, the State of Connecticut, and all other applicable federal, state and local agencies. Whenever the requirements of the above references conflict or overlap, the more stringent provision shall apply.

B. All project personnel engaged in the remediation work covered under this section shall be trained with eight (8) hours of PCB Awareness Training.

C. The HMAC shall provide a Project Health and Safety Officer with forty (40) hour OSHA Hazwoper training and an additional eight (8) hours of supervisor training in hazardous waste site operations as described in 29 CFR 1910. The supervisor shall be on site at all times during remediation work.

1.5 GENERAL SCOPE OF WORK

A. The HMAC shall be responsible for removal and disposal of presumed PCB Bulk Product Waste where caulks and glazing compounds will be impacted under the overall scope of the Project.

B. The HMAC shall be responsible for decontaminating all tools and equipment used in the remediation work. Tools shall be decontaminated using the methods prescribed by 40 CFR 761 Subpart S. The HMAC shall capture all decontamination fluids and handle them in accordance with this Specification.

C. The HMAC shall be responsible for disposal of all disposable clean-up materials (i.e. used PPE, used containment barriers, etc.) in accordance with this Specification.

1.6 SUBMITTALS

The following documents shall be submitted to the Owner's Consultant prior to the start of the Project:

A. Training Documentation: Documentation of 40- Hour HAZWOPER and 8-Hour Supervisor Training for the designated on-Site Health and Safety Officer and 8-hour PCB Awareness Training for all engaged personnel.

B. Work Plan: A written work plan that details the means and methods to be used for the removal and disposal of scheduled materials, waste container staging, ground protection, and the HMAC's plan to

protect workers and prevent waste migration from work areas. The work plan shall include the following elements:

1. Floor plans indicating the proposed work areas and containment barriers, and signage for all presumed PCB Bulk Product Waste removal work as outlined in this Specification;
2. Specific procedures to be used to remove and dispose of scheduled items and decontamination of equipment, and tools;
3. Detailed plans and procedures for removal of scheduled materials from in situ positions, transport of the materials to waste containers, reduction of waste materials for disposal requirements;
4. Detailed plans and procedures to ensure that further contamination of the Site does not occur as the result of remediation procedures;
5. Detailed procedures for personnel and equipment decontamination including procedures for the capture and containment of decontamination fluids.
6. A detailed proposed schedule for all remediation and disposal activities.

C. Presumed PCB Bulk Product Waste Disposal Plan: A written plan that details the HMAC's plan for transportation and disposal of all wastes generated during the project. The Disposal Plan shall identify:

1. Waste packaging, labeling, placarding and manifesting procedures,
2. A list of anticipated waste profiling procedures and samples and identification of the firms that will collect and analyze the samples.
3. The name, address, 24-hour contact number, and EPA TSCA Approval (if applicable) for the proposed treatment or disposal facilities to which wastes generated during the project will be transported.
4. The name, address, contact person(s) and state-specific permit numbers for proposed waste transporters.
5. A site plan indicating where waste disposal containers will be staged and how they will be labeled and secured.
6. The route(s) by which the waste will be transported to the designated disposal facility, and states or territories through which the waste will pass if the waste is to be disposed of outside of the State of Connecticut.
7. Safety Data Sheets: Safety Data Sheets (OSHA Form 174 or equivalent) and manufacturer's information shall be provided for all chemicals and materials to be used during the project including decontamination fluids.

D. Health and Safety Plan

1. The HMAC is responsible and liable for the health and safety of all on-site personnel and the off-site community affected by the Project. All on-site workers or other persons entering the abatement work areas, decontamination areas or waste handling and staging areas shall be knowledgeable of and comply with the requirements of the site-specific Health and Safety Plan (HASP) at all times. The HMAC's HASP shall comply with all applicable federal, state and local regulations protecting human health and the environment from the hazards posed by the work to be performed under this project.
2. The HASP shall carry the endorsement and signature of a health and safety professional.
3. The HMAC shall not initiate on-site work in the contaminated areas until the HASP has been finalized and reviewed and accepted by the Owner’s Consultant.
4. Consistent disregard for the provisions of the HASP shall be deemed as sufficient cause for immediate stoppage of work and termination of the Contract or any Subcontracts without compromise or prejudice to the rights of the Owner or the Architect.
5. Any discrepancies between the HMAC's HASP and these specifications or federal and state regulations shall be resolved in favor of the more stringent requirements that provide the highest degree of protection to the project personnel and the surrounding community and environment, as determined by the Owner’s Consultant.
6. In addition to exposure concerns of hazardous materials, other health and safety considerations will apply to the work. The HMAC shall be responsible for recognizing such hazards and shall be responsible for the health and safety of HMAC employees at all times. It is the HMAC's responsibility to comply with all applicable health and safety regulations.
7. The HMAC shall prepare and submit a site-specific HASP to the Owner’s Consultant a

minimum of ten (10) business days prior to commencement of abatement work. The HASP shall govern all work conducted at the Site during the remediation of caulk; waste handling, sampling, and management; and waste transportation.

8. At a minimum, the HASP shall address the requirements set forth in 29 CFR 1910.120, as further outlined below:

    a. Health and Safety Organization
    b. Site Description and Hazard Assessment
    c. Training (HAZWOPER)
    d. Medical Surveillance
    e. Work Areas
    f. Personal Protective Equipment
    g. Personal Hygiene and Decontamination
    h. Standard Operating Procedures and Engineering Controls
    i. Emergency Equipment and First Aid Provisions
    j. Equipment Decontamination
    k. Air Monitoring
    l. Telephone List
    m. Emergency Response and Evacuation Procedures and Routes
    n. Site Control
    o. Permit-Required Confined Space Procedures (If Applicable)
    p. Spill Containment Plan
    q. Heat and Cold Stress
    r. Record Keeping
    s. Community Protection Plan

9. The HASP shall be reviewed by all persons prior to entry into the abatement, decontamination, or waste staging areas, whether a representative of the HMAC, Owner, Architect/Engineer, Environmental Consultant, sub-HMACs, waste transporter or Federal, State or local regulatory agency. Such review shall be acknowledged and documented by the HMAC's Health and Safety Officer by obtaining the name, signature and affiliation of all persons reviewing the HASP.
10. The HASP shall be maintained so as to be readily accessible and reviewable by all site personnel throughout the duration of the-abatement project and until all waste materials are removed from the site and disposed of at the appropriate disposal facility.
11. The HMAC's on-site Health and Safety Officer shall be responsible for ensuring that project personnel and site visitors are informed of and comply with the provisions of the HASP at all times during the project.

E. The following documents shall be submitted to the Owner’s Consultant within seven (7) calendar days following removal of waste from the Site:

1. Waste Profile Sheets
2. Pre-Disposal Analysis Test Results (if testing is conducted)
3. Manifests signed by the disposal facility
4. Tipping Receipts provided by the disposal facility
5. Certification of Final Disposal signed by the responsible disposal facility official.

1.7 APPLICABLE STANDARDS AND REGULATIONS

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only. Where a conflict or overlap among regulations and/or these specifications exist, the most stringent requirements shall apply. The Owner’s Consultant will determine which requirements are most stringent.

1. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

    a. ANSI.Z89.1 Personnel Protective Equipment-Protective Headwear for Industrial Workers-Requirements (Latest Revision)

2. CODE OF FEDERAL REGULATIONS (CFR) U.S. DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION(OSHA)

    a. 29 CFR Subpart D Walking -Working Surface
    b. 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response
    c. 29 CFR 1910.134 Respiratory Protection Standard
    d. 29 CFR 1910.1200 Hazard Communication
    e. 29 CFR 1926.20 General Health and Safety Provisions
    f. 29 CFR 1926.57 Ventilation
    g. 29 CFR 1926.59 Hazard Communication Program
    h. 29 CFR 1926.62 Lead Exposure in Construction
    i. 29 CFR 1926.65 Hazardous Waste Operations and Emergency Response
    j. 29 CFR 1926.95 Criteria for Personal Protective Equipment
    k. 29 CFR 1926, Subpart H Materials Handling, Storage, Use and Disposal
    l. 29 CFR 1926, Subpart L Scaffolding
    m. 29 CFR 1926, Subpart M Fall Protection
    n. 29 CFR 1926, Subpart X Ladders
    o. 29 CFR 1926, Subpart Z Toxic and Hazardous Substances

3. U.S. ENVIRONMENTAL PROTECTION AGANECY (US EPA)

    a. 40 CFR 50.6 National Primary and Secondary Ambient Air Quality Standards for Particulate Matter
    b. 40 CFR 260 Hazardous Waste Management System: General
    c. 40 CFR 261 Identification and Listing of Hazardous Waste
    d. 40 CFR 262 Standards Applicable to Generators of Hazardous Waste
    e. 40 CFR 263 Standards Applicable to Transporters of Hazardous Waste
    f. 40 CFR 264 Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
    g. 40 CFR 265 Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
    h. 40 CFR 268 Land Disposal Restrictions
    i. 40 CFR 700 toxic Substances Control Act (TSCA)
    j. 40 CFR 761PCBs Manufacturing, Processing, Distribution in Commerce and Use Prohibitions

4. U.S. DEPARTMENT OF TRANSPORTATION (DOT)

    a. 49 CFR 105 Hazardous Materials Program. Definitions and General Procedures
    b. 49 CFR 171 General Information, Regulations and Definitions
    c. 49 CFR 172 Hazardous Material Tables. Special Provisions, Hazardous Materials Communications Emergency Response Information and Training Requirements
    d. 49 CFR 173 Shippers-General Requirements for Shipments and Packaging
    e. 49 CFR 177 Carriage by Public Highway
    f. 49 CFR 178 Specifications for Packaging

5. NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)Publication Number 87-10B Respiratory Decision Logic NIOSH/OSHA Booklet 3142 Lead in Construction
    a. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (NIOSH Publication 85-115)

6. U.S. DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

    a. PUB 3126 Working with Lead in the Construction Industry
    b. 29 CFR 1910, Subpart I, Appendix B-Non-Mandatory Compliance Guidelines for Hazard Assessment and Personal Protective Equipment Selection

7. REGULATIONS OF CONNECTICUT STATE AGENCIES (RCSA)

a. Hazardous Waste 22a-449(c)-100 through 119
b. Hazardous Waste Transporter Permits 22a-449(c)-11
c. Permit Fees for Hazardous Waste Materials Management 22a-454-1

8. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY GUIDANCE

a. Polychlorinated Biphenyl (PCB) Site Revitalization Guidance Under the Toxic Substances Control Act

1.8 POSTING AND RECORD MAINTENANCE REQUIREMENTS

A. The following items shall be conspicuously displayed proximate to but outside of abatement work areas. The HMAC shall assure that the posted regulations are not altered, defaced or covered by other materials.

B. Exit Routes

1. Emergency exit procedures and routes

C. Emergency Phone Numbers

1. A list Indicating the telephone numbers and locations of the local hospital(s); the local emergency squad; the local fire department; the local police department; the Poison Control Center; Chemical Transportation Emergency Center (CHEMTREC); the Connecticut State Department of Public Health's office; the HMAC (on-site and after hours numbers); and the environmental consultant (on-site and after hours numbers).

D. Warning Signs

1. Warning signs shall be posted in English and in the language of any workers on-site who do not speak English, and be of sufficient size to be clearly legible and display the following:

WARNING:
HAZARDOUS WASTE WORK AREA
PRESUMED PCBs-POISON
NO SMOKING, EATING OR DRINKING
AUTHORIZED PERSONNEL ONLY
PROTECTIVE CLOTHING IS REQUIRED IN THIS AREA

E. Items Available On-Site

1. The HMAC shall maintain the following items on-site and available for review by all employees and authorized visitors:

a. The HMAC’s Work Plan
b. The HMAC’s Disposal Plan
c. The Project Health and Safely Plan (HASP)
d. Certificates of Training for all workers and the project Supervisor
e. Copies of applicable codes, standards, and publications
f. Safety Data Sheets (SDS) for all chemicals used during the project.
g. Copies of the HMAC's written hazard communication, respiratory protection, and confined space entry programs.

1.9 WORK ZONES

A. The HMAC shall establish and clearly identify work zones in the field. Access by equipment, site personnel, and the public to the work areas shall be limited as follows:

1. Abatement Zone - The Abatement Zone(s) shall consist of all areas where remediation, waste handling and staging activities are ongoing and the immediately surrounding locale or other areas where contamination could occur. Outdoor Abatement Zones shall be visibly delineated with orange construction fencing at a minimum, and restricted from access by all persons except those directly necessary to the completion of the respective remediation tasks. Indoor Abatement Zones shall be delineated with one (1) layer of six (6) mil polyethylene sheeting at a minimum, maintained under negative pressure with HEPA filtered exhaust systems, posted with warning signs and restricted from access by all persons except those directly necessary to the completion of the respective remediation tasks. The Abatement Zones shall be relocated and delineated as necessary as work progresses from one portion of the project Site to another, to limit access to each remediation area and to minimize risk of exposure to site workers and the general public. Prior to relocation, areas shall be visually inspected by the Owner's Consultant to confirm completion of work. Access shall be controlled at the periphery of the Abatement Zones to regulate the flow of personnel and equipment into and out of each zone and to help verify that proper procedures for entering and exiting are followed. All persons within the Abatement Zones shall have all required training and wear the appropriate level of protection established in the HASP. Refer to Section 020800 Asbestos Abatement for additional requirements that will affect the Abatement Zone construction.
2. Decontamination Zone - The Decontamination Zone is the transition zone between the remediation area and the "clean" Support Zone, and is intended to reduce the potential for contaminant dispersal from the Abatement Zone to clean areas of the site. The Decontamination Zone shall consist of a buffer area surrounding each Abatement Zone through which the transfer of equipment, materials, personnel and containerized waste products will occur and in which decontamination of equipment, personnel, and clothing will occur. The Decontamination Zones shall be clearly delineated with caution tape at a minimum and labeled with signage as provided in Part 1.8 of this Section. All emergency response and first aid equipment shall be readily maintained in these Zones. All protective equipment and clothing shall be removed or decontaminated in the Decontamination Zone prior to exiting to the Support Zone.
3. Support Zone - The Support Zone will consist of the area outside the Decontamination Zones and the remainder of the project site. Administrative and other support functions and any activities that by nature need not be conducted in the Abatement or Decontamination Zone related to the project shall occur in the Support Zone. Access to the Abatement and Decontamination Zones shall be controlled by the Health and Safety Officer and limited to those persons necessary to complete the remediation work and who have reviewed and signed the HASP.

1.10 PERSONAL PROTECTIVE EQUIPMENT

A. The HMAC shall be responsible to determine and provide the appropriate level of personal protective equipment in accordance with applicable regulations and standards necessary to protect the HMAC's employees and the general public from all hazards present.

B. The HMAC shall provide all employees with the appropriate safety equipment and protective clothing to ensure an appropriate level of protection for each task, taking into consideration the chemical, physical, ergonomic and biological hazards posed by the Site and work activities.

C. The HMAC shall establish criteria for the selection and use of personal protective equipment (PPE) in the HASP.

D. The PPE to be utilized for the project shall be selected based upon the potential hazards associated with the project site and the work to be performed. Appropriate protective clothing shall be worn at all times within the Abatement Zone.

E. The HMAC shall provide the appropriate level of respiratory protection to all field personnel engaged in activities where respiratory hazards exist or there is a potential for such hazard to exit.

F. The HMAC shall provide, as necessary, protective coveralls, disposable gloves and other protective clothing for all personnel that will be actively involved in abatement activities or waste handling

activities or otherwise present in the Abatement Zones. Coveralls shall be of Tyvek or equivalent material. Should the potential for exposure to liquids exist, splash-resistant disposable suits shall be provided and utilized.

G. Protective coveralls, and other protective clothing shall be donned and removed within the Decontamination Zone and shall be disposed of at the end of each day. Ripped coveralls shall be immediately replaced after appropriate decontamination has been completed to the satisfaction of the Health and Safety Officer. Protective clothing shall not be worn outside of the Decontamination Zone.

H. Hard Hats, protective eyewear, rubber boots and/or other non-skid footwear shall be provided by the HMAC as required for workers and authorized visitors, Safety shoes and hard hats shall be in conformance with ANSI Z89.1 (1969) and ANSI 241.1 (1967), respectively.

I. All contaminated protective clothing, respirator cartridges and disposable protective items shall be placed into proper containers to be provided by the HMAC for transport and proper disposal in accordance with 40 CFR 262.

1.11 EMERGENCY EQUIPMENT AND FIRST AID REQUIREMENTS

A. The HMAC shall provide and maintain at the site, at a minimum, the following Emergency and First Aid Equipment:

1. Fire Extinguishers-a minimum of one (1) fire extinguisher shall be supplied and maintained at the site by the HMAC throughout the duration of the project. Each extinguisher shall be a minimum of a 20-pound Class ABC dry fire extinguisher with Underwriters Laboratory approval per 29 CFR 1910.157.
2. First Aid Kit-a minimum of one (1) first aid kit meeting the requirements of 29 CFR 1910.151 shall be supplied and maintained at the site by the HMAC throughout the duration of the project.
3. Communications (either cellular or radio) shall be provided by the HMAC for use by site personnel at all times during the project.

B. The Health and Safety Officer shall be notified immediately in the event of personal injury, potential exposure to contaminants, or other emergency. The Health and Safety Officer shall then immediately notify the Owner’s Consultant of same.

C. If a member of the work crew demonstrates symptoms of heat or cold stress, injury, chemical exposure or other similar issue, another team member present within the delineated Abatement Zone (i.e., suitably equipped with appropriate PPE provisions) should remove the affected person from the delineated work site and signal/communicate to the Health and Safety Officer of the incident. Precautions should be taken to avoid exposure of other individuals to contaminated media.

D. An evaluation of the person's condition shall be made by the Health and Safety Officer, to determine the appropriate course of action to administer first aid or other emergency response provision. The Health and Safety Officer shall assess the seriousness of the injury, give first aid treatment if appropriate, and arrange for appropriate emergency response from outside emergency services, it warranted.

E. If soiled clothing cannot be removed, the injured person will be wrapped in a blanket while transported from the Site.

F. The Health and Safety Officer shall monitor the affected person to determine whether there are symptoms resulting from the exposure or injury. If there is a visible manifestation of exposure such as skin irritation, the affected party shall be referred to a medical facility for treatment and evaluation as to whether the manifestation may be indicative of a delayed or acute exposure, a secondary response to exposure such as skin infection or occupational dermatitis. All incidents of injuries and/or obvious chemical exposure shall be evaluated by the Health and Safety Officer and the Owner’s Consultant to determine whether modifications to work practices and/or protective provisions are warranted.

1.12 STANDARD SAFETY AND HEALTH PROCEDURES AND ENGINEERING CONTROLS

A. The following provisions shall be employed to promote overall safety, personnel hygiene and personnel decontamination:

1. Each HMAC or subcontractor shall ensure that all safety equipment and protective clothing to be utilized by its personnel is maintained in a clean and readily accessible manner at the Site.
2. All prescription eyeglasses in use on this project shall be safety glasses conforming to ANSI Standard Z87.1. No contact lenses shall be allowed on the site.
3. Prior to exiling the delineated Decontamination Zone(s), all personnel shall remove protective clothing, and place disposable items in appropriate disposal containers to be dedicated to that purpose. Following removal of PPE, personnel shall thoroughly wash and rinse their face, hands, arms and other exposed areas with soap and tap water wash and subsequent tap water rinse. A fresh supply of tap water shall be provided at the site on each work day by the HMAC for this purpose.
4. All PPE used on site shall be decontaminated or disposed of at the end of each work day. Discarded PPE shall be placed in the appropriate waste stream.
5. Respirators, if necessary, shall be dedicated to each employee, and not interchanged between workers without cleaning and sanitizing.
6. Eating, drinking, chewing gum or tobacco, smoking, and any other practice that increases the likelihood of hand to mouth contact shall be prohibited within the delineated abatement and decontamination work zones. Prior to performing these activities, each employee shall thoroughly cleanse their face, hands, arms and other exposed areas,
7. All personnel shall thoroughly cleanse their face, hands, arms and other exposed areas prior to using toilet facilities.
8. No alcohol, tobacco, illegal drugs, weapons, or firearms will be allowed on the Site at any time.
9. All personnel that are on non-prescription (i.e., over-the-counter) or prescription medication of any kind shall notify the Health and Safety Officer prior to conducting work at the site. The Health and Safety Officer will make a determination as to whether such individuals will be allowed to work on the Site, and, if so, in what capacity. The Health and Safety Officer may require signed documentation from the Individual's personal physician stating what limitations may be posed by the medication or condition that may apply to that individual's work activities.
10. Contact with potentially contaminated surfaces should be avoided, if possible. Field personnel should minimize walking through standing water/puddles, mud or other wet or discolored surfaces; kneeling on ground; and placing equipment, materials or food on ground or other potentially contaminated surface.
11. The use of the "Buddy System`` shall be employed at all times while conducting work at the site. Each employee shall frequently monitor other workers for signs of heat stress or chemical exposure or fatigue; periodically examine others PPE for signs of wear or damage; routinely communicate with others; and notify the Site Safety Officer in the case of an emergency.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. All materials shall be delivered in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name.

B. Damaged or deteriorating materials shall not be used and shall be removed from the premises. Material that becomes contaminated with asbestos shall be decontaminated or disposed of as asbestos waste.

C. Polyethylene sheet in a roll size to minimize the frequency of joints shall be delivered to job site with factory label indicating six-mil.

D. Tape or adhesive spray will be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheets to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water.

E. All proper labeling and placards for waste receptacles shall be maintained on site in a sufficient quantity to support the project.

F. Pre-printed caution tape shall be maintained on site in a sufficient quantity to support the project.

G. Six-mil polyethylene glove bags.

H. Non-chlorinated organic solvent.

I. Appropriate labels and signage.

J. Appropriate waste containers.

2.2 TOOLS AND EQUIPMENT

A. Provide suitable tools for caulk and glazing removal.

B. The HMAC shall have air monitoring equipment of type and quantity to monitor operations and conduct personnel exposure surveillance per OSHA requirements.

C. The HMAC shall have available sufficient inventory on site for materials necessary for the job including protective clothing, respirators, filter cartridges, polyethylene sheeting of proper size and thickness, tape, and air filters.

D. The HMAC shall provide temporary electrical power sources such as generators (when required).

E. Vacuum units and negative pressure exhaust fans of suitable size and capacities for project, shall have HEPA filter(s) capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter or larger.

PART 3 - EXECUTION

3.1 SEQUENCE OF SITE WORK

A. The HMAC shall coordinate all remediation and disposal activities with the Building Owner (or Owner's Representative) and the General Contractor.

B. If there will be changes to the initial schedule or sequencing, the HMAC shall inform the Owner's Consultant in writing and confirm all dates on submitted schedules.

C. The HMAC shall coordinate all work with the General Contractor and confirm weatherization or security requirements of the building following remediation activities.

D. Public access to the building shall not be restricted by the work.

3.2 PREPARATION OF ABATEMENT ZONES

A. The Site shall be restricted to authorized personnel with temporary fencing.

B. The remediation of caulk and glazing materials shall be addressed in the HMAC's Work Plan.

C. For interior work areas, the HMAC shall establish Abatement Zones, Decontamination Zones, and Support Zones in accordance with Section 1.9 of this Specification and the following:

1. The HMAC shall establish a negative pressure enclosure of sufficient size to contain the work

area.

2. Provide GFCI devices, temporary power, and temporary lighting installed in compliance with the applicable electrical codes. All temporary installations are to be made by a licensed electrician.
3. Shut down electrical power, including receptacles and light fixtures. Lock and tag out circuits associated with the electrical components in the work area(s).
4. Shut down and isolate heating, cooling, and ventilation air systems to prevent contamination or particle dispersal to other areas of the structure. Lock and tag out circuits associated with heating and cooling units. During the work, vents within the work area shall be sealed with duct tape and polyethylene sheeting.
5. Seal off all openings, including but not limited to operable windows, corridors, doorways, skylights, ducts, grills, diffusers, and any other penetration of the work areas, with two (2) layers polyethylene sheeting minimum of six-mils thick sealed with duct tape. In addition to the polyethylene sheeting, place hard barriers at doorways and corridors which will not be used for passage between Abatement Zones and non-abatement areas. Seal all floor drains.
6. Cover all walls and floors within Abatement Zone with a minimum of one (1) layer of six-mil polyethylene sheeting.
7. Maintain emergency and fire exits from the work area, or establish alternative exits satisfactory to fire officials.
8. Create pressure differential between Abatement Zones and non-abatement areas by the use of acceptable negative air pressure equipment. The HMAC shall ensure required negative air pressure is obtained throughout the containment and the total volume of air within the work area is changed every fifteen (15) minutes.
9. Post all approaches to each work area with appropriate Warning signs. Warning signs shall be of size and type that are easily readable and are visible from all approaches to the work areas.
10. Install drop cloths to facilitate the cleanup.
11. Refer to Section 020800 Asbestos Abatement for additional requirements where asbestos containing materials will be impacted during removal.

D. For exterior work areas, the HMAC shall establish Abatement Zones, Decontamination Zones, and Support Zones in accordance with Section 1.9 of this Specification and the following:

1. Intact or Outdoor Remediation: A Negative Pressure Enclosures (NPEs) will not be required in the Abatement Zones for the remediation if the caulks and window glazing materials are removed intact or (isolated) outdoors.
2. All approaches to work areas shall be restricted with barriers (i.e. orange construction fencing) properly posted with signage.
3. The HMAC shall establish the Abatement Zone, Decontamination Zone and Support Zone in accordance with Part 1.9 of this Specification. The boundaries of the three (3) zones shall be designated and segregated by orange construction fencing and posted with proper signage at a minimum.
4. To ensure that exterior work will not contaminate interior areas of the building, exterior abatement zones shall be isolated from the interior areas of the building with critical barriers consisting of two (2) layers of six (6) mil polyethylene sheeting or equivalent to prevent accidental entry and air exchange into the building. Within each exterior Abatement Zone, openings into the building interior such as door and window openings shall be securely sealed. The sheeting shall be sturdy enough to withstand inclement weather conditions. Utilize wood framing or hard barriers as necessary to support the sheeting.
5. Where necessary, weather screens shall be constructed to prevent the dispersion of particulate or debris due to wind or rain. The construction and placement of the weather screens shall be addressed in the HMAC's Work Plan.
6. Where necessary, ground cover and erosion controls shall be established to prevent the migration of remediation dust or debris due to water from rain or remediation activities. The construction and placement of the ground cover and erosion controls shall be addressed in the HMAC's Work Plan.
7. Catch basins within remediation work zones shall be sealed to prevent solids or liquids from entering.

3.3 PREPARATION OF DECONTAMINATION ZONES

A. Preparation of Contiguous Personnel Decontamination System

1. The HMAC shall establish contiguous to each Abatement Zone, where feasible, a personnel decontamination system consisting of equipment room, shower room and clean room in series. Access between the contaminated and uncontaminated areas shall be through this decontamination enclosure only. The decontamination system shall be constructed of two (2) layers of six (6) mil polyethylene sheeting. Pre-fabricated "pop-up" decontamination chambers shall be clean and not showing signs of wear or deterioration. Metal shower surrounds shall be required for this project.
2. Access between rooms in decontamination system shall be through double flap-curtained openings. Clean room, shower room and equipment room within decontamination system shall be completely sealed ensuring that the sole source of air flow through this area originates from uncontaminated areas outside the work area.
3. The shower unit shall be equipped with an adequate supply of warm water. Shower waste water shall be captured into fifty-five gallon drums or other suitable containers for waste profiling and disposal.
4. The shower room shall have soap and an adequate supply of drying towels. Provide an adequate number of shower units in accordance with OSHA 29 CFR 1926.1101.

B. Preparation of Remote Personnel Decontamination System

1. In instances where construction of a contiguous decontamination facility is not feasible, the HMAC shall establish a remote personnel decontamination system. Access routes between the Abatement Zone and the shower shall be secured and restricted to authorized personnel and protected from contamination. The decontamination system shall be constructed of two (2) layers of six (6) mil polyethylene sheeting.
2. Access between rooms in decontamination system shall be through double flap-curtained openings. Clean room, shower room and equipment room within decontamination system shall be completely sealed.
3. The shower unit shall be equipped with an adequate supply of warm water. Shower waste water shall be captured into fifty-five gallon drums or other suitable containers for waste profiling and disposal.
4. The shower room shall have soap and an adequate supply of drying towels. Provide an adequate number of shower units in accordance with OSHA 29 CFR 1926.1101.
5. When a remote personnel decontamination system will be utilized, a minimum of two (2) chambers shall be constructed contiguous to each Abatement Zone and be equipped with a HEPA vacuum and clean protective clothing.

C. Preparation of Waste Load Out Systems

1. The HMAC shall establish waste load out systems, where feasible, contiguous to Abatement Zones. The waste load system shall, at a minimum be restricted and consist of protective ground cover, weather protection as described in Part 3.2.C.2, 5, 6, and 7 of this Specification.
2. The waste load out system shall be used for decontaminating waste containers, bags, bundles, etc. prior to removal from the work area and transporting waste from the work area to the non-work area.
3. Persons working inside the contaminated work area are not permitted to pass from the work area to the non-work area through the waste load out system. Persons inside the contaminated work area shall not be permitted to enter into the clean area of the waste load out system.
4. Appropriate waste containers shall be placed adjacent to Abatement Zones. Containers shall be lined, labeled, covered and secured.
5. Decontamination of all non-disposable equipment and tools employed in the course of the project will be performed in accordance with §761 Subpart S prior to removal from the enclosure system.
6. Liquid wastes generated as a result of the decontamination procedures shall be collected in fifty-five (55) gallon steel drums or other suitable contains for waste profiling or treatment or incineration in accordance with §761.60 (if required).

3.4 PREPARATION OF SUPPORT ZONES

A. Establish one (1) point of access into the Support Zone where the work area access log will be maintained.

B. For outdoor work areas, establish orange construction fence to delineate the Support Zone from unrestricted areas and post with applicable warning signs. Establish one (1) point of access into the Support Zone where the work area access log will be maintained.

C. Each work area shall contain an access log in order to maintain a list of personnel accessing the work area. Each person entering and exiting the work area shall sign the access log.

3.5 REMEDIATION PROCEDURES - GENERAL

A. Work shall be performed using appropriate engineering controls including HEPA filter equipped tools and misting to prevent exposure from the work and migration of contaminants.

B. All debris generated during operations including but not limited to visible caulking, dust and debris shall be HEPA vacuumed continuously throughout the work shift and at the end of the work shift to avoid accumulation. Any tears or rips that occur in polyethylene barriers or floor coverings shall be repaired or removed and replaced with new protections.

C. Ladders, scaffolding, or lifts utilized in the remediation shall be properly decontaminated as addressed in the HMAC's work plan prior to removal from the work area.

D. Abrasive actions performed on contaminated materials and masonry shall not be allowed.

E. All working surfaces of tools and equipment that contacts contaminated material shall be decontaminated using the methods prescribed by §40 CFR 761 Subpart S prior to removal from the regulated area.

3.6 CAULK REMEDIATION

A. The HMAC shall establish the Abatement Zone, Decontamination Zone, and Support Zone in accordance with this Specification prior to the remediation of interior and exterior caulk.

B. The HMAC shall mist all contaminated materials with water prior to and during removal. The standard shall be no visible emissions. Water shall be controlled and not allowed to pool or run off of the protective ground coverings.

C. Where electrical, telecommunication or data cables exist in wall sleeves or in close proximity to caulk removal, omit water usage. Utilize the nozzle end of a HEPA vacuum directly at the removal point to capture debris and dust generated during caulk removal.

D. Utilize hand held tools to manually remove caulk from substrate. Utilize a nylon brush to remove all visible caulk residue.

E. The waste shall be placed into a lined container. Any part of tools or equipment that comes into contact with caulk and window glazing compounds will be subject to §40 Subpart S decontamination.

F. The HMAC shall immediately containerize all waste.

G. All surfaces from which caulk was removed shall be HEPA vacuumed and final cleaned until no visible residue remains.

H. Liquid materials, including equipment or personal decontamination fluids or similar liquids generated during work at the Site shall be placed directly into appropriately sized and sealed vessels immediately upon generation.

I. Liquid wastes generated as a result of the caulk and window glazing compound remediation and personnel or equipment decontamination shall be characterized by testing and analysis and disposed of accordingly. Regulated liquid wastes shall be burned in a high temperature incinerator in accordance with §761.60 or managed (treated) in accordance with §761.60.

3.7 WINDOW GLAZING REMEDIATION

A. The HMAC shall establish the Abatement Zone, Decontamination Zone, and Support Zone in accordance with this Specification prior to the remediation of door with window glazing.

B. The HMAC shall mist all contaminated materials with water prior to and during removal. The standard shall be no visible emissions. Water shall be controlled and not allowed to pool or run off of the protective ground coverings.

C. Remove window sash from opening and immediately containerize entire sash.

D. Window sashes to be disposed of as hazardous lead and PCB bulk product waste.

3.8 FINAL WORK AREA CLEANING

A. Upon completion of remediation and removal of tools, waste, and supplies from each work area, the HMAC shall use wet wiping and HEPA vacuuming methods to remove all visible dust, debris and residue from all surfaces within the abatement and decontamination zones.

B. Decontaminate substrate with a non-chlorinated organic solvent and perform second HEPA vacuuming of surface.

C. Upon completion of the final work area cleaning, a visual inspection shall be conducted by the Contractor's Site Supervisor for visible evidence of residual caulk, window glazing compounds and dust and debris. Following the Site Supervisor's visual inspection, the Owner's Consultant shall perform a final visual inspection of the work area. The visual inspection shall provide verification that remediation work has been completed in accordance with this specification. Work areas shall remain regulated until successful completion of final visual inspection by Owner's Consultant.

D. Any surface exhibiting evidence of contamination, dust or debris, or incomplete abatement of specified caulk and window glazing compounds shall be re-cleaned by the HMAC at no cost to the Owner.

3.9 ON-SITE WASTE MANAGEMENT

A. SOLID WASTES

1. All solid waste materials shall be placed directly in appropriate waste receptacles immediately upon removal from in-situ positions. Solid wastes shall include used containment barriers, personnel protective equipment, and other solid wastes generated during the work, Suitable waste receptacles may consist of CTDOT-approved 5 to 55-gallon containers.
2. Containers shall consist of suitable DOT-approved containers that are watertight and free of corrosion, perforations, punctures, or other damage. All containers shall have ring lock lids and shall be sealed at the conclusion of each workday.
3. The waste containers shall remain staged at the site with a secure impermeable cover in place until the materials are transported from the site to be delivered to the designated disposal facility.
4. A waste staging area shall be designated prior to initiation of the remediation work and approved by the Owner's Consultant.
5. Caulk and window glazing compound waste shall be stored in compliance with the time constraints, container, inspection, and labeling requirements, and all other requirements set forth in §761.65. On-site temporary storage of caulk and window glazing compounds shall be limited to thirty (30) days per §761.65(C)(1).

B. DECONTAMINATION FLUIDS AND LIQUID WASTE MATERIALS

1. All working surfaces of tools and equipment that contacts contaminated materials shall be decontaminated using the methods prescribed by §40 CFR 761 Subpart S.
2. Liquid Wastes generated as a result of the caulk and window glazing compound remediation and equipment or personnel decontamination shall be profiled and if necessary, burned in a high temperature incinerator in accordance with §761.60 or managed (treated) in accordance with §761.60 if necessary.
3. Under no circumstances shall decontamination fluids or liquid wastes be discharged to the ground surface or subsurface at the site.
4. Liquid materials, including equipment or personal decontamination fluids or similar liquids generated during work at the site shall be placed directly into appropriately sized and sealed vessels immediately upon generation.
5. Acceptable vessels for the storage of liquid wastes may include DOT approved 55-gallon barrels, steel or polyethylene tanks, fractioning tanks or tank trucks. All proposed vessels shall be compatible with the intended liquid contents.
6. Container staging areas shall be designated prior to initiation of the removal work and approved by the Owner's Consultant.
7. All storage vessels to be used in the containerization and transportation of liquid waste materials shall be free of corrosion, perforations, punctures or other condition that may impair its ability to securely contain liquid.
8. Temporary staging of liquid waste vessels at the site shall be in a manner that will prevent freezing of contained liquids. Should the potential exist for liquid containers to freeze during exterior storage at the site, arrangements shall be made with the Owner's Consultant to identify and utilize an appropriate alternate storage location acceptable to the Owner's Consultant.
9. All liquid storage vessels utilized and staged at the site shall be stored in an area on the property that will not interfere with facility operations or normal flow of vehicle or pedestrian traffic, and in a manner that will minimize the potential for tipping, vandalism or damage by vehicular traffic.
10. All characterization of waste, testing, analytical fees for disposal purposes shall be borne by the HMAC.

C. LABELING OF WASTE CONTAINERS

1. All waste containers and temporary waste storage areas shall be labeled in accordance with §761.40 and §761.45.
2. All waste containers shall be posted with signage indicating the disposition of the waste as PCB Bulk Product Waste.
3. All waste containers must be labeled with the name of the waste contained; the date in which the first material was placed in the vessel; and the last date at which addition of waste occurred.
4. All waste containers containing caulk or caulk debris, containment system components, used personnel protective equipment, personal and equipment wash water and decontamination fluids, or other wastes generated during the remediation work shall be labeled as follows:

HAZARDOUS WASTE-Federal law prohibits improper disposal.
If found, contact the nearest police or public safety authority or the
U.S. Environmental Protection Agency.
Generator's Name:
Manifest Document No.:

5. Such marking must be durable, in English and printed on or affixed to the surface of the package or on a label, tag or sign; displayed on a background of sharply contrasting color; un-obscured by labels or attachments and located away from any other marking (such as advertising) that could substantially reduce its effectiveness.

3.8 WASTE TRANSPORTATION AND DISPOSAL

A. All waste packaging, labeling and transportation activities shall be performed in accordance with applicable State of Connecticut and US Department of Transportation Regulations at 49 CFR Parts 171, 172, 173, 177, and 178, and any and all other applicable federal, state and local laws and regulations.

B. All wastes shall be shipped using state-specific standard manifest documents. The HMAC shall supply and complete the manifest documents in accordance with all applicable state and federal regulations. All manifest documents shall be signed by a representative of the Owner and appropriate copes shall be provided to the Owner's representative prior to removing the waste from the site.

C. The HMAC or their designated waste disposal sub-contractor providing waste transportation services shall possess a valid Waste Hauler's Permit issued by the State of Connecticut Department of Energy and Environmental Protection (CTDEEP). In addition, if the waste is to be transported and disposed of out of Connecticut State, applicable permits for those states or territories through which the waste will be transported and for where it will be disposed will be required. It is the responsibility of the HMAC to identify the appropriate disposal facility and associated travel route(s) and to identify the pertinent permits that will be required and to provide copies of the applicable permits to the Owner's Consultant prior to removing the waste from the site.

D. The HMAC shall be responsible for applying for, obtaining and payment of all permits and temporary hazardous waste generator identification numbers to support the project.

3.9 CERTIFICATION OF REMEDIATION WORK

A. The HMAC shall certify in writing to the Owner's Consultant that all remediation work and waste disposal has been completed in accordance with this specification and all applicable federal and state regulations.

B. The HMAC shall certify in writing to the Owner's Consultant that each piece of equipment used in the Abatement Zones or which has come in or potential come into contact with caulk and window glazing compounds has been decontaminated in accordance with 40 CFR 761 Subpart S prior to removal from the Site.

END OF SECTION

BUILDING DEMOLITION

PART 1 – GENERAL

1.1 WORK INCLUDED

A. Demolish designated structures.
B. Provide demolition as necessary to complete the project.
C. Remove materials from site.

1.2 RELATED WORK

A. Section 01 50 00 - Construction Facilities and Temporary Controls.
B. Section 01 77 00 - Contract Closeout: Project record documents.

1.3 SUBMITTALS

A. Submit demolition and removal procedures and schedule under provisions of Section 01 31 00.

1.4 EXISTING CONDITIONS

A. Conduct demolition to minimize interference with adjacent work to remain.
B. Provide, erect, and maintain temporary barriers and security devices.
C. Conduct operations with minimum interference to public or private thoroughfares. Maintain egress and access at all times.
D. Do not close or obstruct roadways or sidewalks without permits.

PART 2 – PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 PREPARATION

A. Prevent movement or settlement of adjacent structures. Provide bracing and shoring.

B. Mark location of disconnected utilities. Identify utilities and indicate capping locations on Project Record Documents.

3.2 EXECUTION

A. Demolish indicated structures and appurtenances in an orderly and careful manner.

B. Demolish items necessary to complete the project scope of work. Coordinate with Architect.

C. Cease operations and notify Architect/Engineer immediately if adjacent structures appear to be endangered. Do not resume operations until corrective measures have been taken.

D. Except where noted otherwise, immediately remove demolished material from site.

E. Relics, antiques, and similar objects remain the property of the Owner. Notify Architect/Engineer prior to removal and obtain acceptance regarding method of removal.

F. Remove and promptly dispose of contaminated, vermin infested, or dangerous materials encountered.

G. Do not burn or bury materials on site.

H. Keep work sprinkled to minimize dust. Provide hoses and water main or hydrant connections for this purpose.

I. Rough grade and compact areas affected by demolition to maintain site grades and contours.

J. Remove demolished materials from site as work progresses. Leave site in clean condition.

END OF SECTION

SELECTIVE INTERIOR DEMOLITION

PART 1 – GENERAL

1.1 WORK INCLUDED

A. Remove designated building equipment and fixtures.
B. Remove designated partitions and components.
C. Cap and identify utilities.
D. Remove all materials necessary to complete the scope of work as shown in the contract documents.

1.2 RELATED WORK

A. Section 01 50 00 - Construction Facilities and Temporary Controls: Temporary barriers and enclosures.
B. Section 01 50 00 - Construction Facilities and Temporary Controls: Security.
C. Section 01 50 00 - Construction Facilities and Temporary Controls: Cleaning during construction.
D. Section 01 77 00 - Contract Closeout: Project record documents.
E. Section 02 41 16.13 - Building Demolition.

1.3 SUBMITTALS

A. Submit demolition and removal procedures and schedule under provisions of Section 01 33 00.

1.4 EXISTING CONDITIONS

A. Conduct demolition to minimize interference with adjacent building areas. Maintain protected egress and access at all times.

B. Provide, erect, and maintain temporary barriers and security devices.

PART 2 – PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 PREPARATION

A. Erect and maintain weatherproof closures for exterior openings as specified in Section 01 50 00.

B. Protect existing items, which are not indicated to be altered.

C. Disconnect, remove, and cap designated utility services within demolition areas.

D. Mark location of disconnected utilities. Identify and indicate capping locations on Project Record Documents.

3.2 EXECUTION

A. Demolish in an orderly and careful manner. Protect existing construction to remain.

B. Except where noted otherwise, immediately remove demolished materials from site.

C. Relics, antiques, and similar objects remain the property of the Owner. Notify Architect prior to removal and obtain acceptance regarding method of removal.

D. Remove and promptly dispose of contaminated, vermin infested, or dangerous materials encountered.

E. Do not burn or bury materials on site.

F. Remove demolished materials from site as work progresses. Upon completion of work, leave areas of work in clean condition.

END OF SECTION

MISCELLANEOUS ROUGH CARPENTRY

PART 1 – GENERAL

1.1 WORK INCLUDED

A. Roof curbs.
B. Wood furring and grounds.
C. Wood treatment.

1.2 REFERENCES

A. ALSC - American Lumber Standards Committee: Softwood Lumber Standard.
B. APA - American Plywood Association: Grades and Standards.
C. FS TT-W-571 - Wood Preservation: Treating Practices.
D. NFPA - National Forest Products Association.
E. SFPA - Southern Forest Products Association.
F. WCLIB - West Coast Lumber Inspection Bureau: Standard Grading Rules for West Coast Lumber.
G. WWPA - Western Wood Products Association.

1.3 QUALITY ASSURANCE

A. Lumber Grading Agency: Certified by ALSC.
B. Plywood Grading Agency: Certified by APA.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Lumber Grading Rules: WWPA.

B. Softwood Lumber: Southern Pine species, No. 2 grade, kiln dried or surfaced dry with 19 percent maximum moisture content.

C. Plywood: APA Grade C-D, with waterproof glue, unsanded.

D. Fasteners: Hot-dipped galvanized steel for exterior, high humidity, and treated wood locations; plain finish elsewhere; size and type to suit condition.

E. Anchors: Adhesive expanding bolt type for anchorage to hollow masonry. Bolts or ballistic fasteners for anchorages to steel.

2.2 WOOD TREATMENT

A. Wood Preservative (Pressure Treatment): FS TT-W-571 AWPA Treatment UC4A using water borne preservative with 0.30 percent retainage; preservative shall not contain chromium or arsenic.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Erect wood framing members level and plumb.

B. Space framing and furring 16 inches.

C. Curb all roof openings except where prefabricated curbs are provided. Form corners by lapping side members alternatively.

D. Coordinate work with installation of decking and support of decking at openings.

END OF SECTION

WOOD DECKING

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Softwood lumber Glue laminated structural wood decking.

1.2 REFERENCES

A. AITC 112 - Standard for Tongue and Groove Heavy Timber Decking.
B. ALSC (American Lumber Standards Committee) - Softwood Lumber Standards.
C. APA (American Plywood Association).
D. NFPA (National Forest Products Association).
E. RIS (Redwood Inspection Service).
F. SPIB (Southern Pine Inspection Bureau).
G. WCLIB (West Coast Lumber Inspection Bureau).
H. WWPA (Western Wood Products Association).

1.3 SYSTEM DESCRIPTION

A. Design roof live and dead 40 psf with deflection limited to 1/240 of span.

1.4 SUBMITTALS FOR REVIEW

A. Section 01 33 00 – Submittal Procedures: Procedures for submittals.
B. Product Data: Provide technical data on wood preservative materials.
C. Shop Drawings: Indicate deck framing system, loads and cambers, bearing details, framed openings.

1.5 SUBMITTALS FOR INFORMATION

A. Section 01 33 00 – Submittal Procedures: Procedures for submittals.
B. Product Data: Provide application instructions.

1.6 QUALITY ASSURANCE

A. Perform Work in accordance with the following agencies:
   1. Lumber Grading Agency: Certified by AITC 108.
B. Tongue & Groove Decking:
C. Perform Work in accordance with ANSI A190.1. Maintain one copy copies of each document on site.
D. In lieu of grade stamping exposed to view lumber and plywood, submit manufacturer's certificate certifying that products conform to specified requirements.
E. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience and certified by AITC.

F. Installer: Company specializing in performing the work of this section with minimum five years' experience.
G. Design decking under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed at the place where the Project is located.

1.7 DELIVERY, STORAGE, AND PROTECTION

A. Section 01 60 00 – Product Requirements: Transport, handle, store, and protect products.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Lumber Grading Rules: AITC 110 & AITC 112.
B. Tongue & Groove Decking: Douglas Fir species, size to match existing.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify that support framing is ready to receive decking.

3.2 PREPARATION

A. Coordinate placement of bearing & support items.

3.3 INSTALLATION - GLUE LAMINATED DECKING

A. Install decking perpendicular to framing members, with ends staggered over firm bearing. On sloped surfaces, lay decking with tongue upward.
B. Fit butt end deck joints occurring between support members with metal splines to maintain tight, aligned joints.
C. Engage decking tongue and groove edges.
D. Secure with fasteners. Side spike planks together, through pre-drilled holes.
E. Cut decking to accommodate roof drain and flange.

3.4 TOLERANCES

A. Surface Flatness of Decking Without Load: 1/4 inch in 10 feet maximum, and 1/2 inch in 30 feet maximum.

END OF SECTION

ELASTOMERIC EPDM SHEET ROOFING, FULLY ADHERED

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Elastomeric fully adhered sheet Membrane Roofing System with insulation.

1.2 RELATED SECTIONS
A. Section 06 10 53 – Miscellaneous Rough Carpentry: Roof curbs
B. Section 06 15 00 – Wood Decking
C. Section 07 62 00 - Sheet Metal Flashing & Trim
D. Section 07 71 23 - Gutters and Downspouts.

1.3 SYSTEM DESCRIPTION
A. Elastomeric sheet membrane roof assembly including structure to conform to UL requirements for a Class C rated assembly, and FM Class I/ I-90 requirements for wind uplift resistance.

1.4 SUBMITTALS
A. Submittals shall be in accordance with Section 01 33 00, Paragraph Quality Assurance.

1.5 QUALITY ASSURANCE
A. Perform Work in accordance with Underwriters Laboratories Inc. UL Class C Fire Hazard Classification; Factory Mutual Engineering Corporation FM Roof assembly Classification wind uplift requirement of I90, FM Construction Bulletin 1-28, Class 1 Construction.

1.6 ENVIRONMENTAL REQUIREMENTS
A. Do not install membrane during inclement weather or when air temperature may fall below 50 degrees.

1.7 WARRANTY
A. Provide 15 year 'Total System" warranty under provisions of Section 01 40 00, Quality Control.

B. Provide 15-year warranty for labor.

PART 2 – PRODUCTS

2.1 MEMBRANE MATERIALS
A. Manufacturers:
1. Carlisle System: Sure-White
2. Firestone System: Rubbergard Eco White

B. Membrane: EPDM materials; non-reinforced .060-inch-thick, white color as selected. EPDM membrane shall conform to ASTM D-4637.

Physical Property	Test Method	Minimum Test Result
Color		White
Specific Gravity	ASTM D-297	1.12
Tensile Strength	ASTM D-412	1300 psi

Elongation at Break	ASTM D-412	300%	
Tear Resistance (Die C)	ASTM D-624		175 lb./in.
Sheet Composition	ASTM D-297		
% Polymer that is EPDM		100	
% Sheet that is Polymar			30

C. Cements and Primers:
1. Cements and Primers used for splicing, patching, and flashing shall be compatible with the membrane and substrate materials furnished, and shall be furnished by the same manufacturer as the membrane elastomer, and meet the manufacturer's published specifications for the same.
2. Any deviations from manufacturer's furnished products must be approved in writing by the manufacturer and accepted by the Architect prior to installation.

D. Flashings:
1. General: Flashings shall be as approved by manufacturer to comply with their 15 year "Total System" warranty.
2. Elastomeric Flashing: Elastomeric flexible flashing shall be furnished in uncured condition and shall meet or exceed the following test values:

Property	Test Method	Test Value
Test Strength	ASTM D-412	1200 psi
Elongation @ break	ASTM D-412	400%
Brittleness Temperature	ASTM D-746	-40°C
Tear Resistance Die C	ASTM D-624	140 lb./in.
Resistance to Ozone	ASTM D-1149	No Cracks

E. Pre-Fabricated Flashing Accessories:
1. Molded Pipe Flashing - white , cured, pre-cast base flashing for pipes and conduit up to 6" in diameter installed with splicing cement and seam sealant. Provide in sizes as necessary and supply with stainless steel clamp. Install in accordance with manufacturers' requirements, clamp tightly and apply sealant to top of neck.
2. Physical Properties - cured prefabricated flashing shall meet the same properties as non-cured flashings.

2.2 MEMBRANE FASTENING

A. SEALANTS:
1. Lap sealant shall be a one-part elastomeric caulking/adhesive sealant furnished by elastomeric membrane manufacturer according to his latest published catalog. Shelf life shall be marked clearly on container: "Do not use after _____;" and use will not be permitted of expired material. Store and apply according to manufacturer's installation instructions.
2. Sealant for difficult to flash penetrations or objects shall be an elastomeric, pourable material furnished by membrane manufacturer according to his latest published catalog. Shelf life shall be marked clearly on containers: "Do not use after _____;" and use will not be permitted of expired material. Store and apply according to manufacturer's installations instructions.
3. Water cut-off sealant is to be used for end of day stopping point and shall be an elastomeric sealant to adhere and seal space at edge of membrane and substrate. It will be furnished by elastomeric membrane manufacturer and meet their latest

published catalog requirements. Store and apply according to manufacturer's installation instructions.

4. Other sealers, tack coats, and tapes used shall be compatible to the elastomeric membrane and shall be as furnished and recommended by membrane manufacture. Use shall be according to manufacturer's recommendations and within the shelf life period designated on the containers. Asphalt or coat tar derivative products are not to be use in this construction.

B. FASTENERS:
   1. Fasteners shall be as recommended by the elastomeric membrane manufacturer for the type of deck, type and thickness of insulation, and fastening requirements of the manufacturer's system, UL, local building code or insurance requirements, whichever is most stringent.
   2. Fastener spacing shall meet FM approval Guide for I-90 Zone I windstorm rating when used with the selected insulation.
   3. Fasteners shall be galvanized steel or other non-corroding material employing plastic washers of a size recommended by the EPDM manufacturer. Washers, batten strips, and metal flashings or clips will be protected from contact with dissimilar metals in fasteners or companion accessories to preclude electrolytic corrosion.
   4. Length of penetration into substrate deck, wall, or nailer shall be sufficient to prevent backing out by vibration, shrinkage, or swelling action. Contractor to establish layout of fasteners, to insure proper attachment through the top flange of the steel deck prior to adhering membrane. Any fasteners through the ribs of decking will not be considered acceptable placement.

2.3 INSULATION MATERIALS

A. Manufacturers:
   1. Refer to manufacturer's "Total System" warranty requirement.

B. Insulation: FS HHI197212/2 Class 1 Polyisocyanurate with glass fiber felt facers. Provide minimum 1 layer, 1/2 inch minimum thickness, square edges, minimum R total = 2.5 aged value or tapered insulation as noted. Use largest acceptable sheets.

2.4 ACCESSORIES

A. Flexible Flashings: Same material as membrane; white color; as recommended by manufacturer.

B. Hard rubber edging with extension to cover roof edge blocking.

C. Termination bars, water cut-off mastic and fasteners.

D. Reinforced EPDM (Reinforced Universal Securement Strip): .060 thick EPDM, reinforced.

E. ½” Protection Board.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify that surfaces and site conditions are ready to receive work; deck is clean and

smooth, free of snow or ice; properly sloped to drains.

B. Verify roof openings, curbs, and protrusions through roof are solidly set; cant strips and reglets are in place.

C. Notify Architect 48 hours prior to application of insulation and roofing membrane.

D. Notify Architect immediately of any deficiencies in the deck, parapets, or any substrates.

3.2 INSULATION APPLICATION

A. Place insulation with long sides of boards parallel with deck so that side joints between boards do not exceed 1/4. Mechanically fasten insulation to deck to meet FM I -90, Zone II requirements.

B. Minimum Total Insulation Thickness: 1/2 inch or as required to achieve an overall insulation R value of 2.5.

C. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.

D. All gaps greater than 1/4" shall be filled with acceptance insulation. Under no circumstances shall the membrane be left unsupported over a space greater than 1/4". Tapered or feathered insulation shall be installed around all roof drains so as to provide proper slope for drainage.

3.3 MEMBRANE APPLICATION

A. Apply membrane and mechanical attachment devices in accordance with manufacturer's instructions with spray and/or roller.

B. Mechanically attach membrane to roof assembly at perimeter according to FM and manufacturer's requirements.

C. Apply adhesive at a rate of according to manufacturer's recommendations, evenly and continuously. Allow adhesive to dry to consistency prescribed by manufacturer before adhering membrane.

D. Roll out membrane and allow the membrane to relax for a minimum of 30 minutes before attachment. Bond sheet to substrate except those areas directly over or within 3 inches of a working crack or expansion joint. Work out air bubbles, wrinkles, and fishmouths. Firmly press sheet into place without stretching.

E. Install perimeter mechanical fasteners in accordance with manufacturers' instructions.

F. Shingle joints on sloped substrate in direction of drainage. Clean both mating surfaces at splice area with seam cleaner, apply adhesive to both surfaces, lap adjoining sheets a minimum of 4" and seal with a roller. Apply in-seam sealant and RUSS strips as delineated. Apply lap sealant to all seams.

G. Continue membrane up vertical surfaces minimum 8 or as noted. Reinforce membrane

with multiple thickness of membrane material over joints.

H. Seal items penetrating membrane with counterflashing membrane material. Install membrane flashings. Seal watertight to membrane.

3.4 FLASHINGS AND ACCESSORIES

A. All EPDM flashings to be a minimum of 0.60 inch thick material as recommended by manufacturer.

B. Apply flexible flashings to seal membrane to vertical elements. Strip in with a minimum of 6" wide EPDM flashing material.

C. Coordinate installation of roof drains, sumps and related flashings.

D. Seal flashings and flanges of items penetrating membrane.

END OF SECTION

This page intentionally left blank

SHEET METAL FLASHING AND TRIM

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Coping, parapet, flashings, gravel stop, drip edge,
B. Counterflashings over base flashings.

1.2 RELATED SECTIONS

A. Section 07 53 23 - Elastomeric EPDM Sheet Roofing, Fully Adhered: Roofing system.
B. Section 07 71 23 - Gutters and Downspouts.

1.3 REFERENCES

A. ASTM A525 - Steel Sheet, Zinc Coated, (Galvanized) by the Hot-Dip Process.
B. ASTM B32 - Solder Metal.
C. ASTM B209 - Aluminum and Alloy Sheet and Plate.
D. ASTM B370 - Copper Sheet and Strip for Building Construction.
E. ASTM B486 - Paste Solder.
F. ASTM D226 - Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
G. ASTM D4586 - Asphalt Roof Cement, Asbestos-Free.
H. CDA (Copper Development Association) - Contemporary Copper, A Handbook of Sheet Copper Fundamentals, Design, Details and Specifications.
I. CDA - Copper Roofing - A Practical Handbook.
J. FS O-F-506 - Flux, Soldering, Paste and Liquid.
K. NRCA (National Roofing Contractors Association) - Roofing Manual.
L. SMACNA - Architectural Sheet Metal Manual.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 33 00.
B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
C. Samples: Submit two samples, 12 x 12 inch in size illustrating typical standing seam, seam, external corner, internal corner, junction to vertical dissimilar surface, material and finish.
D. Submit two samples 12 x 12 inch in size illustrating metal finish color.

1.5 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA standard details and requirements.
B. Maintain one copy of each document on site.

1.6 QUALIFICATIONS

A. Fabricator and Installer: Company specializing in sheet metal flashing work with 5 years documented experience.

1.7 PRE-INSTALLATION CONFERENCE

A. Convene one week prior to commencing work of this section, under provisions of Section 01 31 00.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, protect and handle products to site under provisions of Section 01 60 00.
B. Stack preformed and prefinished material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
C. Prevent contact with materials, which may cause discoloration or staining.

1.9 COORDINATION

A. Coordinate work under provisions of Section 01 31 00.
B. Coordinate with the work of Section 07 65 26 for installing flashing reglets.

PART 2 – PRODUCTS

2.1 SHEET MATERIALS

A. Copper: ASTM B370, cold rolled 20 oz/sq ft thick; natural finish.
B. Aluminum Sheet: ASTM B209, .032 inch thick; mill finish, shop pre-coated with baked on enamel coating of color to be selected.
C. Pre-Coated Galvanized Steel: ASTM A446, Grade A, G90 zinc coating; 24 gage core steel, shop pre-coated with modified silicone coating of color to be selected.
D. Lead Coated Copper: ASTM B101 Type 1, Class A, soft temper, 20 oz/sq ft.

2.2 ACCESSORIES

A. Fasteners: Same material and finish as flashing metal, with soft neoprene washers.
B. Underlayment: ASTM D226 No. 15 asphalt saturated roofing felt.
C. Slip Sheet: Rosin sized building paper.
D. Primer: Zinc chromate type.
E. Protective Backing Paint: Zinc chromate alkyd.
F. Sealant: Specified in Section 07 92 00.
G. Bedding Compound: Rubber-asphalt.
H. Plastic Cement: ASTM D4586, Type I.
I. Reglets: Surface mounted and Recessed type, galvanized steel.
J. Insulating tape: 1/8 inch thick bituminous self adhesive for use between dissimilar metals.

2.3 FABRICATION

A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
B. Fabricate cleats of type sheet metal, same material as sheet, minimum 2 inches wide, interlockable with sheet.
C. Form pieces in longest possible lengths.
D. Hem exposed edges on underside 1/2-inch miter and seam corners.
E. Form material with standing seams.
F. Pre-tin edges of copper sheet. Solder shop formed metal joints. After soldering, remove flux. Wipe and wash solder joints clean. Weather seal joints.
G. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.
H. Fabricate vertical faces with bottom edge formed outward 1/4 inch (6 mm) and hemmed to form drip.
I. Fabricate flashings to allow toe to extend 2 inches over roofing. Return and brake edges.

2.4 FINISH

A. Prepare copper surfaces in accordance with Section 09 91 00.

B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, reglets in place, and nailing strips located.
B. Verify roofing termination and base flashings are in place, sealed, and secure.

3.2 PREPARATION

A. Install starter and edge strips, and cleats before starting installation.
B. Install surface mounted reglets true to lines and levels. Seal top of reglets with sealant.

3.3 INSTALLATION

A. Conform to drawing details on the drawings and in the SMACNA manual.
B. Insert flashings into reglets to form tight fit. Secure in place with wedges. Pack remaining spaces with lead wool. Seal flashings into reglets with sealant.
C. Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.
D. Apply plastic cement compound between metal flashings and felt flashings.

E. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
F. Seal metal joints watertight.
G. Solder metal joints for full metal surface contact. After soldering, wash metal clean with neutralizing solution and rinse with water.
H. Provide insulating tape where necessary to prevent contact of dissimilar metals.

3.4 FIELD QUALITY CONTROL

A. Field inspection will be performed under provisions of Section 01 40 00.
B. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

3.5 SCHEDULE

A. Brake metal fascia and trim: Pre-coated Aluminum. Color: To be selected. Profiles as shown on the Drawings.
B. Flashing in contact with masonry: Copper.
C. Parapet coping flashing - Copper. Color: To be selected. Profiles as shown on the Drawings.

END OF SECTION

This page intentionally left blank

GUTTERS AND DOWNSPOUTS

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Pre-coated Aluminum gutters and downspouts.

1.2 RELATED SECTIONS
A. Section 07 53 23 – Elastomeric EPDM Sheet Roofing, Fully Adhered.
B. Section 07 62 00 - Sheet Metal Flashing and Trim.

1.3 REFERENCES
A. ASTM B209 - Aluminum and Aluminum Alloy Sheet and Plate.
B. FS TT-C-494 - Coating Compound, Bituminous, Solvent Type, Acid Resistant.
C. SMACNA - Architectural Sheet Metal Manual.

1.4 SUBMITTALS
A. Submit manufacturer's installation instructions under provisions of Section 01 33 00.
B. Submit shop drawings & Product data under provisions of Section 01 33 00.
C. Indicate on shop drawings, general construction, configurations, jointing methods and locations, fastening methods, locations and installation details.
D. Provide product data on prefabricated components.
E. Submit Samples under the provisions of Section 01 33 00.
F. Submit three samples 12 inches in length illustrating component design, finish, color and configuration.

1.5 QUALITY ASSURANCE
A. Conform to SMACNA Manual Drawings for nominal sizing of components for rainfall intensity determined by a storm occurrence of 1 in 5 years.

1.6 DELIVERY, STORAGE, AND HANDLING
A. Deliver products to site under provisions of Section 01 60 00.
B. Store and protect products under provisions of Section 01 60 00.
C. Stack preformed and prefinished material to prevent twisting, bending, or abrasion, and to aid ventilation. Slope to drain.
D. Prevent contact with materials during storage, which may cause discoloration, staining, or damage.

PART 2 PRODUCTS

2.1 MANUFACTURERS
A. Architectural Metals; 8188 S. State Road, M-66, Portland, MI 48875; Tel: 616.374.0161; Fax: 616.374.0785; web: www.archmetalsinc.com
B. Englert Inc.; 1200 Amboy Avenue, Perth Amboy, NJ 08861; Tel: 800.364.5378; Fax: 888.389.0520; Web: www.englertinc.com
C. Berger Building Products; 805 Pennsylvania Boulevard, Feasterville, PA 19053; Tel: 215.355.1200; Fax: 215.355.7738; www.bergerbp.com

D. Alcoa Building Products (Aluminum Coil Stock), 201 Isabella Street, Pittsburgh, PA 15212-5858; Tel: 412.553.4545; Fax: 412.553.4498
E. Jay R. Smith Mfg. Co., 2781 Gunter Park DR E, Montgomery, AL 36109; Tel: 334.277.8520; www.jrsmith.com
F. Substitutions: Under provisions of Section 01 60 00.

2.2 MATERIALS

A. Aluminum Sheet: ASTM B209, 3003 Aluminum alloys, 0.032-inch-thick; shop precoated with 3 coats of paint coating, color as selected by architect.

2.3 COMPONENTS

A. Gutter: 6" Box Gutter
B. Downspouts: Square pipe

2.4 ACCESSORIES

A. Elbow: Corrugated
B. Gooseneck Pipe: Profiled to match downspout
C. Anchorage Devices: Type recommended by fabricator.
D. Gutter Supports: Brackets/ hanger to match Gutter material & finish
E. Downspout Supports: Pipe Straps to match Downspout material & finish
F. Mitres & End Caps: Profiled to suit gutter & downspout
G. Joint Fasteners: Profiled to suit gutter & downspout
H. Downspout Strainers: Profiled to suit downspout
I. Gutter Screens: Profiled to suit gutter
J. Downspout Header/ Collector Head:

2.5 FABRICATION

A. Form gutters and downspouts of profiles and sizes indicated.
B. Field measure site conditions prior to fabricating work.
C. Fabricate with required connection pieces.
D. Form sections square, true, and accurate in size, in maximum possible lengths and free of distortion or defects detrimental to appearance or performance.
E. Hem exposed edges of metal.

2.6 FINISHES

A. Backpaint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil.
B. Baked Enamel Finish: AA-C12C42R1x (cleaned with inhibited chemicals, conversion coated with an acid-chromate-flourise-phosphase treatment, and painted with organic coating specified below). Apply baked enamel finish in strict compliance with paint manufacturer's specification for cleaning, conversion coating and paint.
    1. Organic Coating: Manufacturer's standard thermosetting acrylic enamel, minimum 0.8 mil dry film thickness.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that surfaces are ready to receive work & conditions are as indicated on shop drawings.
B. Beginning of installation means acceptance of existing conditions.

3.2 INSTALLATION

A. Install conductor heads, gutters, downspouts, and accessories in accordance with manufacturer's instructions.
B. Join lengths with formed seams sealed watertight. Flash & seal gutters to downspouts & accessories.
C. Apply backing paint to metal back surfaces.
D. Apply bituminous protective backing on surfaces in contact with dissimilar materials.
E. Slope gutters 1/16 inch per foot minimum.
F. Seal metal joints watertight.
G. Connect downspouts to storm sewer system. Seal connection watertight.

END OF SECTION

This page intentionally left blank