The State of Connecticut

Department of Housing (DOH)

Community Development Block Grant Disaster Recovery Program (CDBG-DR)

Owner Occupied Rehabilitation and Rebuilding Program (OORR)

BID PACKAGE

For

Rehabilitation/Reconstruction work for:

Caron Castaldo

205 Dahl Avenue

Stratford, CT 06614

Prepared By:

Martinez Couch & Associates, LLC
1084 Cromwell Avenue Suite A-2
Rocky Hill, CT
860-436-4364

Project #: 1933 – 205 Dahl Avenue, Stratford, CT

EQUAL HOUSING OPPORTUNITY

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Section 1

ADVERTISEMENT FOR BIDS

Project #1933 – 205 Dahl Avenue, Stratford, CT

The State of Connecticut Department of Housing (DOH) is seeking proposals through a Request for Proposal (RFP) process for the rehabilitation, reconstruction and/or mitigation of residential structures damaged by Superstorm Sandy in compliance with all applicable local, federal, and state statutory requirements with special attention paid to requirements for Community Development Block Grants under the United States Department of Housing and Urban Development ("HUD") Disaster Recovery grant program.

Separated sealed bids for 1933 – 205 Dahl Avenue, Stratford, CT will be received by Martinez, Couch and Associates, LLC. until 5:00 o'clock PM on July 29, 2014.

The Information to Bidders, Form of Bid, Form of Contract, Plans, Specifications, and Form of Bid Bond, Performance and Payment Bond or Security, and other contract documents may be examined on the Department of Housing Hurricane Sandy Recover website at www.ct.gov/doh/ and click on the "Hurricane Sandy" link.

Copies of plans may be downloaded directly from the Department of Housing website under bid notices or obtained at the office of Martinez, Couch and Associates, LLC. located at 1084 Cromwell Avenue, Suite 2 Rocky Hill, CT 06067 upon payment of $50.00 for each set. Requests for copies plans shall provide 2 days notice to Martinez, Couch and Associates, LLC.

DOH reserves the right to waive any informalities or to reject any or all bids.

Attention to bidders is particularly called to the requirements as to conditions of employment to be observed and minimum wages rates to be paid under the contract (if applicable), Section 3, Segregated Facilities, Section 109 and E. O. 11246.

No bidder may withdraw his bid within 30 calendar days after the actual date of the bid opening thereof.

INFORMATION FOR BIDDERS

Receipt and Opening of Bids:

The State of Connecticut Department of Housing (herein called the "DOH"), invites bids on the form attached. Bids will be received by DOH at the office of Martinez, Couch and Associates, LLC. until 5:00 o'clock PM on July 29, 2014.

The envelopes containing the bids must be sealed, addressed to Mr. Richard Couch, P.E. at Martinez, Couch and Associates, LLC. and designated as bid for 1933 – 205 Dahl Avenue, Stratford, CT.

DOH may consider informal any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all bids. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement there considered. NO bidder may withdraw a bid within 30 days after the actual date of the opening thereof.

Mandatory Walk Through: All bidders must attend a mandatory walk through of the property designated above. The date and time of the walk through is set for 2:00 o'clock PM on July 17, 2014.

Preparation of Bids:

Each bid must be submitted on the prescribed form and accompanied by Certification by Bidder Regarding Equal Employment Opportunity, Form HUD-950.1, and Certification of Bidder Regarding Section 3 and Segregated Facilities. All blank spaces for bid process must be filled in, in ink or typewritten, in both words and figures, and the foregoing Certifications must be fully completed and executed when submitted.

Each bid must be submitted in a sealed envelope bearing on the outside the name of the bidder, his/her address, and the name of the project for which the bid is submitted. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as specified in the bid form.

Subcontracts: The bidder is specifically advised that any person, for, or other party to whom it is proposed to award a subcontract under this contract:

1. Must be acceptable to the DOH after verification by the State of the current eligibility status; and,
2. Must submit Form HUD-950.2, Certification by Proposed Subcontractor Regarding Equal Employment Opportunity and Certification of Proposed Subcontractor Regarding Section 3 and Segregated Facilities. Approval of the proposed subcontractor award cannot be given by the DOH unless and until the proposed subcontractor has submitted the Certifications and/or other evidence showing that it has fully complied with any reporting requirements to which it is or was subject. Although the bidder is not required to attach such Certifications by proposed subcontractors to his/her bid, the bidder is here advised of this requirement so that appropriate action can be taken to prevent subsequent delay in subcontract awards.

Method of Bidding: DOH invites the following bid(s):

Qualifications of Bidder: The DOH may make such investigations as he/she deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the DOH all such information and date for this purpose as the DOH may request. The DOH reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the DOH that such bidder is property qualified to carry out the obligations of the contract and to complete the work contemplated therein. Conditional bids will not be accepted.

The State's set Contractor Prequalifications are available at the Department of Housing's Hurricane Sandy Recovers website www.ct.gov/doh/ and click on the "Hurricane Sandy" link.

Conditions of Work: Each bidder must inform him/herself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his/her obligation to furnish all material and labor necessary to carry out the provision of his/her contract. Insofar as possible the contractor, in carrying out the work, must employ such methods or means as will not cause any interruption of or interference with the work of any other contractor.

Addenda and Interpretations: No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any bidder orally.

Every request for such interpretation should be in writing addressed to: Martinez, Couch and Associates, LLC. at 1084 Cromwell Avenue, Suite A-2 Rocky Hill, CT 06067 and, to be given consideration, must be received at least five days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instruction will be in the form of written addenda to the specifications which, if issued, will be forwarded by electronic mail and posted on DOH's Hurricane Sandy website to all prospective bidders (at the respective email addresses furnished for such purposes), not later than three days prior to the date fixed for the opening of bids. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his/her bid as submitted. All addenda so issued shall become part of the contract documents.

Performance and Payment Bonds: A performance and payment bond will be required of the successful bidder (contractor) for 100 percent of the contract price on contracts over $100,000.

Notice of Special Conditions: Attention is particularly called to those parts of the contract documents and specifications which deal with the following:

1. Inspection and testing of materials
2. Insurance requirements
3. Wage rates (if applicable)
4. State allowances

Laws and Regulations: The bidder's attention is directed to the fact that all applicable State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout, and they will be deemed to be included in the contract the same as though herein written out in full.

Method of Award-Lowest Qualified Bidder: If at the time this contract is to be awarded, the lowest base bid submitted by a responsible bidder does not exceed the amount of funds then estimated by the DOH as available to finance the contract; the contract will be awarded on the base bid only. If such bid exceeds such amount, the DOH may reject all bids or may award the contract on the base bid combined with such deductible alternatives applied in numerical order in which they are listed in the Form of Bids, as produces a net amount which is within the available funds.

If the homeowner wishes to select a prequalified bidding contractor other than the lowest and most responsible bidder, said owner is responsible for paying the difference between the lowest bidder and their chosen bidder from their own financing.

Obligation of Bidder: At the time of the opening of bids, each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the plans and contract documents (including all addenda). The failure or omission of any bidder to examine any form, instrument or document shall in no way relieve any bidder from any obligation in respect of his/her bid.

Safety Standards and Accident Prevention: With respect to all work performed under this contract, the contractor shall:

1. Comply with the safety standards provision of applicable laws, building and construction codes and the "Manual of Accident Prevention in Construction" published by the Associated General Contractors of America, the requirements of the Occupational Safety and Health Act of 1970 (Public Law 91-596), and the requirements of Title 29 of the Code of Federal Regulations, Section 1518 as published in the "Federal Register," Volume 36, No 75, Saturday, April 17, 1971.
2. Exercise every precaution at all times for the prevention of accidents and the protection of persons (including employees) who may be injured on the job site before the employer has made a standing arrangement for removal of injured persons to a hospital or a doctor's care.

Contract Progress Schedule: Each bid shall be accompanied by a Contract Progress Schedule. Such Schedule shall list the bidder's timetable for completion of the contract.

BID FORM

The undersigned, being familiarized with the local conditions affecting the cost of the work and with the Drawings, Scope of Work, Specifications, Invitation to Bidders, Instructions to Bidders, General Conditions, Bid Form, Form of Contract and Form of Bonds for Project No. 1933 – 205 Dahl Avenue, Stratford, CT and Addenda No. and _____ thereto, as prepared by Martinez Couch and Associates, LLC, Rocky Hill Connecticut, and on file in the office of DOH, hereby proposes to provide all work as required for the rehabilitation and reconstruction for said Project No. 1933 – 205 Dahl Avenue, Stratford, CT located at 205 Dahl Avenue in Stratford, State of Connecticut, all in accordance with the Drawings and Specifications, for the sum of :
_____Dollars ($_____).

Section #	***Scope of Work***	***Subcontractor***	***Cost***	
			$ / Per	***Total ($)***
01 00 00	General Conditions		/L.S.	
01 50 00	Temporary Facilities		/L.S.	
02 83 13	Lead Hazard Remediation		/L.S.	
02 85 00	Mold Remediation		/L.S.	
23 52 16	Condensing Boilers		/L.S.	
TOTAL COST				

Unit Prices - For Unforeseen Conditions During Repairs

All unit prices, unless otherwise noted, shall include all incidental work normally required in connection with the particular type of work involved and would include, but not necessarily be limited to costs of materials, material accessories, material waste, fabrication, labor, supervision, engineering, layout, transportation, rigging, insurances, overhead, and profit. All labor rates, unless otherwise noted, shall include, but not necessarily be limited to all fringe benefits, insurances, overhead, and profit.

Item	***Rate ($/Per)***
Electrician Labor Rate (HR.)	/HR.

The undersigned agrees that if within the period of thirty (30) days after the opening of bids, or when extended to the next work day immediately following said period, notice of the acceptance of this bid shall be mailed, or delivered to him/her at the business address given below, or at any time thereafter before this bid is withdrawn, will within fifteen (15) days thereafter deliver to the DOH, where directed, a contract properly executed in such number of counterparts as may be required by said DOH, on the forms annexed, with such changes therein as shall have been made by DOH, prior to the time named for delivery of this proposal, together with an executed Completion Assurance Agreement with a Letter of Credit in a form satisfactory to the DOH and a letter indicating those

FORM OF NON-COLLUSIVE AFFIDAVIT

AFFIDAVIT

State of _____)

County of _____)

_____, being first duly sworn, deposes and says:

That he/she is,_____ the party making the foregoing proposal for bid, that such proposal or bid is genuine and not collusive or sham; that said bidder has not colluded, conspired, connived or agreed, directly or indirectly, with any bidder or person, to put in a sham bid or to refrain from bidding, and has not, in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference, with any person, to fix the bid price of affiant or of any other bidder, or to fix any overhead, profit or cost element of said bid price, or of that of any other bidder, or to secure any advantage against DOH or any person interested in the proposed contract, and that all statements in said proposal for bid are true.

Project No._____

Location _____

_____

Signature

_____

Name and Title

_____

Date

(Signature should be notarized.)

BIDDER'S CERTIFICATION OF ELIGIBILITY

By the submission of this bid, the bidder certifies that to the best of its knowledge and belief, neither it, nor any person or firm which has an interest in the bidder's firm, nor any of the bidder's subcontractors, is ineligible to:

(1) Be awarded contracts by any agency of the United States Government or HUD; or,

(2) Participate in HUD programs pursuant to 24 CFR part 24.

_____

(Name of Bidder)

_____

(Address)

BY:_____

Title: _____

NOTE: This certification is a material representation of fact upon which reliance is placed when making award. If it is later determined that the bidder knowingly rendered an erroneous certification, the contract may be terminated for default, and the bidder may be debarred or suspended from participation in HUD programs and other Federal programs.

CERTIFICATION OF GENERAL BIDDERS ON CDBG-DR CONSTRUCTION PROJECTS

I. CERTIFICATION REGARDING HEALTH AND SAFETY

The undersigned hereby certifies that he/she is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work; that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least ten hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee

II. CERTIFICATION REGARDING NON-COLLUSION AND DEBARMENT

The undersigned further certifies under the penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity. The undersigned further certifies that neither he/she nor any firm, corporation, partnership or association in which he/she has a substantial interest is designated as an ineligible contractor by the Comptroller General of the United States pursuant to Section 5.6 (b) of the Regulations of the Secretary of Labor, Part 5 (29 CFR, Part 5), or pursuant to Section 3 (a) of the Davis-Bacon Act, as amended (40 USC 276a). The undersigned further certifies that said undersigned is not presently debarred from doing public construction work in the State of Connecticut.

Date: _____

_____

Name of General Bidder

By _____

Signature

_____

Print name and title

_____

Business Address

_____

Street Address City and State

OSHA-10 OSHA-10

CERTIFICATION OF SUB- BIDDERS (IF ANY) ON CDBG-DR CONSTRUCTION PROJECTS

I. CERTIFICATION REGARDING HEALTH AND SAFETY

The undersigned hereby certifies that he/she is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work; that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least ten hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee

II. CERTIFICATION REGARDING NON-COLLUSION AND DEBARMENT

The undersigned further certifies under penalties of perjury that this subbid is in all responses bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity. The undersigned further certifies that neither he/she nor any firm, corporation, partnership or association in which he/she has a substantial interest is designated as an ineligible contractor by the Comptroller General of the United States pursuant to Section 5.6 (b) of the Regulations of the Secretary of Labor, Part 5 (29 CFR, Part 5), or pursuant to Section 3 (a) of the Davis-Bacon Act, as amended (40 USC 276a). The undersigned further certifies that said undersigned is not presently debarred from doing public construction work in the State of Connecticut.

Date _____

_____

Name of Sub-bidder

By _____

Signature

_____

Print Name and Title

_____

Business Name

_____

Street Address, City and State

PERFORMANCE AND PAYMENT BOND

(For contracts over $100,000)

KNOW ALL MEN BY THESE PRESENTS: THAT we, _____, as PRINCIPAL, and_____ , as SURETY, are held firmly bound unto_____ hereinafter called the DOH, in the penal sum of _____ ($_____), for the payment of which sum we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally.
WHEREAS, Principal has entered into a certain Contract with DOH, dated _____, a copy of which is hereto attached and made a part hereof.

NOW, THEREFORE, the condition of this obligation is such that if the Principal shall in all respects fully perform the Contract and all duly authorized modifications thereof, during its original term and any extensions thereof that may be granted and during any guaranty period for which the Contract provides, and if the Principal shall fully satisfy all claims arising out of the prosecution of the work under the Contract and shall fully indemnify DOH for all expenses which it may incur by reason of such claims, including its attorney's fees and court costs, and if the Principal shall make full payment to all persons supplying labor, services, materials, or equipment in the prosecution of the work under the Contract, in default of which such persons shall have a direct right of action hereupon; and if the Principal shall pay or cause to be paid all sales and use taxes payable as a result of the performance of the Contract as well as payment of gasoline and special motor fuel taxes in the performance of the Contract and all motor vehicle fees required for commercial motor vehicles used in connection with the performance of the Contract, then this obligation shall be void; otherwise, it shall remain in full force and effect. No modification of the Contract or extension of the term thereof, nor any forbearance on the part of DOH shall in any way release the Principal or the Surety from liability hereunder. Notice to the Surety of any such modification, extension, or forbearance is hereby waived.

IN WITNESS WHEREOF, the aforesaid Principal and Surety have executed this instrument and affixed their seals hereto, this _____ day of _____.

_____ _____

Principal Surety

_____ _____

Name and Title

(Signatures must be notarized.)

(Power-of-Attorney for person signing for Surety Company must be attached to bond.)

The rate of premium on this bond is $_____ per thousand.

The total amount of premium charge is $_____.

(The above is to be filled in by Surety Company.)

SUBCONTRACTOR IDENTIFICATION

(Provide additional forms for more subcontractors, as needed prior to contract execution.)

This form is a part of your bid package and must be submitted along with the itemized and formal bid forms at the time of the bid opening. Failure to submit a completed document could result in the disqualification of your bid.

Name of Subcontractor: _____

Address: _____
Trade: _____
Hourly Wage: _$_____ Full Contract Price: _$_____
Federal Tax# or SSN #: _____
Male Owned Business _____ Female Owned Business_____
Is he/she of Hispanic or Latino ethnicity? Yes_____ No_____
Race: (Please check one)
____White ____American Indian/Alaskan Native
____Black/African American ____Hasidic Jew
____Asian/Pacific American

Name of Subcontractor: _____
Address: _____
Trade: _____
Hourly Wage: _$_____ Full Contract Price: _$_____
Federal Tax# or SSN #: _____
Male Owned Business _____ Female Owned Business_____
Is he/she of Hispanic or Latino ethnicity? Yes_____ No_____
Race: (Please check one)
____White ____American Indian/Alaskan Native
____Black/African American ____Hasidic Jew
____Asian/Pacific American

Name of Subcontractor: _____
Address: _____
Trade: _____
Hourly Wage: _$_____ Full Contract Price: _$_____
Federal Tax# or SSN #: _____
Male Owned Business _____ Female Owned Business_____
Is he/she of Hispanic or Latino ethnicity? Yes_____ No_____
Race: (Please check one)
____White ____American Indian/Alaskan Native
____Black/African American ____Hasidic Jew
____Asian/Pacific American

_____ _____
Contractor's Signature Date

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY

INSTRUCTIONS

This certification is required pursuant to Executive Order 11246 (30 F R 12319-25). The implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven calendar days after bid opening. No contract shall be awarded unless such report is submitted.

CERTIFICATION OF BIDDER

Name and address of Bidder (include zip code)

_____

_____

_____

1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause.
   ( ) YES ( ) NO

2. Compliance reports were required to be filed in connection with such contract or subcontract.
   ( ) YES ( ) NO

3. Bidder has filed all compliance reports due under applicable instructions, including SF.100.
   ( ) YES ( ) NO ( ) NOT REQUIRED

4. Have you ever seen or are you being considered for sanction due to violation of Executive Order 11246, as amended?
   ( ) YES ( ) NO

5. No segregated facilities will be maintained.

NAME AND TITLE OF SIGNER (Please type.)

_____

_____ _____

SIGNATURE DATE

Green Building Standards Checklist

HUD CPD Green Building Retrofit Checklist

The CPD Green Retrofit Checklist promotes energy efficiency and green building practices for residential retrofit projects. Grantees must follow the checklist in its entirety and apply all measures within the Checklist to the extent applicable to the particular building type being retrofitted. The phrase "when replacing" in the Checklist refers to the mandatory replacement with specified green improvements, products, and fixtures only when replacing those systems during the normal course of the retrofit.

WATER AND ENERGY CONSERVATION MEASURES

N/A **Water-Conserving Fixtures**
Install or retrofit water conserving fixtures in any unit and common facility, use the following specifications: Toilets-- 1.28 gpf; Urinals-- 0.5 gpf; Showerheads-- 2.0 gpm; Kitchen faucets-- 2.0 gpm; and Bathroom faucets-- 1.5gpm. [gpf = gallons per flush; gpm = gallons per minute]

N/A **ENERGY STAR Appliances**
Install ENERGY STAR-labeled clothes washers, dishwashers, and refrigerators, if these appliance categories are provided in units or common areas.

N/A **Air Sealing: Building Envelope**
Seal all accessible gaps and penetrations in the building envelope. If applicable, use low VOC caulk or foam.

X **Insulation: Attic** (if applicable to building type)
For attics with closed floor cavities directly above the conditioned space, blow in insulation per manufacturer's specifications to a minimum density of 3.5 Lbs. per cubic foot (CF). For attics with open floor cavities directly above the conditioned space, install insulation to meet or exceed IECC levels.

N/A **Insulation: Flooring** (if applicable to building type)
Install ≥ R-19 insulation in contact with the subfloor in buildings with floor systems over vented crawl spaces. Install a 6-mil vapor barrier in contact with 100% of the floor of the crawl space (the ground), overlapping seams and piers at least 6 inches.

N/A **Duct Sealing** (if applicable to building type)
In buildings with ducted forced-air heating and cooling systems, seal all penetrations of the air distribution system to reduce leakage in order to meet or exceed ENERGY STAR for Homes' duct leakage standard.

N/A **Air Barrier System**
Ensure continuous unbroken air barrier surrounding all conditioned space and dwelling units. Align insulation completely and continuously with the air barrier.

N/A **Radiant Barriers: Roofing**
When replacing or making a substantial repair to the roof, use radiant barrier sheathing or other radiant barrier material; if economically feasible, also use cool roofing materials.

N/A

Windows
When replacing windows, install geographically appropriate ENERGY STAR rated windows.

N/A

Sizing of Heating and Cooling Equipment
When replacing, size heating and cooling equipment in accordance with the Air Conditioning Contractors of America (ACCA) Manuals, Parts J and S, or 2012 ASHRAE Handbook--HVAC Systems and Equipment or most recent edition.

N/A

Domestic Hot Water Systems
When replacing domestic water heating system(s), ensure the system(s) meet or exceed the efficiency requirements of ENERGY STAR for Homes' Reference Design. Insulate pipes by at least R-4.

X

Efficient Lighting: Interior Units
Follow the guidance appropriate for the project type: install the ENERGY STAR Advanced Lighting Package (ALP); ***OR*** follow the ENERGY STAR MFHR program guidelines, which require that 80% of installed lighting fixtures within units must be ENERGY STAR-qualified or have ENERGY STAR-qualified lamps installed; ***OR*** when replacing, new fixtures and ceiling fans must meet or exceed ENERGY STAR efficiency levels.

X

Efficient Lighting: Common Areas and Emergency Lighting (if applicable to building type)
Follow the guidance appropriate for the project type: use ENERGY STAR-labeled fixtures or any equivalent high-performance lighting fixtures and bulbs in all common areas; ***OR*** when replacing, new common space and emergency lighting fixtures must meet or exceed ENERGY STAR efficiency levels. For emergency lighting, if installing new or replacing, all exist signs shall meet or exceed LED efficiency levels and conform to local building codes.

N/A

Efficient Lighting: Exterior
Follow the guidance appropriate for the project type: install ENERGY STAR-qualified fixtures or LEDs with a minimum efficacy of 45 lumens/watt; ***OR*** follow the ENERGY STAR MFHR program guidelines, which require that 80% of outdoor lighting fixtures must be ENERGY STAR-qualified or have ENERGY STAR-qualified lamps installed; ***OR*** when replacing, install ENERGY STAR compact fluorescents or LEDs with a minimum efficacy of 45 lumens/watt.

INDOOR AIR QUALITY

N/A

Air Ventilation: Single Family and Multifamily (three stories or fewer)
Install an in-unit ventilation system capable of providing adequate fresh air per ASHRAE 62.2 requirements.

N/A

Air Ventilation: Multifamily (four stories or more)
Install apartment ventilation systems that satisfy ASHRAE 62.2 for all dwelling units and common area ventilation systems that satisfy ASHRAE 62.1 requirements. If economically feasible, consider heat/energy recovery for 100% of corridor air supply.

N/A

Composite Wood Products that Emit Low/No Formaldehyde

Composite wood products must be certified compliant with California 93120. If using a composite wood product that does not comply with California 93120, all exposed edges and sides must be sealed with low-VOC sealants.

N/A **Environmentally Preferable Flooring**
When replacing flooring, use environmentally preferable flooring, including the FloorScore certification. Any carpet products used must meet the Carpet and Rug Institute's Green Label or Green Label Plus certification for carpet, pad, and carpet adhesives.

X **Low/No VOC Paints and Primers**
All interior paints and primers must be less than or equal to the following VOC levels: Flats--50 g/L; Non-flats--50 g/L; Floor--100 g/L. [g/L = grams per liter; levels are based on a combination of the Master Painters Institute (MPI) and GreenSeal standards.]

X **Low/No VOC Adhesives and Sealants**
All adhesives must comply with Rule 1168 of the South Coast Air Quality Management District. All caulks and sealants must comply with regulation 8, rule 51, of the Bay Area Air Quality Management District.

N/A **Clothes Dryer Exhaust**
Vent clothes dryers directly to the outdoors using rigid-type duct work.

X **Mold Inspection and Remediation**
Inspect the interior and exterior of the building for evidence of moisture problems. Document the extent and location of the problems, and implement the proposed repairs according to the Moisture section of the EPA Healthy Indoor Environment Protocols for Home Energy Upgrades.

N/A **Combustion Equipment**
When installing new space and water-heating equipment, specify power-vented or direct vent combustion equipment.

N/A **Mold Prevention: Water Heaters**
Provide adequate drainage for water heaters that includes drains or catch pans with drains piped to the exterior of the dwelling.

X **Mold Prevention: Surfaces**
When replacing or repairing bathrooms, kitchens, and laundry rooms, use materials that have durable, cleanable surfaces.

N/A **Mold Prevention: Tub and Shower Enclosures**
When replacing or repairing tub and/or shower enclosures, use non-paper-faced backing materials such as cement board, fiber cement board, or equivalent in bathrooms.

N/A **Integrated Pest Management**
Seal all wall, floor, and joint penetrations with low-VOC caulking or other appropriate sealing methods to prevent pest entry. [If applicable, provide training to multifamily buildings staff.]

X **Lead-Safe Work Practices**

For properties built before 1978, if the project will involve disturbing painted surfaces or cleaning up lead contaminated dust or soil, use certified renovation or lead abatement contractors and workers using lead-safe work practices and clearance examinations consistent with the more stringent of EPA's Renovation, Repair, and Painting Rule and HUD's Lead Safe Housing Rule.

X

Radon Testing and Mitigation (if applicable based on building location)
For buildings in EPA Radon Zone 1 or 2, test for radon using the current edition of American Association of Radon Scientists and Technologists (AARST)'s Protocols for Radon Measurement in Homes Standard for Single-Family Housing or Duplexes, or AARST's Protocol for Conducting Radon and Radon Decay Product Measurements in Multifamily Buildings. To install radon mitigation systems in buildings with radon level of 4 pCi/L or more, use ASTM E 2121 for single-family housing or duplexes, or AARST's Radon Mitigation Standards for Multifamily Buildings. For new construction, use AARST's Reducing Radon in New Construction of 1 & 2 Family Dwellings and Townhouses, or ASTM E 1465.

Section 2

General Conditions

1. The purpose of this HUD and DOH sponsored 0% interest loan Owner Occupied Rehabilitation and Rebuilding program is to make good faith efforts to assist qualified property owners in making repairs to their property damaged by Superstorm Sandy. Eligible repairs include code, health and safety compliance modifications, including but not limited to building envelope and energy efficiency upgrades (See Green Building Standards).
2. In the event that the homeowner is dissatisfied with the work performed although the work has been completed to industry standards, approved by the local municipality's code enforcement officials and approved by the DOH or its agent, the homeowner's approval will be overridden, full payment will be issued to the contractor and the project will be officially closed.
3. The owner is responsible for removal or relocation from the respective work areas the following, including but not necessarily limited to: personal belongings, window treatments, small furniture, fixtures, area carpets, interior and exterior plants. The contractor will be responsible for covering and protecting large furniture unable to be removed from the respective work areas.
4. The Contractor, unless otherwise specified, shall provide all labor, materials, tools, equipment, and related items required for the erection and completion of all work indicated in this project manual and as may be inferred, implied or otherwise necessary for the proper execution of the work.
5. The Contractor shall pay all necessary taxes, fees, and permits necessary to complete all of his work as detailed on the attached scope of work.
6. The premises herein shall be occupied during the course of the construction work.
7. All rehabilitation, alterations, repairs, or extensions shall be in compliance with all applicable codes of the Municipality, HUD requirements or compliance with the latest edition of the International Building Code, which ever applies and is the more strict. All electrical, heating, and plumbing work shall comply with the rules and regulations of the National, State and Local Codes. Before commencing work, contractors and/or subcontractors shall obtain all necessary permits.
8. The Contractor certifies that he has familiarized himself with the requirements of the specifications and plans and understands the extent and character of the work to be done, and inspected the premises and given his full attention to any and all areas with which he might become specifically involved. He must familiarize himself with all conditions relating to and affecting his work and bid.
9. The selected Contractor must, prior to contract signing, supply the DOH and the Owner with the original certificates of insurance in accordance with the following insurance requirements:
   A. Contractor shall procure and maintain for the duration of the Agreement the following types of insurance, in amounts no less than the stated limits, against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder.
      1) Workers' Compensation Insurance: The Contractor shall maintain full and complete Workers' Compensation Insurance for all of its employees and those of its subcontractors engaged in work on the premises, in accordance with the local and state laws governing the same, in the minimum amounts of $100,000 each accident, $500,000 disease – Policy limit, $100,000 disease – each employee.
      2) General Liability Insurance: The Contractor shall furnish evidence of a comprehensive general liability insurance coverage with a combined single limit for bodily injury, death, and property damage in the amount of $1,000,000 per occurrence, naming the Owner and the State as additional insured. This shall cover the use of all equipment, hoists and vehicles on the Premises not covered by any automobile liability policy. If the Contractor has a "claims-made" policy, then the following additional requirements apply: (a) the policy must provide a retroactive date which must be on or before the

execution date of this Agreement and (b) the extended reporting period may not be less than five (5) years following the Construction Completion Date.

3) Automobile Liability: The Contractor shall furnish evidence of Automobile Liability insurance with minimum limits of $1,000,000 per occurrence, combined single limit for bodily injury and property damage liability. This shall include owned vehicles, non-owned vehicles and employee non-ownership.
4) Cargo Insurance: ~~The Contractor shall furnish evidence of all-risk cargo insurance, with a minimum limit of $ per occurrence when the project involves raising a structure above the Base Flood Elevation~~.
5) Builders Risk: The Contractor shall maintain Builder's Risk (fire and extended coverage) insurance providing coverage for the entire work at the project site, including all work in place, all materials stored at the building site, foundations and building equipment. Coverage shall be on a completed value form basis in an amount equal to the projected value of the project. The Contractor agrees to endorse the State of Connecticut and the Owner as Loss Payees.

B. Additional Insurance Provisions

1) Each of the Owner and the State of Connecticut Department of Housing, and their successors and assigns, as their interests may appear, shall be named as an Additional Insured on the Commercial General Liability policy.
2) Described insurance shall be primary coverage and Applicant and Applicant's insurer shall have no right of subrogation recovery or subrogation against the State of Connecticut.
3) Applicant shall assume any and all deductibles in the described insurance policies.
4) Without limiting Applicant's obligation to procure and maintain insurance for the duration identified in (A) above, each insurance policy shall not be suspended, voided, cancelled or reduced except after thirty (30) days prior written notice by certified mail has been given to the State of Connecticut, with the exception that a ten (10) day prior written notice by certified mail for non-payment of premium is acceptable.
5) Each policy shall be issued by an Insurance Company licensed to do business by Connecticut Department of Insurance and having a minimum Best Rating of A- or equivalent or as otherwise approved by the State.

10. DOH and its agents must be notified prior to start of work of any subcontractor to be paid for work on the job who is different from the subcontractor identified in original bid proposal.
11. Working times for the project shall be Monday through Friday 8 am to 5 pm (EST). Contractors must request permission from owner and be in compliance with local municipal ordinances prior to working longer hours or weekends.
12. All materials shall be new and of acceptable quality. The Contractor shall submit proof of purchase of warrantee items at closeout. The property Owner shall select all colors, models, etc. as per scope of work. All materials and work must be applied in accordance with the applicable manufacturer's latest instructions and specifications, and in accordance with Federal prohibitions against the use of lead paint.
13. All manufacturers' warranties are to be extended to the property Owner free and clear of all liens. Unless otherwise specified, all labor, material, and workmanship provided by the Contractor shall be guaranteed by the Contractor, including that of subcontractors, for a one (1) year period from the date of the Final Payment. This guarantee shall be in addition to and not in limitation of, in lieu of, or modify and other guarantee that is due the property Owner from any manufacturer.
14. The Contractor shall repair or replace all work, materials and equipment which are found to be defective during construction and the guarantee period. Repair shall include all damage to surrounding work caused by the failure and/or necessary for the repair or replacement of the defect. All repairs and replacements shall be performed at no additional expense to the Owner and shall be completed promptly after the Contractor receives notice of the defect.

15. The Contractor shall take all necessary measures and precautions to protect the surroundings from damage occurring due to performance of the work. All areas and surfaces of the existing building which are affected by the execution of the new work (removals, demolition, repairs etc.) shall be patched and restored to either match the existing adjacent conditions or to match the new work, whichever is applicable. If such damage occurs it will be repaired by the Contractor at no cost to the Owner. Contractor shall provide all temporary shoring, bracing and other construction (interior and exterior) required to perform the work of this contract.
16. The Contractor shall dispose of all debris and remove all material resulting from his work in accordance with local and State law. The Contractor shall police and maintain a clean and safe job site daily. He shall reinstall accessories taken down and clean up all scrap around the project and remove fingerprints. All on-site maintenance relating to the performance of the work shall be the responsibility of the Contractor until the Certificate of Completion is issued. The project shall be maintained in a habitable and safe condition daily if the project is to remain occupied.
17. Materials and products not otherwise specified in these documents shall be to match building standards and existing conditions, provided such items are in compliance with all applicable codes. Such codes set the minimum standards to be achieved.
18. All work shall be neat and accurate and done in a manner in accordance with customary trade practices**. The Contractor, at a minimum, shall leave the premises broom clean and orderly after each working day and shall keep the premises free from accumulation of materials and rubbish by disposing of such debris in an onsite disposal container (provided by the contractor) or removed by vehicle in accordance with all applicable state and local regulations.** At the completion of the project the Contractor shall remove all excess materials from the site. Any surplus material agreed to be left for the owner shall be stored neatly by the contractor in a location directed by the owner free from weather, spoilage or pilferage.
19. The Contractor shall coordinate any work which interfaces with other Contractors or with the operations of the Owner. The Contractor shall take all necessary precautions to prevent fire, bodily injury, damage to property and any other calamities that may arise which pose a threat to life, limb property.
20. The Contractor shall not make any changes to the scope of work unless a change order is processed and fully executed by the DOH.
21. The Owner may cancel this contract within three days of signing and not be liable to the Contractor or DOH. Should the Owner opt to cancel they must sign and send a Notice of Cancellation to DOH, otherwise DOH shall issue a Notice to Proceed authorizing the contractor to commence with the proposed improvements.
22. The Contractor shall commence work under this contract within 15 work days of the date of the notice to proceed and complete work within **60** calendar days of the notice to proceed.
23. If the Contractor is delayed at any time in the progress of the work by any act or neglect of the Owner or by any employee of the Owner, or by any separate Contractor employed by the Owner, or by changes ordered in the work or by labor disputes, fire, unusual delay in delivery of materials, transportation, adverse weather conditions not reasonably anticipatable, unavoidable casualties, or any cause beyond the Contractor's control, or by delay authorized by the Owner pending arbitration, or by any other cause which justifies the delay, the contract time may be extended by Change Order for such reasonable time as may be agreed upon by all parties. It shall be the responsibility of the Contractor to request and document in writing such extensions within three (3) work days.
24. In the event that the Contractor does not commence or pursue the work as hereinafter stated, then DOH shall have the right to terminate this agreement and to hire a successor Contractor to perform the work. Any such termination shall be by certified mail to the address noted in this agreement, and shall be effective as of the date of mailing. Payments by the DOH/Owner in the event of termination shall be as follows:
25. The successor Contractor shall first be paid and then the terminated Contractor. Payments to the terminated Contractor shall be limited both as to those funds remaining after payment to the successor Contractor but shall

not exceed the value of the work actually performed by the terminated Contractor. Further, should the total cost for work performed under this contract exceed the amount stated in this agreement due to the Contractor's termination, then the Owner shall have a cause of action against the terminated Contractor for any such additional cost.

26. If, through any cause, the Contractor shall fail to fulfill in a timely and proper manner his obligations under this Contract, or if the Contractor shall violate any of the covenants, agreements, or stipulations of this Contract, DOH shall, thereupon, have the right to terminate this Contract by giving written notice to the Contractor of such termination and specifying the effective date of such termination. In such event, all unfinished work required by the Contractor under this Contract shall, at the option of the DOH, be completed or not.
27. Payments
    1) DOH/Homeowner shall pay the Contractor the price as provided in this contract.
    2) DOH shall make progress payments approximately every 30 days as the work proceeds, on estimates of work accomplished which meets the standards of quality established under the contract, as approved by the Contracting Officer. DOH may, subject to written determination and approval of the Contracting Officer, make more frequent payments to contractors which are qualified small businesses.
    3) Before the first progress payment under this contract, the Contractor shall furnish, in such detail as requested by the Contracting Officer, a breakdown of the total contract price showing the amount included therein for each principal category of the work, which shall substantiate the payment amount requested in order to provide a basis for determining progress payments. The breakdown shall be approved by the Contracting Officer and must be acceptable to DOH. The values and quantities employed in making up this breakdown are for determining the amount of progress payments and shall not be construed as a basis for additions to or deductions from the contract price. The Contractor shall prorate its overhead and profit over the construction period of the contract.
    4) The Contractor shall submit, on AIA forms provided by DOH, periodic estimates showing the value of the work performed during each period based upon the approved breakdown of the contract price. Such estimates shall be submitted not later than 14 days in advance of the date set for payment and are subject to correction and revision as required. The estimates must be approved by the Contracting Officer with the concurrence of the architect prior to payment. If the contract covers more than one project, the Contractor shall furnish a separate progress payment estimate for each.
    5) Along with each request for progress payments and the required estimates, the Contractor shall furnish lien waivers and labor releases as good and sufficient evidence that the premises are free from all liens, damages, and anything chargeable to said contractor.
    6) Except as otherwise provided in State law, DOH shall retain five (5) percent of the amount of progress payments until completion and acceptance of all work under the contract; except, that if upon completion of 50 percent of the work, the Contracting Officer, after consulting with the Architect, determines that the Contractor's performance and progress are satisfactory, DOH may make the remaining payments in full for the work subsequently completed. If the Contracting Officer subsequently determines that the Contractor's performance and progress are unsatisfactory, DOH shall reinstate the five (5) percent retainage until such time as the Contracting Officer determines that performance and progress are satisfactory. Retainage will be released 90 days after project completion.
    7) The Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration when computing progress payments. Material delivered to the Contractor at locations other than the site may also be taken into consideration if the Contractor furnishes satisfactory evidence that (1) it has acquired title to such material; (2) the material is properly stored in a bonded warehouse, storage yard, or similar suitable place as may be approved by the Contracting Officer; (3) the material is insured to cover its full value; and (4) the material will be used to perform this contract. Before any progress payment which includes delivered material is made, the Contractor shall furnish such documentation as the Contracting Officer may require to assure the protection of DOH's/Homeowner's interest in such materials. The Contractor shall remain responsible for such stored material notwithstanding the transfer of title to the Homeowner.

8) All material and work covered by progress payments made shall, at the time of payment become the sole property of the Homeowner, but this shall not be construed as (1) relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or, (2) waiving the right of DOH/Homeowner to require the fulfillment of all of the terms of the contract. In the event the work of the Contractor has been damaged by other contractors or persons other than employees of DOH in the course of their employment, the Contractor shall restore such damaged work without cost to DOH/Homeowner and to seek redress for its damage only from those who directly caused it.
9) DOH shall make the final payment due the Contractor under this contract after (1) completion and final acceptance of all work; and (2) presentation of release of all claims against DOH/Homeowner arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. Each such exception shall embrace no more than one claim, the basis and scope of which shall be clearly defined. The amounts for such excepted claims shall not be included in the request for final payment. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned.
10) Prior to making any payment, the Contracting Officer may require the Contractor to furnish receipts or other evidence of payment from all persons performing work and supplying material to the Contractor, if the Contracting Officer determines such evidence is necessary to substantiate claimed costs.
11) DOH shall not; (1) determine or adjust any claims for payment or disputes arising there under between the Contractor and its subcontractors or material suppliers; or, (2) withhold any moneys for the protection of the subcontractors or material suppliers. The failure or refusal of DOH to withhold moneys from the Contractor shall in nowise impair the obligations of any surety or sureties under any bonds furnished under this contract.

28. Disputes
    1) "Claim," as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to the contract. A claim arising under the contract, unlike a claim relating to the contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim. The submission may be converted to a claim by complying with the requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.
    2) Except for disputes arising under the clauses entitled Labor Standards - Davis Bacon and Related Acts, herein, all disputes arising under or relating to this contract, including any claims for damages for the alleged breach thereof which are not disposed of by agreement, shall be resolved under this clause.
    3) All claims by the Contractor shall be made in writing and submitted to the Contracting Officer for a written decision.
    4) A claim by the Homeowner against the Contractor shall be subject to a written decision by the Contracting Officer.
    5) The Contracting Officer shall, within calendar 60 (unless otherwise indicated) days after receipt of the request, decide the claim or notify the Contractor of the date by which the decision will be made.
    6) The Contracting Officer's decision shall be final unless the Contractor (1) appeals in writing to a higher level in DOH in accordance with DOH's policy and procedures, (2) refers the appeal to an independent mediator or arbitrator, or (3) files suit in a court of competent jurisdiction. Such appeal must be made within (30 unless otherwise indicated) calendar days after receipt of the Contracting Officer's decision.
    7) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under or relating to the contract, and comply with any decision of the Contracting Officer.
29. The Contractor will not discriminate against any employee or applicant for employment because of race, color, creed, religion, sex, sexual preference, national origin, or mental or physical disability during the performance of this agreement. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, in all employment practices such as the following: employment

upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation and selection for training, including apprenticeship, without regard to their race, color, creed, religion, sex, sexual preference, national origin or mental or physical disability. This provision will be inserted in all subcontracts, if any, for work covered by this agreement.

30. Equal Employment Opportunity (EEO) Clause

    During the performance of this contract, the Contractor agrees as follows:

    1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and the employees are treated during employment without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
    2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.
    3) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
    4) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations and relevant orders of the Secretary of Labor.
    5) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.
    6) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by the rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
    7) The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance. Provided, however, that in the event a Contractor becomes involved in, or is threatened with litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.

31. In the event of the Contractor’s noncompliance with this equal opportunity clause or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further contracts in accordance with procedures authorized in Presidential Executive Order 11246, or by rule, regulations, or order of the Secretary of Labor or as provided by law.

32. The following applies to all contracts of $10,000,000.00 or more: SECTION 402 VETERANS OF THE VIETNAM ERA. AFFIRMATIVE ACTION FOR DISABLED VETERANS AND VETERANS OF THE VEITNAM ERA. The Contractor will not discriminate against any employee or applicant for employment

because he or she is a disabled veteran of the Vietnam era in regard to any position for which the employee or applicant for employment is qualified. The Contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified disabled veterans and veterans of the Vietnam era without discrimination based upon their disability or veteran status in all employment practices such as the following: employment upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation and selection for training, including apprenticeship.

33. No officer, employee or member of the Governing Body of the Municipality shall have any financial interest, direct or indirect, in this contract or the proceeds of this loan.
34. DOH retains the right to reject any or all bids or any part of any bid in part or in whole if deemed to be in the best interest of the project.
35. Substitutions of materials from that specified are only allowed on an approved/equal basis. The Contractor must submit written documentation of the substitute item or material for approval by the Owner and Program prior to making such substitution. Any items or material substituted by the Contractor without prior written approval of the Owner and Program will at the Contractor's expense be replaced if it is determined not to be equal to the item or material specified. Any surrounding, adjoining, or dependent items affected by replacement of the unequal substituted material shall also be replaced, reworked, and reinstalled at no cost to the Owner.
36. Bids shall contain prices for general categories of work and/or items as specified on the provided bid sheets. In the case of a mathematical error by the Contractor, the correct sum of the individual line items in the cost summary shall be the Contractor's bid.
37. All bids shall remain in effect for thirty (30) calendar days.
38. The Owner will supply all necessary power required by the Contractor at no additional cost to complete his work. Power shall be limited to the use of existing outlets and shall not exceed the existing capacity of the system. Power required over the capacity of the existing electrical system shall be the responsibility of the Contractor. Heating during construction shall be supplied by the Owner.
39. If any unseen or unknown asbestos related conditions arise during the work the Contractor shall stop all work immediately and notify the DOH of such.
40. OTHER PROVISIONS – LEAD BASED PAINT

    For properties built before 1978, if the project will involve disturbing painted surfaces or cleaning up lead contaminated dust or soil, use certified renovation or lead abatement contractors and workers using lead-safe work practices and clearance examinations consistent with the more stringent of EPA's Renovation, Repair, and Painting Rule and HUD's Lead Safe Housing Rule. The Contractor shall comply with the requirements concerning lead-based paint contained in the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. 4821-4846) as implemented by 24 CFR Part 35 and EPA's Repair Renovation, and Painting Rule at 40 CFR.80 Subpart E.

    Any and all rehabilitation work under this Agreement will comply with the requirements of the Federal Lead-Based Paint Poisoning Prevention Act (42 U.S.C. 4831) which prohibits the use of lead-based paint in residential structures constructed or rehabilitated with Federal Assistance in any form.

    The construction or rehabilitation of residential structures with assistance provided under this contract is subject to the final regulations "Requirements for Notification, Evaluation and Reduction of Lead-Based Paint Hazards in Federally owned Residential Property and Housing Receiving Federal Assistance." The regulation is at 24 CFR part 35. It implements sections 1012 and 1013 of the Residential Lead-Based Paint Hazard Reduction Act

of 1992, Title X, of the Housing and Community Development Act of 1992. Sections 1012 and 1013 amend the Lead-Based Paint Poisoning Prevention Act of 1971.

Beginning April 22, 2010, the Contractor is required to have a certificate from a 6 hour EPA/HUD RRP lead remediation course.

41. The Contractor shall comply with the provisions of the immigration Reform and Control Act of 1986 effective and enforceable as of June 6, 1987 which Act makes unlawful the hiring for employment or subcontracting individuals failing to provide documentation of legal eligibility to work in the United States. The Contractor shall hold DOH, its agents and the Homeowner harmless for the failure to comply with the provisions of said Act.

SECTION 000115

LIST OF DRAWING SHEETS

1.LIST OF DRAWINGS

A. Drawings: Drawings consist of the Contract Drawings and other drawings listed on the Table of Contents page of the separately bound drawing set titled 'Connecticut Department of Housing, Community Development Block Grant, Disaster Recovery Program, Project 1933 – 205 Dahl Avenue, Stratford, CT, Owner Occupied Rehabilitation and Rebuilding Program, dated 5/28/2014, as modified by subsequent Addenda and Contract modifications.

B. List of Drawings: Drawings consist of the following Contract Drawings and other drawings of type indicated:
   1. Title Sheet – Sheet T-0.0
   2. Schematic – First Floor Layout, Sheet A-1.0

END OF DOCUMENT

SECTION 00 31 26

EXISTING HAZARDOUS MATERIAL INFORMATION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. "Hazardous Material Inspection Report, 205 Dahl Avenue, Stratford CT" June 13, 2014

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

Facility Support Services, LLC

Environmental & Safety Consulting Engineers

Connecticut Department of Housing
Community Development Block Grant – Disaster Recovery
Owner Occupied Recovery and Rehabilitation Program

Hazardous Materials
Inspection Report

205 Dahl Avenue
Stratford, Connecticut

PREPARED FOR:

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Rocky Hill, CT 06067

PREPARED BY:

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June 13, 2014

FSS #22214-1933

SIGNATURES OF REPORT AUTHORS

The employees of Facility Support Services, LLC whose names appear below prepared this report. Requests for information on the content of this document should be directed to these individuals.

Kevin Bogue

Kevin S. Bogue, LEP, CHMM
Project Manager
CTDPH Asbestos Inspector #000157

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Table 1	Summary of Laboratory Analysis of Spore Types
Table 2	Summary of Laboratory Analysis of Radon
Table 3	Positive Asbestos Bulk Sampling Results Table
Table 4	Summary of Laboratory Analysis of PCB's

ATTACHMENTS

Attachment A	Mold Analytical Data
Attachment B	Radon Analytical Data
Attachment C	FSS Licensure
Attachment D	Asbestos Laboratory Analytical Data
Attachment E	Lead Analytical Data

I. Introduction

Facility Support Services, LLC (FSS) was contracted by Martinez, Couch & Associates, LLC (MCA) to perform a limited scope hazardous materials survey of 205 Dahl Avenue in Stratford, Connecticut. The purpose of this inspection was to identify the presence of asbestos, PCBs, lead paint and mold in certain building materials proposed for removal/demolition that qualify for the repair/replacement of items damaged by the October 2012 Tropical Storm Sandy under the Connecticut Department of Housing (DOH), Community Development Block Grant – Disaster Recovery Owner Occupied Recovery and Rehabilitation Program. In addition, FSS performed radon testing as required for DOH funded projects. FSS utilized best industry practices to identify all suspect materials associated with the structures. Any material that has not been identified during this inspection or discovered during renovation/demolition activities must be presumed to be hazardous until such time that samples of the material can be collected and analyzed.

II. Mold

FSS conducted sampling for mold on May 22, 2014. Testing for total spores in air was conducted for the following areas of 205 Dahl Avenue in Stratford, Connecticut to identify concerns with indoor air quality related to mold and fungi:

- 1st Floor Dining Room
- Basement
- Outside of House

The outside ambient air sample provided a background reference sample (collected from a location in the front yard). Mr. Chris Hudacek of FSS conducted the spore sampling utilizing an air sampling pump and sample media. Air was collected at a rate of 15.0 liters of air per minute. The samples were collected on Air-O-Cell type sampling cartridges located in line with the sampling pump, which ran for 10 minutes at each sampling location.

The spore samples were analyzed by EMSL Analytical of Wallingford, Connecticut for the identification and enumeration of spores (EMSL Method M001). EMSL is a State of Connecticut, Department of Public Health certified laboratory (Accreditation Number 165118). Analytical reports for mold are included in Appendix A.

The analysis for total spore counts is a direct microscopic examination and does not include culturing or growing fungi. Therefore, the results include both viable and non-viable spores. Spore trap results are reported in spores per cubic meter of air.

Table 1
Summary of Laboratory Analysis of Spore Types
205 Dahl Avenue, Stratford, Connecticut

Sample Number & Location	Raw Count	Total Fungi (Count/m^3)	Spore Types Present
22214052201M Outside	135	2,850	Ascospores, Aspergillus/Penicillium, Basidiospores, Cladosporium, Ganoderma, Myxomycetes, Pithomyces
22214052202M Basement	691	14,610	Ascospores, Aspergillus/Penicillium, Basidiospores, Chaetomium, Cladosporium, Ganoderma, Myxomycetes, Torula
22214052203M Dining Room	121	2,580	Ascospores, Aspergillus/Penicillium, Basidiospores, Cladosporium, Ganoderma, Myxomycetes

The primary mold species were Ascospores for the outside sample, and Aspergillus/Penicillium for the interior samples.

Ascospores – All Ascospores belong to members of the Phylum Ascomycota, which encompasses a wide range of genera. They occur everywhere in nature. The pathogenic effects of this species depends on the genus and species.

Aspergillus/Penicillium - Can be associated with hay fever and asthma, and can grow on a wide range of substrates indoors, and are prevalent in water-damaged buildings and where foods are stored.

Myxomycetes – Occurs on decaying logs, dead leaves, lawns, mulched flower beds and dung. Indoor suitable substrates have been identified as rotting lumber. The allergic potential of this species includes hay fever and asthma.

In Connecticut, there are currently no regulatory standards directly governing mold/fungal spore concentrations. Although no standards for mold exist, some information regarding levels have been published, including the following:

Baxter, et al considers mold contamination present in a building when the total mold spore concentration per cubic meter is above 10,000. However in special cases, even low quantitative levels of certain particles or particle types (such as *Penicillium/Aspergillus* spore chains in an un-treated building) may be diagnostic and may indicate a hidden mold reservoir that merits further investigation.

FSS's investigation found total spore concentrations inside the 205 Dahl Avenue residence of up to 14,610/m^3, which is above the 10,000/m^3 level noted above.

The American Conference of Government Industrial Hygienists (ACGIH) stated that indoor mold levels are generally less than 1/3 the outdoor level and that when indoor mold is at more than this level remedial action should be taken to find the source of the elevated counts and to clean it up. However, this is a general rule and may be inaccurate and unreliable method for screening buildings for mold.

FSS's investigation found a total spore concentration in the basement sample approximately 5 times above the exterior sample with a different suite of spore types than that noted in the outside sample, while the 1st floor sample (dining room) contained similar levels and a similar suite of spore types when compared to outside air.

III. Radon

Initial radon testing was conducted by Mr. Chris Hudacek. Test results were obtained by using a passive activated charcoal device manufactured and analyzed by Radon Testing Corporation of America of Elmsford, New York. The test devices are individually numbered and marked with a bar code for identification (RTCA 4 Pass Charcoal Canister, NRSB Device Code 10331).

Devices were placed in the basement level of the residence on May 22, 2014. The sampling devices were placed on table with a yellow "Do Not Disturb Test in Progress" warning sign placed beneath the test device. The homeowner was reminded to not open

windows or to allow anyone to tamper with the test device. Testing time was approximately 121 hours. QA/QC consisted of the collection of a duplicate sample.

The Radon canisters were submitted to Radon Testing Corporation of America for analysis. The analytical results for initial sample (#2313438) was reported to be 1.6 pCi/L, as shown on Table 2 below. The EPA action level established for Radon is 4.0 pCi/L. Analytical result reports are included in Appendix B.

Table 2
Summary of Laboratory Analysis of Radon
205 Dahl Avenue, Stratford, Connecticut

Canister ID#	Location	Radon Concentration (pCi/L)
May 22-27, 2014		
2313438	Basement	1.6

IV. Asbestos

FSS conducted a limited scope asbestos inspection and bulk sampling on May 22, 2014 of suspect building materials that are proposed for renovations. The inspection was conducted by Chris Hudacek, a State of Connecticut licensed Asbestos Inspector. Mr. Hudacek's Connecticut Asbestos Inspectors/Management Planner license is provided in Appendix C.

The following suspect materials were indentified during the inspection:

- Boiler Unit – fire brick
- Boiler Unit - Gasket
- Boiler Unit – refractory cement

This asbestos inspection was performed in accordance with the EPA, NESHAP regulations for building renovations and demolition, 40 CFR Part 61, Amended 11/20/1990. The bulk asbestos samples collected during this inspection were delivered under full chain of custody and analyzed by EMSL Analytical, Inc., via EPA/600/R-

93/116. This is currently the approved EPA test method, which uses Polarized Light Microscopy (PLM). EMSL Analytical, Inc. is an accredited asbestos laboratory (NVLAP # 200700-0) and is a State of Connecticut approved public health laboratory for asbestos analysis. Copies of the laboratory analytical results can be found in Attachment D of this report.

Laboratory results have revealed that the asbestos content of the tested materials are less than the 1% required to confirm a material as asbestos containing.

V. PCBs

Following an inspection of building materials proposed for renovations, no suspected PCB-containing materials were identified.

VI. Lead

The subject residential structure was built prior to 1978 (1927) and therefore the likelihood that lead painted surfaces are present is increased. As a residential structure built prior to 1978 the removal of lead painted materials where a child under 6 is housed, or may visit, would trigger the EPA Renovation, Repair and Painting (RRP) rule. Furthermore, adherence to the requirements of The Lead-Safe Housing Rule (US Department of Housing and Urban development, HUD) are stipulated by the Connecticut Department of Housing (DOH) as part of the Community Development Block Grant – Disaster Recovery Owner Occupied Recovery and Rehabilitation Program.

A building wide XRF inspection was conducted by Maureen Monaco of Gilberto Lead Inspections, LLC (Gilbertco) utilizing a Scitec Map4 Portable X-Ray Fluoroscope Spectrum Analyzer with a Cobalt 57 source. The findings of the investigation determined one area tested positive for lead based paint (>1.0 mg/cm^2:

- Basement Door Stop - this material was found in non-intact (damaged) condition.

A copy of the Gilbertco Lead Inspection Report is provided in Appendix E. Following the HUD Lead-Safe Housing Guidelines, this non-intact material should undergo interim measures to abatement the hazard.

FSS has evaluated proposed demolition materials against the XRF lead evaluation of painted surfaces. Based on this evaluation, the materials proposed for demolition will not contain levels of leachable lead above the hazardous waste determination level.

VII. Conclusions & Recommendations

When the structure is renovated, all removed debris should be sent to an appropriate landfill for final disposal following all appropriate regulations. Any work involving lead-containing paints should be conducted under the EPA's RRP Renovation, Repair and Painting Rule. Any material discovered during renovation activities which have not been included in this survey must be presumed to contain asbestos, lead and PCBs until such time that the material can be evaluated and sampled.

Asbestos – Asbestos containing materials (>1% asbestos) were not identified in materials proposed for renovation or demolition.

PCBs - No suspected PCB-containing materials were identified in proposed renovation materials.

Mold – Mold spore count analysis indicates accelerated mold growth in the basement area of the residence (when comparing samples from indoor mold spore counts and types to exterior samples).

Radon – Levels of radon were identified in the basement of the residence at a level of 1.6 pCi/L, below the EPA action level of 4.0 pCi/L. No further work related to radon will be required at this residence.

Lead - Following the HUD Lead-Safe Housing Guidelines, the non-intact areas should undergo interim measures to abatement the hazard.

- Basement Door Stop.

ATTACHMENTS

ATTACHMENT A

MOLD ANALYTICAL DATA

EMSL Analytical, Inc.
29 North Plains Highway, Unit # 4 Wallingford, CT 06492
Phone/Fax: 203-284-5948 / (203) 284-5978
http://www.EMSL.com / wallingfordlab@emsl.com

Order ID: 241401920
Customer ID: FSS93
Customer PO:
Project ID:

Attn: Kevin Bogue
Facility Support Services, LLC
2685 State Street
Hamden, CT 06517

Phone: (203) 288-1281
Fax: (203) 248-4409
Collected: 05/22/2014
Received: 05/22/2014
Analyzed: 05/30/2014

Proj: 205 DAHL AVE./22214-1933

Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods EMSL 05-TP-003, ASTM D7391)

Lab Sample Number:	241401920-0001			241401920-0002			241401920-0003		
Client Sample ID:	22214052201M			22214052202M			22214052203M		
Volume (L):	150			150			150		
Sample Location:	Outside at rear			Basement			1st floor dining room		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria	-	-	-	-	-	-	-	-	-
Ascospores	72	1500	52.6	18	380	2.6	18	380	14.7
Aspergillus/Penicillium	3	60	2.1	633	13400	91.7	74	1600	62
Basidiospores	41	870	30.5	12	250	1.7	10	210	8.1
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	1	20	0.1	-	-	-
Cladosporium	8	200	7	21	440	3	11	230	8.9
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	5	100	3.5	2	40	0.3	4	80	3.1
Myxomycetes++	3	60	2.1	3	60	0.4	4	80	3.1
Pithomyces	3	60	2.1	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Torula	-	-	-	1	20	0.1	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	**135**	**2850**	**100**	**691**	**14610**	**100**	**121**	**2580**	**100**
Hyphal Fragment	4	80	2.8	7	100	0.7	6	100	3.9
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	1	20	0.7	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	-	-	-	2	-	-	1	-
Fibrous Particulate (1-4)	-	-	-	-	2	-	-	1	-
Background (1-5)	-	2	-	-	3	-	-	2	-

Bipolaris++ = Bipolaris/Drechslera/Exserohilum
Myxomycetes++ = Myxomycetes/Periconia/Smut

No discernable field blank was submitted with this group of samples.

Gloria V. Oriol, Laboratory Manager
or Other Approved Signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Wallingford, CT AIHA-LAP, LLC--EMLAP Lab 165118

Initial report from: 05/30/2014 11:45:58

For Information on the fungi listed in this report please visit the Resources section at www.emsl.com

OrderID: 241401920

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Microbiology Chain of Custody

EMSL Order Number (*Lab Use Only*): 24140192D

EMSL Analytical, Inc.
4 Fairfield Blvd

Wallingford, CT 06492
PHONE: (203) 284-5948
FAX: (203) 284-5978

Company: Facility Support Services, LLC	**EMSL-Bill to:** ☐ Different ☑ Same If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 2685 State Street	
City: Hamden **State/Province:** CT	**Zip/Postal Code:** 06517 **Country:** United States
Report To (Name): Kevin Bogue	**Telephone #:** 203-288-1281
Email Address: kbogue.fss@snet.net	**Fax #:** 203-248-4409 **Purchase Order:**
Project Name/Number: 205 Dahl Ave./22214-1933	**Please Provide Results:** ☐ FAX ☑ E-mail ☐ Mail
U.S. State Samples Taken: CT	**Connecticut Samples:** ☐ Commercial ☒ Residential

Turnaround Time (TAT) Options* - Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

*Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide. TATs are subject to methodology requirements

Non Culturable Air Samples (Spore Traps) – Test Codes

- **M001** Air-O-Cell
- **M049** BioSIS
- **M030** Micro 5
- **M173** Allegro M2
- **M003** Burkard
- **M174** MoldSnap
- **M004** Allergenco
- **M043** Cyclex
- **M176** Relle Smart
- **M032** Allergenco-D
- **M002** Cyclex-d
- **M130** Via-Cell
- **M172** Versa Trap

Other Microbiology Test Codes

- **M041** Fungal Direct Examination
- **M005** Viable Fungi ID and Count
- **M006** Viable Fungi ID and Count (Speciation)
- **M007** Culturable Fungi
- **M008** Culturable Fungi (Speciation)
- **M009** Gram Stain Culturable Bacteria
- **M010** Bacterial Count and ID – 3 Most Prominent
- **M011** Bacterial Count and ID – 5 Most Prominent
- **M013** Sewage Contamination in Buildings
- **M014** Endotoxin Analysis
- **M015** Heterotrophic Plate Count
- **M180** Real Time Q-PCR-ERMI 36 Panel
- **M018** Total Coliform (Membrane Filtration)
- **M020** Fecal *Streptococcus* (Membrane Filtration)
- **M210-215** *Legionella* Detection
- **M026** Recreational Water Screen
- **M027** Mycotoxin Analysis
- **M029** *Enterococci*
- **M019** Fecal Coliform
- **M133** MRSA Analysis
- **M028** *Cryptococcus neoformans* Detection
- **M120** *Histoplasma capsulatum* Detection
- **M033-39** Allergen Testing
- **M044** Group Allergen (Cat, Dog, Cockroach, Dustmites)
- **Other** See Analytical Price Guide

Preservation Method (Water):

Name of Sampler: Chris Hudacek **Signature of Sampler:** [signature]

Sample #	Sample Location	Sample Type	Test Code	Volume/Area	Date/Time Collected
Example: A1	Kitchen	Air	M001	75L	1/1/12 4:00 PM
222140522 01M	Outside at rear	Air	M001	150 L	5/22/14 @ 1:10pm
02M	Basement	Air	M001	150L	5/22/14 @ 1:24pm
03M	1st floor Dining Room	Air	M001	150L	5/22/14 @ 1:35pm

Client Sample # (s): 01M-03M **Total # of Samples:** 3

Relinquished (Client): [signature] **Date:** 5/22/14 **Time:**

Received (Client): **Date:** **Time:**

Comments:

RECEIVED
MAY 22 2014
By: 16:00 [signature]

Page 1 of 1 pages

ATTACHMENT B

RADON ANALYTICAL DATA

PC1405300019

RADON TESTING CORPORATION OF AMERICA

Site Radon Inspection Report

Date : 05/30/2014

Mr. Kevin Bogue
FACILITY SUPPORT SVCS., LLC
2685 State Street
Hamden, CT 06517-

Client: Caron Castaldo
Test Location: 205 Dahl Avenue
Stratford, CT 06614
Individual Canister Results

Canister ID# :	2313438	Test Start :	05/22/2014 @ 12:45
Canister Type :	Charcoal Canister 3 inch	Test Stop :	05/27/2014 @ 14:08
Location :	First Floor Dining Rm	Received:	05/30/2014 @ 10:03
Radon Level :	1.6 pCi/L	Analyzed:	05/30/2014 @ 15:06

Error for Measurement is: ± 0.3 pCi/L

The reported results indicate that radon levels in the building tested are below the United States Environmental Protection Agency (EPA) action level of 4.0 picoCuries per liter of air (pCi/L). The EPA recommends retesting if your living patterns change and you begin occupying a lower level of the building, such as a basement or if major remodeling is done.

General radon information may be obtained by consulting the EPA booklet: A Citizen's Guide to Radon (www.epa.gov/radon/pubs/citguide.html). To request a copy or for further information, please contact your state health department. The EPA maintains a radon information website, including copies of its publications, at www.epa.gov/iaq/radon.

For New Jersey clients: Please see the attached guidance document entitled Radon Testing and Mitigation: The Basics for further information.

For New York clients: If the radon level of one or more testing devices is equal to or exceeds 20 pCi/L please contact the New York State Department of Health, Bureau of Environmental Radiation Protection, for technical advice and assistance at 518-402-7556 or toll free1-800-458-1158.

PLEDGE OF ASSURED QUALITY

All procedures used for generating this report are in complete accordance with the current EPA protocols for the analysis of radon in air (EPA 402-R-92-004). The analytical results relate only to the samples tested, in the condition received by the lab, and that calculations were based upon the information supplied by client. RTCA and its personnel do not assume responsibility or liability, collectively and individually, for analysis results when detectors have been improperly handled or placed by the consumer, nor does RTCA and its personnel accept responsibility for any financial or health consequences of subsequent action or lack of action, taken by the customer or it's consultants based on RTCA-provided results.

National Radon Safety Board NRSB Certified Radon Professionals

Andreas C. George
Radon Measurement Specialist
NJ MES 11089

Dante Galan
Laboratory Director

NRSB ARL0001
NYS ELAP ID: 10806
PADEP ID: 0346
NJDEP ID: NY933
NJ MEB 90036
FL DOH RB1609

(914)345-3380
FAX (914)345-8546

2 Hayes Street, Elmsford, NY 10523
www.rtca.com

ATTACHMENT C

FSS LICENSURE

0004366 FP **PRSRT T4 0 0764 06359
CHRISTOPHER M. HUDACEK
28 ANNA FARM RD W
NORTH STONINGTON CT 06359-1034

Dear Licensed/Certified Professional,
Attached you will find your validated license/certification for the coming year. Should you have any questions about your license/certificate renewal, please do not hesitate to write or call:

Department of Public Health **(860) 509-7603**
P.O. Box 340308
M.S.#12MQA **http://www.dph.state.ct.us**
Hartford, CT 06134-0308

Sincerely,

JEWEL MULLEN, MD, MPH, MPA, COMMISSIONER
DEPARTMENT OF PUBLIC HEALTH

INSTRUCTIONS:

1. Detach and sign each of the cards on this form.
2. Display the large card in a prominent place in your office or place of business.
3. The wallet card is for you to carry on your person. If you do not wish to carry the wallet card, place it in a secure place.
4. The employer's copy is for persons who must demonstrate current licensure/certification in order to retain employment or privileges. The employer's card is to be presented to the employer and kept by them as a part of your personnel file. Only one copy of this card can be supplied to you.

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
PURSUANT TO THE PROVISIONS OF THE GENERAL STATUTES OF CONNECTICUT
THE INDIVIDUAL NAMED BELOW IS CERTIFIED BY THIS DEPARTMENT AS A

ASBESTOS CONSULTANT-INSP/MGMT PLANNER

CHRISTOPHER M. HUDACEK

CERTIFICATION NO. 000259
CURRENT THROUGH 02/28/15
VALIDATION NO. 03-756444

SIGNATURE COMMISSIONER

EMPLOYER'S COPY

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
NAME
CHRISTOPHER M. HUDACEK

VALIDATION NO.	CERTIFICATION NO.	CURRENT THROUGH
03-756444	000259	02/28/15

PROFESSION
ASBESTOS CONSULTANT-INSP/MGMT PLANNER

SIGNATURE COMMISSIONER

WALLET CARD

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
NAME
CHRISTOPHER M. HUDACEK

VALIDATION NO	CERTIFICATION NO.	CURRENT THROUGH
03-756444	000259	02/28/15

PROFESSION
ASBESTOS CONSULTANT-INSP/MGMT PLANNER

SIGNATURE COMMISSIONER

ATTACHMENT D

ASBESTOS LABORATORY ANALYTICAL DATA

EMSL Analytical, Inc.
29 North Plains Highway, Unit # 4, Wallingford, CT 06492
Phone/Fax: 203-284-5948 / (203) 284-5978
http://www.EMSL.com wallingfordlab@emsl.com

EMSL Order:	241401922
CustomerID:	FSS93
CustomerPO:	
ProjectID:	

Attn: **Kevin Bogue**
Facility Support Services, LLC
2685 State Street

Hamden, CT 06517

Phone:	(203) 288-1281
Fax:	(203) 248-4409
Received:	05/22/14 4:00 PM
Analysis Date:	5/29/2014
Collected:	5/22/2014

Project: **205 DAHL AVE./22214-1933**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
22214052201A *241401922-0001*	Boiler unit - fire brick	White/Red Non-Fibrous Homogeneous	<1%	Cellulose	100%	Non-fibrous (other)	**None Detected**
22214052201B *241401922-0002*	Boiler unit - fire brick	White/Red Non-Fibrous Homogeneous	<1%	Cellulose	4% 96%	Quartz Non-fibrous (other)	**None Detected**
22214052202A *241401922-0003*	Boiler unit - front gasket	Brown/White Fibrous Homogeneous	85%	Glass	15%	Non-fibrous (other)	**None Detected**
22214052203A *241401922-0004*	Boiler unit at chimney - refractory cement	Gray Non-Fibrous Homogeneous	<1%	Cellulose	100%	Non-fibrous (other)	**None Detected**
22214052203B *241401922-0005*	Boiler unit at chimney - refractory cement	Gray Non-Fibrous Homogeneous	<1%	Cellulose	100%	Non-fibrous (other)	**None Detected**
22214052203C *241401922-0006*	Boiler unit at chimney - refractory cement	Gray Non-Fibrous Homogeneous	8%	Wollastonite	92%	Non-fibrous (other)	**None Detected**

Analyst(s)

Kristin Lopez (3)
Santino Ferraro (3)

Gloria V. Oriol, Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

Samples analyzed by EMSL Analytical, Inc. Wallingford, CT NVLAP Lab Code 200700-0,

Initial report from 05/30/2014 09:21:08

THIS IS THE LAST PAGE OF THE REPORT.

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*: 241401922

EMSL Analytical, Inc.
29 North Plains Hwy
Unit 4
Wallingford, CT 06492
PHONE: (203) 284-5948
FAX: (203) 284-5978

Company: Facility Support Services, LLC	**EMSL-Bill to:** ☐ Different ☑ Same If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 2685 State Street	
City: Hamden **State/Province:** CT	**Zip/Postal Code:** 06517 **Country:** United States
Report To (Name): Kevin Bogue	**Telephone #:** 203-288-1281
Email Address: kbogue.FSS@snet.net	**Fax #:** 203-248-4409 **Purchase Order:**
Project Name/Number: 205 Dahl Ave./22214-1933	**Please Provide Results:** ☐ FAX ☑ E-mail ☐ Mail
U.S. State Samples Taken: CT	**Connecticut Samples:** ☐ Commercial ☒ Residential

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

PCM - Air ☐ Check if samples are from NY
- ☐ NIOSH 7400
- ☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
- ☒ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)

Point Count
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

Point Count w/Gravimetric
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
- ☐ NYS 198.1 (friable in NY)
- ☐ NYS 198.6 NOB (non-friable-NY)
- ☐ NIOSH 9002 (<1%)

TEM – Air ☐ **4-4.5hr TAT (AHERA only)**
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312

TEM - Bulk
- ☐ TEM EPA NOB
- ☐ NYS NOB 198.4 (non-friable-NY)
- ☐ Chatfield SOP
- ☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
- Fibers >10µm ☐ Waste ☐ Drinking
- All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
- ☐ Microvac - ASTM D 5755
- ☐ Wipe - ASTM D6480
- ☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
- ☐ PLM CARB 435 - A (0.25% sensitivity)
- ☐ PLM CARB 435 - B (0.1% sensitivity)
- ☐ TEM CARB 435 - B (0.1% sensitivity)
- ☐ TEM CARB 435 - C (0.01% sensitivity)
- ☐ TEM Qual. via Filtration Technique
- ☐ TEM Qual. via Drop-Mount Technique

Other:
- ☐

☐ **Check For Positive Stop – Clearly Identify Homogenous Group** **Filter Pore Size (Air Samples):** ☐ 0.8µm ☐ 0.45µm

Samplers Name: Chris Hudacek **Samplers Signature:** [signature]

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	SEE ATTACHED		

RECEIVED MAY 22 2014 @ 16:00 Walk in

Client Sample # (s): - **Total # of Samples:** 6

Relinquished (Client): [signature] **Date:** 5/22/14 **Time:**

Received (Lab): **Date:** **Time:**

Comments/Special Instructions:

Page 1 of 2 pages

FACILITY SUPPORT SERVICES, LLC

Asbestos Sampling Log

241401922

CLIENT: Martinez Couch DATE: 5/22/14

LOCATION: 205 Dahl Ave. Stratford SAMPLED BY: C. Hudacek

SAMPLE ID	LOCATION	DESCRIPTION
222140522 01A	Boiler Unit	Fire Brick
B	↓	↓
02A	↓	Front Gasket
03A	↓ at Chimney	Refractory Cement
B	↓	↓
C	↓	↓

RECEIVED
MAY 22 2014
By 16:00

2685 STATE ST. HAMDEN, CT 06517
PH: 203-288-1281 FAX: 203-248-4409

ATTACHMENT E

LEAD ANALYTICAL DATA

LEAD BASED PAINT INSPECTION
REPORT OF FINDINGS
OF:

205 DAHL AVENUE
STRATFORD, CONNECTICUT

DATE:
May 22, 2014

PREPARED BY:
GILBERTCO LEAD INSPECTIONS LLC
287 MAIN STREET
ANSONIA, CONNECTICUT 06401

GILBERTCO
LEAD INSPECTIONS, LLC

"LEAD BASED PAINT SPECIALIST"

May 22, 2014

Job 9928-6-205

Kevin Bogue, LEP, CHMM
Facility Support Services, LLC
2685 State Street
Hamden, Connecticut 06517

Re: Lead Based Paint Inspection: 205 Dahl Ave., Stratford, Connecticut
Caron Castaldo- Applicant 1933

Gilbertco Lead Inspections LLC performed a limited XRF inspection for the presence of lead based paint at 205 Dahl Drive, Stratford, Connecticut. The inspection was requested by Facility Support Services in response to distribution of HUD funds given to CT DOH for Storm Sandy repair work.

The site inspected consists of a single family, cape style home built about 1927. The home has been renovated and upgraded. The home is vinyl sided with vinyl replacement windows throughout. There are no children under the age of six currently residing here.

In accordance with HUD/EPA guidance issued June 26, 1996, the Scitec Map 4 Spectrum Analyzer was used in the "Unlimited" assaying mode. This enables the equipment to accurately determine whether the result is "Positive", above the 1.0 mg/cm2 action level or "Negative", below the action level regardless of precision or operator bias. In accordance with the above guidance, values of 0.91 mg/cm2 through 1.19 mg/cm2 are considered "Inconclusive", meaning the value level of lead in paint was so close to the 1.0 mg/cm2 action level that further analysis by XRF would not result in a "Positive" or "Negative" answer. Only laboratory analysis of the paint film can determine actual values in this range. Chip sampling of inconclusive was not included in the scope of this report, therefore, any results above 0.9 mg/cm2 are considered positive. Results are arranged floor plan style with the substrate and condition noted. Orientation of rooms places side 'one' as street side, with side 'two' to the left, side 'three' opposite, and wall 'four' to the right. Rooms were tested in a clockwise pattern.

287 Main Street
Ansonia, CT 06401
203-732-2615 - FAX 866-437-8191
Toll Free In CT Only 1-800-959-2985

In regards to the above mentioned property, *only one area of lead based paint hazard was identified.* This areas was the basement, exit door , wall 3, door stop (painted white) .A lead based paint hazard is "any condition that causes lead exposure from lead-contaminated dust, lead contaminated soil, or lead-contaminated paint that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects…". Several areas tested positive for lead based paint but are currently in an intact condition. These areas should be placed on a Management Plan and monitored annually for signs of deterioration or paint breakdown. *See attached* . In April 2010, a new EPA regulation requires that any contractor who disturbs more than six square feet of painted surface per room or does window replacement must be certified as a Renovate Right Contractor. Homeowners are allowed to do their own renovation but are not exempt from providing renovation notices or posting informational signs. Further information regarding Renovate Right may be obtained at www.epa.gov/lead/pubs/renovation or by calling the National Lead Information Center at 1-800-424-LEAD (5323).

Lead in dust was not included in the scope of this report. Only laboratory analysis can insure that no lead dust hazards remain after renovations or everyday use of the home.

Although soil was not tested for lead, it can be presumed positive unless proven otherwise. Vegetable plants should not be planted near the perimeter of the house or in water runoff areas. Children should not be allowed to play in bare soil areas adjacent to the house. Asphalt, bushes, mulch, or good quality grass covering are acceptable deterrents.

Please feel free to call if any questions arise,

Maureen Monaco

Maureen Monaco
Director of Operations
Consultant Contractor #270
Lead Inspector Risk Assessor #1172
Lead Abatement Supervisor #2383

CERTIFICATION
LEAD IN PAINT RESULTS

AGENCY:	GILBERTCO LEAD INSPECTIONS LLC 287 MAIN STREET ANSONIA, CONNECTICUT 06401
PROJECT ADDRESS:	205 DAHL AVENUE STRATFORD, CONNECTICUT
PROJECT NUMBER:	9928-6-205
TEST DATE:	MAY 22, 2014
REQUIREMENTS:	CHAPTER 7 HUD GUIDELINES LEAD INSPECTION- SURFACE BY SURFACE
INSTRUMENTATION:	SCITEC MAP4 PORTABLE X-RAY (BRUKER HANDHELD) FLUOROSCOPE SPECTRUM ANALYZER (XRF) COBALT 57 SOURCE
REPORT MEDIUM:	MG PB/CM2 (MILLIGRAMS OF LEAD PER SQUARE CENTIMETER)
CALIBRATION:	TO MEASURE LEAD K-SHELL EMISSIONS. FACTORY CALIBRATED WITH HUD APPROVED REFERENCE STANDARDS. CALIBRATION FIELD CHECKED HOURLY AS RECOMMENDED BY MANUFACTURER
OPERATORS CERTIFICATION:	LEAD CONSULTANT CONTRACTOR-CC270 LEAD INSPECTOR RISK ASSESSOR- IR 1172 LEAD ABATEMENT SUPERVISOR- 2383

I hereby certify to the best of my knowledge and capabilities that this report reflects the true lead content of the surfaces tested in this report on this date.

Maureen Mnaw 5/22/2014

205 Dahl Avenue, Stratford, CT
May 22, 2014

Room Type	Room #	Wall #	Component	Substraet	Condition	K Shell	Decision
Calibration						1.21	Okay
Living Room	1	1	Door	Metal	Intact	-0.05	Negative
Living Room	1	1	Door Casing	Wood	Intact	0.17	Negative
Living Room	1	1	Wall	Sheetrk	Intact	0.34	Negative
Living Room	1	1	Window Sill	Wood	Intact	-0.1	Negative
Living Room	1	1	Window Trim	Wood	Intact	0	Negative
Living Room	1	1	Baseboard	Wood	Intact	0.04	Negative
Living Room	1	1	Wall	Sheetrk	Intact	-0.34	Negative
Living Room	1	4	Window Sill	Wood	Intact	-0.33	Negative
Living Room	1	4	Window Trim	Wood	Intact	-0.04	Negative
Living Room	1	4	Radiator	Metal	Intact	0.16	Negative
Living Room	1	4	Baseboard	Wood	Intact	-0.14	Negative
Living Room	1	4	Wall	Sheetrk	Intact	0.18	Negative
Living Room	1	3	Wall	Sheetrk	Intact	0.15	Negative
Living Room	1	3	Stair Stringer	Wood	Intact	0.04	Negative
Living Room	1	1	Ceiling	Sheetrk	Intact	-0.32	Negative
Living Room	1	3	Door Casing	Wood	Intact	0.11	Negative
Living Room	1	3	Door	Wood	Intact	-0.21	Negative
Living Room	1	1	Floor	Wood	Stain/varnish	0.49	Negative
Living Room	1	2	Wall	Sheetrk	Intact	0.62	Negative
Living Room	1	2	Window Sill	Wood	Non-intact	-0.33	Negative
Living Room	1	2	Radiator	Metal	Intact	0.23	Negative
Living Room	1	2	Window Trim	Wood	Intact	-0.14	Negative
Living Room	1	3	Wall	Sheetrk	Intact	-0.02	Negative
Living Room	1	3	Door Casing	Wood	Intact	-0.04	Negative
Living Room	1	3	Door Jamb	Wood	Intact	0.31	Negative
Kitchen	2	1	Wall	Sheetrk	Intact	0.56	Negative
Kitchen	2	1	Door Caing	Wood	Intact	-0.06	Negative
Kitchen	2	2	Cabinet	Wood	Intact	-0.14	Negative
Kitchen	2	2	Window Sill	Wood	Intact	0.08	Negative
Kitchen	2	2	Window Trim	Wood	Non-intact	0.03	Negative
Kitchen	2	1	Ceiling	Sheetrk	Intact	0.4	Negative
Kitchen	2	4	Wall	Sheetrk	Intact	0.04	Negative
Kitchen	2	4	Radiator	Metal	Intact	0.08	Negative
Kitchen	2	4	Baseboard	Wood	Intact	-0.18	Negative
Kitchen	2	3	Wall	Sheetrk	Intact	-0.34	Negative
Laundry/exit	3	1	Wall	Sheetrk	Intact	-0.15	Negative
Laundry/exit	3	1	Ceiling	Sheetrk	Intact	0.18	Negative
Laundry/exit	3	2	Wall	Sheetrk	Intact	0.35	Negative
Laundry/exit	3	2	Window Trim	Wood	Intact	0.17	Negative
Laundry/exit	3	2	Window Sill	Wood	Intact	0.2	Negative
Laundry/exit	3	2	Window Sash	Wood	Intact	-0.22	Negative

Laundry/exit	3	1	Ceiling	Sheetrk	Intact	0.03	Negative
Laundry/exit	3	3	Wall	Sheetrk	Intact	-0.17	Negative
Laundry/exit	3	3	Door	Wood	Intact	-0.19	Negative
Laundry/exit	3	3	Door Casing	Wood	Intact	-0.23	Negative
Laundry/exit	3	4	Wall	Sheetrk	Intact	-0.4	Negative
Laundry/exit	3	4	Door Casing	Wood	Intact	-0.09	Negative
Laundry/exit	3	4	Baseboard	Wood	Intact	-0.27	Negative
Bath	4	2	Door	Other	Intact	-0.27	Negative
Bath	4	2	Door Casing	Wood	Intact	-0.12	Negative
Bath	4	2	Wall	Sheetrk	Intact	0.11	Negative
Bath	4	1	Wall	Sheetrk	Intact	0.11	Negative
Bath	4	1	Cabinet	Wood	Stain/varnish	0.06	Negative
Bath	4	1	Ceiling	Sheetrk	Intact	-0.03	Negative
Bath	4	4	Wall	Sheetrk	Intact	-0.1	Negative
Bath	4	4	Window Trim	Sheetrk	Intact	0.06	Negative
Bath	4	4	Radiator	Metal	Intact	0.03	Negative
Bath	4	3	Wall	Sheetrk	Intact	-0.13	Negative
Bedroom	5	1	Ceiling	Sheetrk	non-intact	-0.16	Negative
Bedroom	5	2	Closet Door	Wood	Intact	-0.17	Negative
Bedroom	5	2	Clo Dr Csng	Wood	Intact	-0.16	Negative
Bedroom	5	2	Shelf	Wood	Intact	0.08	Negative
Bedroom	5	2	Shelf Support	Wood	Intact	-0.02	Negative
Bedroom	5	2	Wall	Sheetrk	Intact	-0.01	Negative
Bedroom	5	3	Wall	Sheetrk	Intact	-0.04	Negative
Bedroom	5	3	Door Casing	Wood	Intact	0.37	Negative
Bedroom	5	3	Door	other	Intact	-0.2	Negative
Bedroom	5	3	Baseboard	Wood	Intact	0.05	Negative
Bedroom	5	3	Window Sill	Wood	Intact	0.02	Negative
Bedroom	5	3	Window Trim	Wood	Intact	0.21	Negative
Bedroom	5	3	Window Stop	Wood	Intact	0	Negative
Bedroom	5	4	Wall	Sheetrk	Intact	0.34	Negative
Bedroom	5	4	Window Trim	Wood	Intact	0.12	Negative
Bedroom	5	4	Window Sill	Wood	Intact	0.19	Negative
Bedroom	5	4	Wndow Sash	Wood	Intact	-0.08	Negative
Bedroom	5	4	Baseboard	Wood	Intact	-0.01	Negative
Bedroom	5	1	Wall	Sheetrk	Intact	0.32	Negative
Bedroom	5	1	Door Casing	Wood	Intact	0.37	Negative
Bedroom	5	1	Door Jamb	Wood	Intact	0.37	Negative
2nd Fl Front BR	6	1	Wall	Sheetrk	Intact	0.24	Negative
2nd Fl Front BR	6	4	Window Trim	Wood	Intact	-0.16	Negative
2nd Fl Front BR	6	1	Window sash	Wood	Intact	-0.22	Negative
2nd Fl Front BR	6	1	Window Well	Wood	Intact	0.13	Negative
2nd Fl Front BR	6	2	Wall	Sheetrk	Intact	0.13	Negative
2nd Fl Front BR	6	1	Ceiling	Sheetrk	Intact	0.4	Negative

2nd Fl Front BR	6	4	Wall	Sheetrk	Intact	-0.01	Negative
2nd Fl Front BR	6	4	Baseboard	Sheetrk	Intact	-0.03	Negative
2nd Fl Front BR	6	3	Wall	Sheetrk	Intact	0.1	Negative
2nd Fl Front BR	6	3	Baseboard	Wood	Intact	0	Negative
2nd Fl Front BR	6	2	Shelf	Wood	Intact	-0.21	Negative
2nd Fl Front BR	6	2	Shelf Support	Wood	Intact	0.17	Negative
2nd Fl Rear BR	7	1	Wall	Sheetrk	Intact	-0.17	Negative
2nd Fl Rear BR	7	1	Baseboard	Wood	Intact	-0.07	Negative
2nd Fl Rear BR	7	2	Wall	Sheetrk	Intact	-0.06	Negative
2nd Fl Rear BR	7	2	Baseboard	Wood	Intact	0.07	Negative
2nd Fl Rear BR	7	3	Wall	Sheetrk	Intact	-0.33	Negative
2nd Fl Rear BR	7	3	Window Sill	Wood	Intact	0.26	Negative
2nd Fl Rear BR	7	3	Window Sash	Wood	Intact	0.37	Negative
2nd Fl Rear BR	7	3	Window Trim	Wood	Intact	-0.32	Negative
2nd Fl Rear BR	7	4	Wall	Sheetrk	Intact	0.31	Negative
2nd Fl Rear BR	7	4	Baseboard	Wood	Intact	0.25	Negative
2nd Fl Rear BR	7	1	Ceiling	Sheetrk	Intact	-0.09	Negative
Basement	8	1	Stair Stringer	Wood	Stain/varnish	-0.07	Negative
Basement	8	1	Stair Tread	Wood	Stain/varnish	0.24	Negative
Basement	8	1	Stair Riser	Wood	Intact	0.08	Negative
Basement	8	1	Wall	Masonry	Non-intact	-0.15	Negative
Basement	8	1	Wall	Masonry	Non-intact	-0.05	Negative
Basement	8	3	Wall	Masonry	Non-intact	-0.2	Negative
Basement	8	3	Wall	Masonry	Non-intact	0.15	Negative
Basement	8	3	Exit Door	Wood	Stain/varnish	-0.19	Negative
Basement	8	3	Door Stop	Wood	Non-intact	4.07	Positive
Exterior	9	3	Door	Metal	Non-intact	0.15	Negative
Exterior	9	3	Door Casing	Wood	Non-intact	-0.23	Negative
Exterior	9	2	Window sash	Wood	Non-intact	0.56	Negative
Exterior	9	1	Post/column	Wood	Non-intact	-0.12	Negative
Exterior	9	1	Door Casing	Metal	Intact	-0.08	Negative
Exterior	9	1	Door Jamb	Wood	Intact	-0.05	Negative
Exterior	9	1	Door Casing	Wood	Intact	0.53	Negative
Exterior	9	1	Kickplate	Wood	Intact	0.18	Negative

SECTION 010000

SUMMARY OF WORK

General Conditions

The following provisions are intended to supplement and complement each other and shall, where possible, be thus interpreted. If, however, any provision of the Project Documents irreconcilably conflicts with one or more of the following provisions, the provision imposing the greater duty or obligation on the Contractor shall govern.

1. Contractor shall supply all materials (except where indicated), labor, tools, equipment, and supplies required to complete the total Project in accordance with the drawings, specifications and other Contract Documents. Prior to beginning Work, Contractor shall list any deficiencies in scope and report to the DOH.

2. Contractor shall provide all coordination of all Work with Owner, Owner Vendors, DOH, DOH Agencies as required for project completion.

3. Contractor will develop a comprehensive logistics plan for all activities that affect the Owner.

4. Contractor is responsible on a daily basis to submit a Daily Construction Report (DCR) indicating subcontractors, total number of people working, description of Work completed that day, total hours worked that day, and any major deliveries.

5. Contractor shall secure and pay for a dumpster for all refuse and waste material. The dumpster location will be determined by the property Owner.

6. If required for the Project (as reasonably determined by Owner) Contractor shall erect and maintain dust-barriers to separate living areas from areas of construction.

7. In the event of a required utility shutdown, Contractor will diligently schedule work with the Owner. Contractor will give the Owner Project Manager at least three (3) days advance notice of any proposed utility shutdown.

8. Contractor shall comply with all of the legal regulations, including, but not limited to, OSHA safety regulations and regulations of municipal, city, local, and other government agencies having jurisdiction concerning the Work. Contractor shall give all notices and comply with all laws, ordinances, codes, rules and regulations bearing on the conduct of the Work. If Contractor performs any Work that is contrary to such laws, ordinances, codes, rules, and regulations, it shall make all changes to comply therewith and bear all costs arising therefrom.

9. All permits, required for any part of Contractor's Work, including those to be obtained in the Owner's name, shall be procured and paid for by Contractor.

GENERAL SCOPE

1. Inspect all areas, including those not affected by the repair scope, for damage to the finishes, fixtures, appliances, furnishings, etc. Document and report any and all damage to Owner for acceptance, and to DOH for notice, prior to commencing work.

2. Furnish and install any temporary supports or bracing as required to properly complete the work.

3. Provide all floor preparation as required including any flashing, skimming, or patching to provide for a suitable substrate for flooring work.

4. Contractor is responsible to detach and reset any items to properly perform all work, including but not limited to: trim, hardware, fixtures, door slabs, electrical components, mechanical components, etc.

PROJECT SCOPE OF WORK

1. MECHANICAL

1.1. Disconnect, remove and dispose of existing boiler unit in basement.
   1.1.1. Cap any piping as required to properly complete work.

1.2. Furnish and install new boiler unit.
   1.2.1. Provide training to homeowner on operation and maintenance.

1.3. Flush, balance, and test heating system to ensure it is in complete working order.

1.4. Furnish and install new stainless steel flue in existing masonry stack.
   1.4.1. Provide proper sealing of exhaust system as required.

2. ENVIRONMENTAL

2.1. Provide all necessary work, labor and materials required for Section 02 85 00 – Mold Remediation
2.2. Provide all necessary work, labor and materials required for Section 02 83 13 – Lead Hazard Remediation

SECTION 013300

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 - RELATED DOCUMENTS

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

1.2 - SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. Related Requirements:
   1. Section 000115 "List of Drawings Sheets"

1.3 - DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Engineer's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Engineer's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

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

D. Martinez Couch & Associates LLC (MCA) is the Project Manager and for this project. MCA will provide technical consultation, review of all materials, and project management. All references in this specification and in all other specifications references, MCA is Martinez Couch & Associates.
   1. All submittals shall be mailed to:
      Martinez Couch & Associates
      1084 Cromwell Avenue
      Rocky Hill, CT 06067
      Phone Number: (860) 436-4364
      Fax Number: (860) 436-4626

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

All submittals shall be submitted in PDF via electronic mail (email) to

1. recouch@martinezcouch.com

2. mranando@martinezcouch.com

1.4 - ACTION SUBMITTALS

A. 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 revisions to submittals noted by MCA 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 construction schedule.
   2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 10 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.
   4. Format: Arrange the following information in a tabular format:
      a. Add information, such as scheduled dates for purchasing and installation and the activity or event number, if using a CPM construction schedule.
      b. Scheduled date for first submittal.
      c. Specification Section number and title.
      d. Submittal category: Action; informational.
      e. Name of subcontractor.
      f. Description of the Work covered.
      g. Scheduled date for MCA final release or approval.
      h. Scheduled date of fabrication.
      i. Retain three subparagraphs below if CPM construction schedules are required.
      j. Scheduled dates for purchasing.
      k. Scheduled dates for installation.
      l. Activity or event number.

1.5 - SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. MCA's Digital Data Files: Electronic digital data files of the Contract Drawings will not be provided by Engineer for Contractor's use in preparing submittals.
      a. Engineer makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.

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

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer'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 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
   2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
   3. Resubmittal Review: Allow 15 days for review of each resubmittal.
   4. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Engineer and to Engineer's consultants, allow 15 days for review of each submittal. Submittal will be returned to Engineer before being returned to Contractor.

D. Paper Submittals: Place a permanent label or title block on each submittal item for identification.
   1. Indicate name of firm or entity that prepared each submittal on label or title block.
   2. Provide a space approximately 6 by 8 inches (150 by 200 mm) on label or beside title block to record Contractor's review and approval markings and action taken by Engineer.
   3. Include the following information for processing and recording action taken:
      a. Project name.
      b. Date.
      c. Name of Engineer.
      d. Name of Construction Manager.
      e. Name of Contractor.
      f. Name of subcontractor.
      g. Name of supplier.
      h. Name of manufacturer.
      i. Submittal number or other unique identifier, including revision identifier.
         1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
      j. Number and title of appropriate Specification Section.
      k. Drawing number and detail references, as appropriate.
      l. Location(s) where product is to be installed, as appropriate.
      m. Other necessary identification.

4. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Engineer observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
5. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Engineer will discard submittals received from sources other than Contractor.
   a. Transmittal Form for Paper Submittals: Use AIA Document G810**.**
   b. Transmittal Form for Paper Submittals: Provide locations on form for the following information:
      1) Project name.
      2) Date.
      3) Destination (To:).
      4) Source (From:).
      5) Name and address of Engineer.
      6) Name of Contractor.
      7) Name of firm or entity that prepared submittal.
      8) Names of subcontractor, manufacturer, and supplier.
      9) Category and type of submittal.
      10) Submittal purpose and description.
      11) Specification Section number and title.
      12) Specification paragraph number or drawing designation and generic name for each of multiple items.
      13) Drawing number and detail references, as appropriate.
      14) Indication of full or partial submittal.
      15) Transmittal number numbered consecutively.
      16) Submittal and transmittal distribution record.
      17) Remarks.
      18) Signature of transmitter.

E. Options: Identify options requiring selection by Engineer.

F. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Engineer on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
   1. Note date and content of previous submittal.
   2. Note date and content of revision in label or title block and clearly indicate extent of revision.
   3. Resubmit submittals until they are marked with approval notation from Engineer's action stamp.

H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Engineer action stamp.

PART 2 - PRODUCTS

2.1 - SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
   1. Action Submittals: Submit three paper copies of each submittal unless otherwise indicated. MCA will return two copies.
   2. Informational Submittals: Submit paper copies of each submittal unless otherwise indicated. Engineer will not return copies.
   3. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
   1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
   2. Mark each copy of each submittal to show which products and options are applicable.
   3. Include the following information, as applicable:
      a. Manufacturer's catalog cuts.
      b. Manufacturer's product specifications.
      c. Standard color charts.
      d. Statement of compliance with specified referenced standards.
      e. Testing by recognized testing agency.
      f. Application of testing agency labels and seals.
      g. Notation of coordination requirements.
      h. Availability and delivery time information.
   4. For equipment, include the following in addition to the above, as applicable:
      a. Wiring diagrams showing factory-installed wiring.
      b. Printed performance curves.
      c. Operational range diagrams.
      d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
   5. Submit Product Data before or concurrent with Samples.
   6. Submit Product Data in the following format:
      a. Three paper copies of Product Data unless otherwise indicated. Engineer will return two copies.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data unless submittal based on Engineer's digital data drawing files is otherwise permitted.
   1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
      a. Identification of products.
      b. Schedules.
      c. Compliance with specified standards.
      d. Notation of coordination requirements.
      e. Notation of dimensions established by field measurement.
      f. Relationship and attachment to adjoining construction clearly indicated.

g. Seal and signature of professional engineer if specified.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm), but no larger than 30 by 42 inches (750 by 1067 mm)
3. Retain subparagraph below unless default submittal format specified elsewhere in this article applies.
4. Submit Shop Drawings in the following format:
   a. Three opaque copies of each submittal. Engineer will retain two copies; remainder will be returned.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:
   a. Generic description of Sample.
   b. Product name and name of manufacturer.
   c. Sample source.
   d. Number and title of applicable Specification Section.
   e. Specification paragraph number and generic name of each item.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
   a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
   b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
   a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line to Engineer. Engineer will provide sample to property owner for their use to select option to be used.
5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
   a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line to Engineer. Engineer will provide sample to property owner for their use to select option to be used.

E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.
5. Submit product schedule in the following format:

    a. Three paper copies of product schedule or list unless otherwise indicated. Engineer will return two copies.

F. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of Engineers and owners, and other information specified.

G. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

H. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

I. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

J. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

K. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

L. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

M. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
1. Name of evaluation organization.
2. Date of evaluation.
3. Time period when report is in effect.
4. Product and manufacturers' names.
5. Description of product.
6. Test procedures and results.
7. Limitations of use.

N. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

O. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

P. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

2.2 – DELEGATED-DESIGN SERVICES

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

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

PART 3 - EXECUTION

3.1 - CONTRACTOR'S REVIEW

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

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

3.2 - ENGINEER'S ACTION

A. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or revisions required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action, as follows:
   1. Action Code 1 - No Exceptions Taken

2. Action Code 2 - Correct as Noted
3. Action Code 3 - Revise and Resubmit
4. Action Code 4 - Rejected

B. Informational Submittals: Engineer will review each submittal and will not return it, or will return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Engineer.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Submittals not required by the Contract Documents may be returned by the Engineer without action.

END OF SECTION

SECTION 015000

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 DESCRIPTION

A. General: During the construction period various types of services are necessary to record or support the construction process, which are not an integral part of the final construction. Provide temporary facilities and controls in accordance with the Contract Documents.

B. Scope of Work includes but is not limited to:

a) Layout and measurements.
b) Staging areas.
c) Rubbish removal.
d) Safety, protection and security.
e) Temporary toilets.
f) Water Service
g) Temporary scaffolding, ladders, stairs, hoists, etc.
h) Site fence.
i) Temporary closures
j) Labor disputes
k) Temporary light and power
l) Temporary heat
m) Ventilation and Humidity Control

1.2 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. Ladders, scaffolds, planks, hoists and similar items required for a specific item of work shall be part of that Scope of Work

1.3 QUALITY ASSURANCE

A. Codes: Comply with applicable Building Code and Standards.

B. Standards: Comply with the State and Local Board of Health, Environmental Protection Agency, Fire Department and other applicable standards.

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

D. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

1.4 SUBMITTALS

A. Refer to Section 01330 or certain individual items of this section.

1.5 PRODUCT HANDLING

A. Maintain temporary facilities and controls in proper safe condition throughout progress of the Work.

1.6 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Requirements:

1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

PART 2 - PRODUCTS AND EXECUTION

2.1 TEMPORARY FACILITIES INSTALLATION

A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to Martinez Couch and Associates, testing agencies, and authorities having jurisdiction.

B. Layout and Measurements:
1. Use of Data Furnished: Boring, and survey data made available to the Contractor is for information only, and the Contractor shall use his own judgment as to the actual conditions. He is warned that reliance on the information presented is at his own risk, and neither the Owner, State, nor the Engineer and his consultants will be liable for errors relating to such data.
2. Additional Data Required By Contractor: The Contractor may make borings or drive test pits he requires to verify the conditions at the site at his own expense. The location and size of such exploratory holes will be subject to approval by the Engineer.

3. Protection of Survey: Land monuments, bench marks, survey points and other such references shall be protected from damage unless and until their removal is authorized. If they are disturbed, they shall be replaced in their proper positions.
4. Measurements: Take measurements of the work and be responsible for it.
   a. Discrepancies: Thoroughly examine the drawings and specifications, carefully checking the figured dimensions, before commencing work, and report to the Engineer if any discrepancy, error, or defect appears.
   b. Dimensions: If figured dimensions are lacking on the drawings, the Engineer will supply them.

C. Staging Area:
1. Scope: Access and staging areas for purposes of this Contract shall be confined to areas as directed by the Owner or Engineer within the property boundary.
2. Location of Apparatus: The locations of material, apparatus, equipment, fixtures, piping outlets, etc., are not specified. The actual location shall be as directed or as required to suit the conditions at the time of installation. Before installation, the Contractor shall consult the Engineer and ascertain the actual location.
3. Provide temporary storage sheds if necessary, and other storage facilities on the job site for the storage of materials that may be subject to weather damage when interior or covered space is not available.
4. Provide for adequate timber bridging and planking or other suitable means as required for legal egress, and for the safeguarding of existing paving, walks and curbs, structures and utilities from damage due to construction vehicle traffic. Safeguard existing conditions from damage during construction. Repair or replace the damaged existing surroundings within the designated access and staging areas which is needed to remain in place and which is damaged by operations under this Contract.
5. Do not encumber the premises nor overload the structures beyond their allowable design live load with his/her apparatus, storage of materials and the operation of his/her workmen, and shall be confined within the limits designated by the Owner or Engineer.

D. Rubbish Removal:
1. Clean-up debris, rubbish and old materials resulting from the Work on a daily basis.
2. Cleaning Responsibility: Remove from the work area of building and site debris, resulting from the work daily or as often as necessary if it interferes with the work or staging area under the contract or presents a fire hazard. No rubbish or debris shall be dropped from a height of more than 6 feet, or thrown out of windows or openings without a chute. An adequate number of cleaning personnel shall be provided during working hours, who shall keep areas within and adjacent to the building free from dust and loose dirt by sweeping and wet mopping.
3. Rubbish Disposal: Furnish containers at central collection locations as designated by the Owner or Engineer on the site to receive construction debris. Cost of containers, removal and disposal charges shall be paid by the Contractor. Containers shall be removed as often as necessary to minimize interference with work in progress.
4. Clean the site around the building and maintain it clean and free from food and beverage containers, waste and other debris. Provide and rigidly enforce the use of waste receptacles by construction personnel. Burning of refuse is not permitted.

5. Salvage Materials: Construction salvage materials, not indicated items elsewhere to be returned to the Owner, shall become the property of the Contractor and shall be taken from the premises. Storage of materials and equipment on the site, other than for this project, will not be permitted.

E. Safety, Protection and Security:

1. Provide safety and protection in accordance with Contract Documents.

2. Protection: Protection shall be maintained for the duration of the Project and shall include:
   a. Weather Protection: Arrange to provide protection against rain, wind, storms, frost, heat and other weather conditions, so as to maintain work, materials, apparatus and fixtures free from injury or damage. At the end of each day's work items likely to be damaged shall be covered. Remove snow and ice for the proper protection and/or execution of the construction work.
   b. Protection of Finished or Existing Work: Provide protection for the finished work. Finished or Existing floors that will remain shall be protected from traffic or construction work by covering with materials approved by the finish manufacturer. Finished construction and materials shall be protected from rain, snow and windstorm damage throughout the construction period.
   c. Fire Protection: Maintain fire-fighting equipment for the duration of construction in accordance with the requirements of the Fire Department and the Insurance Underwriters and subject to approval of the Owner's insurance agent. .Provide fire extinguishers as required by the local Fire Department and the Building Code. Coordinate with existing firefighting equipment in existing building.
   d. Volatile Liquids: Bulk storage of volatile liquids shall be outside the building at designated location. Only as much volatile liquid shall be allowed within the building at any given time as is needed for that day's operation.
   e. Vermin and Rodent Control: Prevent the infestation and multiplication of vermin and rodents, and, if necessary, employ an exterminator to rid the premises of them if there is evidence that they exist.
   f. Dust Protection: Prevent the nuisance of dust to the surrounding areas, and provide coverings or water sprinkling materials and equipment as required for such dust prevention for the work.
   g. Structural Alterations: Do not permit endangering work by excavation or otherwise and shall not cut or alter the work without the consent of the Structural Engineer. Written instruction shall be obtained from the Structural Engineer's representatives before cutting beams or other structural members, arches, lintels, etc.

3. Protection of Adjacent Property:
   a. Scope: Take necessary precautions to protect public and private property on or adjacent to the job site, including utilities, street signs, light standards, hydrants, pavements and walks, planting and natural features, against damage or injury including settlement or collapse.

b. Building Damage: Should damage result to structures or property, the Contractor shall correct or repair it without undue delay and to the complete satisfaction of the Owner. No "Waiver of Responsibility" for incomplete, inadequate or defective adjoining work will be accepted unless otherwise stated by the Engineer.

c. Excavation Damage: Maintain the existing and adjoining structures safety. Concrete or rock excavation in the proximity of the adjoining structures shall be done by line drilling. Existing footings and foundation work exposed shall be underpinned as directed by Engineer. Prevent damage to pipes, conduits, wires, cables or structures above or below ground.

d. Site Damage: Repair and restoration of existing roads, pavements, walks, curbs, manholes, hydrants, light standards, street signs, catch basins, railings and plantings, and other construction or surfaces required due to the work under this contract shall be included in the work under the Contract even if not specifically called for in the various sections of the Specifications. Repair and restoration work shall match existing work. Costs incurred in repair work, including permits, bonds and supervision by public authorities, shall be borne by the Contractor causing the damage.

4. Welding & Cutting:

a. Handling of Welding Materials: The handling and storage of welding materials, acetylene and oxygen tanks, burners, and other equipment required for the execution of welding and cutting work at the job shall be subject to the approval of the Building Department and Fire Marshal.

b. Welding Standards: Work shall be performed in accordance with the standard specifications of the American Welding Society.

c. Fire Protection: Welders shall take precautions required to prevent fires as a result of his/her operations. When welding tools or torches are in used, the Contractor shall have available, in the immediate vicinity of the work, a fire extinguisher of the $C0_2$ type. The fire extinguisher shall be provided and maintained by the Installer. Fuel for cutting and heating torches shall be gas only, and shall be contained in Underwriters Laboratory listed containers. Storage of gas shall be in locations approved by the Fire Department.

Provide fireproofed tarpaulins where applicable at welding and cutting operations.

d. Power: The Owner will not provide power for electric welders.

5. Tree Protection: Trees identified by the Owner or Engineer to remain must be protected by the Contractor during the construction period. Avoid driving vehicles or storing materials within the tree root area and excavating in the root area unless accepted by the Owner or Engineer.

6. Security: The Contractor shall secure his/her tools, materials and assemblies. Claims shall not be made against the Owner or Engineer for equipment or tool losses or damage to installed assemblies.

F. Temporary Toilets:

1. Chemical Toilets: The Contractor shall provide and maintain temporary enclosed and weatherproof chemical toilets located on the site. Use of the owner's toilets by construction personnel within occupied areas of the building is not permitted.
2. Cleaning of Toilets: Toilets shall be maintained in a clean and sanitary condition and shall conform to the requirements of the local Department of Health and Labor requirements. Toilets shall be pumped and cleaned a minimum of once per week.

G. Water Service:
1. Water shall be available for the various trades as coordinated with the property Owner. Prevent freeze-ups. Have water available for the various trades during the normal working periods and for fire prevention purposes.
2. Cost: the Owner shall pay the cost of water.

H. Temporary Scaffolding, Ladders, Stairs, Hoists, Etc.:
1. Scope: Coordinate the installation and maintenance and safety of temporary stairs, ladders, ramps, scaffolds, runways, sidewalk bridges, fences, derricks, hoists, chutes, and other such operational facilities as may be needed for the proper execution of the work. Apparatus, equipment and construction shall meet the requirements of the Labor Law and other State and local Building Department Requirements.
2. Scaffolding: Coordinate the location, erection, maintenance and removal of scaffolding and other temporary facilities as required for the proper installation of the work.
3. Hoists and/or Crane: (for General Use) Coordinate and maintain the use of conventional construction hoists of sufficient size and capacity to raise materials and equipment and give access to construction levels.

I. Site Fence, if applicable:
1. Location: A site fence shall be installed by the Contractor at the construction site perimeter and adjacent staging areas if required by the contract documents. New construction work, including trailer and staging shall be contained within the site fence.
2. Type: Provide either of the following types:
   a. Woven Wire Mesh: 6'-0" high with gates and required bracing.
   b. Maintain fence and gates during entire construction period in a neat and orderly way free of graffiti or unauthorized signs.

J. Temporary Closures:
1. Take special precautions against damage to materials and work installed in cold or freezing weather, by providing adequate special heat and/or covering to prevent damage by the elements.
2. Temporary Partitions: (adjacent to occupied areas) after relocation of occupancy from spaces requiring access, provide temporary partitions to isolate occupied areas from work areas. Temporary partitions shall be of gypsum board on suitable studs and shall not interfere with the emergency exit requirements of occupied areas.
3. Exterior partitions shall be suitably weather protected insulated and otherwise sealed off to prevent dirt and weather infiltration.
4. Interior partitions shall be suitably sealed to limit noise and dirt infiltration.

K. Labor Disputes:

1. Notifications: Immediately notify the Engineer of actual or impending labor disputes that may affect or is affecting the schedule of the Work. Take appropriate measures to eliminate or minimize the effect of such labor dispute on the schedule, including but not limited to, such measures as: promptly seeking appropriate injunctive relief; filing appropriate charges with the National Labor Relations Board under the applicable provisions of the Labor Management Relations Act of 1947, as amended; filing appropriate damage actions; taking such measures as establishing a reserved gate, where appropriate; seek other sources or supply or service; and other measures that may be appropriately utilized to limit or eliminate the effect of the labor dispute.
2. Damage - Time Extension: To the extent the Contractor fails to promptly initiate measures that are appropriate, no extension of time for completion shall be allowed. In addition, any delay impact on any Contractor's schedule or on the schedule for the Project, which is a direct result of such failure, shall be considered as a Contractor caused delay under applicable provisions of the Contract. The rights and remedies provided in this paragraph are in addition to other rights or remedies provided by law or under this Contract. The Contractor shall include this clause in every Contract, together with a requirement that Sub-Subcontractors include a substantially similar clause in each lower tier subcontract.

L. Temporary Light and Power:

1. Scope: The Contractor shall provide labor, materials, tools, appliances, and equipment and perform operations necessary for the complete execution of a separate system of temporary electric light and power throughout the project suitable for supplying electrical energy for illumination and for power tools and equipment. Such system shall be installed and maintained in place as needed and removed promptly as its necessity ceases to exist. Maintaining shall and include energizing and de-energizing the electrical systems each working day, and turning on and off of lights daily.
2.
3. Lighting Standards: The minimum temporary lighting to be provided, and maintained in each room and changed as needed when interior walls are being erected as directed by OSHA standards. Temporary lighting must be maintained for twenty-four (24) hours a day, and seven (7) days a week at stairs and corridors below ground. In other spaces, temporary lighting and power shall be energized approximately thirty (30) minutes before the starting time and after the quitting time of the latest stopping unless otherwise directed by code.
4. Wiring Standards: Temporary wiring and equipment shall conform to the requirements of the National Electrical Code, regulations of the Building Code.

5. Energy Costs: The Owner shall pay the Electric Utility bills, as they become due, for electric energy used for temporary lighting and power to perform work in the building.
6. Other Costs: The Contractor responsible for the other costs in connection with providing and maintaining the temporary electrical power system.

M. Temporary Heat:
   1. Scope of Enclosed Building Protection: Prior to the winter weather protection as required to accomplish the following:
   2. To protect the finish work.
   3. If the heat not available from existing heating plant, the Contractor is responsible to provide sufficient heat so that the work can be accomplish in accordance with the Contract.
   4. Cost: If the other than existing plant used for heat the Contractor shall pay for temporary heat equipment, safety provisions and fuel charges.
   5. Damage Due to Lack of or Improperly Operated Temporary Heat: Maintain heat to prevent damage due to frost and freezing during the period when temporary heat is needed. Prevent damage due to defective equipment or the use of equipment, including but not limited to damage such a stains, smudges, soot or fire, and repair damage in a manner satisfactory to the Owner and Engineer.

N. Ventilation and Humidity Control (Where necessary for project work): Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

   1. Provide dehumidification systems when required to reduce substrate moisture levels to level required to allow installation or application of finishes.

2.2 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:
   1. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.

   1. Protect existing site improvements to remain including curbs, pavement, and utilities.
   2. Maintain access for fire-fighting equipment and access to fire hydrants.

C. Parking: Use designated areas of Owner's existing parking areas for construction personnel.

2.3 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

1. Comply with work restrictions specified in Section 011000 "Summary."

B. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

C. Barricades and Warning Signs: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs.

D. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

E. Prohibit smoking in construction areas.

F. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

2.4 MOISTURE AND MOLD CONTROL

A. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.

B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:

1. Protect porous materials from water damage.
2. Protect stored and installed material from flowing or standing water.
3. Keep porous and organic materials from coming into prolonged contact with concrete.
4. Remove standing water from decks.
5. Keep deck openings covered or dammed.

C. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:

1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
2. Keep interior spaces reasonably clean and protected from water damage.
3. Periodically collect and remove waste containing cellulose or other organic matter.
4. Discard or replace water-damaged material.
5. Do not install material that is wet.
6. Discard, replace, or clean stored or installed material that begins to grow mold.
7. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.

D. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:

1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
2. Use temporary dehumidifiers or permanent HVAC system, if available to control humidity.
3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.

    a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 48 hours are considered defective.
    b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of exposure and continuing daily for 48 hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.
    c. Remove materials that cannot be completely restored to their manufactured moisture level within 48 hours.

2.5 OPERATION, TERMINATION, AND REMOVAL

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

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor.

2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.

3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION 015000

SECTION 01 77 00

CLOSEOUT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Substantial Completion Procedures.

B. Final Completion Procedures.

C. Requirements for Operating and Maintenance Manuals.

D. Requirements for Warranties.

E. Requirements for Commissioning , Testing, and Inspection Records.

F. Final Cleaning.

1.2 SUBMITTALS

A. Submit under provisions of Section 01 30 00.

B. Manufacturer's data sheets on each cleaning product to be used, including:
   1. Material descriptions, dimensions, and profiles.
   2. Preparation instructions and recommendations.
   3. Storage and handling requirements and recommendations.
   4. Application methods.

C. Material Safety Data Sheets (MSDS), where appplicaple.

D. Contractor’s List of Incomplete Items.

E. Certified List of Incomplete Items.

F. Labor Warranties.

G. Product Warranties.

H. Product Operating and Maintenance Manuals.

I. Project Records: Commissioning, Testing, and Inspection Records.

J. Owner Acceptance Letter.

1.3 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor’s List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor’s Punch List), indicating the value of each item on the list and reasons why the work is incomplete.

B. Submittals Prior to substantial Completion: Complete the following prior to requesting inspection for determining date of substantial completion. List items below that are incomplete at time of request.

1. Submit closeout submittals, including project record documents, operation and maintenance manuals, warranties, final certifications, and similar final record information.

C. Procedures prior to Substantial Completion: Complete the following prior to requesting inspection for determining date of substantial completion. List items below that are incomplete at time of request.
   1. Instruct owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
   2. Terminate and remove temporary facilities from project site, along with mockups, construction tools, and similar elements.
   3. Complete final construction cleaning (broom sweep), including touch up painting.
   4. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

1.4 FINAL COMPLETION PROCEDURES

A. Preliminary Procedures: Before requesting final inspection for determining final completion, complete the following:
   1. List of incomplete items: Submit certified copy of MCA substantial completion inspection list of items to be completed of corrected (punch list), endorsed and dated by MCA. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.

B. Inspection: Submit a written request for final inspection to determine acceptance. On receipt of request, MCA will either proceed with inspection or notify contractor of unfulfilled requirements. MCA will prepare a final certificate for payment after inspection or will notify contractor of construction that must be completed or corrected before certificate will be issued.
   1. Request reinspection when the work identified in previous inspections as incomplete is completed or corrected.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by contractor that are outside the limits of construction.
   1. Organize list of spaces in sequential order, starting with exterior areas first.
   2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment's, and building systems.
   3. Submit list of incomplete items, including item values, in MS excel electronic file format.

1.6 SUBMITTAL OF PROJECT WARRANTIES

A. Time of submittal: Submit written warranties on request of MCA for designated portions of work where commencement of warranties other than date of substantial completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Warranty documents to be provided to Owner in hard copy format. Photo copies or scanned PDF versions of the warranty documents shall be provided to MCA for file submission to

PART 2 PRODUCTS

2.1 CLEANING AGENTS AND MATERIALS, GENERAL

A. Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might

damage finished or unfinished surfaces.

PART 3 EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average residential building. Comply with manufacturer's written instructions.
   1. Clean project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
   2. Remove tools, construction equipment, machinery, and surplus material from project site.
   3. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
   4. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
   5. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damages transparent materials.
   6. Remove labels that are not permanent.
   7. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
   8. Leave project clean and ready for occupancy.

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of final completion.

B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
   1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
   2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence or repair or restoration.
   3. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION

SECTION 02 41 19

SELECTIVE DEMOLTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Demolition and removal of selected portions of building or structure.

B. Demolition and removal of selected site elements.

1.2 REFERENCES

A. American National Standards Institute (ANSI/ASSE).

B. State of Connecticut Department of Energy and Environmental Protection (CTDEEP).

C. State of Connecticut Department of Environmental Protection (CTDEP).

D. State of Connecticut Department of Public Health (CTDPH).

E. Occupational Safety and Health Administration (OSHA).

1.3 SUBMITTALS

A. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.4 FIELD CONDIITONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work unless otherwise noted in the contract documents.
   1. If suspected hazardous materials are encountered, do not disturb; immediately notify MCA and Owner. Hazardous materials will be removed per the written directive of the CT DOH and under separate specification.

C. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

PART 2 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that utilities scheduled to remain have been properly protected before starting selective demolition operations.

B. Verify that utilities scheduled to be removed have been disconnected and capped before starting selective demolition operations.

C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to MCA.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
   1. Arrange to shut off indicated utilities with utility companies.
   2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
   3. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated to be removed.

3.3 PREPERATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent properties.

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent properties.

C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
   1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces.
   2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.

3. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
4. Dispose of demolished items and materials promptly.

B. Removed and Reinstalled Items:
1. Clean salvaged items.
2. Store items in area as coordinated with Owner.
3. Protect stored items until reinstallation.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for intended use.

C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Owner, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Disposal: Transport demolished materials off Owner's property and legally dispose of them at a licensed transfer station.

3.6 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION

SECTION 02 83 19.13

LEAD BASED PAINT ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. 'Lead Hazard Remediation Project, 205 Dahl Avenue' prepared by Gilberto Lead Inspections LLC.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION

All work, labor, and materials shall be accordance with 'Lead Hazard Remediation Project, 205 Dahl Avenue' prepared by Gilberto Lead Inspections LLC.

Part 1 General

1.1 SCOPE

A. The work specified herein includes lead paint hazard reduction in accordance with The Department of Housing and Urban Development (HUD) Lead Safe Housing Rule (24 CFR 35) for all components and surfaces containing defective toxic levels of lead paint. The work shall be conducted to satisfy the requirements of federal HUD standards. Testing was performed in accordance with HUD and State of Connecticut protocols.

Property Information:

Address: 205 Dahl Avenue, Stratford, CT
(A single family residence)

Property Owner: Caron Castaldo
205 Dahl Avenue, Stratford, CT

Lead Testing Performed by:

Maureen Monaco – Lead Inspector /Risk Assessor #1172

Gilbertco Lead Inspections LLC- Consultant Contractor #270
287 Main Street
Ansonia, CT 06401
1-800-959-2985

Date of testing: May 22, 2014

Methodology: Handheld Scitec Map 4 (Keymaster/Bruker) XRF spectrum analyzer, K Shell emissions

Resident Information:

Caron Castaldo. No children under the age of six in residence.

B. Prior to abatement or interim controls, repair work including but not limited to the repair of any leaks related to the deterioration of lead based painted surfaces is required. None required.

C. Abatement or Lead Hazard Remediation includes the following methods:

- Replacement by removing components such as windows, doors, and trim that have lead painted surfaces and installing new lead free components.

- Rigid enclosure using enclosure system by mechanically attaching a rigid durable barrier covering building components with all edges and

seams sealed with caulk or other sealant. Enclosures are intended to prevent access and exposure to lead painted surfaces and provide a "dust –tight" system to trap and lead contaminated dust.

Appropriate enclosure materials include:

Surface Location	Covering Material
Exterior Trim	Aluminum or vinyl coil stock
Exterior Finish	Aluminum or vinyl siding
Interior Finish	Drywall, wainscoting
Steps	Vinyl or rubber tread and riser coverings
Floors	Underlayment and vinyl

- Liquid Encapsulation by application of an approved liquid coating that acts as a barrier between lead based paint and the environment.

- Paint removal by separation of lead paint from the surface of components. This activity may include the following methods when performed with the proper conditions and engineering controls:
    1. Mechanical removal by wet scraping or HEPA needle gun.
    2. Chemical removal by use of strippers in accordance with manufacturer's specifications.
    3. Heat Gun by heating the painted surface utilizing proper engineering controls and when temperature does not exceed 700 degrees F.

- Soil Hazard Reduction Methods may include

    1. Removal and replacement of lead contaminated soil by removing the top 2-6 inches of lead contaminated soil, disposing it in accordance with federal and state standards and replacing it with new lead free soil. EPA Guidance recommends this method when lead levels exceed 500 ppm.

    2. Permanent Cover of bare soil areas with concrete, asphalt, or other permanent materials; EPA Guidance recommends this method when lead concentrations in soil exceed 5000 ppm.

    3. Interim controls may include covering lead contaminated soil with grass, gravel, mulch, or restrictive elements such as fences, shrubbery, or decking to prevent access to contaminated soil. Interim controls require periodic monitoring to ensure that the cover or controls are in place.

D. Interim controls may be performed by personnel who have received the Renovate Right Certification from the EPA. Interim Controls are measures designed to temporarily reduce human exposure or likely exposure to lead paint hazards, including specialized cleaning, repairs, maintenance painting, and temporary containments.

E. The Contractor shall provide all labor, materials, equipment, services, insurance, supervision, and incidentals which are necessary or required to perform the work of lead paint remediation in accordance with applicable governmental regulations and these specifications.

F. The Contractor is responsible for restoring all auxiliary areas utilized during abatement to conditions equal to or better than original. The contractor shall, at no additional expense to the building owner, repair any damage caused to auxiliary areas during the performance of abatement activities.

G. The Contractor will protect and preserve in operating conditions, including all utilities transversing the building and site. Damage to any utility due to work under this contract shall be repaired to the reasonable satisfaction and at no cost to the building owner.

H. The Contractor shall coordinate work schedule and site access with the building owner. The contractor shall submit a schedule or work and shall be approved by the building owner prior to the commencement of work. The contractor shall be responsible for securing the building for the duration of the work.

I. The Contractor shall be responsible for removing and decontaminating movable objects from the work area. This should be coordinated with the building owner.

1.2 DESCRIPTION OF WORK

A. The site is a two story, cape style residential home built about 1927. The exterior of the home is vinyl sided with vinyl replacements windows throughout.

B. The scope of work includes replacing a basement exit door stop..

C. An EPA Certified Renovate Right Contractor or a CT Licensed Lead Abatement Contractor will be utilized to perform the required work.

D. All required lead based paint abatement work shall be conducted in compliance with HUD regulation 24 CFR Part 35.

E. Lead based paint is present on the similar painted components in the areas of the project as found in the inspection report attached. It is the responsibility of the Contractor to comply with the OSHA Construction industry Standard 29 CFR 1926.62 when conducting abatement activities which may disturb materials with lead based paint.

1.3 PERSONAL PROTECTION

A. Prior to commencement of work, instruct all workers in all aspects of personal protection, work procedures, emergency evacuation procedures and use of all equipment. A formal respiratory protection program including respiratory protection must be implemented in accordance with 29 CFR 1926.26 and 29 CFR 1910.134.

B. Contractor will provide appropriate respiratory and filters for protection equipment for each worker and ensure usage during potential dust exposure. Respirators shall be approved by the National Institute for Occupational Safety and Health under 30 CFR Part 11.

C. Contractor will provide and require workers to wear protective clothing in work areas where lead dust concentrations exceed permissible exposure limits established OSHA. This includes impervious coveralls with elastic wrists and ankles, head covering, gloves, and foot coverings.

1.4 PREPARATION OF LEAD CONTROL AREA

A. Post warning signs meeting EPA Renovate Right Program at each entrance and exit. Notification to tenants or owner must be made in writing.

B. Install an impermeable cloth or vinyl on ground under work area to collect paint dust, chips, and debris.

1.5 LEAD REMOVAL

A. A competent person shall be on the job site at all times to ensure proper work practices are followed.

B. Utilize wet methods to remove lead based paint and painted components in accordance with 29 CFR 1926.62 utilizing fine mist to moisten surface to prevent lead dust from becoming airborne.

C. At the end of each work shift remove and place all visible accumulation of paint chips and associated dust and debris. This includes rags, sponges and protective clothing.

D. The following practices are prohibited:
- Dry scraping
- Power tools for grinding, sanding, and cutting without HEPA vacuum dust collection

1.6 CLEAN-UP , VISUAL INSPECTION, FINAL INSPECTION

A. After a visual inspection, the Contractor will remove impermeable drop cloths.

B. The contractor will call Gilbertco Lead Inspections LLC (1-800-959-2985) or Facilities Support Services LLC at 1-203-288-1281 to do a visual inspection of the interior and exterior of the project to detect incomplete work, visible debris, or damage cause by abatement or remediation activity.

1.7 DISPOSAL OF HAZARDOUS LEAD BEARING WASTE

A. Materials associated with the abatement shall be disposed of as hazardous waste with a TCLP reading >5 mg/l. The contractor shall obtain a small quantity hazardous waste generator ID number from the State of Connecticut DEEP for the site, if hazardous waste generated exceeds 100 kilograms per month. Materials associated with this abatement include:
- Any lead containing or lead based paint debris
- Wood painted with lead based paint
- Stripped paint or paint chips
- Painted wall or ceiling plaster
- Painted concrete debris

B. Disposal of all hazardous waste shall comply with the requirements of Resource Conservation and Recovery Act (RCRA).

C. Contractor can wipe clean polyethylene sheeting and dispose of it as construction debris.

D. Dumpsters containing hazardous waste are to be kept covered and locked when not in active use for lading of materials.

E. All containers of hazardous lead bearing material shall carry the following label in accordance with 29 CFR 1926.62.

HAZARDOUS LEAD WASTE

Federal Law prohibits improper disposal.
If found, contact the nearest police or public safety authority,
or the U.S. Environmental Protection Agency
Generator Information:
Facility Name: _____
Facility Address: _____
Facility Phone Number: _____
EPA ID / Manifest Document #: _____
Accumulation Start Date: _____
EAP Waste #: _____
HAZARDOUS WASTE SOLID NUMBERS
ORM-E NA 9189 D008
HANDLE WITH CARE

F. Payment for disposal of hazardous waste will not be made until a signed copy of the manifest from the treatment or disposal facility certifying the amount of lead-containing materials is returned and a copy is furnished.

SECTION 02 85 00

MOLD REMEDIATION

The following work plan outlines the microbial mold abatement of 205 Dahl Avenue in Stratford, Connecticut.

1. The Contractor shall have a designated Competent Person: on the job at all times to ensure proper work practices throughout the project.
2. Prior to beginning the clean-up and decontamination process, the contractor shall install at a minimum, a one-stage decontamination unit at the entrance to the area.
3. Workers shall don the proper PPE following 29 CFR 1910.120 prior to beginning the removal. This may include respiratory protection and. or disposable full body coveralls.
4. Microbial abatement shall be implemented using the following procedure:
   a. If visible mold growth is observed:
      i. Mold contaminated waste materials shall be handled and removed from specified locations for proper disposal.
      ii. Materials shall be removed in a manner which does not breakdown the materials into fine dust or powder to the extent feasible. Equipment and tools to be utilized shall include hand tools only to remove materials from adjacent substrates.
      iii. Any dry or brittle materials shall be removed with additional engineering controls such as use of a HEPA vacuum to removed accumulated dust or debris during removal.
      iv. Waste shall be immediately placed in disposal containers/storage trailers. The containers shall not be empties into other containers to avoid dispersal of dust or fugitive emissions.
      v. The use of minimal but sufficient quantities of water to wet the generated waste prior to collection shall be utilized. Under no circumstances shall the mold waste show evidence of free liquid water, pooling or ponding with the waste stream. Any liquid used to wet the dust and debris to control fugitive emission shall be properly containerized and decontaminated in accordance with CHS Section 22a-463 through 22a-469.
   b. All remaining surfaces that are disturbed during renovation or demolition.
      i. Spray one coat of Shockwave Disinfectant & Cleaner (or similar) to all surfaces per the manufacturer's specifications. This includes all floors, walls, and ceilings. Alternate products must be approved by the project consultant.
      ii. Spray one coat of Aftershock fungicidal coating (or similar) to all surfaces per the manufacturer's specifications. This includes all floors, walls, and ceilings. Alternate products must be approved by the project consultant.

SECTION 23 52 16

CONDENSING BOILERS

PART I GENERAL

1.1 DESCRIPTION – This section specifies packaged hot water boilers with trim (accessories), natural gas, fuel valve, and piping trains and other accessories

1.2 RELATED WORK – NOT USED

1.3 REFERENCES

A. CSA: Directory of Certified Appliances and Accessories

B. ANSI Z21.13: Gas-Fired Low-Pressure Steam and Hot Water Boilers

C. ASME SEC IV: Boiler and Pressure Vessel Codes, Rules for Construction of Heating Boilers

D. ASME SEC VIII: Boilers and Pressure Vessel Codes, Rules for Construction of Pressure Vessels

E. NFPA 54 (AGA Z223.1): National Fuel Gas Code

F. NFPA 58: Storage and Handling of Liquefied Petroleum Gases

G. NFPA 70: National Electrical Code

H. UL 795 & 726: Gas and Oil Equipment Directory

I. Title VIII: California Code of Regulations

J. Underwriters' Laboratories, Inc. (UL) Listed Products, UL Standard 795, for Commercial Industrial Gas Heating Equipment

K. Underwriters' Laboratories, Inc. (UL) Listed Products, UL Standard 353 Standard for Limit Controls

L. Intertek Testing Laboratories (ETL)

1.4 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the products specified in this section with minimum five years experience.

1.5 REGULATORY REQUIREMENTS

A. Conform to applicable code for internal wiring of factory wired equipment.

B. Units: ETL or UL listed as Complete Gas Fired Boiler Assemblies.

C. Gas Train shall comply with UL Standard 795 & ASME CSD-1. oFM Approved option.

D. Conform to ASME Section IV for boiler construction.

E. Units to bear ASME "H" Stamp and be National Board Registered.

F. Low Nox Units under 2MM BTU input shall be pre certified to SCAQMD Rule 1146.2

1.6 DELIVERY, STORAGE, RIGGING, MOVING, AND PROTECTION

A. Transport, handle, store, and protect products to point of delivery and receiving (by contractor).

B. Coordinate shipping dates and off-loading requirements with installing contractor prior to shipment.

C. Protect boilers and accessories before, during, and after installation from damage to casing by leaving factory shipping packaging in place until immediately prior to final acceptance.

1.7 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for boilers.

2. Include rated capacities, operating characteristics, and furnished specialties and accessories.

B. Shop Drawings: For boilers, boiler trim, and accessories.

1. Include plans, elevations, sections, and mounting or attachment details.

2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

3. Include diagrams for power, signal, and control wiring.

1.7 WARRANTY

A. Manufacturer's Warranty: Provide non-prorated warranty for not less than 5-years against

damage caused by thermal shock at all normal operating conditions.

B. Provide a minimum 1-year Parts Warranty from date of start-up, or 15-months from ship date.

C. Water treatment issues are not covered by warranty.

PART II: EQUIPMENT

2.1 PERFORMANCE REQUIREMENTS

A. Boiler unit shall be of sufficient heating capacity for existing radiant heating system on site. At site walk through contractor shall review the existing heating system and size boiler heating capacity appropriately and submit to MCA for approval in accordance with Section 01 33 00 prior to commencing work.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. ASME Compliance: Fabricate and label boilers to comply with 2010 ASME Boiler and Pressure Vessel Code.

D. ASHRAE/IES 90.1 Compliance: Boilers shall have minimum efficiency according to "Gas and Oil Fired Boilers - Minimum Efficiency Requirements."

E. DOE Compliance: Minimum efficiency shall comply with 10 CFR 430, Subpart B, Appendix N.

F. UL Compliance: Test boilers for compliance with UL 795. Boilers shall be listed and labeled by a testing agency acceptable to authorities having jurisdiction.

G. CSA Compliance: Test boilers for compliance with CSA B51.

H. Mounting Base: For securing boiler to concrete base.

I. The heater shall be manufactured in accordance with the ASME Section IV Code.

J. All controls trim shall be in compliance with UL Standards.

K. Boiler shall be certified and listed by C.S.A. International under the latest edition of the harmonized ANSI Z21.13 test standard for the U.S. and Canada.

L. Boiler shall comply with the energy efficiency requirements of the latest edition of the ASHRAE 90.1 Standard and the minimum efficiency requirements of the latest edition of the ASHRAE 103 Standard.

M. Boiler shall meet U.S. Environmental Protection Agency and Department of Energy guidelines for “Energy Star” efficiency.

N. AFUE shall be verified through third party testing by the Hydronics Institute Division of AHRI and listed in the AHRI Certification Directory

2.2 LOW PRESSURE HOT WATER BOILERS

A. Acceptable Manufactures,
   1. Weil-Mclain
   2. Lochinvar
   3. Rinnai
   4. Rheem

B. Description: Factory-fabricated, -assembled, and -tested, copper-finned, water-tube condensing boiler with heat exchanger sealed pressure tight, built on a steel base, including insulated jacket; flue-gas vent; combustion-air intake connections; water supply, return, and condensate drain connections; and controls. Water-heating service only. The boiler shall be completely assembled and tested at the manufacturers plant

C. Heat Exchanger: Finned-copper primary and stainless-steel secondary heat exchangers.

D. Combustion Chamber: Stainless steel, sealed.

E. Burner: Natural gas, forced draft drawing from gas premixing valve.

F. Blower: Centrifugal fan to operate during each burner firing sequence and to prepurge and postpurge the combustion chamber.

   1. Motors: Comply with NEMA regulations

      a. Motor Sizes: Minimum size as indicated; if not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0.

G. Gas Train: Combination gas valve with manual shutoff and pressure regulator.

H. Ignition: Silicone carbide hot-surface ignition that includes flame safety supervision and 100 percent main-valve shutoff.

I. Integral Circulator: Cast-iron body and stainless-steel impeller sized for minimum flow required in heat exchanger.

J. Boiler shall be constructed with a heavy gauge steel jacket assembly, primed and pre-painted on both sides. The combustion chamber shall be sealed and completely enclosed, independent of the outer jacket assembly, so that integrity of the outer jacket does not affect a proper seal. A burner/flame observation port shall be provided. The burner shall be a premix design and constructed of high temperature stainless steel with a woven metal fiber outer covering to provide modulating firing rates.

K. Boiler shall bear the ASME "H" stamp for 160 psi working pressure and shall be National Board listed. There shall be no banding material, bolts, gaskets or "O" rings in the header configuration.

L. The boiler shall be supplied with a gas valve designed with negative pressure regulation and be equipped with a variable speed blower system, to precisely control the fuel/air mixture to provide modulating boiler firing rates for maximum efficiency.

M. The boiler shall operate in a safe condition at a derated output with gas supply pressures as low as 4 inches of water column.

N. A built-in trap shall allow condensation to drain from the heat exchanger assembly. The complete heat exchanger assembly shall carry a twelve (12) year limited warranty

O. The 316L stainless steel combustion chamber shall be designed to drain condensation to the bottom of the heat exchanger assembly

P. The boiler shall be furnished complete with controls and trim to provide safe, efficient operation.

Q. The boiler shall be equipped with leveling legs

R. Shall be equipped with; a temperature/pressure gauge, high limit temperature control certified to UL353, ASME certified pressure relief valve, outlet water temperature sensor, return water temperature sensor, a UL 353 certified flue temperature sensor, outdoor air sensor, low water flow protection and built-in adjustable freeze protection.

S. The boiler shall have an independent laboratory rating for Oxides of Nitrogen (NOx) of 20 ppm or less corrected to 3% O2. The manufacturer shall verify proper operation of the burner, all controls and the heat exchanger by connection to water and venting for a factory fire test prior to shipping.

T. The boiler shall be equipped with a gas burner, which is listed by CSA or Underwriters' Laboratories and displays the listing label. All controls and trim shall be in compliance with UL Standard 795. The burner shall be suitable for use with natural or LPG gas. The burner shall be complete with electronic flame safeguard, air pressure switch, blower motor and controls with on/off two-stage firing, or modulating. A gas pilot of the premix type with electric ignition shall provide reliable ignition.

U. Boiler shall be equipped with two terminal strips for electrical connection. A low voltage connection board with 42 data points for safety and operating controls, i.e., Auxiliary Relay, Auxiliary Proving Switch, Alarm Contacts, Runtime Contacts, Manual Reset Low Water Cutoff, Flow Switch, High and Low Gas Pressure Switches, Tank Thermostat, Three Wall Thermostat/Zone Controls, System Supply Sensor, Outdoor Sensor, Building Management System Signal, Modbus Control Contacts and Cascade Control Circuit. A high voltage terminal strip shall be provided for supply voltage. The high voltage terminal strip plus integral relays are provided for independent pump control of the System pump, the Boiler pump and the Domestic Hot Water pump.

2.3 TRIM

A. Include devices sized to comply with ASME B31.1

B. Pressure Controllers: Operating, firing rate, and high limit.

C. Safety Relief Valve:

1. Size and Capacity: As required for equipment according to 2010 ASME Boiler and Pressure Vessel Code.
2. Description: Fully enclosed steel spring with adjustable pressure range and positive shutoff; factory set and sealed.

a. Drip-Pan Elbow: Cast iron and having threaded inlet and outlet with threads complying with ASME B1.20.1.

D. Pressure Gage: Minimum 3-1/2-inch (89-mm) diameter. Gage shall have normal operating pressure about 50 percent of full range.

E. Water Column: Minimum 12-inch (300-mm) glass gage with shutoff cocks.

F. Drain Valves: Minimum NPS 3/4 (DN 20) or nozzle size with hose-end connection.

G. Blowdown Valves: Factory-installed bottom and surface, slow-acting blowdown valves same size as boiler nozzle. Blowdown valves shall be combination of slow and quick acting as required by ASME B31.1.

H. Stop Valves: Boiler inlets and outlets, except safety relief valves or preheater inlet and outlet, shall be equipped with stop valve in an accessible location as near as practical to boiler nozzle and same size or larger than nozzle. Valves larger than NPS 2 (DN 50) shall have rising stem.

I. Stop-Check Valves: Factory-installed, stop-check valve and stop valve at boiler outlet with free-blow drain valve factory installed between the two valves and visible when operating stop-check valve.

2.4 VENTING

A. Description: Double-wall metal vents tested according to UL 1738 and rated for 480 deg F (248 deg C) continuously, with positive or negative flue pressure complying with NFPA 211.

B. Construction: Inner shell and outer jacket separated by at least a 1/2-inch (13-mm) airspace.

C. Inner Shell: ASTM A 959, Type 29-4C stainless steel.

D. Outer Jacket: Stainless steel.

E. Accessories: Tees, elbows, increasers, draft-hood connectors, terminations, adjustable roof flashings, storm collars, support assemblies, thimbles, firestop spacers, and fasteners; fabricated from similar materials and designs as vent-pipe straight sections; all listed for same assembly.
   1. Termination: Round chimney top designed to exclude minimum 98 percent of rainfall.

F. A separate pipe shall supply combustion air directly to the boiler from the outside. The air inlet pipe may shall conform to the latest NFPA, SMACNA and ASHRAE standards.

G. All exhaust piping, supports, guides, and other components shall be in accordance with manufacturer requirements and installed compliant with all code promulgating agencies and organizations having authority on said components including but not limited to state and local building codes and the NFPA.

H. Venting system shall be furnished and installed complete to function as a finished product.

2.5 ELECTRICAL POWER

A. Single-Point Field Power Connection: Factory installed and wired switchs, motor controllers, transformers, and other electrical devices necessary shall provide a single-point field power connection to boiler

1. House in NEMA 250, Type 1 enclosure.
2. Wiring shall be numbered and color coded to match wiring diagram.
3. Install factory wiring outside of an enclosure in a metal raceway.
4. Field power interface shall be to fused disconnect switch or as required by code.
5. Provide branch power circuit to each motor and to controls with a disconnect switch or circuit breaker.
6. Provide each motor with overcurrent protection.

2.6 COMPRESSION/EXPANSION TANKS

A. Furnish and install compression/expansion tanks of adequate capacity for system. Thank shall be in compliance with ASME code.

B. Manual venting shall be permitted for system venting and initial testing.

PART III - EXECUTION

3.1 EXAMINATION

A. Examine roughing in for concrete equipment bases, anchor bolt sizes and locations, and piping and electrical connections to verify actual locations sizes, and other conditions affect performance of the work.

1. Final boiler locations indicated on drawings are approximate. Determine exact locations before roughing in for piping and electrical connections.

B. Examine Mechanical spaces for suitable conditions will be installed

C. Proceed with installation only after unsatisfactory conditions have been corrected

3.2 INSTALLATION

A. BOILER INSTALLATION

1. Boiler and auxiliary equipment shall be installed in accordance with manufacturer's written instructions. Proper provision shall be made for expansion and contraction between boiler foundation and floor. This joint shall be packed with suitable nonasbestos rope and filled with suitable compound that will not become soft at a temperature of 100 degrees F. Boiler supports shall permit free expansion and contraction of each portion of the boiler without placing undue stress on any part of the boiler or setting. Boiler breeching shall allow full provision for expansion and contraction between all interconnected components.

2. Boiler and Burner Access Openings: Arrange all equipment and piping to allow access to openings without disassembly of equipment or piping.

3. Provide space that permits full opening of all boiler and burner doors, panels and other access openings. Provide space for pulling full length of all boiler tubes directly from their installed location.

4. Vent and combustion air piping shall be installed in accordance with applicable national codes, NFPA standards and per the boiler manufacturers' recommendations. The boiler's total combined air intake length shall not exceed 100 equivalent feet. The boiler's total combined exhaust venting length shall not exceed 100 equivalent feet

5. Install gas fired-boilers according to NFPA 54.

6. Assemble and Install Boiler Trim

7. Install electrical devices furnished with boiler but not specified to be factory mounted

8. Install control wiring to field mounted electrical devices

B. GAS FUEL SYSTEM

1. Burners, pilots, and all accessories shall be listed in UL FLAMMABLE & COMBUSTIBLE. The fuel system shall be provided with a gas tight, manually operated, UL listed stop valve at the gas-supply connections, a gas strainer, a pressure regulator, pressure gauges, a burner-control valve, a safety shutoff valve suitable for size of burner and sequence of operation, and other components required for safe, efficient, and reliable operation as specified. Approved permanent and ready facilities to permit periodic valve leakage tests on the safety shutoff valve or valves shall be provided

C. ELECTRIC SYSTEM

1. Electrical connection shall be according to manufacturer installation specification and meet all Connecticut State Building Code Requirements.

D. INSTALLATION OF LISTED VENTS

1. Comply with minimum clearances from combustibles and minimum termination heights according to product listing or NFPA 211, whichever is most stringent.

2. Seal between sections of positive-pressure vents according to manufacturer's written installation instructions, using sealants recommended by manufacturer.

3. Support vents at intervals recommended by manufacturer to support weight of vents and all accessories, without exceeding appliance loading.

4. Lap joints in direction of flow.

5. After completing system installation, including outlet fittings and devices, inspect exposed finish. Remove burrs, dirt, and construction debris, and repair damaged finishes.

3.2 CONNECTIONS

A. Install piping adjacent to boiler to allow service and maintenance

B. Install piping from equipment drain connection to nearest floor drain. Piping shall be at least full size of connection. Provide and isolation valve.

C. Connect piping to boilers, except safety relief valve connections, with flexible connectors of materials suitable for service.

D. Connect gas piping to boiler gas-train inlet with union. Piping shall be at least full size of gas-train connection. Provide a reducer if required

E. Connect hot-water piping to supply- and return-boiler tappings with shutoff valve and union or flange at each connection.

F. Install piping from safety relief valves to nearest floor drain.

3.3 INSPECTION AND TESTS

A. Condition of Boiler - After setting the boiler and prior to making any connections to the boiler, the Contractor and Owners shall jointly inspect interior and exterior for damage. Correct all damage by repair or replacement to achieve a like new condition.

B. Boiler relief Valves

1. Test valve set pressure with boiler operating pressure

2. Valve Popping Tolerance: Plus or minus three percent of set pressure for set pressures over 480 kPa (70 psi) gage.

3. Valve Blowdown Tolerance: Reset at not less than 6 percent below set pressure of valve with the lowest set pressure. Minimum blowdown two percent of the set pressure.

C. Performance Testing of Boiler

1. Smoke testing shall be by visual observation of the stack and by smoke density monitor (permanent instrument - if provided). If smoke density monitor is not provided, utilize Bacharach Model 21-7006 Smoke Test Kit. If there is disagreement with the results of these tests, provide qualified observation person and tests in compliance with EPA Reference Method 9 (CFR 40, Part 60, Appendix A).

2. NOx emissions shall be tested with electronic analyzer reading in parts per million. Analyzer shall be calibrated with certified test gas within three months prior to use. Analyzer shall be accurate to plus or minus 5% of reading.

3. An additional efficiency test will be required, conforming to ASME Performance Test Code PTC 4, if the boiler efficiency determined in the Test P-1 above, does not comply with requirements. Utilize ASME Test Forms PTC 4.1.a, 4.1.b, and the abbreviated input-output and heat balance methods.

D. Fuel System Test

1. Gas System Test - The gas fuel system shall be tested in accordance with the test procedures outlined in NFPA 54

END OF SECTION