# 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:

Julie Lucas and David Lieberman

2210 Park Avenue

Bridgeport, CT 06607

Prepared By:

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

Project #: 1533 – 2210 Park Avenue, Bridgeport, CT

EQUAL HOUSING OPPORTUNITY

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***Section 1***

## ADVERTISEMENT FOR BIDS

Project #1533 – 2210 Park Avenue, Bridgeport, 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 1533 – 2210 Park Avenue, Bridgeport, CT will be received by Martinez, Couch and Associates, LLC. until 5 o'clock PM on July 17, 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 A-2 Rocky Hill, CT 06067 upon payment of $50.00 for each set. Requests for copies of 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 o'clock PM on July 17, 2014.

The envelopes containing the bids must be sealed, addressed to Mr. Richard Couch at Martinez, Couch and Associates, LLC. and designated as bid for 1533 – 2210 Park Avenue, Bridgeport, 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 11 o'clock AM on July 2, 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. 1533 – 2210 Park Avenue, Bridgeport 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. 1533 – 2210 Park Avenue, Bridgeport, CT located at 2210 Park Avenue in Bridgeport, 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 19.13 | Lead Abatement | | /L.S. | |
| 02 85 00 | Mold Remediation | | /L.S. | |
| 06 40 00 | Architectural Woodwork | | /L.S. | |
| 07 21 00 | Building Insulation | | /L.S. | |
| 07 31 00 | Asphalt Shingles | | /S.F. | |
| 07 71 23 | Gutters | | /S.F. | |
| 08 50 00 | Windows | | /L.S. | |
| 09 29 00 | Gypsum Board | | /S.F. | |
| 09 64 00 | Wood Flooring | | /S.F. | |
| 09 90 00 | Paintings Coatings | | /S.F. | |
| 09 93 00 | Staining and Transparent Coatings | | /S.F. | |
| 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)*** |
|---|---|
| Carpenter Labor Rate | /H.R. |
| | |

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.

X

**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.

N/A

**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.

N/A

**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.

N/A **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.

N/A **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.

N/A

**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 'Project 1533 – 2210 Park Avenue, Connecticut Department of Housing, Community Development Block Grant, Disaster Recovery Program, Bridgeport, CT Owner Occupied Rehabilitation and Rebuilding Program, dated 6/25/2014, 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
   3. Schematic – Roof Layout, Sheet A-2.0

END OF DOCUMENT

SECTION 00 31 26

EXISTING HAZARDOUS MATERIAL INFORMATION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. "Hazardous Material Inspection Report, 2210 Park Avenue, Bridgeport CT" June 5, 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

## 2210 Park Avenue
## Bridgeport, Connecticut
## (Applicant # 1533)

PREPARED FOR:

Martinez Couch & Associates, LLC
1084 Cromwell Ave. Suite A-2
Rocky Hill, CT 06067

PREPARED BY:

Facility Support Services, LLC
2685 State Street
Hamden, CT 06517
Phone (203) 288-1281

June 5, 2014

FSS #22214

## 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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# I. Introduction

Facility Support Services, LLC (FSS) was contracted by Martinez, Couch & Associates, LLC (MCA) to perform a limited scope hazardous materials survey of 2210 Park Avenue in Bridgeport, 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 14, 2014. Testing for total spores in air was conducted for the following areas of 2210 Park Avenue in Bridgeport, Connecticut to identify concerns with indoor air quality related to mold and fungi:

- Playroom
- Basement
- Outside of House

The outside ambient air sample provided a background reference sample (collected from a location in the front yard). Mr. Kevin Bogue 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**
**2210 Park Avenue, Bridgeport, Connecticut**

| Sample Number & Location | Raw Count | Total Fungi (Count/m$^3$) | Spore Types Present |
|---|---|---|---|
| 1533-MS1 Playroom | 23 | 420 | Ascospores, Aspergillus/Penicillium, Basidiospores, Cladosporium, Myxomycetes, Pithomyces, Ulocladium, Tetraploa, and unidentifiable spores |
| 1533-MS2 Basement | 22 | 480 | Ascospores, Aspergillus/Penicillium, Basidiospores, Chaetomium, Cladosporium, Myxomycetes, Oidium |
| 1533-MS3 Outside | 56 | 1,180 | Ascospores, Basidiospores, Cladosporium, Myxomycetes, Nigrospora, Oidium |

The primary mold species in exterior areas was Cladosporium and Aspergillus/Penicillium. Aspergillus/Penicillium is 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. Cladosporium is associated with dead plant matter, straw, soil and woody plants, and can grow on fiberglass, paints, textiles and water-damaged buildings.

The primary mold species in interior areas was Basidiospores which is associated with forest floors, lawns and plants, and can grow on wood containing products.

Basidiospores below to members of the Phylum Basidiomycota, which includes mushrooms and fungi.

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 2210 Park Avenue residence of up to 480/$m^3$, which is well below 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 interior samples of approximately 1/3 (38%) of the exterior sample, very near the 1/3rd level noted above.

## III. Radon

Initial radon testing was conducted by Mr. Kevin Bogue. 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 14, 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 119 hours. QA/QC consisted of the collection of a duplicate sample, a blank and a spiked sample.

The Radon canisters were submitted to Radon Testing Corporation of America for analysis. The analytical results for samples were reported at between 1.0 and 1.4 pCi/L, as shown on Table 2 below. The blank sample contained 0.1 pCi/L. 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**
**2210 Park Avenue, Bridgeport, Connecticut**

| Canister ID# | Location | Radon Concentration (pCi/L) |
|---|---|---|
| May 15-20, 2014 | | |
| 2313530 | Basement | 1.0 |
| 2313535 | Blank | 0.1 |
| 2313539 | Basement (Duplicate) | 1.4 |

Note: Sample 2313522 was a spiked sample for QA/QC purposes

## IV. Asbestos

FSS conducted a limited scope asbestos inspection and bulk sampling on May 14, 2014 of suspect building materials that are proposed for renovations. The inspection was conducted by Kevin Bogue, a State of Connecticut licensed Asbestos Inspector. Mr. Bogue's Connecticut Asbestos Inspectors/Management Planner license is provided in Appendix C.

The following suspect materials were indentified during the inspection:

- 1st Floor Ceiling Skim coat (white)
- 1st Floor Ceiling Base coat (grey)
- 1st Floor Ceiling Insulation (brown, fibrous)
- 1st Floor Ceiling (black tar paper)
- 1st Floor Ceiling (grey board)
- 1st Floor Ceiling (taping compound)
- Roof shingle
- Roof felt paper
- 2nd Floor ceiling – skim coat, white
- 2nd Floor ceiling – grey base coat

- 2nd Floor ceiling – grey board

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. Refer to Table 3 below for a detailed description of each positive sample.

**Laboratory results have revealed that the asbestos content of sampled materials is below the 1% required to confirm a material as asbestos containing.**

## V. PCBs

Following an inspection of building materials proposed for renovations, one suspected PCB-containing material was identified: Black tar paper located in 1st floor ceiling. No detectable PCB concentrations was identified in this material.

## VI. Lead

The subject residential structure was built prior to 1978 (1949) 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 that several areas tested positive for lead based paint (>1.0 mg/cm2), including:

- Window well and window jamb (hall/stairs, 1st floor front right Bedroom, Laundry, Bathroom, 2nd Floor Hall, 2nd floor front right bedroom, master closet, 2nd floor bathroom, 3rd floor hall, 3rd floor bedroom, 3rd floor bath
- exterior sash (3rd Floor bedroom and 3rd Floor bath)
- Wall/Ceiling – LL Rear Right office (lead plate from former x-ray room)
- Door – LL Garage
- Exterior components – threshold (rear), door to rear exit, rear door casing, front garage door.

Most of these materials were found in non-intact (damaged) condition (only the painted surfaces in the lower level rear right office was in intact condition). A copy of the Gilbertco Lead Inspection Report is provided in Appendix E. Following the HUD Lead-Safe Housing Guidelines, the non-intact areas should undergo interim measures to abatement the hazard.

These materials are not proposed to be disturbed during renovation activities, therefore, no testing of building components for leachable lead is required for disposal as non-hazardous for lead at a landfill.

## 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.

**Lead** - 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. Furthermore, the following building components should be repaired to abate the lead hazard.

- Window well and window jamb (hall/stairs, 1st floor front right Bedroom, Laundry, Bathroom, 2nd Floor Hall, 2nd floor front right bedroom, master closet, 2nd floor bathroom, 3rd floor hall, 3rd floor bedroom, 3rd floor bath
- exterior sash (3rd Floor bedroom and 3rd Floor bath)
- Door – Lower Level Garage
- Exterior components – threshold (rear), door to rear exit, rear door casing, front garage door.

**Asbestos –** No asbestos containing materials (>1% asbestos) were identified at the site.

**PCBs -** One suspected PCBs containing component was identified in proposed renovation materials and tested. Results indicate the material does not contain PCBs. Materials proposed for renovation can be disposed of as non-PCB containing materials.

**Mold** – Mold spore count analysis indicates no accelerated mold growth in the areas surveyed when comparing indoor mold spore count numbers to exterior spore count numbers.

**Radon** – Levels of radon were identified in the basement of the residence at a level up to 1.4 pCi/L, below the 4.0 pCi/L EPA action level.

# 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: | 241401848 |
| 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: | 05/14/2014 |
| Received: | 05/19/2014 |
| Analyzed: | 05/22/2014 |

**Proj:** 22214-1533

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

| Lab Sample Number: | 241401848-0001 | | | 241401848-0002 | | | 241401848-0003 | | |
|---|---|---|---|---|---|---|---|---|---|
| Client Sample ID: | 1533-MS1 | | | 1533-MS2 | | | 1533-MS3 | | |
| Volume (L): | 150 | | | 150 | | | 150 | | |
| Sample Location: | PLAYROOM | | | BASEMENT | | | OUTSIDE | | |
| **Spore Types** | **Raw Count** | **Count/m³** | **% of Total** | **Raw Count** | **Count/m³** | **% of Total** | **Raw Count** | **Count/m³** | **% of Total** |
| Alternaria | - | - | - | - | - | - | - | - | - |
| Ascospores | 1 | 20 | 4.8 | 3 | 60 | 12.5 | 18 | 380 | 32.2 |
| Aspergillus/Penicillium | 1 | 20 | 4.8 | 3 | 60 | 12.5 | - | - | - |
| Basidiospores | 7 | 100 | 23.8 | 8 | 200 | 41.7 | 8 | 200 | 16.9 |
| Bipolaris++ | - | - | - | - | - | - | - | - | - |
| Chaetomium | - | - | - | 1 | 20 | 4.2 | - | - | - |
| Cladosporium | 5 | 100 | 23.8 | 4 | 80 | 16.7 | 20 | 420 | 35.6 |
| Curvularia | - | - | - | - | - | - | - | - | - |
| Epicoccum | - | - | - | - | - | - | - | - | - |
| Fusarium | - | - | - | - | - | - | - | - | - |
| Ganoderma | - | - | - | - | - | - | - | - | - |
| Myxomycetes++ | 5 | 100 | 23.8 | 2 | 40 | 8.3 | 3 | 60 | 5.1 |
| Pithomyces | 1 | 20 | 4.8 | - | - | - | - | - | - |
| Rust | - | - | - | - | - | - | - | - | - |
| Scopulariopsis | - | - | - | - | - | - | - | - | - |
| Stachybotrys | - | - | - | - | - | - | - | - | - |
| Torula | - | - | - | - | - | - | - | - | - |
| Ulocladium | 1 | 20 | 4.8 | - | - | - | - | - | - |
| Unidentifiable Spores | 1 | 20 | 4.8 | - | - | - | - | - | - |
| Nigrospora | - | - | - | - | - | - | 1 | 20 | 1.7 |
| Oidium | - | - | - | 1 | 20 | 4.2 | 6 | 100 | 8.5 |
| Tetraploa | 1 | 20 | 4.8 | - | - | - | - | - | - |
| **Total Fungi** | **23** | **420** | **100** | **22** | **480** | **100** | **56** | **1180** | **100** |
| Hyphal Fragment | 2 | 40 | 9.5 | 2 | 40 | 8.3 | - | - | - |
| Insect Fragment | - | - | - | - | - | - | - | - | - |
| Pollen | 19 | 400 | 95.2 | 4 | 80 | 16.7 | 40 | 840 | 71.2 |
| Analyt. Sensitivity 600x | - | 21 | - | - | 21 | - | - | 21 | - |
| Analyt. Sensitivity 300x | - | 7* | - | - | 7* | - | - | 7* | - |
| Skin Fragments (1-4) | - | 2 | - | - | 1 | - | - | - | - |
| Fibrous Particulate (1-4) | - | 1 | - | - | 1 | - | - | 1 | - |
| Background (1-5) | - | 3 | - | - | 1 | - | - | 1 | - |

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: 05/22/2014 11:37:23

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

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: 241401848
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: 05/14/2014
Received: 05/19/2014
Analyzed: 05/22/2014

**Proj:** 22214-1533

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

| Lab Sample Number: | 241401848-0004 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client Sample ID: | 1533-MS4 | | | | | | | | |
| Volume (L): | 150 | | | | | | | | |
| Sample Location: | ATTIC | | | | | | | | |
| **Spore Types** | **Raw Count** | **Count/m³** | **% of Total** | - | - | - | - | - | - |
| Alternaria | - | - | - | - | - | - | - | - | - |
| Ascospores | 4 | 80 | 26.7 | - | - | - | - | - | - |
| Aspergillus/Penicillium | 1 | 20 | 6.7 | - | - | - | - | - | - |
| Basidiospores | - | - | - | - | - | - | - | - | - |
| Bipolaris++ | - | - | - | - | - | - | - | - | - |
| Chaetomium | 2 | 40 | 13.3 | - | - | - | - | - | - |
| Cladosporium | 6 | 100 | 33.3 | - | - | - | - | - | - |
| Curvularia | - | - | - | - | - | - | - | - | - |
| Epicoccum | - | - | - | - | - | - | - | - | - |
| Fusarium | - | - | - | - | - | - | - | - | - |
| Ganoderma | 1 | 20 | 6.7 | - | - | - | - | - | - |
| Myxomycetes++ | - | - | - | - | - | - | - | - | - |
| Pithomyces | 1 | 20 | 6.7 | - | - | - | - | - | - |
| Rust | - | - | - | - | - | - | - | - | - |
| Scopulariopsis | - | - | - | - | - | - | - | - | - |
| Stachybotrys | 1 | 20 | 6.7 | - | - | - | - | - | - |
| Torula | - | - | - | - | - | - | - | - | - |
| Ulocladium | - | - | - | - | - | - | - | - | - |
| Unidentifiable Spores | - | - | - | - | - | - | - | - | - |
| Nigrospora | - | - | - | | | | | | |
| Oidium | - | - | - | | | | | | |
| Tetraploa | - | - | - | | | | | | |
| **Total Fungi** | **16** | **300** | **100** | | | | | | |
| Hyphal Fragment | 8 | 200 | 66.7 | | | | | | |
| Insect Fragment | - | - | - | | | | | | |
| Pollen | 4 | 80 | 26.7 | | | | | | |
| Analyt. Sensitivity 600x | - | 21 | - | | | | | | |
| Analyt. Sensitivity 300x | - | 7* | - | | | | | | |
| Skin Fragments (1-4) | - | 2 | - | | | | | | |
| Fibrous Particulate (1-4) | - | 1 | - | | | | | | |
| Background (1-5) | - | 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: 05/22/2014 11:37:23

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

24140184B

# Microbiology Chain of Custody

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

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

| | |
|---|---|
| **Company:** Facilty Support Services, LLC | **EMSL-Bill to:** ☐ Different ☑ Same<br>If Bill to is Different note instructions in Comments** |
| **Street:** 2685 State Street | *Third Party Billing requires written authorization from third party* |
| **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 #:** **Purchase Order:** |
| **Project Name/Number:** 22214 -1533 | **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:** Kevin Bogue **Signature of Sampler:** Kevin Bogue

| Sample # | Sample Location | Sample Type | Test Code | Volume/Area | Date/Time Collected |
|---|---|---|---|---|---|
| **Example:** A1 | Kitchen | Air | M001 | 75L | 1/1/12 4:00 PM |
| 1533-MS1 | Play Room | AIR | M001 | 150 l | 5/14/14 1:40 |
| 1533 - MS2 | basement | ↓ | ↓ | ↓ | ↓ 1:56 |
| 1533 - MS3 | Outside | ↓ | ↓ | ↓ | ↓ 2:08 |
| 1533 - MS4 | Attic | ↓ | ↓ | ↓ | ↓ 2:25 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

**Client Sample # (s):** MS1 - MS4 **Total # of Samples:** 4

**Relinquished (Client):** Kevin Bogue **Date:** 5/19/14 **Time:**

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

**Comments:**

RECEIVED MAY 19 2014 By 17:00

# ATTACHMENT B

# RADON ANALYTICAL DATA

PC1405230064

RTCA RADON TESTING CORPORATION OF AMERICA

Site Radon Inspection Report

Date : 05/23/2014

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

Client: Ms. Julie Lucas
Test Location: 2210 Park Avenue
Bridgeport, CT 06604-

Individual Canister Results

| | | | |
|---|---|---|---|
| Canister ID# : | 2313522 | Test Start : | 05/17/2014 @ 08:27 |
| Canister Type : | Charcoal Canister 3 inch | Test Stop : | 05/19/2014 @ 08:27 |
| Location : | Basement S-2 | Received: | 05/23/2014 @ 10:58 |
| Radon Level : | 31.7 pCi/L | Analyzed: | 05/23/2014 @ 15:32 |
| Error for Measurement is: ± | 1.1 pCi/L | | |

| | | | |
|---|---|---|---|
| Canister ID# : | 2313530 | Test Start : | 05/15/2014 @ 13:50 |
| Canister Type : | Charcoal Canister 3 inch | Test Stop : | 05/20/2014 @ 12:45 |
| Location : | Basement B-2 | Received: | 05/23/2014 @ 10:58 |
| Radon Level : | 1.0 pCi/L | Analyzed: | 05/23/2014 @ 15:32 |
| Error for Measurement is: ± | 0.3 pCi/L | | |

| | | | |
|---|---|---|---|
| Canister ID# : | 2313535 | Test Start : | 05/15/2014 @ 13:52 |
| Canister Type : | Charcoal Canister 3 inch | Test Stop : | 05/20/2014 @ 12:46 |
| Location : | Basement BK | Received: | 05/23/2014 @ 10:58 |
| Radon Level : | 0.1 pCi/L | Analyzed: | 05/23/2014 @ 15:32 |
| Error for Measurement is: ± | 0.2 pCi/L | | |

| | | | |
|---|---|---|---|
| Canister ID# : | 2313539 | Test Start : | 05/15/2014 @ 13:50 |
| Canister Type : | Charcoal Canister 3 inch | Test Stop : | 05/20/2014 @ 12:45 |
| Location : | Basement B-1 | Received: | 05/23/2014 @ 10:58 |
| Radon Level : | 1.4 pCi/L | Analyzed: | 05/23/2014 @ 15:17 |
| Error for Measurement is: ± | 0.3 pCi/L | | |

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

PC1405230064

RTCA RADON TESTING CORPORATION OF AMERICA

Site Radon Inspection Report

Date : 05/23/2014

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

Client: Ms. Julie Lucas
Test Location: 2210 Park Avenue
Bridgeport, CT 06604-

Individual Canister Results

The results indicate that at least one testing device registered at or above the United States Environmental Protection Agency (EPA) action level of 4.0 picoCuries per liter of air (pCi/L). The EPA recommends mitigation if the average of two short-term tests taken in the lowest level of the building suitable for occupancy show radon levels that are equal to or greater than 4.0 pCi/L.

For information on how to reduce radon levels in your home, please review the EPA booklet: Consumer's Guide to Radon Reduction (www.epa.gov/radon/pdfs/consguid.pdf) and 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

# STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

PURSUANT TO THE PROVISIONS OF THE GENERAL STATUTES OF CONNECTICUT
THE INDIVIDUAL NAMED BELOW IS LICENSED
BY THIS DEPARTMENT AS A

ASBESTOS CONSULTANT - INSP/MGMT PLANNER

LICENSE NO.
000157

CURRENT THROUGH
08/31/14

VALIDATION NO.
03 - 628349

KEVIN S. BOGUE

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: | 241401852 |
| CustomerID: | FSS93 |
| CustomerPO: | |
| ProjectID: | |

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

**Hamden, CT 06517**

Project: **22214-1533**

| | |
|---|---|
| Phone: | (203) 288-1281 |
| Fax: | (203) 248-4409 |
| Received: | 05/19/14 5:00 PM |
| Analysis Date: | 5/22/2014 |
| Collected: | 5/14/2014 |

# 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** |
| 20140514-1533 S1A-Skim Coat *241401852-0001* | 1st floor ceiling - white skim coat + grey base coat | White Non-Fibrous Homogeneous | <1% | Cellulose | 20% | Ca Carbonate | **None Detected** |
| | | | | | 80% | Non-fibrous (other) | |
| 20140514-1533 S1A-Base Coat *241401852-0001A* | 1st floor ceiling - white skim coat + grey base coat | Gray Non-Fibrous Homogeneous | <1% | Cellulose | 30% | Quartz | **None Detected** |
| | | | | | 70% | Non-fibrous (other) | |
| 20140514-1533 S1B-Skim Coat *241401852-0002* | 1st floor ceiling - white skim coat + grey base coat | White Non-Fibrous Homogeneous | <1% | Cellulose | 60% | Ca Carbonate | **None Detected** |
| | | | | | 40% | Non-fibrous (other) | |
| 20140514-1533 S1B-Base Coat *241401852-0002A* | 1st floor ceiling - white skim coat + grey base coat | Gray Non-Fibrous Homogeneous | <1% | Cellulose | 40% | Quartz | **None Detected** |
| | | | | | 60% | Non-fibrous (other) | |
| 20140514-1533 S1C-Skim Coat *241401852-0003* | 1st floor ceiling - white skim coat + grey base coat | White Non-Fibrous Homogeneous | <1% | Cellulose | 60% | Ca Carbonate | **None Detected** |
| | | | | | 40% | Non-fibrous (other) | |
| 20140514-1533 S1C-Base Coat *241401852-0003A* | 1st floor ceiling - white skim coat + grey base coat | Gray Non-Fibrous Homogeneous | | | 30% | Quartz | **None Detected** |
| | | | | | 45% | Ca Carbonate | |
| | | | | | 25% | Non-fibrous (other) | |
| 20140514-1538 S2A *241401852-0004* | 1st floor ceiling - brown fibrous insulation | Brown Fibrous Homogeneous | 99% | Cellulose | 1% | Non-fibrous (other) | **None Detected** |

Analyst(s)

*Kristin Lopez (12)* *William Shedrawy (6)*
*Lauren Brennan (15)*

Gloria V. Oriol, Laboratory Manager
or other approved signatory

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

Initial report from 05/23/2014 09:15:06

**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: | 241401852 |
| CustomerID: | FSS93 |
| CustomerPO: | |
| ProjectID: | |

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

**Hamden, CT 06517**

Project: **22214-1533**

| | |
|---|---|
| Phone: | (203) 288-1281 |
| Fax: | (203) 248-4409 |
| Received: | 05/19/14 5:00 PM |
| Analysis Date: | 5/22/2014 |
| Collected: | 5/14/2014 |

# 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** |
| 20140514-1538 S2B<br>*241401852-0005* | 1st floor ceiling - brown fibrous insulation | Brown<br>Fibrous<br>Homogeneous | 99% | Cellulose | 1% | Non-fibrous (other) | **None Detected** |
| 20140514-1538 S2C<br>*241401852-0006* | 1st floor ceiling - brown fibrous insulation | Brown<br>Fibrous<br>Homogeneous | 99% | Cellulose | 1% | Non-fibrous (other) | **None Detected** |
| 20140514-1538 S3A<br>*241401852-0007* | 1st floor ceiling - black tar paper | Brown/Black<br>Fibrous<br>Homogeneous | 60% | Cellulose | 40% | Non-fibrous (other) | **None Detected** |
| 20140514-1538 S3B<br>*241401852-0008* | 1st floor ceiling - black tar paper | Brown/Black<br>Fibrous<br>Homogeneous | 60% | Cellulose | 40% | Non-fibrous (other) | **None Detected** |
| 20140514-1538 S3C<br>*241401852-0009* | 1st floor ceiling - black tar paper | Black<br>Fibrous<br>Homogeneous | 60% | Cellulose | 40% | Non-fibrous (other) | **None Detected** |
| 20140514-1538 S4A<br>*241401852-0010* | 1st floor ceiling - grey board | Gray<br>Non-Fibrous<br>Homogeneous | 4% | Cellulose | 30%<br>66% | Gypsum<br>Non-fibrous (other) | **None Detected** |
| 20140514-1538 S4B<br>*241401852-0011* | 1st floor ceiling - grey board | Gray<br>Non-Fibrous<br>Homogeneous | 5% | Cellulose | 35%<br>60% | Gypsum<br>Non-fibrous (other) | **None Detected** |
| 20140514-1538 S4C<br>*241401852-0012* | 1st floor ceiling - grey board | Gray<br>Non-Fibrous<br>Homogeneous | 3% | Cellulose | 97% | Non-fibrous (other) | **None Detected** |

Analyst(s)

*Kristin Lopez (12)* *William Shedrawy (6)*
*Lauren Brennan (15)*

Gloria V. Oriol, Laboratory Manager
or other approved signatory

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

Initial report from 05/23/2014 09:15:06

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Phone/Fax: 203-284-5948 / (203) 284-5978
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| | |
|---|---|
| EMSL Order: | 241401852 |
| CustomerID: | FSS93 |
| CustomerPO: | |
| ProjectID: | |

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

**Hamden, CT 06517**

Project: **22214-1533**

| | |
|---|---|
| Phone: | (203) 288-1281 |
| Fax: | (203) 248-4409 |
| Received: | 05/19/14 5:00 PM |
| Analysis Date: | 5/22/2014 |
| Collected: | 5/14/2014 |

# 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** |
| 20140514-1538 S5A<br>*241401852-0013* | 1st floor ceiling - white taping compound | White<br>Non-Fibrous<br>Homogeneous | | | 45%<br>55% | Ca Carbonate<br>Non-fibrous (other) | **None Detected** |
| 20140514-1538 S5B<br>*241401852-0014* | 1st floor ceiling - white taping compound | White<br>Non-Fibrous<br>Homogeneous | | | 45%<br>55% | Ca Carbonate<br>Non-fibrous (other) | **None Detected** |
| 20140514-1538 S5C<br>*241401852-0015* | 1st floor ceiling - white taping compound | White<br>Non-Fibrous<br>Homogeneous | <1% | Cellulose | 70%<br>30% | Ca Carbonate<br>Non-fibrous (other) | **None Detected** |
| 20140514-1538 S6A<br>*241401852-0016* | Roof - shingle (top layer) | Black<br>Fibrous<br>Homogeneous | 10% | Glass | 5%<br>85% | Quartz<br>Non-fibrous (other) | **None Detected** |
| 20140514-1538 S6B<br>*241401852-0017* | Roof - shingle (top layer) | Black<br>Fibrous<br>Homogeneous | 12% | Glass | 8%<br>80% | Quartz<br>Non-fibrous (other) | **None Detected** |
| 20140514-1538 S6C<br>*241401852-0018* | Roof - shingle (top layer) | Black<br>Fibrous<br>Homogeneous | 3%<br><1% | Glass<br>Cellulose | 97% | Non-fibrous (other) | **None Detected** |
| 20140514-1538 S7A<br>*241401852-0019* | Roof - felt paper | Black<br>Fibrous<br>Homogeneous | 60% | Cellulose | 40% | Non-fibrous (other) | **None Detected** |
| 20140514-1538 S7B<br>*241401852-0020* | Roof - felt paper | Black<br>Fibrous<br>Homogeneous | 60% | Cellulose | 40% | Non-fibrous (other) | **None Detected** |

Analyst(s)

*Kristin Lopez (12)* *William Shedrawy (6)*
*Lauren Brennan (15)*

Gloria V. Oriol, Laboratory Manager
or other approved signatory

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

Initial report from 05/23/2014 09:15:06

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Phone/Fax: 203-284-5948 / (203) 284-5978
http://www.EMSL.com wallingfordlab@emsl.com

| | |
|---|---|
| EMSL Order: | 241401852 |
| CustomerID: | FSS93 |
| CustomerPO: | |
| ProjectID: | |

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

**Hamden, CT 06517**

Project: **22214-1533**

| | |
|---|---|
| Phone: | (203) 288-1281 |
| Fax: | (203) 248-4409 |
| Received: | 05/19/14 5:00 PM |
| Analysis Date: | 5/22/2014 |
| Collected: | 5/14/2014 |

# 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** |
| 20140514-1538 S7C<br>*241401852-0021* | Roof - felt paper | Black<br>Fibrous<br>Homogeneous | 60% | Cellulose | 40% | Non-fibrous (other) | **None Detected** |
| 20140514-1538 S8A<br>*241401852-0022* | 2nd floor ceiling - skim coat- white | White<br>Non-Fibrous<br>Homogeneous | <1% | Cellulose | 50%<br>50% | Ca Carbonate<br>Non-fibrous (other) | **None Detected** |
| 20140514-1538 S8B<br>*241401852-0023* | 2nd floor ceiling - skim coat- white | White<br>Non-Fibrous<br>Homogeneous | <1% | Cellulose | 60%<br>40% | Ca Carbonate<br>Non-fibrous (other) | **None Detected** |
| 20140514-1538 S8C<br>*241401852-0024* | 2nd floor ceiling - skim coat- white | White<br>Non-Fibrous<br>Homogeneous | <1% | Cellulose | 65%<br>35% | Ca Carbonate<br>Non-fibrous (other) | **None Detected** |
| 20140514-1538 S9A<br>*241401852-0025* | 2nd floor ceiling - grey base coat | Gray<br>Non-Fibrous<br>Homogeneous | <1% | Cellulose | 25%<br>10%<br>65% | Quartz<br>Ca Carbonate<br>Non-fibrous (other) | **None Detected** |
| 20140514-1538 S9B<br>*241401852-0026* | 2nd floor ceiling - grey base coat | Gray<br>Non-Fibrous<br>Homogeneous | <1% | Cellulose | 30%<br>10%<br>60% | Quartz<br>Ca Carbonate<br>Non-fibrous (other) | **None Detected** |
| 20140514-1538 S9C<br>*241401852-0027* | 2nd floor ceiling - grey base coat | Gray<br>Non-Fibrous<br>Homogeneous | | | 25%<br>75% | Quartz<br>Non-fibrous (other) | **None Detected** |
| 20140514-1538 S10A<br>*241401852-0028* | 2nd floor ceiling - grey board | Gray<br>Non-Fibrous<br>Homogeneous | 2% | Cellulose | 98% | Non-fibrous (other) | **None Detected** |

Analyst(s)

*Kristin Lopez (12)* *William Shedrawy (6)*
*Lauren Brennan (15)*

Gloria V. Oriol, Laboratory Manager
or other approved signatory

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

Initial report from 05/23/2014 09:15:06

**EMSL Analytical, Inc.**
**29 North Plains Highway, Unit # 4, Wallingford, CT 06492**
Phone/Fax: 203-284-5948 / (203) 284-5978
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| EMSL Order: | 241401852 |
| CustomerID: | FSS93 |
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| ProjectID: | |

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

**Hamden, CT 06517**

Project: **22214-1533**

| | |
|---|---|
| Phone: | (203) 288-1281 |
| Fax: | (203) 248-4409 |
| Received: | 05/19/14 5:00 PM |
| Analysis Date: | 5/22/2014 |
| Collected: | 5/14/2014 |

# 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** |
| 20140514-1538 S10B<br>*241401852-0029* | 2nd floor ceiling - grey board | Gray Non-Fibrous<br>Homogeneous | 3% | Cellulose | 97% | Non-fibrous (other) | **None Detected** |
| 20140514-1538 S10C<br>*241401852-0030* | 2nd floor ceiling - grey board | Gray Non-Fibrous<br>Homogeneous | 5% | Cellulose | 95% | Non-fibrous (other) | **None Detected** |

Analyst(s)

*Kristin Lopez (12)* *William Shedrawy (6)*
*Lauren Brennan (15)*

Gloria V. Oriol, Laboratory Manager
or other approved signatory

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

Initial report from 05/23/2014 09:15:06



**THIS IS THE LAST PAGE OF THE REPORT.**

OrderID: 241401848

EMSL ANALYTICAL, INC.
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# Asbestos Bulk Building Material Chain of Custody

**EMSL Order Number** *(Lab Use Only)*: 241401850

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

| | |
|---|---|
| **Company :** Facilty Support Services, LLC | **EMSL-Bill to:** ☑ Same ☐ Different<br>If Bill to is Different note instructions in Comments**<br>*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 #:** **Purchase Order:** |
| **Project Name/Number:** 22214 -1533 | **Please Provide Results:** ☐ Fax ✓ Email ☐ Mail |
| **U.S. State Samples Taken:** CT | **CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt |

**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.*

| **PLM - Bulk (reporting limit)** | **TEM – Bulk** |
|---|---|
| ☒ PLM EPA 600/R-93/116 (<1%) | ☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1 |
| ☐ PLM EPA NOB (<1%) | ☐ NY ELAP Method 198.4 (TEM) |
| Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%) | ☐ Chatfield Protocol (semi-quantitative) |
| Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%) | ☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2 |
| ☐ NIOSH 9002 (<1%) | ☐ TEM Qualitative via Filtration Prep Technique |
| ☐ NY ELAP Method 198.1 (friable in NY) | ☐ TEM Qualitative via Drop Mount Prep Technique |
| ☐ NY ELAP Method 198.6 NOB (non-friable-NY) | **Other** |
| ☐ OSHA ID-191 Modified | ☐ |
| ☐ Standard Addition Method | |

☐ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** 5/14/14

**Samplers Name:** Kevin Bogue **Samplers Signature:** Kevin Bogue

| Sample # | HA # | Sample Location | Material Description |
|---|---|---|---|
| 20140514_1538 S1A | 1+2 | 1st Floor ceiling | white skim coat + gray base coat |
| S1B | 1+2 | ↓ | ↓ |
| S1C | 1+2 | ↓ | ↓ |
| 20140514_1538 S2A | | 1st Floor ceiling | Brown fibrous insulation |
| S2B | | ↓ | ↓ |
| S2C | | ↓ | ↓ |
| 20140514_1538 S3A | | ~~Bto~~ 1st Floor ceiling | black tar paper |
| S3B | | ↓ | ↓ |
| S3C | | ↓ | ↓ |
| | | | |

**Client Sample # (s):** S1A - **Total # of Samples:**

**Relinquished (Client):** Kevin Bogue **Date:** 5/14/14 **Time:**

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

**Comments/Special Instructions:**

RECEIVED MAY 19 2014 By 17:00

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

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

# Asbestos Bulk Building Material Chain of Custody

**EMSL Order Number** (*Lab Use Only*): 241401852

*Additional Pages of the Chain of Custody are only necessary if needed for additional sample information*

| Sample # | HA # | Sample Location | Material Description |
|---|---|---|---|
| 20140514-1538 S4A | | 1st Floor Ceiling | Grey board |
| S4B | | ↓ | ↓ |
| S4C | | ↓ | ↓ |
| 20140514-1538 S5A | | 1st Floor Ceiling | white taping compound |
| S5B | | ↓ | ↓ |
| S5C | | ↓ | ↓ |
| 20140514-1538 S6A | | Roof | Shingle (top layer) |
| S6B | | ↓ | ↓ |
| S6C | | ↓ | ↓ |
| 20140514-1538 S7A | | Roof | Felt paper |
| S7B | | ↓ | ↓ |
| S7C | | ↓ | ↓ |
| 20140514-1538 S8A | | 2nd Floor ceiling | skim coat-white |
| S8B | | ↓ | ↓ |
| S8C | | ↓ | ↓ |
| 20140514-1538 S9A | | 2nd Floor Ceiling | grey base coat |
| S9B | | ↓ | ↓ |
| S9C | | ↓ | ↓ |
| 20140514-1538 S10A | | 2nd Floor ceiling | grey board |
| S10B | | ↓ | ↓ |
| S10C | | ↓ | ↓ |
| | | | |
| | | | |
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***Comments/Special Instructions:**

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Page 2 of 2 pages

# ATTACHMENT E

# LEAD ANALYTICAL DATA

# STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

## LEAD INSPECTION AND TESTING SUMMARY FORM

**This lead inspection and testing summary form must be completed and sent to the property owner of the property in accordance with Section 19a-111-3 (d) of the regulations of Connecticut State Agencies concerning Lead Poisoning Prevention and Control. A Comprehensive Lead Inspection is one performed to satisfy CGS 19a-111 (epidemiological investigation) and CGS 19a-110(d) (on-site inspection). Bare soil areas, dust and water are required to be tested for the presence of lead as part of a comprehensive lead inspection.**

**PROPERTY INSPECTED/TESTED**

**(Check):** Residence ☑ Child Day Care Center/Group Day Care Home ☐ Name: _____ Family Day Care Home ☐ Name: _____

**(Check One):** Comprehensive Lead Inspection ☐ Limited Testing ☒

Street Address: 2210 Park Ave Apt.#_____ Floor: _____

City/Town: Bridgeport Zip Code: 06604 Telephone: _____

If Apartment, Number of Units: _____ Year Property Built: 1949

**PROPERTY OWNER**

Name: Julie Lucas and Lieberman

Street Address: 2210 Park Ave City: Bridgeport

State: CT Zip Code: 06604 Telephone: _____

**INSPECTING ENTITY**

**A. If Consultant Contractor:**

Name: Gilbertco Lead Inspectiosn LLC

Street Address: 287 Main Street

City: Ansonia State: CT Zip Code: 06401

Consultant License Number: CC #270

Inspector's Name: Maureen Monaco Telephone: 1-800-959-2985

Inspector's Certification Number: IR 1172

**B. If Code Enforcement Agency:**

Department Name: _____

Street Address: _____

City: _____ State: _____ Zip Code: _____

Inspector's Name: _____ Telephone: _____

Date of Inspector's Initial Training: ____/____/____ Date of Latest Refresher Training: ____/____/____

**INSPECTION INFORMATION** **Beginning and End Date(s) of Inspection:** 05 / 05 / 14

For each day that the inspection was conducted consent was given by an adult occupant of the dwelling unit to enter and inspect all areas of the dwelling that are under the control of that individual or to which that individual has legitimate access.
☑ Yes ☐ No

Name of person 18 years of age or older who granted consent: Julie Lucas Age:____ Date: 5/15/14

Name of person 18 years of age or older who granted consent: _____ Age:____ Date: _____

**A. Were Lead-Based Surfaces Identified? (Check One)** ☑ Yes ☐ No
If yes, complete the tables below. Data in tables may not indicate all identified lead-based surfaces.

| **EXTERIOR** Lead-Based Surfaces | Foundation | Siding &/or Trim | Stairs &/or Stair Components | Porch &/or Porch Components | Doors &/or Trim | Windows &/or Trim | Garage &/or Garage Components |
|---|---|---|---|---|---|---|---|
| Deteriorated | ☐ | ☐ | ☐ | ☐ | ☑ | ☑ | ☑ |
| Intact | ☐ | ☐ | ☐ | ☐ | ☑ | ☑ | ☑ |

(X = positive location)

| **INTERIOR** Lead-Based Surfaces | Floors | Baseboards | Walls | Ceilings | Stairs &/or Stair Components | Doors &/or Trim | Windows &/or Trim | Closet/ Cabinet Components |
|---|---|---|---|---|---|---|---|---|
| Deteriorated | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☑ | ☐ |
| Intact | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☑ | ☐ |

(X = positive location)

Were rooms, areas or components inaccessible during inspection? (Check One) ☐ Yes ☑ No
List any inaccessible locations: _____

**B. Indicate Potential Lead Hazards Identified:**

**(Check All That Apply)**
Was drinking water tested for lead?
☐ Yes ☑ No
Was dust tested for lead?
☐ Yes ☑ No
Was bare soil tested for lead?
☐ Yes ☑ No ☐ N/A If yes, complete the adjacent table.

| **Lead Hazard Locations** | Floors (dust) | Window Sills (dust) | Window Wells (dust) | Soil | Water | Paint (XRF) | Paint Chip |
|---|---|---|---|---|---|---|---|
| (Enter highest result for each) | | | | | | 5.37 | |

Per section 19a-111-4(a) and 19a-111-2(e) of the Lead Poisoning Prevention and Control Regulations:

A lead abatement plan **is required for this property:** ☑ Yes ☐ No
A lead management plan is required for this property: ☑ Yes ☐ No

A lead hazard remediation **plan is required for this property:** ☐ Yes ☐ No
A lead management plan is required for this property: ☐ Yes ☐ No

Inspector's Signature: Maurice Nmau Date: 5 / 19 / 14

The federal Residential Lead-Based Paint Hazard Reduction Act, 42 U.S.C. 4852d, requires sellers and landlords of most residential housing built before 1978 to disclose all available records and reports concerning lead-based paint and/or lead-based paint hazards, including the test results contained or referenced in this notice, to purchasers and tenants at the time of sale or lease or upon lease renewal. This disclosure must occur even if hazard reduction or abatement has been completed. Failure to disclose these test results is a violation of the U.S. Department of Housing and Urban Development and the U.S. Environmental Protection Agency regulations at 24 CFR Part 35 and 40 CFR Part 745 and can result in a fine of up to $11,000 per violation. To find out more information about your obligations under federal lead-based paint requirements, call 1-800-424-LEAD.

I have received a copy of this summary report from my landlord/property manager and have been informed that I can obtain further information about the testing results from the report by contacting the property owner listed above.

Resident's Signature: _____ Date: ____/____/____

1-7-14

# LEAD BASED PAINT INSPECTION
# REPORT OF FINDINGS
# OF:

2210 PARK AVENUE
BRIDGEPORT, CONNECTICUT

**DATE:**

May 15, 2014

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

# GILBERTCO
## LEAD INSPECTIONS, LLC

## "LEAD BASED PAINT SPECIALIST"

May 15, 2014

Job 9928-3-2210

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

**Re: Lead Based Paint Inspection: 2210 Park Ave., Bridgeport, CT**
**Julie Lucas- Applicant 1533**

Gilbertco Lead Inspections LLC performed a limited XRF inspection for the presence of lead based paint at 2210 Park Ave., Bridgeport, 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 large, four story, single family home built about 1949. The exterior is unpainted brick with vinyl siding. Some windows are vinyl replacements, some are original. The home is in good repair and enjoys excellent housekeeping.

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, *several lead based paint hazards were identified.* A lead based paint hazard is "any condition that causes lead exposure to lead 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 from 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.

This lead inspection report should be disclosed to future tenants and /or buyers in accordance with Title X ( copy enclosed). As with any lead-containing surface, children should not be allowed to chew or mouth painted surfaces as this is a common source of lead poisoning in children.

Please feel free to call if any questions arise,

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<br>287 MAIN STREET<br>ANSONIA, CONNECTICUT 06401 |
| PROJECT ADDRESS: | 2210 PARK AVENUE<br>BRIDGEPORT, CONNECTICUT |
| PROJECT NUMBER: | 9928-3-2210 |
| TEST DATE: | MAY 15, 2014 |
| REQUIREMENTS: | CHAPTER 7 HUD GUIDELINES<br>LEAD INSPECTION- SURFACE BY SURFACE |
| INSTRUMENTATION: | SCITEC MAP4 PORTABLE X-RAY ( BRUKER HANDHELD)<br>FLUOROSCOPE SPECTRUM ANALYZER<br>(XRF) COBALT 57 SOURCE |
| REPORT MEDIUM: | MG PB/CM2 (MILLIGRAMS OF LEAD<br>PER SQUARE CENTIMETER) |
| CALIBRATION: | TO MEASURE LEAD K-SHELL EMISSIONS.<br>FACTORY CALIBRATED WITH HUD APPROVED<br>REFERENCE STANDARDS. CALIBRATION FIELD<br>CHECKED HOURLY AS RECOMMENDED BY<br>MANUFACTURER |
| OPERATORS CERTIFICATION: | LEAD CONSULTANT CONTRACTOR-CC270<br>LEAD INSPECTOR RISK ASSESSOR- IR 1172<br>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.

Mauri Moran 5/15/2014

## 2210 Park Avenue, Bridgeport, Connecticut
## May 15, 2014

| Room Type | Room # | Wall # | Component | Substrate | Condition | K Shell | Decision |
|---|---|---|---|---|---|---|---|
| Calibration | | | | | | 1.18 | Okay |
| Entry | 1 | 1 | Door | Wood | Non-intact | 0.16 | Negative |
| Entry | 1 | 1 | Door Casing | Wood | Non-intact | 0.45 | Negative |
| Entry | 1 | 1 | Wall | Sheetrk | Intact | -0.08 | Negative |
| Entry | 1 | 1 | Window Sill | Wood | Intact | 0.35 | Negative |
| Entry | 1 | 1 | Window Trim | Wood | Intact | 0.08 | Negative |
| Entry | 1 | 1 | Radiator | Metal | Intact | 0.7 | Negative |
| Entry | 1 | 1 | Baseboard | Wood | Intact | 0.16 | Negative |
| Entry | 1 | 4 | Wall | Sheetrk | Intact | 0.19 | Negative |
| Entry | 1 | 3 | Wall | Sheetrk | Intact | -0.28 | Negative |
| Entry | 1 | 3 | Baseboard | Wood | Intact | 0.24 | Negative |
| Entry | 1 | 3 | Door | Wood | Intact | -0.31 | Negative |
| Entry | 1 | 3 | Door Jamb | Wood | Intact | -0.01 | Negative |
| Entry | 1 | 3 | Door Casing | Wood | Intact | 0.25 | Negative |
| Entry | 1 | 2 | Wall | Sheetrk | Intact | 0.02 | Negative |
| Entry | 1 | 2 | Closet Door | Wood | Intact | -0.07 | Negative |
| Entry | 1 | 2 | Clo Dr Csng | Wood | Intact | 0.37 | Negative |
| Entry | 1 | 2 | Shelf | Wood | Intact | 0 | Negative |
| Entry | 1 | 2 | Shelf Support | Wood | Intact | -0.01 | Negative |
| Hall/Stairs | 2 | 1 | Door | Wood | Non-intact | -0.26 | Negative |
| Hall/Stairs | 2 | 1 | Door Casing | Wood | Non-intact | 0.03 | Negative |
| Hall/Stairs | 2 | 1 | Wall | Sheetrk | Intact | -0.06 | Negative |
| Hall/Stairs | 2 | 4 | Wall-upper | Sheetrk | Intact | 0.06 | Negative |
| Hall/Stairs | 2 | 4 | Chair Rail | Wood | Intact | -0.25 | Negative |
| Hall/Stairs | 2 | 4 | Wall-lower | Wood | Intact | 0.1 | Negative |
| Hall/Stairs | 2 | 3 | Stair Tread | Wood | Stain/varnish | 0.26 | Negative |
| Hall/Stairs | 2 | 3 | Stair Riser | Wood | Intact | 0.13 | Negative |
| Hall/Stairs | 2 | 3 | Stair Stringer | Wood | Non-intact | 0.14 | Negative |
| Hall/Stairs | 2 | 3 | Newel Post | Wood | Stain/varnish | 0.03 | Negative |
| Hall/Stairs | 2 | 3 | Railing | Wood | Stain/varnish | 0.12 | Negative |
| Hall/Stairs | 2 | 3 | Spindle | Wood | Intact | -0.18 | Negative |
| Hall/Stairs | 2 | 4 | Window Sill | Wood | Intact | 0.14 | Negative |
| Hall/Stairs | 2 | 4 | Window Sash | Wood | Intact | 0.96 | Negative |
| Hall/Stairs | 2 | 4 | Window Trim | Wood | Intact | 0.17 | Negative |
| **Hall/Stairs** | **2** | **4** | **Window Well** | **Wood** | **Non-intact** | **2.18** | **Positive** |
| **Hall/Stairs** | **2** | **4** | **Window Jamb** | **Wood** | **Non-intact** | **2.25** | **Positive** |
| Hall/Stairs | 2 | 4 | Radiator | Metal | Intact | 0.47 | Negative |
| Hall/Stairs | 2 | 1 | Ceiling | Sheetrk | Intact | 0.03 | Negative |
| Hall/Stairs | 2 | 1 | Ceiling Trim | Wood | Intact | 0.04 | Negative |
| Hall/Stairs | 2 | 2 | Wall | Sheetrk | Intact | 0.24 | Negative |
| Hall/Stairs | 2 | 2 | Baseboard | Wood | Intact | -0.18 | Negative |
| Hall/Stairs | 2 | 3 | Door Casing | Wood | Intact | 0.14 | Negative |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Living Room | 3 | 4 | Wall | Sheetrk | Intact | 0.27 | Negative |
| Living Room | 3 | 4 | Baseboard | Wood | Intact | 0.18 | Negative |
| Living Room | 3 | 1 | Floor | Wood | Stain/varnish | -0.02 | Negative |
| Living Room | 3 | 1 | Mantle | Wood | Stain/varnish | -0.08 | Negative |
| Living Room | 3 | 1 | Wall | Sheetrk | Intact | 0.23 | Negative |
| Living Room | 3 | 1 | Window Sill | Wood | Non-intact | 0.51 | Negative |
| Living Room | 3 | 1 | Window Trim | Wood | Non-intact | 0.39 | Negative |
| Living Room | 3 | 2 | Window Apron | Wood | Intact | 0.2 | Negative |
| Living Room | 3 | 2 | Baseboard | Wood | Intact | 0.41 | Negative |
| Living Room | 3 | 2 | Radiator | Metal | Intact | 0.1 | Negative |
| Living Room | 3 | 1 | Ceiling | Sheetrk | Intact | -0.23 | Negative |
| Living Room | 3 | 1 | Ceiling Trim | Wood | Intact | 0.11 | Negative |
| Living Room | 3 | 2 | Wall | Sheetrk | Intact | 0.28 | Negative |
| Living Room | 3 | 2 | Door | Wood | Non-intact | -0.05 | Negative |
| Living Room | 3 | 2 | Door Casing | Wood | Non-intact | 0.09 | Negative |
| Living Room | 3 | 2 | Door Jamb | Wood | Non-intact | 0.41 | Negative |
| Living Room | 3 | 3 | Wall | Sheetrk | Intact | 0.14 | Negative |
| Living Room | 3 | 3 | Baseboard | Wood | Intact | 0.07 | Negative |
| Living Room | 3 | 1 | Floor | Wood | Stain/varnish | -0.33 | Negative |
| | | | | | | | |
| 1st Fl Front Right BR | 4 | 4 | Door | Wood | Stain/varnish | -0.26 | Negative |
| 1st Fl Front Right BR | 4 | 4 | Door Casing | Wood | Intact | 0.17 | Negative |
| 1st Fl Front Right BR | 4 | 4 | Wall | Sheetrk | Intact | -0.01 | Negative |
| 1st Fl Front Right BR | 4 | 1 | Wall | Sheetrk | Intact | -0.1 | Negative |
| 1st Fl Front Right BR | 4 | 1 | Window Sill | Sheetrk | Intact | 0.38 | Negative |
| 1st Fl Front Right BR | 4 | 1 | Window Sash | Wood | Non-intact | 0.69 | Negative |
| 1st Fl Front Right BR | 4 | 1 | Window Trim | Wood | Intact | 0.44 | Negative |
| **1st Fl Front Right BR** | **4** | **1** | **Window Wall** | **Wood** | **Non-intact** | **4.8** | **Positive** |
| **1st Fl Front Right BR** | **4** | **1** | **Window Jamb** | **Wood** | **Non-intact** | **3.18** | **Positive** |
| 1st Fl Front Right BR | 4 | 1 | Exterior Sash | Wood | Non-intact | 0.12 | Negative |
| 1st Fl Front Right BR | 4 | 1 | Radiator | Metal | Intact | 0.24 | Negative |
| 1st Fl Front Right BR | 4 | 2 | Wall | Sheetrk | Intact | 0.24 | Negative |
| 1st Fl Front Right BR | 4 | 2 | Baseboard | Wood | Intact | 0.22 | Negative |
| 1st Fl Front Right BR | 4 | 1 | Radiator | Metal | Intact | 0.47 | Negative |
| 1st Fl Front Right BR | 4 | 1 | Floor | Wood | Stain/varnish | -0.3 | Negative |
| 1st Fl Front Right BR | 4 | 1 | Wall | Sheetrk | Intact | -0.51 | Negative |
| 1st Fl Front Right BR | 4 | 3 | Door | Other | Intact | -0.15 | Negative |
| 1st Fl Front Right BR | 4 | 3 | Door Casing | Wood | Intact | 0.12 | Negative |
| 1st Fl Front Right BR | 4 | 3 | Baseboard | Wood | Intact | -0.09 | Negative |
| 1st Fl Front Right BR | 4 | 1 | Ceiling | Sheetrk | Intact | -0.27 | Negative |
| 1st Fl Front Right BR | 4 | 1 | Ceiling Trim | Sheetrk | Intact | 0.03 | Negative |
| | | | | | | | |
| 1st Fl Left Rear Den | 5 | 4 | Door Casing | Wood | Intact | -0.12 | Negative |
| 1st Fl Left Rear Den | 5 | 4 | Wall | Sheetrk | Intact | -0.09 | Negative |
| 1st Fl Left Rear Den | 5 | 4 | Baseboard | Sheetrk | Intact | -0.1 | Negative |
| 1st Fl Left Rear Den | 5 | 1 | Wall | Sheetrk | Intact | -0.1 | Negative |
| 1st Fl Left Rear Den | 5 | 1 | Baseboard | Sheetrk | Intact | -0.01 | Negative |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1st Fl Left Rear Den | 5 | 1 | Door | Other | Intact | -0.09 | Negative |
| 1st Fl Left Rear Den | 5 | 1 | Door Casing | Wood | Intact | -0.14 | Negative |
| 1st Fl Left Rear Den | 5 | 2 | Wall | Sheetrk | Intact | -0.03 | Negative |
| 1st Fl Left Rear Den | 5 | 2 | Window Sill | Wood | Intact | -0.14 | Negative |
| 1st Fl Left Rear Den | 5 | 2 | Window Trim | Wood | Intact | 0.1 | Negative |
| 1st Fl Left Rear Den | 5 | 2 | Radiator | Metal | Intact | 0.44 | Negative |
| 1st Fl Left Rear Den | 5 | 1 | Ceiling | Sheetrk | Non-intact | -0.14 | Negative |
| 1st Fl Left Rear Den | 5 | 1 | Ceiling Trim | Wood | Intact | 0.01 | Negative |
| 1st Fl Left Rear Den | 5 | 3 | Wall | Sheetrk | Intact | 0.19 | Negative |
| 1st Fl Left Rear Den | 5 | 3 | Window Sill | Wood | Intact | 0.38 | Negative |
| 1st Fl Left Rear Den | 5 | 3 | Window Trim | Wood | Intact | -0.13 | Negative |
| 1st Fl Left Rear Den | 5 | 3 | Radiator | Metal | Intact | 0.32 | Negative |
| 1st Fl Left Rear Den | 5 | 4 | Wall | Sheetrk | Intact | -0.01 | Negative |
| | | | | | | | |
| Dining Room | 6 | 1 | Wall | Sheetrk | Intact | -0.29 | Negative |
| Dining Room | 6 | 1 | Baseboard | Wood | Intact | 0.14 | Negative |
| Dining Room | 6 | 2 | Wall | Sheetrk | Intact | 0.13 | Negative |
| Dining Room | 6 | 2 | Baseboard | Wood | Intact | 0.41 | Negative |
| Dining Room | 6 | 2 | Wall | Sheetrk | Intact | -0.04 | Negative |
| Dining Room | 6 | 2 | Door Casing | Wood | Intact | 0.31 | Negative |
| Dining Room | 6 | 2 | Door Jamb | Wood | Intact | 0.15 | Negative |
| Dining Room | 6 | 3 | Wall | Sheetrk | Intact | 0.25 | Negative |
| Dining Room | 6 | 3 | Door | Metal | Intact | -0.14 | Negative |
| Dining Room | 6 | 3 | Door Casing | Wood | Intact | -0.24 | Negative |
| Dining Room | 6 | 3 | Wall-upper | Sheetrk | Intact | 0.12 | Negative |
| Dining Room | 6 | 3 | Chairrail | Wood | Intact | 0.11 | Negative |
| Dining Room | 6 | 3 | Wall-lower | Sheetrk | Intact | -0.13 | Negative |
| Dining Room | 6 | 3 | Baseboard | Wood | Intact | 0 | Negative |
| Dining Room | 6 | 4 | Wall-upper | Sheetrk | Intact | 0.03 | Negative |
| Dining Room | 6 | 4 | Chairrail | Wood | Intact | 0.04 | Negative |
| Dining Room | 6 | 4 | Wall-lower | Sheetrk | Intact | 0.21 | Negative |
| Dining Room | 6 | 4 | Baseboard | Wood | Intact | 0.3 | Negative |
| Dining Room | 6 | 4 | Floor | Wood | Stain/varnish | 0.22 | Negative |
| Dining Room | 6 | 4 | Door Casing | Wood | Intact | 0.37 | Negative |
| Dining Room | 6 | 4 | Ceiling | Sheetrk | Intact | 0.05 | Negative |
| Dining Room | 6 | 1 | Ceiing Trim | Wood | Intact | -0.02 | Negative |
| | | | | | | | |
| Kitchen | 7 | 1 | Door Jamb | Wood | Non-intact | -0.26 | Negative |
| Kitchen | 7 | 1 | Door Casing | Wood | Non-intact | 0.14 | Negative |
| Kitchen | 7 | 1 | Wall | Sheetrk | Intact | 0.02 | Negative |
| Kitchen | 7 | 1 | Cabinet | Wood | Intact | -0.13 | Negative |
| Kitchen | 7 | 1 | Cabinet | Wood | Intact | 0 | Negative |
| Kitchen | 7 | 2 | Wall-upper | Sheetrk | Intact | 0.35 | Negative |
| Kitchen | 7 | 2 | Chair Rail | Wood | Intact | -0.11 | Negative |
| Kitchen | 7 | 2 | Wall-lower | Sheetrk | Intact | 0.13 | Negative |
| Kitchen | 7 | 2 | Baseboard | Wood | Intact | 0.11 | Negative |
| Kitchen | 7 | 2 | Door Casing | Wood | Intact | -0.09 | Negative |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Kitchen | 7 | 3 | Cabinet | Wood | Intact | 0.29 | Negative |
| Kitchen | 7 | 3 | Wall-upper | Sheetrk | Intact | -0.22 | Negative |
| Kitchen | 7 | 3 | Chair Rail | Wood | Intact | 0.04 | Negative |
| Kitchen | 7 | 3 | Wall-lower | Other | Intact | 0.19 | Negative |
| Kitchen | 7 | 3 | Door | Wood | Intact | 0.3 | Negative |
| Kitchen | 7 | 3 | Door Jamb | Wood | Intact | 0.04 | Negative |
| Kitchen | 7 | 3 | Door Casing | Wood | Intact | 0.09 | Negative |
| Kitchen | 7 | 3 | Cabinet | Wood | Intact | -0.11 | Negative |
| Kitchen | 7 | 3 | Cabinet | Wood | Intact | 0 | Negative |
| Kitchen | 7 | 4 | Window Sill | Wood | Intact | -0.06 | Negative |
| Kitchen | 7 | 4 | Window Trim | Wood | Non-intact | 0.12 | Negative |
| Kitchen | 7 | 4 | Cabinet | Wood | Intact | -0.02 | Negative |
| Kitchen | 7 | 4 | Ceiling | Sheetrk | Intact | -0.13 | Negative |
| Kitchen | 7 | 1 | Closet Door | Wood | Non-intact | -0.11 | Negative |
| Kitchen | 7 | 1 | Clo Dr Csng | Wood | Non-intact | 0.2 | Negative |
| Kitchen | 7 | 1 | Clo Dr Jamb | Wood | Non-intact | 0.15 | Negative |
| Kitchen | 7 | 1 | Shelf | Wood | Intact | -0.15 | Negative |
| Kitchen | 7 | 1 | Shelf Support | Wood | Intact | -0.06 | Negative |
| Kitchen | 7 | 4 | Radiator | Metal | Intact | 0.05 | Negative |
| | | | | | | | |
| Rear Exit | 8 | 1 | Door | Wood | Intact | 0.49 | Negative |
| Rear Exit | 8 | 1 | Door Casing | Wood | Intact | -0.15 | Negative |
| Rear Exit | 8 | 1 | Wall | Sheetrk | Intact | 0.14 | Negative |
| Rear Exit | 8 | 2 | Wall-uuper | Sheetrk | Intact | 0.6 | Negative |
| Rear Exit | 8 | 2 | Chairrail | Sheetrk | Intact | 0 | Negative |
| Rear Exit | 8 | 2 | Wall-lower | Sheetrk | Intact | 0.15 | Negative |
| Rear Exit | 8 | 2 | Baseboard | Sheetrk | Intact | -0.25 | Negative |
| Rear Exit | 8 | 2 | Door Casing | Wood | Intact | 0.09 | Negative |
| Rear Exit | 8 | 3 | Door | Wood | Intact | 0.28 | Negative |
| Rear Exit | 8 | 3 | Door Casing | Wood | Intact | 0.18 | Negative |
| Rear Exit | 8 | 3 | Wall | Wood | Intact | -0.04 | Negative |
| Rear Exit | 8 | 4 | Wall | Sheetrk | Intact | 0.17 | Negative |
| Rear Exit | 8 | 4 | Baseboard | Wood | Intact | 0 | Negative |
| Rear Exit | 8 | 4 | Wall | Sheetrk | Intact | 0.07 | Negative |
| Rear Exit | 8 | 4 | Baseboard | Wood | Intact | 0.03 | Negative |
| Rear Exit | 8 | 1 | Ceiling | Sheetrk | Intact | 0.11 | Negative |
| | | | | | | | |
| Laundry | 9 | 4 | Door Casing | Wood | Intact | -0.09 | Negative |
| Laundry | 9 | 4 | Wall-uuper | Sheetrk | Intact | 0.17 | Negative |
| Laundry | 9 | 4 | Chair rail | Wood | Intact | 0 | Negative |
| Laundry | 9 | 4 | Wall-lower | Sheetrk | Intact | 0.21 | Negative |
| Laundry | 9 | 4 | Baseboard | Wood | Intact | 0.12 | Negative |
| Laundry | 9 | 1 | Wall-uuper | Sheetrk | Intact | -0.02 | Negative |
| Laundry | 9 | 1 | Chair Rail | Wood | Intact | -0.12 | Negative |
| Laundry | 9 | 1 | Wall-lower | Wood | Intact | 0.3 | Negative |
| Laundry | 9 | 2 | Wall-uper | Sheetrk | Intact | -0.07 | Negative |
| Laundry | 9 | 2 | Chair Rail | Wood | Intact | -0.22 | Negative |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Laundry | 9 | 2 | Wall-lower | Sheetrk | Intact | 0.08 | Negative |
| Laundry | 9 | 3 | Wall | Sheetrk | Intact | 0.12 | Negative |
| Laundry | 9 | 3 | Wall | Sheetrk | Intact | 0.18 | Negative |
| Laundry | 9 | 3 | Radiator | Sheetrk | Intact | 0.23 | Negative |
| Laundry | 9 | 3 | Baseboard | Wood | Intact | 0.33 | Negative |
| Laundry | 9 | 3 | Window Sill | Wood | Intact | 0.49 | Negative |
| Laundry | 9 | 3 | Window Sash | Wood | Non-intact | -0.11 | Negative |
| Laundry | 9 | 3 | Window Trim | Wood | Intact | 0.09 | Negative |
| **Laundry** | **9** | **3** | **Window Well** | **Wood** | **Non-intact** | **3.97** | **Positive** |
| **Laundry** | **9** | **3** | **Window Jamb** | **Wood** | **Non-intact** | **3.11** | **Positive** |
| | | | | | | | |
| Bathroom | 10 | 2 | Door | Wood | Intact | 0.16 | Negative |
| Bathroom | 10 | 2 | Door Jamb | Wood | Intact | 0.04 | Negative |
| Bathroom | 10 | 2 | Door Casing | Wood | Intact | 0.17 | Negative |
| Bathroom | 10 | 2 | Wall | Sheetrk | Intact | 0.31 | Negative |
| Bathroom | 10 | 2 | Baseboard | Wood | Intact | 0.04 | Negative |
| Bathroom | 10 | 3 | Wall | Sheetrk | Intact | -0.28 | Negative |
| Bathroom | 10 | 3 | Closet Door | Wood | Intact | 0.11 | Negative |
| Bathroom | 10 | 3 | Clo Dr Csng | Wood | Intact | 0.14 | Negative |
| Bathroom | 10 | 3 | Wall | Sheetrk | Intact | 0.32 | Negative |
| Bathroom | 10 | 3 | Shelf | Wood | Intact | 0.17 | Negative |
| Bathroom | 10 | 3 | Shelf Support | Wood | Non-intact | -0.15 | Negative |
| Bathroom | 10 | 4 | Wall | Sheetrk | Intact | -0.25 | Negative |
| Bathroom | 10 | 4 | Window Sill | Wood | Intact | 0.23 | Negative |
| Bathroom | 10 | 4 | Window Sash | Wood | Intact | 0.17 | Negative |
| Bathroom | 10 | 4 | Window Trim | Wood | Intact | 0.02 | Negative |
| **Bathroom** | **10** | **4** | **Window Well** | **Wood** | **Non-intact** | **2** | **Positive** |
| **Bathroom** | **10** | **4** | **Window Jamb** | **Wood** | **Non-intact** | **3.88** | **Positive** |
| Bathroom | 10 | 4 | Ext Sash | Wood | Non-intact | 0.7 | Negative |
| Bathroom | 10 | 4 | Radiator | Metal | Intact | 0.46 | Negative |
| Bathroom | 10 | 1 | Wall | Sheetrk | Intact | -0.14 | Negative |
| Bathroom | 10 | 1 | Cabinet | Wood | Intact | -0.08 | Negative |
| Bathroom | 10 | 1 | Ceiling | Sheetrk | Intact | -0.23 | Negative |
| | | | | | | | |
| 2nd Fl Hall | 11 | 4 | Window Sill | Wood | Intact | -0.06 | Negative |
| 2nd Fl Hall | 11 | 4 | Window Sash | Wood | Intact | 0.55 | Negative |
| 2nd Fl Hall | 11 | 4 | Window Trim | Wood | Intact | 0.41 | Negative |
| **2nd Fl Hall** | **11** | **4** | **Window Well** | **Wood** | **Intact** | **2.29** | **Positive** |
| **2nd Fl Hall** | **11** | **4** | **Window Jamb** | **Wood** | **Non-intact** | **2.8** | **Positive** |
| 2nd Fl Hall | 11 | 4 | Ext sash | Wood | Non-intact | 0.01 | Negative |
| 2nd Fl Hall | 11 | 3 | Wall-upper | Sheetrk | Intact | 0.17 | Negative |
| 2nd Fl Hall | 11 | 3 | Chairrail | Wood | Intact | 0.27 | Negative |
| 2nd Fl Hall | 11 | 3 | Wall-lower | Wood | Intact | -0.05 | Negative |
| 2nd Fl Hall | 11 | 3 | Baseboard | Wood | Intact | 0.37 | Negative |
| 2nd Fl Hall | 11 | 3 | Floor | Wood | Stain/varnish | 0.07 | Negative |
| 2nd Fl Hall | 11 | 1 | Ceiling | Sheetrk | Intact | 0.06 | Negative |
| 2nd Fl Hall | 11 | 3 | Closet Door | Wood | Intact | 0.09 | Negative |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2nd Fl Hall | 11 | 3 | Clo Dr Csng | Wood | Intact | -0.14 | Negative |
| 2nd Fl Hall | 11 | 1 | Wall | Sheetrk | Intact | 0.37 | Negative |
| 2nd Fl Hall | 11 | 1 | Baseboard | Wood | Intact | -0.22 | Negative |
| 2nd Fl Hall | 11 | 2 | Wall | Sheetrk | Intact | 0.05 | Negative |
| 2nd Fl Hall | 11 | 2 | Baseboard | Wood | Intact | 0.43 | Negative |
| | | | | | | | |
| 2nd Fl Front Right BR | 12 | 3 | Door | Wood | Intact | 0.02 | Negative |
| 2nd Fl Front Right BR | 12 | 3 | Door Casing | Wood | Intact | 0.2 | Negative |
| 2nd Fl Front Right BR | 12 | 3 | Wall | Sheetrk | Intact | 0.43 | Negative |
| 2nd Fl Front Right BR | 12 | 3 | Baseboard | Wood | Intact | 0.18 | Negative |
| 2nd Fl Front Right BR | 12 | 2 | Wall | Sheetrk | Intact | 0 | Negative |
| 2nd Fl Front Right BR | 12 | 1 | Wall | Sheetrk | Intact | 0.49 | Negative |
| 2nd Fl Front Right BR | 12 | 1 | Baseboard | Wood | Intact | 0.17 | Negative |
| 2nd Fl Front Right BR | 12 | 4 | Wall | Sheetrk | Intact | 0.23 | Negative |
| 2nd Fl Front Right BR | 12 | 4 | Window Sill | Wood | Intact | 0.72 | Negative |
| 2nd Fl Front Right BR | 12 | 4 | Window Sash | Wood | Intact | 0.56 | Negative |
| 2nd Fl Front Right BR | 12 | 4 | Window Trim | Wood | Intact | 0.38 | Negative |
| **2nd Fl Front Right BR** | **12** | **4** | **Window Wall** | **Wood** | **Non-intact** | **2.67** | **Positive** |
| **2nd Fl Front Right BR** | **12** | **4** | **Window Jamb** | **Wood** | **Non-intact** | **1.95** | **Positive** |
| 2nd Fl Front Right BR | 12 | 4 | Ext Sash | Wood | Non-intact | 0.82 | Negative |
| 2nd Fl Front Right BR | 12 | 4 | Radiator | Metal | Intact | 0.22 | Negative |
| 2nd Fl Front Right BR | 12 | 1 | Ceiling | Sheetrk | Intact | -0.02 | Negative |
| 2nd Fl Front Right BR | 12 | 1 | Stair Tread | Wood | Intact | -0.57 | Negative |
| 2nd Fl Front Right BR | 12 | 1 | Stair Riser | Wood | Intact | 0.14 | Negative |
| 2nd Fl Front Right BR | 12 | 1 | Stair Stringer | Wood | Intact | 0.35 | Negative |
| 2nd Fl Front Right BR | 12 | 1 | Railing | Wood | Stain/varnish | 0.16 | Negative |
| 2nd Fl Front Right BR | 12 | 1 | Newel Post | Wood | Stain/varnish | -0.04 | Negative |
| 2nd Fl Front Right BR | 12 | 1 | Spindle | Wood | Intact | 0.12 | Negative |
| 2nd Fl Front Right BR | 12 | 3 | Closet Door | Wood | Intact | 0.04 | Negative |
| 2nd Fl Front Right BR | 12 | 3 | Clo Dr Csng | Wood | Intact | 0.03 | Negative |
| 2nd Fl Front Right BR | 12 | 3 | Shelf | Wood | Intact | -0.07 | Negative |
| 2nd Fl Front Right BR | 12 | 3 | Shelf Support | Wood | Intact | -0.33 | Negative |
| 2nd Fl Front Right BR | 12 | 3 | Wall | Sheetrk | Intact | -0.03 | Negative |
| 2nd Fl Front Right BR | 12 | 3 | Baseboard | Wood | Intact | -0.02 | Negative |
| 2nd Fl Front Right BR | 12 | 1 | Floor | Wood | Stain/varnish | 0.02 | Negative |
| | | | | | | | |
| 2nd Fl Master BR | 13 | 4 | Door | Wood | Non-intact | 0.14 | Negative |
| 2nd Fl Master BR | 13 | 4 | Door Jamb | Wood | Intact | 0.35 | Negative |
| 2nd Fl Master BR | 13 | 4 | Door Casing | Wood | Intact | 0.04 | Negative |
| 2nd Fl Master BR | 13 | 4 | Wall | Sheetrk | Intact | 0.06 | Negative |
| 2nd Fl Master BR | 13 | 4 | Baseboard | Wood | Intact | 0.13 | Negative |
| 2nd Fl Master BR | 13 | 1 | Wall | Sheetrk | Intact | 0.17 | Negative |
| 2nd Fl Master BR | 13 | 1 | Baseboard | Wood | Intact | 0.22 | Negative |
| 2nd Fl Master BR | 13 | 1 | Floor | Wood | Stain/varnish | -0.03 | Negative |
| 2nd Fl Master BR | 13 | 1 | Window Sill | Wood | Intact | 0.31 | Negative |
| 2nd Fl Master BR | 13 | 1 | Window Trim | Wood | Intact | 0.09 | Negative |
| 2nd Fl Master BR | 13 | 1 | Window Jamb | Wood | Intact | 0.18 | Negative |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2nd Fl Master BR | 13 | 1 | Radiator | Metal | Intact | 0.12 | Negative |
| 2nd Fl Master BR | 13 | 2 | Wall | Sheetrk | Intact | 0.39 | Negative |
| 2nd Fl Master BR | 13 | 2 | Closet Door | Wood | Intact | -0.16 | Negative |
| 2nd Fl Master BR | 13 | 2 | Clo Dr Csng | Wood | Intact | 0.17 | Negative |
| 2nd Fl Master BR | 13 | 2 | Shelf | Wood | Intact | -0.05 | Negative |
| 2nd Fl Master BR | 13 | 2 | Shelf Support | Wood | Intact | -0.14 | Negative |
| 2nd Fl Master BR | 13 | 3 | Wall | Sheetrk | Intact | -0.3 | Negative |
| 2nd Fl Master BR | 13 | 3 | Baseboard | Wood | Intact | 0.1 | Negative |
| 2nd Fl Master BR | 13 | 1 | Floor | Wood | Stain/varnish | 0 | Negative |
| 2nd Fl Master BR | 13 | 1 | Ceiling | Sheetrk | Intact | 0.28 | Negative |
| | | | | | | | |
| Master Closet | 14 | 4 | Door | Wood | Stain/varnish | 0.04 | Negative |
| Master Closet | 14 | 4 | Door Casing | Wood | Intact | 0.22 | Negative |
| Master Closet | 14 | 4 | Wall | Sheetrk | Intact | 0.28 | Negative |
| Master Closet | 14 | 4 | Baseboard | Wood | Intact | -0.02 | Negative |
| Master Closet | 14 | 1 | Ceiling | Sheetrk | Intact | -0.25 | Negative |
| Master Closet | 14 | 3 | Wall | Sheetrk | Intact | -0.04 | Negative |
| Master Closet | 14 | 3 | Cabinet | Wood | Intact | 0.09 | Negative |
| Master Closet | 14 | 2 | Wall | Wood | Intact | -0.16 | Negative |
| Master Closet | 14 | 2 | Radiator | Metal | Intact | 0.83 | Negative |
| Master Closet | 14 | 2 | Window Sill | Wood | Intact | 0.49 | Negative |
| Master Closet | 14 | 2 | Window Sash | Wood | Intact | 0.07 | Negative |
| Master Closet | 14 | 2 | Window Trim | Wood | Intact | 0.23 | Negative |
| **Master Closet** | **14** | **2** | **Window Wall** | **Wood** | **Non-Intact** | **5.37** | **Positive** |
| **Master Closet** | **14** | **2** | **Window Jamb** | **Wood** | **Non-Intact** | **3.91** | **Positive** |
| Master Closet | 14 | 1 | Closet Door | Wood | Stain/varnish | 0.22 | Negative |
| Master Closet | 14 | 1 | Shelf | Metal | Intact | 0.16 | Negative |
| Master Closet | 14 | 1 | Shelf Support | Metal | Intact | 0.04 | Negative |
| Master Closet | 14 | 1 | Wall | Sheetrk | Intact | -0.21 | Negative |
| Master Closet | 14 | 1 | Baseboard | Sheetrk | Intact | 0.05 | Negative |
| | | | | | | | |
| 2nd Fl Rear Bedroom | 15 | 4 | Door | Wood | Stain/varnish | 0.09 | Negative |
| 2nd Fl Rear Bedroom | 15 | 4 | Door Casing | Wood | Intact | 0.05 | Negative |
| 2nd Fl Rear Bedroom | 15 | 4 | Wall | Sheetrk | Intact | 0.17 | Negative |
| 2nd Fl Rear Bedroom | 15 | 4 | Closet Door | Wood | Stain/varnish | 0.15 | Negative |
| 2nd Fl Rear Bedroom | 15 | 4 | Clo Dr Csng | Wood | Stain/varnish | 0.08 | Negative |
| 2nd Fl Rear Bedroom | 15 | 4 | Shelf | Wood | Stain/varnish | 0.08 | Negative |
| 2nd Fl Rear Bedroom | 15 | 4 | Shelf Support | Wood | Intact | -0.06 | Negative |
| 2nd Fl Rear Bedroom | 15 | 3 | Wall | Sheetrk | Intact | 0.09 | Negative |
| 2nd Fl Rear Bedroom | 15 | 3 | Window Sill | Wood | Intact | 0.2 | Negative |
| 2nd Fl Rear Bedroom | 15 | 3 | Window Trim | Wood | Intact | 0.14 | Negative |
| 2nd Fl Rear Bedroom | 15 | 3 | Window Jamb | Wood | Intact | 0.13 | Negative |
| 2nd Fl Rear Bedroom | 15 | 3 | Radiator | Metal | Intact | 0 | Negative |
| 2nd Fl Rear Bedroom | 15 | 2 | Wall | Sheetrk | Intact | 0.11 | Negative |
| 2nd Fl Rear Bedroom | 15 | 2 | Closet Door | Wood | Intact | -0.05 | Negative |
| 2nd Fl Rear Bedroom | 15 | 2 | Shelf | Wood | Intact | 0.02 | Negative |
| 2nd Fl Rear Bedroom | 15 | 1 | Wall | Sheetrk | Intact | 0.11 | Negative |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2nd Fl Rear Bedroom | 15 | 1 | Baseboard | Wood | Intact | 0.09 | Negative |
| 2nd Fl Rear Bedroom | 15 | 1 | Floor | Wood | Stain/varnish | -0.41 | Negative |
| 2nd Fl Rear Bedroom | 15 | 1 | Ceiling | Sheetrk | Intact | -0.3 | Negative |
| | | | | | | | |
| 2nd Floor Bath | 16 | 1 | Door | Wood | Intact | -0.27 | Negative |
| 2nd Floor Bath | 16 | 1 | Door Casing | Wood | Intact | 0.11 | Negative |
| 2nd Floor Bath | 16 | 1 | Wall | Sheetrk | Intact | 0.13 | Negative |
| 2nd Floor Bath | 16 | 1 | Door Jamb | Wood | Intact | 0.1 | Negative |
| 2nd Floor Bath | 16 | 1 | Ceiling | Sheetrk | Intact | 0.13 | Negative |
| 2nd Floor Bath | 16 | 1 | Closet Door | Wood | Stain/varnish | 0.21 | Negative |
| 2nd Floor Bath | 16 | 1 | Clo Dr Csng | Wood | Intact | 0.07 | Negative |
| 2nd Floor Bath | 16 | 1 | Shelf | Wood | Intact | 0.11 | Negative |
| 2nd Floor Bath | 16 | 1 | Shelf Support | Wood | Intact | 0.18 | Negative |
| 2nd Floor Bath | 16 | 1 | Ceiling | Sheetrk | Intact | 0.16 | Negative |
| 2nd Floor Bath | 16 | 2 | Wall | Sheetrk | Intact | 0.01 | Negative |
| 2nd Floor Bath | 16 | 3 | Wall | Sheetrk | Intact | 0.26 | Negative |
| 2nd Floor Bath | 16 | 4 | Wall | Sheetrk | Intact | 0.27 | Negative |
| 2nd Floor Bath | 16 | 4 | Wall | Sheetrk | Intact | 0.12 | Negative |
| 2nd Floor Bath | 16 | 4 | Window Sill | Wood | Intact | 0.66 | Negative |
| 2nd Floor Bath | 16 | 4 | Window Sash | Wood | Intact | 0.23 | Negative |
| 2nd Floor Bath | 16 | 4 | Window Trim | Wood | Intact | 0.4 | Negative |
| **2nd Floor Bath** | **16** | **4** | **Window Well** | **Wood** | **Non-intact** | **2.15** | **Positive** |
| **2nd Floor Bath** | **16** | **4** | **Window Jamb** | **Wood** | **Non-intact** | **3.46** | **Positive** |
| 2nd Floor Bath | 16 | 4 | Radiator | Metal | Intact | 0.71 | Negative |
| 2nd Floor Bath | 16 | 1 | Ceiling | Sheetrk | Intact | -0.15 | Negative |
| | | | | | | | |
| 3rd Floor Hall | 17 | 4 | Window Sill | Wood | Intact | 0.18 | Negative |
| 3rd Floor Hall | 17 | 4 | Window Sash | Wood | Intact | 0.11 | Negative |
| 3rd Floor Hall | 17 | 4 | Window Trim | Wood | Intact | -0.13 | Negative |
| 3rd Floor Hall | 17 | 4 | Window Trim | Wood | Intact | 0.01 | Negative |
| **3rd Floor Hall** | **17** | **4** | **Window Well** | **Wood** | **Non-intact** | **2.11** | **Positive** |
| **3rd Floor Hall** | **17** | **4** | **Window Jamb** | **Wood** | **Non-intact** | **1.63** | **Positive** |
| 3rd Floor Hall | 17 | 4 | Radiator | Metal | Intact | 0.1 | Negative |
| 3rd Floor Hall | 17 | 4 | Wall | Sheetrk | Intact | 0.28 | Negative |
| 3rd Floor Hall | 17 | 3 | Wall | Sheetrk | Intact | -0.06 | Negative |
| 3rd Floor Hall | 17 | 3 | Baseboard | Wood | Intact | -0.06 | Negative |
| 3rd Floor Hall | 17 | 1 | Floor | Wood | Stain/varnish | -0.02 | Negative |
| 3rd Floor Hall | 17 | 1 | Closet Door | Wood | Intact | 0.08 | Negative |
| 3rd Floor Hall | 17 | 1 | Clo Dr Csng | Wood | Intact | 0.1 | Negative |
| 3rd Floor Hall | 17 | 1 | Closet Door to attic | Wood | Intact | -0.05 | Negative |
| 3rd Floor Hall | 17 | 1 | Clo Dr Csng | Wood | Intact | -0.12 | Negative |
| 3rd Floor Hall | 17 | 1 | Wall in closet | Sheetrk | Intact | 0.09 | Negative |
| 3rd Floor Hall | 17 | 1 | Shelf in closet | Wood | Intact | 0.13 | Negative |
| 3rd Floor Hall | 17 | 1 | Shelf Support | Wood | Intact | 0.05 | Negative |
| 3rd Floor Hall | 17 | 1 | Ceiling | Sheetrk | Non-intact | -0.06 | Negative |
| 3rd Floor Hall | 17 | 2 | Wall | Sheetrk | Intact | 0 | Negative |
| 3rd Floor Hall | 17 | 2 | Door | Wood | Intact | 0.08 | Negative |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3rd Floor Hall | 17 | 2 | Door Jamb | Wood | Intact | 0.31 | Negative |
| 3rd Floor Hall | 17 | 2 | Door Casing | Wood | Intact | -0.16 | Negative |
| 3rd Floor Hall | 17 | 2 | Wall | Sheetrk | Intact | -0.04 | Negative |
| 3rd Floor Hall | 17 | 2 | Closet Door | Wood | Intact | 0.36 | Negative |
| 3rd Floor Hall | 17 | 2 | Clo Dr Csng | Wood | Intact | -0.04 | Negative |
| 3rd Floor Hall | 17 | 2 | Wall | Sheetrk | Intact | 0.23 | Negative |
| 3rd Floor Hall | 17 | 2 | Baseboard | Wood | Intact | 0.05 | Negative |
| | | | | | | | |
| 3rd Fl Bedroom | 18 | 4 | Door | Wood | Intact | 0.05 | Negative |
| 3rd Fl Bedroom | 18 | 4 | Door Casing | Wood | Intact | 0.27 | Negative |
| 3rd Fl Bedroom | 18 | 4 | Wall | Sheetrk | Intact | 0.26 | Negative |
| 3rd Fl Bedroom | 18 | 4 | Baseboard | Wood | Intact | 0.14 | Negative |
| 3rd Fl Bedroom | 18 | 4 | Closet Door | Wood | Intact | -0.22 | Negative |
| 3rd Fl Bedroom | 18 | 4 | Clo Dr Csng | Wood | Intact | 0.17 | Negative |
| 3rd Fl Bedroom | 18 | 4 | Shelf | Wood | Intact | 0.35 | Negative |
| 3rd Fl Bedroom | 18 | 4 | Shelf Support | Sheetrk | Intact | -0.12 | Negative |
| 3rd Fl Bedroom | 18 | 4 | Wall | Sheetrk | Intact | -0.08 | Negative |
| 3rd Fl Bedroom | 18 | 1 | Wall | Sheetrk | Intact | -0.03 | Negative |
| 3rd Fl Bedroom | 18 | 1 | Ceiling | Sheetrk | Intact | 0.66 | Negative |
| 3rd Fl Bedroom | 18 | 1 | Baseboard | Wood | Intact | -0.01 | Negative |
| 3rd Fl Bedroom | 18 | 2 | Wall | Sheetrk | Intact | -0.12 | Negative |
| 3rd Fl Bedroom | 18 | 2 | Shelf | Wood | Intact | -0.03 | Negative |
| 3rd Fl Bedroom | 18 | 2 | Window Sill | Wood | Intact | -0.04 | Negative |
| 3rd Fl Bedroom | 18 | 2 | Window Sash | Wood | Intact | 0.85 | Negative |
| 3rd Fl Bedroom | 18 | 2 | Window Trim | Wood | Intact | 0.07 | Negative |
| **3rd Fl Bedroom** | **18** | **2** | **Window Wall** | **Wood** | **Non-intact** | **5.26** | **Positive** |
| **3rd Fl Bedroom** | **18** | **2** | **Window Jamb** | **Wood** | **Non-intact** | **3.41** | **Positive** |
| **3rd Fl Bedroom** | **18** | **2** | **Ext Sash** | **Wood** | **Non-intact** | **2.12** | **Positive** |
| 3rd Fl Bedroom | 18 | 2 | Radiator cover | Metal | Intact | 0.25 | Negative |
| 3rd Fl Bedroom | 18 | 1 | Floor | Wood | Stain/varnish | 0.11 | Negative |
| 3rd Fl Bedroom | 18 | 1 | Ceiling | Sheetrk | Intact | 0.25 | Negative |
| 3rd Fl Bedroom | 18 | 1 | Wall | Sheetrk | Intact | 0.03 | Negative |
| 3rd Fl Bedroom | 18 | 3 | Baseboard | Wood | Intact | 0.32 | Negative |
| 3rd Fl Bedroom | 18 | 1 | Ceiling | Sheetrk | Intact | 0.46 | Negative |
| 3rd Fl Bedroom | 18 | 1 | Closet Door | Sheetrk | Intact | -0.05 | Negative |
| 3rd Fl Bedroom | 18 | 4 | Clo Dr Csng | Wood | Intact | -0.19 | Negative |
| 3rd Fl Bedroom | 18 | 4 | Shelf | Wood | Intact | -0.23 | Negative |
| 3rd Fl Bedroom | 18 | 4 | Shelf Support | Wood | Intact | -0.14 | Negative |
| 3rd Fl Bedroom | 18 | 4 | Wall | Sheetrk | Intact | -0.13 | Negative |
| | | | | | | | |
| 3rd fl Bath | 19 | 1 | Door | Wood | Intact | -0.09 | Negative |
| 3rd fl Bath | 19 | 1 | Door Jamb | Wood | Intact | 0.14 | Negative |
| 3rd fl Bath | 19 | 1 | Door Casing | Wood | Intact | -0.14 | Negative |
| 3rd fl Bath | 19 | 1 | Wall | Sheetrk | Intact | -0.04 | Negative |
| 3rd fl Bath | 19 | 1 | Ceiling | Sheetrk | Intact | 0.2 | Negative |
| 3rd fl Bath | 19 | 2 | Cabinet | Wood | Intact | -0.05 | Negative |
| 3rd fl Bath | 19 | 2 | Wall | Sheetrk | Intact | -0.3 | Negative |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3rd fl Bath | 19 | 2 | Cabinet | Wood | Intact | 0.03 | Negative |
| 3rd fl Bath | 19 | 3 | Wall | Sheetrk | Intact | 0.55 | Negative |
| 3rd fl Bath | 19 | 3 | Window Sill | Wood | Intact | 0.5 | Negative |
| 3rd fl Bath | 19 | 3 | Window Sash | Wood | Non-intact | 0.39 | Negative |
| 3rd fl Bath | 19 | 3 | Window Trim | Wood | Non-intact | 0.11 | Negative |
| **3rd fl Bath** | **19** | **3** | **Window Well** | **Wood** | **Non-intact** | **3.22** | **Positive** |
| **3rd fl Bath** | **19** | **3** | **Window Jamb** | **Wood** | **Non-intact** | **3.08** | **Positive** |
| **3rd fl Bath** | **19** | **3** | **Ext Sash** | **Wood** | **Non-intact** | **1.22** | **Positive** |
| 3rd fl Bath | 19 | 3 | Radiator | Wood | Intact | -0.08 | Negative |
| 3rd fl Bath | 19 | 4 | Wall-upper | Sheetrk | Intact | -0.22 | Negative |
| 3rd fl Bath | 19 | 4 | Chair rail | Wood | Intact | 0.1 | Negative |
| 3rd fl Bath | 19 | 4 | Wall-lower | other | Intact | 0.34 | Negative |
| 3rd fl Bath | 19 | 4 | Baseboard | Wood | Intact | 0.19 | Negative |
| 3rd fl Bath | 19 | 1 | Ceiling | Sheetrk | Intact | -0.23 | Negative |
| | | | | | | | |
| Calibration | | | | | | 1.18 | Okay |
| | | | | | | | |
| LL Office Reception | 20 | 1 | Door | Metal | Intact | -0.12 | Negative |
| LL Office Reception | 20 | 1 | Door jamb | Wood | Intact | -0.19 | Negative |
| LL Office Reception | 20 | 1 | Door Casing | Wood | Intact | 0.17 | Negative |
| LL Office Reception | 20 | 4 | Wall | Sheetrk | Intact | -0.02 | Negative |
| LL Office Reception | 20 | 2 | Wall | Sheetrk | Intact | 0.04 | Negative |
| LL Office Reception | 20 | 1 | Ceiling | Sheetrk | Intact | 0.21 | Negative |
| LL Office Reception | 20 | 2 | Baseboard | Wood | Intact | 0.02 | Negative |
| LL Office Reception | 20 | 2 | Wall | Sheetrk | Intact | -0.48 | Negative |
| LL Office Reception | 20 | 4 | Wall | Sheetrk | Intact | 0.02 | Negative |
| LL Office Reception | 20 | 4 | Baseboard | Wood | Intact | -0.09 | Negative |
| LL Office Reception | 20 | 2 | Door | Wood | Intact | 0.14 | Negative |
| LL Office Reception | 20 | 2 | Door Casing | Wood | Intact | 0.24 | Negative |
| LL Office Reception | 20 | 2 | Wall | Sheetrk | Intact | 0.13 | Negative |
| LL Office Reception | 20 | 3 | Cabinet | Wood | Intact | 0.17 | Negative |
| | | | | | | | |
| LL Bath | 21 | 1 | Door | Other | Intact | -0.17 | Negative |
| LL Bath | 21 | 1 | Door Jamb | Wood | Intact | 0.01 | Negative |
| LL Bath | 21 | 1 | Door Casing | Wood | Intact | -0.25 | Negative |
| LL Bath | 21 | 1 | Wall | Sheetrk | Intact | -0.05 | Negative |
| LL Bath | 21 | 1 | Baseboard | Wood | Intact | 0.01 | Negative |
| LL Bath | 21 | 1 | Wall | Sheetrk | Intact | -0.19 | Negative |
| LL Bath | 21 | 1 | Baseboard | Wood | Intact | 0.12 | Negative |
| LL Bath | 21 | 3 | Wall | Sheetrk | Intact | 0.02 | Negative |
| LL Bath | 21 | 3 | Baseboard | Wood | Intact | 0.01 | Negative |
| LL Bath | 21 | 3 | Wall | Sheetrk | Intact | 0.1 | Negative |
| LL Bath | 21 | 3 | Baseboard | Wood | Intact | -0.04 | Negative |
| LL Bath | 21 | 1 | Ceiling | Sheetrk | Intact | 0.15 | Negative |
| | | | | | | | |
| LL Rear Right Office | 22 | 1 | Door | Other | Intact | -0.28 | Negative |
| LL Rear Right Office | 22 | 1 | Door Jamb | Wood | Intact | 0.01 | Negative |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LL Rear Right Office | 22 | 1 | Door Casing | Wood | Intact | 0.19 | Negative |
| LL Rear Right Office | 22 | 1 | Wall* | Sheetrk | Intact | 19.79 | Positive |
| LL Rear Right Office | 22 | 1 | Wall* | Sheetrk | Intact | 20.49 | Positive |
| LL Rear Right Office | 22 | 2 | Wall | Sheetrk | Intact | -0.35 | Negative |
| LL Rear Right Office | 22 | 3 | Wall | Sheetrk | Intact | 0.25 | Negative |
| LL Rear Right Office | 22 | 3 | Baseboard | Wood | Intact | -0.01 | Negative |
| LL Rear Right Office | 22 | 4 | Wall | Sheetrk | Intact | 0.1 | Negative |
| LL Rear Right Office | 22 | 4 | Window Sill | Wood | Intact | 0.11 | Negative |
| LL Rear Right Office | 22 | 1 | Wall* | Sheetrk | Intact | 19.14 | Positive |
| LL Rear Right Office | 22 | 1 | Ceiling* | Sheetrk | Intact | 6.55 | Positive |
| LL Rear Right Office | 22 | 1 | Ceiling | Sheetrk | Intact | -0.04 | Negative |
| | | | *lead plate - former x-ray room | | | | |
| LL Middle Office | 23 | 2 | Door | Other | Intact | -0.33 | Negative |
| LL Middle Office | 23 | 2 | Door Casing | Wood | Intact | -0.26 | Negative |
| LL Middle Office | 23 | 2 | Wall | Sheetrk | Intact | 0.15 | Negative |
| LL Middle Office | 23 | 2 | Baseboard | Wood | Intact | 0.09 | Negative |
| LL Middle Office | 23 | 3 | Wall | Sheetrk | Intact | -0.13 | Negative |
| LL Middle Office | 23 | 3 | Baseboard | Wood | Intact | -0.12 | Negative |
| LL Middle Office | 23 | 3 | Wall | Sheetrk | Intact | 0.81 | Negative |
| LL Middle Office | 23 | 3 | Wall | Sheetrk | Intact | -0.02 | Negative |
| LL Middle Office | 23 | 3 | Baseboard | Wood | Intact | 0.11 | Negative |
| LL Middle Office | 23 | 4 | Window Sill | Wood | Intact | 0 | Negative |
| LL Middle Office | 23 | 1 | Ceiling | Sheetrk | Intact | 0.14 | Negative |
| LL Middle Office | 23 | 4 | Closet Door | Other | Intact | -0.24 | Negative |
| LL Middle Office | 23 | 4 | Clo Dr Csng | Wood | Intact | 0.33 | Negative |
| LL Middle Office | 23 | 4 | Wall | Sheetrk | Intact | 0.13 | Negative |
| LL Middle Office | 23 | 4 | Baseboard | Wood | Intact | 0.14 | Negative |
| LL Front Office | 24 | 2 | Door | Wood | Intact | -0.39 | Negative |
| LL Front Office | 24 | 2 | Door Casing | Wood | Intact | 0.15 | Negative |
| LL Front Office | 24 | 2 | Wall | Sheetrk | Intact | 0.02 | Negative |
| LL Front Office | 24 | 3 | Wall | Sheetrk | Intact | 0.08 | Negative |
| LL Front Office | 24 | 3 | Baseboard | Wood | Intact | 0.09 | Negative |
| LL Front Office | 24 | 4 | Wall | Sheetrk | Intact | 0.06 | Negative |
| LL Front Office | 24 | 4 | Baseboard | Wood | Intact | -0.34 | Negative |
| LL Front Office | 24 | 1 | Ceiling | Sheetrk | Intact | 0.54 | Negative |
| LL Front Office | 24 | 4 | Closet Door | Other | Intact | 0.02 | Negative |
| LL Front Office | 24 | 4 | Clo Dr Csng | Wood | Intact | 0.01 | Negative |
| LL Front Office | 24 | 1 | Wall | Sheetrk | Intact | -0.37 | Negative |
| LL Front Office | 24 | 1 | Baseboard | Wood | Intact | -0.33 | Negative |
| LL Front Office | 24 | 2 | Wall | Sheetrk | Intact | -0.08 | Negative |
| LL Front Office | 24 | 2 | Door | Metal | Intact | -0.13 | Negative |
| LL Front Office | 24 | 2 | Door Casing | Metal | Intact | 0.03 | Negative |
| LL Garage | 25 | 4 | Door | Metal | Intact | 0.1 | Negative |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LL Garage | 25 | 4 | Door Casing | Wood | Intact | 0.2 | Negative |
| LL Garage | 25 | 4 | Wall | Masonry | Intact | 0.21 | Negative |
| LL Garage | 25 | 4 | Wall | Masonry | Intact | 0.62 | Negative |
| **LL Garage** | **25** | **1** | **Door** | **Wood** | **Non-intact** | **4.64** | **positive** |
| LL Garage | 25 | 2 | Wall | Masonry | Intact | -0.09 | Negative |
| | | | | | | | |
| Exterior | 26 | Rear | Door -Dining Room | Metal | Intact | -0.2 | Negative |
| Exterior | 26 | Rear | Door Casing | Wood | Non-intact | -0.13 | Negative |
| **Exterior** | **26** | **Rear** | **Threshold** | **Wood** | **Non-intact** | **2.64** | **Positive** |
| **Exterior** | **26** | **Rear** | **Door to rear exit** | **Wood** | **Non-intact** | **2.64** | **Positive** |
| **Exterior** | **26** | **Rear** | **Door Casing** | **Wood** | **Non-intact** | **2.69** | **Positive** |
| Exterior | 26 | Rear | Ext Sash | Metal | Intact | 0.45 | Negative |
| Exterior | 26 | Front | Door-Entry | Wood | Non-intact | 0.12 | Negative |
| Exterior | 26 | Front | Door Jamb | Wood | Non-intact | 0.26 | Negative |
| Exterior | 26 | Front | Door Casing | Wood | Non-intact | 0.19 | Negative |
| Exterior | 26 | Front | Threshold | Wood | Non-intact | 0.22 | Negative |
| Exterior | 26 | Front | Kick Plate | Wood | Non-intact | 0.2 | Negative |
| Exterior | 26 | Front | Window Trim | Wood | Non-intact | 0.58 | Negative |
| Exterior | 26 | Front | Porch Floor | Masonry | Non-intact | 0.03 | Negative |
| Exterior | 26 | Front | Soffit over garage | Wood | Non-intact | -0.4 | Negative |
| Exterior | 26 | Front | Wall | Masonry | Intact | 0.4 | Negative |
| Exterior | 26 | Front | Door to Office | Metal | Intact | -0.16 | Negative |
| Exterior | 26 | Front | Door Casing | Wood | Intact | 0.19 | Negative |
| **Exterior** | **26** | **Front** | **Garage Door** | **Wood** | **Intact** | **6.64** | **Positive** |
| Exterior | 26 | Front | Ceiling over gar dr | Masonry | Non-intact | 0.42 | Negative |

*MANAGEMENT PLAN*

*FOR*

*INTACT LEAD-BASED PAINT CONTAINING SURFACES*

*As a homeowner, you should know that painted surfaces throughout this house have been found to contain toxic levels of lead. These surfaces do not have to be abated as they are presently intact. Lead paint and lead dust pose a health risk and are especially dangerous to young children and pregnant woman. The inspection report lists areas that contain lead based paint. Lead paint is presumed to exist on all similarly painted surfaces whether tested or not. If currently intact surfaces become nonintact then lead hazard remediation procedures must be invoked.*

*As the homeowner, you are responsible for observing and monitoring all areas that have been identified or presume to contain lead based paint. Further testing and possible abatement may be needed if any of the surfaces are to be disturbed during renovations or if the surfaces become damaged. Defective surfaces are characterized by cracking, blistering, chalking or peeling paint. If any of these conditions arise, you should contact a qualified lead abatement contractor, a Renovate Right Certified Contractor or the local health department. Do not attempt to remove lead containing surfaces yourself as the lead dust that may arise is extremely hazardous.*

*As the homeowner, you are responsible for warning all persons entering your home that lead based paint is present. This includes tenants, visitors, etc. In April 2010, a new EPA regulation requires that any contractor who disturbs more than six square feet of painted surface 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).*

*Children are especially susceptible to lead hazards. As with any lead containing surface, children should not be allowed to mouth or chew on woodwork. Hygiene practices must include hand washing before meals.*

***If any child is found to have an elevated blood lead level then you must notify the local health department.***

# ATTACHMENT F

# PCB ANALYTICAL DATA

80 Lupes Drive
Stratford, CT 06615

Tel: (203) 377-9984
Fax: (203) 377-9952
e-mail: cet1@cetlabs.com

Client: Mr. Kevin Bogue
Facility Support Services
2685 State Street
Hamden, CT 06517

# Analytical Report
# CET# 4050463

Report Date: May 28, 2014
Project: 22214
Project Number: 22214-1533

Connecticut Laboratory Certificate: PH 0116
Massachussetts laboratory Certificate.: M-CT903
Rhode Island Certification: 199

New York Certification: 11982
Florida Laboratory Certification: E871064

## SAMPLE SUMMARY

The sample(s) were received at 4.2°C.

This report contains analytical data associated with following samples only.

| Sample ID | Laboratory ID | Matrix | Collection Date/Time | Receipt Date |
|---|---|---|---|---|
| 20140514_1533_P1 | 4050463-01 | Solid | 5/14/2014 | 05/20/2014 |

**Client Sample ID 20140514_1533_P1**
**Lab ID: 4050463-01**

**PCBs by Soxhlet** **Analyst: CA**

**Method: EPA 8082A** **Matrix: Solid**

| Analyte | Result (mg/kg (As Rec)) | RL (mg/kg (As Rec)) | Dilution | Prep Method | Batch | Prepared | Date/Time Analyzed | Notes |
|---|---|---|---|---|---|---|---|---|
| PCB-1016 | ND | 0.80 | 4 | EPA 3540C | B4E2228 | 05/22/2014 | 05/27/2014 15:48 | |
| PCB-1221 | ND | 0.80 | 4 | EPA 3540C | B4E2228 | 05/22/2014 | 05/27/2014 15:48 | |
| PCB-1232 | ND | 0.80 | 4 | EPA 3540C | B4E2228 | 05/22/2014 | 05/27/2014 15:48 | |
| PCB-1242 | ND | 0.80 | 4 | EPA 3540C | B4E2228 | 05/22/2014 | 05/27/2014 15:48 | |
| PCB-1248 | ND | 0.80 | 4 | EPA 3540C | B4E2228 | 05/22/2014 | 05/27/2014 15:48 | |
| PCB-1254 | ND | 0.80 | 4 | EPA 3540C | B4E2228 | 05/22/2014 | 05/27/2014 15:48 | |
| PCB-1260 | ND | 0.80 | 4 | EPA 3540C | B4E2228 | 05/22/2014 | 05/27/2014 15:48 | |
| PCB-1268 | ND | 0.80 | 4 | EPA 3540C | B4E2228 | 05/22/2014 | 05/27/2014 15:48 | |
| PCB-1262 | ND | 0.80 | 4 | EPA 3540C | B4E2228 | 05/22/2014 | 05/27/2014 15:48 | |
| *Surrogate: TCMX* | *89.8 %* | *50 - 150* | | | B4E2228 | 05/22/2014 | *05/27/2014 15:48* | |
| *Surrogate: DCB* | *61.0 %* | *50 - 150* | | | B4E2228 | 05/22/2014 | *05/27/2014 15:48* | |

CET #:4050463
Project: 22214
Project Number: 22214-1533

## QUALITY CONTROL SECTION

### Batch B4E2228 - EPA 8082A

| Analyte | Result (mg/kg (As Rec)) | RL (mg/kg (As Rec)) | Spike Level | Source Result | % Rec | % Rec Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **Blank (B4E2228-BLK1)** | | | | | Prepared: 5/22/2014 Analyzed: 5/27/2014 | | | | |
| PCB-1016 | ND | 0.20 | | | | | | | |
| PCB-1221 | ND | 0.20 | | | | | | | |
| PCB-1232 | ND | 0.20 | | | | | | | |
| PCB-1242 | ND | 0.20 | | | | | | | |
| PCB-1248 | ND | 0.20 | | | | | | | |
| PCB-1254 | ND | 0.20 | | | | | | | |
| PCB-1260 | ND | 0.20 | | | | | | | |
| PCB-1268 | ND | 0.20 | | | | | | | |
| PCB-1262 | ND | 0.20 | | | | | | | |
| *Surrogate: TCMX* | | | | | *97.4* | *50 - 150* | | | |
| *Surrogate: DCB* | | | | | *85.0* | *50 - 150* | | | |
| **LCS (B4E2228-BS1)** | | | | | Prepared: 5/22/2014 Analyzed: 5/27/2014 | | | | |
| PCB-1016 | 0.924 | 0.20 | 1.000 | | 92.4 | 50 - 150 | | | |
| PCB-1260 | 0.865 | 0.20 | 1.000 | | 86.5 | 50 - 150 | | | |
| *Surrogate: TCMX* | | | | | *97.5* | *50 - 150* | | | |
| *Surrogate: DCB* | | | | | *80.6* | *50 - 150* | | | |
| **Calibration Check (B4E2228-CCV1)** | | | | | Prepared: 5/22/2014 Analyzed: 5/27/2014 | | | | |
| PCB-1016 | 1.12 | 0.20 | 1.000 | | 112 | 80 - 120 | | | |
| PCB-1260 | 0.887 | 0.20 | 1.000 | | 88.7 | 80 - 120 | | | |
| *Surrogate: TCMX* | | | | | *119* | *50 - 150* | | | |
| *Surrogate: DCB* | | | | | *82.9* | *50 - 150* | | | |

80 Lupes Drive
Stratford, CT 06615

Tel: (203) 377-9984
Fax: (203) 377-9952
email: cet1@cetlabs.com

## Quality Control Definitions and Abbreviations

| | |
|---|---|
| Internal Standard (IS) | An Analyte added to each sample or sample extract. An internal standard is used to monitor retention time, calculate relative response, and quantify analytes of interest. |
| Surrogate Recovery | The % recovery for non-tarer organic compounds that are spiked into all samples. Used to determine method performance. |
| Continuing Calibration | An analytical standard analyzed with each set of samples to verify initial calibration of the system. |
| Batch | Samples that are analyzed together with the same method, sequence and lot of reagents within the same time period. |
| ND | Not detected |
| RL | Reporting Limit |
| Dilution | Multiplier added to detection levels (MDL) and/or sample results due to interferences and/or high concentration of target compounds. |
| Duplicate | Result from the duplicate analysis of a sample. |
| Result | Amount of analyte found in a sample. |
| Spike Level | Amount of analyte added to a sample |
| Matrix Spike Result | Amount of analyte found including amount that was spiked. |
| Matrix Spike Dup | Amount of analyte foun in duplicate spikes including amount that was spike. |
| Matrix Spike % Recovery | % Recovery of spiked amount in sample. |
| Matrix Spike Dup % Recovery | % Recovery of spiked duplicate amount in sample. |
| RPD | Relative percent difference between Matrix Spike and Matrix Spike Duplicate. |
| Blank | Method Blank that has been taken through all steps of the analysis. |
| LCS % Recovery | Laboratory Control Sample percent recovery. The amount of analyte recovered from a fortified sample. |
| Recovery Limits | A range within which specified measurements results must fall to be compliant. |
| CC | Calibration Verification |

Flags:

- H- Recovery is above the control limits
- L- Recovery is below the control limits
- B- Compound detected in the Blank
- P- RPD of dual column results exceeds 40%
- #- Sample result too high for accurate spike recovery.

Connecticut Laboratory Certification PH0116
Massachussets Laboratory Certification M-CT903
Rhode Island Certification 199

New York Certification 11982
Florida Laboratory Certification E871064

Questions related to this report should be directed to David Ditta, Timothy Fusco, or Robert Blake at 203-377-9984.

Sincerely,

David Ditta
Laboratory Director

Report Comments:

ND is None Detected at the specified detection limit
All analyses were performed in house unless a Reference Laboratory is listed.
Samples will be disposed of 30 days after the report date.
Sample Result Flags:
E- The result is estimated, above the calibration range.
H- The surrogate recovery is above the control limits.
L- The surrogate recovery is below the control limits.
B- The compound was detected in the laboratory blank.
P- The Relative Percent Difference (RPD) of dual column analyses exceeds 40%.
D- The RPD between the sample and the sample duplicate is high. Sample Homogenity may be a problem.
+- The Surrogate was diluted out.
All results met standard operating procedures unless indicated by a data qualifier next to a sample result, or a narration in the QC report.
Complete Environmental Testing is only responsible for the certified testing and is not directly responsible for the integrity of the sample before laboratory receipt.

CET #

Volatile Soils Only:

| Date and Time in Freezer |
|---|
| Client: |
| CET: |

4050463

COMPLETE ENVIRONMENTAL TESTING, INC.

# F CUSTODY RECORD

80 Lupes Drive
Stratford, CT 06615
Tel: (203) 377-9984
Fax: (203) 377-9952
e-mail: cet1@cetlabs.com
Bottle Request e-mail: bottleorders@cetlabs.com

Matrix: A=Air, S=Soil, W=Water, DW=Drinking W., C=Cassette, Solid, Wipe, Other (Specify)

| Sample ID | Date/Time | Matrix | Turnaround Time ** (check one): Same Day * | Next Day * | 2-3 Days * | Std (5-7 Days) | Organics: 8260 CT List | 8260 Aromatics | 8260 Halogens | CT ETPH | 8270 CT List | 8270 PNAs | PCBs | Pesticides | Herbicides | Metals (check all that apply): 13 Priority Poll | 8 RCRA | TOTAL | TCLP | SPLP | Field Filtered | Lab To Filter | Additional Analysis: PCB by Soxhlet | TOTAL # OF CONT. | NOTE # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20140514_1533_P1 | 5/14/14 | Solid | | | | X | | | | | | | | | | | | | | | | | X | 1 | |

PRESERVATIVE (Cl–HCl, N–$HNO_3$, S–$H_2SO_4$, Na–NaOH, C=Cool, O–Other)

CONTAINER TYPE (P–Plastic, G–Glass, V–Vial, O–Other)

Soil VOCs Only (M=MeOH B= Sodium Bisulfate W=Water F= Empty Vial E=Encore)

| RELINQUISHED BY: | DATE/TIME | RECEIVED BY: |
|---|---|---|
| Ken Bogue | 5/19/14 | 5-20-14 1510 |
| | 5-20-14 1610 | |
| | | |

NOTES:

## Client / Reporting Information

Company Name: Facility Support Services, LLC

Address: 2625 State St

City: Hamden State: CT Zip: 06517

Report To: K. Bogue E-mail: KBogue.FSS@SNET.NET

Phone #: 203-288-1281 Fax #:

## Project Information

Project Contact: K. Bogue PO #: —

Project: 22214-1533 Project #: —

Location: CT Collector(s): K. Bogue

QA/QC: ☒ Std ☐ Site Specific (MS/MSD) * ☐ RCP Pkg * ☐ DQAW *

Data Report: ☒ Email ☐ PDF ☐ Excel ☐ Other

RSR Reporting Limits (check one): ☐ GA ☐ GB ☐ SWP ☒ Other (specify) 1 pm

Lab Use:
Evidence of Cooling: 4.2 Y or N
Temp Upon Receipt °C

SHEET 1 OF 1

* Additional charge may apply. ** TAT begins when the samples are received at the Lab and all issues are resolved. TAT for samples received after 3 p.m. will start on the next business day.

REV. 12/11

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. ROOFING

1.1. Remove and dispose of asphalt shingle roofing down to sheathing in areas indicated.
  1.1.1. Additional removal of roofing accessories as required to complete work.

1.2. Repair areas of rotted sheathing.

1.3. Furnish and install new 3-tab asphalt shingle roofing system to match existing.
  1.3.1. Provide all underlayment per manufacturer and code requirements.

1.4. Furnish and install all drip edges and flashings as required.

### 2. GUTTERS & DOWNSPOUTS

2.1. Re-install detached gutter.
  2.1.1. Clean and make proper connections to existing gutter system.

### 3. INSUALTION

3.1. Remove and dispose of damaged insulation in attic spaces where indicated.

3.2. Furnish and install new fiberglass insulation in attic spaces.
  3.2.1. R-value to meet 2013 Connecticut State Building Code.

### 4. ARCHITECURAL WOODWORK

4.1. Remove damaged crown molding in first floor playroom.

4.2. Furnish and install new crown molding in first floor playroom to match existing profile.

4.2.1. Make any necessary repairs to walls where trim is replaced, if necessary.

## 5. FINISHES

5.1. Remove and dispose of ceiling in first floor playroom and second floor master bedroom.

5.2. Remove damaged hardwood flooring planks.
- 5.2.1. Remove adjacent areas as necessary.
- 5.2.2. Detach, store, and re-install baseboard or quarter round trims as required to complete this work.

5.3. Furnish and install new gypsum board ceiling where removed. Match existing thickness.
- 5.3.1. Provide taping of gypsum board to match adjacent finishes.

5.4. Prime and paint new gypsum board ceilings, walls and trim in replacement areas.

5.5. Sand, stain, and finish new hardwood flooring planks.
- 5.5.1. Make best efforts to blend with existing finishes.

## 6. ENVIRONMENTAL

6.1. Apply anti microbial agents to all exposed framing and sheathing at insulation removal areas.

6.2. Apply anti microbial agents to wood stud wall framing and backside of wall panels in attic spaces.

6.3. Provide all work, labor, and materials, for Section 02 83 19.13 – Lead Paint Abatment.

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. 'Abatement Plan for 2210 Park Ave., Bridgeport, Ct' prepared by Gilberto Lead Inspections LLC.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION

3.1 – All lead based paint work shall follow work protocols stipulated in 'Abatement Plan for 2210 Park Avenue' prepared by Gilberto Lead Inspections LLC.

**A. Background Information**

Date Plan Submitted: June 18, 2014

Address of Property: 2210 Park Avenue, Bridgeport, CT

Plan Prepared by: Owner ❑ Planner Project Designer ☒

Lead Planner / Project Designer

Name: Maureen Monaco Certificate: 2152

Telephone: 1-800-959-2985

Address: 287 Main Street, Ansonia, CT 06401

**Inspection Report Used to Develop Abatement Plan**

Date of Inspection: May 15, 2014

Consultant Contractor: Gilbertco Lead Inspections LLC, 287 Main Street, Ansonia, CT 06401 Consultant Contractor # 270

Telephone- 1-800-959-2985

Inspectors: Maureen Monaco- Lead Inspector Risk Assessor #1172

**B . Owner Information**

Name: Julie Lucas

Address: 2210 Park Avenue, Bridgeport, CT

Telephone:

**C. Resident Information**

Julie Lucas, Mr. Lieberman,

Number of Children under six years old: one- Wyatt Lieberman DOB 7/4/2010

Will residents be relocated? Yes ❑ No ☒

**D. Abatement Contractor Information**

Who will conduct abatement? Owner ❑ Abatement Contractor ☒

Abatement contractor will submit all licenses and certifications of the company and individuals working on the property and give written notice to the Bridgeport Health Department at least five days prior to commencing the project.

This is a Department of Housing and Urban Development Project receiving Storm Sandy Disaster Recovery funds in excess of $25,000 and therefore must go out to bid. Abatement Contractor to be determined.

**E. Repairs prior to Abatement**

Please Note:

- Water leaks: Must be corrected prior to abatement regardless of the method of abatement. Uncorrected water leaks can cause encapsulating material to fail if the underlying lead painted surface deteriorates. Moisture can also cause paint on stripped surface (and unabated surface) to fail and expose lead residue that may remain on the substrate after stripping by heat, caustic chemicals, solvents or scraping.

- Heating Systems: Inadequate heat after abatement may lead to failure of encapsulants and paint. Therefore heating systems must be repaired. Prior to abatement, forced air systems must be shut down and sealed to prevent transport of lead contamination from the abatement area to other areas of the residence.

What Components or Mechanical Systems Need To Be Repaired Prior To Abatement?

☒ Water leaks, roof, plumbing, wall surfaces, etc.- Repairs to include interior ceiling and floor repair.

❑ Heating Systems-

❑ Electrical Systems

❑ Any other conditions that require repair so as not to impede abatement.

❑No prior repairs required.

**F. Abatement Techniques To Be Used**

Identify which abatement techniques will be used on the attached forms. The three general strategies for lead paint abatement are removal, replacement, and encapsulation. See attached relevant forms.

A. Removal ( REM): stripping of paint

B. Replacement ( REP): Architectural replacement components shall conform with all contract requirements and specifications. Product submittal shall conform with requirements of Section 01 33 00-Submittal Procedures.

C. BARRIER: ( BAR): enclosure using approved materials such as siding or sheetrock.

D. Liquid Encapsulation: ( LENCAP) : Use of Connecticut approved encapsulant; technical information and MSDS attached.

E. Cementitious Encapsulation ( CENCAP): provide technical information

* Note: If rigid, liquid or cementitious encapsulants are to be used, the associated surfaces must be periodically monitored in the future per a schedule that is established within a lead management plan. Additionally liquid and cementitious encapsulants must be authorized for use by the Connecticut Department of Public Health ( DPH) and listed on the DPH registry of Authorized Encapsulant Products.

Paint Removal means the stripping of lead paint from the surfaces of components. The following are some of the paint removal processes that can be used; chemical stripping, mechanical stripping, and wet scraping/wet sanding.

- **Chemical stripping**: there are a variety of paint removal products that are available from various manufacturers. Commonly the stripper is applied to the building component and later removes by manual scraping. All paint layers must be removed. Follow manufacturer's direction on how to apply such products.
- **Mechanical stripping**: This technique requires the use of power tools. Examples of such equipment are: needle guns, vibrating, belt, and rotary sanders. Abrasive blasting equipment and other types of impact strippers that employ the use of steel studs of different sizes and shapes, that rotate in an enclosed head to impact the painted surface. See manufacturer instructions on how to use this equipment. ( Note: Mechanically powered abatement equipment requires the use of HEPA-equipped vacuum attachments to remove dust generated during the use of the equipment).
- **Wet Scraping/wet sanding**. Wet scraping or wet sanding manually removes loose and peeling lead paint. Paint chips and dust that are generated during these procedures, must be controlled, to avoid further distribution of contaminates to adjacent areas. Wet Scraping and sanding involves misting

the peeling paint before scraping or sanding, and thus reducing the amount of lead dust that is generated during these processes. Surfactants (wetting agents) may be added to the water to facilitate cleanup.

- **Heat Gun**: This removal technique involves the softening of the paint with a heat gun and then scraping the paint off. To prevent vaporization of the lead contained in the paint, the temperature of the heat gun must not exceed 700 degrees Fahrenheit per DPH regulations.

Replacement means the removal of components such as windows, doors and trim that have lead painted surfaces and the installation of new components that are fee of lead containing paint. Replacement may be feasible for many exterior and interior architectural components.

Encapsulation refers to the processes that make lead paint inaccessible, by covering or sealing lead painted surfaces. If the lead paint is peeling or deteriorating then some wet scraping and/or wet sanding is necessary prior to encapsulation. The following are some types of rigid encapsulation materials: gypsum dry wall, fiberglass, wool and vinyl siding. Seams must be sealed to prevent the escape of lead dust. Liquid and cementitious encapsulants must be listed on the DPH registry of Authorized Encapsulant Products, to be considered for use.

The following cannot be used as encapsulants:

- A new coat of paint or primer
- Wall paper coverings
- Contact paper

Any area that is to be abated must be properly contained with materials such as 6 mil polyethylene sheeting to prevent further contamination of the dwelling or environment and to facilitate post abatement cleanup.

**G. Dates of Abatement Project**

Estimated start date: July 1, 2014

Estimated completion date: September 1, 2014

Note: Written notice shall be given to the local health department at least five days prior to actual starting date.

**H. Notification To Connecticut Historical Commission**- if property is over 50 years old

Year Built: 1949 Notification required? Yes ☒ No ❑

Address of Ct Historical Commission:

CT Commission of Culture and Tourism and Historic Preservation
1 Constitution Plaza, Second Floor
Hartford, CT 06103
1-860-256-2800

Date filed- May 20, 2014 Response received ☒Yes No ❑
See attached

**I. Notification procedure**

Written notice will be given to the residents five working days prior to start date. The notice shall:

- Inform the residents of their rights and responsibilities per the statutes and regulations
- Inform residents which surfaces or soil areas will be abated.

Additionally, warning signs shall be posted at all entrances to and exits from the abatement area, prior to abatement.

**J. Containment of Work Area ( Interior and Exterior)**

Movable objects belonging to residents must be removed from the abatement area. The belongings should be stored in an easily accessible location.

Cover and seal all non-work surfaces with 6 mil polyethylene as follows;

a) non-movable objects

b) air systems heating, ventilation, and air conditioning

c) entrance to abatement areas

d) floors

e) exterior grounds and surfaces ( use 6 mil polyethylene sheeting to prevent release of lead into the environment)

Note: The contractor and/or owner is responsible for using the best available engineering controls to reduce the potential for emissions to the exterior of an abatement area. Engineering controls may include but not limited to, proper containment and control of the abatement are, provision of negative pressure within containment area, use of wet scraping/wet sanding methods and use of vacuum HEPA attached power tools.

Describe proposed engineering controls:

Polyethylene to cover ground when any exterior work is to be done.

**K. Cleaning After Lead- Based Paint Abatement ( Prior to Clearance Testing)**

Procedure: ☒ 1. Wet clean

☒ 2. Carefully remove the polyethylene covering.

☒ 3. Use a COMMERCIAL HEPA vacuum and wash with TSP or other effective non-TSP cleaner.

☒ 4. After 24 hours from the time active abatement has ceased, HEPA vac again, rewash with TSP or other effective non-TSP cleaner and HEPA vac again.

**L. Waste Disposal ( Hazardous)**

A. Materials associated with the abatement shall be disposed of as hazardous waste with a TCLP reading $\geq$ 5 mg/l. The contractor shall obtain a small quantity hazardous waste generator ID number from the State of CT DEP for the site if hazardous waste 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 lea 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

Any questions regarding hazardous waste issues should be directed to:

State of CT- Dept of Environmental Protection, Waste Management Bureau, 79 Elm Street, Hartford, CT 06106-5127 ,1- 860-424-3023

**M. Worker Protection**

Note: Workers must use proper personal protective equipment per the OSHA Lead in Construction Standard ( 29CFR 1926.62) and state regulation. Full body covering ( suits) with hood and shoe covering attached should be used to prevent lead dust contamination. Disposable coveralls that are used one time, provide effective protection. Indicate the level of protection that is to be provided:

Body Covering ☒ Disposable☒

Head Covering☒ hat Disposable☒

Hand covering ☒ Disposable ☒

Shoe Covering ☒ Disposable ☒

Respirator w/HEPA Filter❑ Type of respirator _____

Note: Neither smoking, eating, or drinking nor the application of cosmetic lip balm, is permitted within the work area. Use of personal clothing and foot wear is not permitted during abatement activities.

Indicate available washing facilities. Hand washing ☒ Showers ❑

Bathroom sink water is available for handwashing; do not use kitchen sink for cleanup.

**N. Clearance Testing**

Prior to reoccupancy, a visual inspection of abatement areas is required and dust samples shall be collected and analyzed from floors and window sills in each area where abatement has occurred. This inspection and sampling must be performed by a certified lead inspector, certified lead inspector risk assessor or an authorized code enforcement official.

☒ Visual inspection and sampling to be performed by a certified lead risk assessor.

Maureen Monaco , IR #1172
Gilbertco Lead Inspections LLC , CC # 270
287 Main Street, Ansonia, Ct 06401
1-800-959-2985 or

Facilities Support Services LLC
2685 State Street
Hamden, Connecticut 06517
1-203-288-1281

Sampling to include window sill, window well, and floor to be sampled in each room where abatement work has taken place.

❑ Visual Inspection to be performed by an authorized code enforcement official of the Bridgeport Health Department once reoccupancy criteria has been met.

**O. Soil Abatement-**

1. For soil lead levels between 400 ppm and 5000 ppm

☒ Plant grass or shrubbery to reduce exposure to bare soil.

❑ Permanent barrier; examples asphalt or cement

☒ Cover three to six inches with gravel or mulch-

❑ Restrict access-

❑ Excavate, remove and replace contaminated soil. Specify depth___.

❑ Relocate play equipment

2. For soil lead levels over 5000 ppm

❑ Excavate and disposal top two inches

❑ Rototill soil

❑ Cover area with lead free soil, mulch, stone, asphalt or other acceptable covering

Key: PS- Paint Stabilization
BAR- Barriers
RESACC- restricted Access
REM- Paint Removal
REP- Replace with new
LEN- Liquid Encapsulate

| Room # | Room Name | Component | Count | Abatement Method | Comments |
|---|---|---|---|---|---|
| 2 | Hall/Stairs | Window well/jamb | 1 | REP | |
| 4 | Front Bedroom | Window well/jamb | 3 | REP | |
| 9 | Laundry | Window well/jamb | 1 | REP | |
| 10 | 1st Fl Bath | Window well/jamb | 1 | REP | |
| 11 | 2nd Fl Hall | Window well/jamb | 1 | REP | |
| 12 | 2nd Fl Right Front Bedroom | Window well/jamb | 1 | REP | |
| 14 | Master Bedroom closet | Window well/jamb | 2 | REP | |
| 16 | 2nd Fl Bath | Window well/jamb | 1 | REP | |
| 17 | 3rd Fl Hall | Window well/jamb | 1 | REP | |
| 18 | 3rd Fl Bedroom | Window well/jamb | 1 | REP | |
| 19 | 3rd Fl Bath | Window well/jamb | 1 | REP | |
| 26 | Exterior | Rear Exit Door, door casing, threshold | 1 | REP | |
| 26 | Exterior | Garage Door | 1 | REP | |

CMLS

# SECTION 02 85 00

# MOLD REMEDIATION

The following work plan outlines the microbial mold abatement of 2210 Park Avenue in Bridgeport, 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 06 40 00

ARCHITECTURAL WOODWORK

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Cabinetry and Cabinetry Hardware.

B. Wood Paneling.

C. Exterior and Interior Wood Trim and Casing.

D. Related Accessories.

1.2 REFERENCES

A. Minimum standards for work in this Section shall be in conformity with the Architectural Woodwork Standards, latest edition, published jointly by the Architectural Woodwork Institute and the Woodwork Institute (AWI).

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

C. ASTM International (ASTM).

D. Occupational Safety and Health Administration (OSHA).

E. Underwriters Laboratories (UL).

1.3 SUBMITTALS

A. Product Data: For each type of factory-fabricated product.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials only when the project is ready for installation and the general contractor has provided a clean storage area.
   1. Delivery of architectural millwork shall be made only when the area of operation is enclosed, all plaster and concrete work is dry and the area broom clean.
   2. Maintain indoor temperature and humidity within the range recommended by the Architectural Woodwork Standards for the location of the project.

1.5 WARRANTY

A. Standard Manufacturers warranty for each type of factory-fabricated product.

PART 2 PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber shall be sound, kiln dried, and in accordance with the Architectural Woodwork

Standards requirements for its use and the Grade specified.

B. Shall be lumber or sheet products of the species and Grade to match existing materials.

C. Shall conform in finish width, thickness, and profile of lumber to match existing materials.

D. Particleboard, MDF, and Plywood shall meet the requirements of the AWS for the Grade specified and their intended.

E. Veneered components shall be in accordance with the Architectural Woodwork Standards requirements for the Grade specified use.

F. Adhesives shall meet the requirements of the Architectural Woodwork Standards for its intended use.

2.2 CABINETRY

A. Cabinetry components to match existing, including the following:
1. Shelving configuration.
2. Drawer configuration.
3. Trims, moldings, toe kicks and end panel configuration.

B. Countertops to match existing, including the following:
1. Cut-out configurations.
2. Backsplash.
3. Plywood substrates.
4. Counter supports.

C. Cabinetry hardware to match existing, including the following:
1. Pulls.
2. Drawer guides.
3. Hinges.
4. Door catches.
5. Shelf supports.

D. Plastic Laminates shall meet the requirements of the Architectural Woodwork Standards for its intended use.

E. All finishes/colors of cabinetry and countertops to match existing.

2.3 EXTERIOR TRIM

A. Waterproof Type I adhesive is required.

B. Sheet products shall be of exterior type.

C. Nails and screws shall be corrosion-resistant.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify the adequacy and proper location of any required backing or support framing.

3.2 INSTALLATION

A. All work shall be secured in place, square, plumb, and level.

B. All work abutting other building components shall be properly scribed.

C. Mechanical fasteners used at exposed and semi-exposed surfaces, excluding installation attachment screws and those securing cabinets end to end, shall be countersunk.

D. All nicks, chips and scratches shall be sanded out, filled and re-touched. Damaged items which cannot be repaired shall be replaced.

END OF SECTION

# SECTION 07 21 00

# BUILDING INSULATION

## PART 1 GENERAL

### 1.1 SECTION INCLUDES

A. Glass-fiber blanket insulation.

B. Spray Foam insulation.

C. Vapor Retarders.

D. Related Accessories.

### 1.2 REFERENCES

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

B. ASTM International (ASTM).

C. North American Insulation Manufacturers Association (NAIMA).

D. Occupational Safety and Health Administration (OSHA).

E. Underwriters Laboratories (UL).

### 1.3 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

B. Submit Material Safety Data Sheets (MSDS) prior to commencement of work for review and for filing at job site as required.

C. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

### 1.4 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging with labeling intact including material name, production date and product code, until ready for installation.

B. Protect insulation from physical damage and from becoming wet, soiled, or covered with ice or snow.

C. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

D. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers: Subject to compliance with requirements, available manufactures offering products that may incorporated into the Work include the following:
   1. CertainTeed Corporation.
   2. Guardian Building Products, Inc.
   3. Johns Manville.
   4. Knauf Insulation.
   5. Owens Corning.
   6. Reef Industries, Inc.

B. Substitutions: or equal.

C. Requests for substitutions will be considered in accordance with Section 01 60 00.
   1. When submitting request for substitution, provide complete product data and MSDS sheet for each substitute product.

2.2 GLASS-FIBER BLANKET INSULATION

A. Unfaced and Kraft Faced Batt Insulation: ASTM C 665, Type I (Unfaced) or Type II (Faced), Class A (Unfaced) or Class C (Faced); non-combustible when tested in accordance with ASTM E 136; extra wide stapling flanges.
   1. Physical and Mechanical Properties
      a. R-value to match existing conditions or meet local building codes. The greater duty or obligation on the R-value shall govern.
      b. Size: Maximum sizes available, to avoid jointing to greatest extent possible.
      c. Width for Metal Framing Application: Same as framing center to center dimension.
      d. Width for Wood Framing Application: Maximum of 1 inch (25 mm) less than framing center to center dimension.
      e. Vapor Retarder Perm Rating (For Faced Batt Insulation): Maximum 1.0 perms (57 ng/(Pa s sq m)) when tested in accordance with ASTM E 96.
      f. Surface Burning Characteristics (For Unfaced Batt Insulation): Maximum flame spread of 25, maximum smoke developed of 50, when tested in accordance with ASTM E 84.
      g. Properties:
         1) Free of Formaldehyde: Insulation is manufactured with bio-based binder and no formaldehyde.
         2) VOC Emission: Low VOC emission certified by GreenGuard Environmental Institute for Children and Schools.
         3) Recycled Content: Minimum of 40% "post-consumer" recycled material.

B. Accessory Materials and Fasteners: Provide all materials required for complete and proper installation of insulation, whether specified or not.

C. Polyethylene Vapor Retarders: ASTM D 4397, 6 mils thick, with maximum permeance rating of 0.13 perm.

D. Vapor-Retarder Tape: Pressure-sensitive tape of type recommended by manufacturer for sealing joints and penetrations in vapor retarder.

## 2.3 SPRAY FOAM INSULATION

A. Open-Cell and Closed-Cell Spray Foam Insulation: Low density, MDI-based semi-rigid polyurethane water-blown type Open Cell Foam: foam OR Medium-density, MDI-based polyurethane thermoset rigid HFC-blown type Closed Cell Foam:

1. Physical and Mechanical Properties:
   a. Thermal Performance (Open-Cell AND Closed-Cell): Thicknesses and R-value to match existing conditions or meet local building codes. The greater duty or obligation on the R-value shall govern.
   b. Core Density: 0.45-0.55pcf (Open-Cell) OR 1.9-2.4pcf (Closed-Cell) when tested in accordance with ASTM D 1622.
   c. Thermal Resistance: 3.6 (Open-Cell) OR 6.4(Initial) and 5.8(Aged) less than or equal to 2-1/2 inches / 6.4 when greater than 2-1/2 inches (Closed-Cell) when tested in accordance with ASTM C 518.
   d. Open Cell Content: Greater than 95% when tested in accordance with ASTM D 2842.
   e. Closed Cell Content: 88-95% when tested in accordance with ASTM D 2842.
   f. Compressive Strength: Greater than 2.4psi (Open-Cell) OR Greater than 25psi (Closed-Cell) when tested in accordance with ASTM D 1621.
   g. Tensile Strength: 5.2psi (Open-Cell) OR 23psi (Closed-Cell) when tested in accordance with ASTM D 1623.
   h. Water Absorption: Less than 30% by volume (Open-Cell) OR Less than 2% by volume (Closed-Cell) when tested in accordance with ASTM D 2842.
   i. Dimensional Stability: Less than 12% by volume (Open-Cell) OR Less than 9% by volume (Closed-Cell) when tested in accordance with ASTM D 2126
   j. Water Vapor Transmission: 33 perm/inch (Open-Cell) OR 1.3 perm/inch (Closed-Cell) when tested in accordance with ASTM E 96.
   k. Air Permeability (Open-Cell AND Closed-Cell): 0.013 when tested in accordance with ASTM E 283.
   l. Fungi Resistance (Open-Cell AND Closed-Cell): Pass, with no growth when tested in accordance with ASTM C 1338.
2. Fire performance
   a. Flame Spread (Open-Cell AND Closed-Cell): Less than 25 when tested in accordance with ASTM E 84.
   b. Smoke: Less than 350 (Open-Cell) OR Less than 450 (Closed-Cell) when tested in accordance with ASTM E 84.

B. Accessory Materials and Fasteners: Provide all materials required for complete and proper installation of spray foam insulation, whether specified or not.

## 2.4 VAPOR RETARDERS

A. Vapor Retarder (Fire Retardant Reinforced, Reinforced, and Standard):

1. Physical and Mechanical Properties:
   a. Material (Minimums): 3-ply fire retardant laminate (Fire Retardant Reinforced) OR 3-ply laminate (Reinforced) OR Extruded polyethylene Film
   b. Weight (Minimums): 33lbs/1,000sq.ft. (Fire Retardant Reinforced), 40lbs/1,000sq.ft. (Reinforced), 49lbs/1,000sq.ft. (Standard), when tested in accordance with ASTM D 3776.
   c. Puncture Propagation Tear (Minimums): 26lb (Fire Retardant Reinforced) OR 30lb (Reinforced) OR 34lb (Standard), when tested in accordance with ASTM D 2582.
   d. Permeance (Perm) (Minimums): 0.062grains/hr-sq ft-in Hg (Fire Retardant Reinforced), 0.038grains/hr-sq ft-in Hg (Reinforced), 0.018grains/hr-sq ft-in Hg (Standard), when tested in accordance with ASTM E 96.
   e. Drop Dart (Minimums): 450g (Fire Retardant Reinforced), 475g (Reinforced), 2270g (Standard), when tested in accordance with ASTM D 1709.
   f. Tensile Strength (1" Tensile) (Minimums): 90lb/5050psi (Fire Retardant Reinforced), 35lb/4560 psi (Reinforced), 44lb/4400 psi (Standard), when tested in accordance with ASTM D 882.
   g. Puncture Strength (Minimums): 30lb (Fire Retardant Reinforced), 35lb (Reinforced), 24lb (Standard), when tested in accordance with ASTM D 4833.
   h. Usable Temperature Range: Minus 25 to 170 degrees F (minus 32 to 77 degrees C).
   i. Application(s):
      1) Use on roof decks under insulation.
      2) Use on exterior walls on inside face of framing.
      3) Use under concrete slabs, over aggregate fill.
      4) Use under concrete slabs, under aggregate fill.

B. Accessory Materials and Fasteners: Provide all materials required for complete and proper installation of vapor retarders, whether specified or not.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. Verify that adjacent materials are dry and ready to receive insulation.

3.2 INSTALLATION , GENERAL

A. Install in accordance with NAIMA "Recommendations for Installation in Residential and Other Light-Frame Construction - Fiber Glass Building Insulation" and manufacturer's instructions.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time

C. Extend insulation to envelope entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

D. Provide sizes to fit applications indicated and selected from manufacturer's standard thickness, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

## 3.3 INSTALLATION OF INSULATION FOR FRAMED CONSTRUCTION

A. Apply insulation units to substrates by method indicated, complying with manufacture's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units

B. Glass-Fiber Blanket Insulation: Install in cavities formed by framing members according to the following requirements:
   1. Use insulation widths and lengths that fill cavities formed by framing members. If more than one length is required to fill cavities, provide lengths that will produce a snug fit between ends.
   2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
   3. Maintain 3-inch clearance of insulation around recessed ligthing fixtures not rated for or protected from contact with insulation
   4. For wood-framed construction, install blankets according to ASTM C 1320 and as follows:
      a. With faced blankets having stapling flanges, secure insulation by inset, stapling flanges to sides of framing members
      b. With faced blankets having stapling flanges, lap blanket over flange of adjacent blanket to maintain continuity of vapor retarder once finish material is installed over it.

C. Miscellaneous Voids: Install insulation in miscellaneous voids and cavity spaces where required to prevent gaps in insulation using the following materials:
   1. Loose-Fill Insulation: Compact to approximately 40 percent of normal maximum volume equaling a density of approximately 2.5 lb/cu. ft.

## 3.4 INSTALLATION OF VAPOR RETARDERS

A. Place vapor retarders on side of construction indicated on Drawings. Extend vapor retarders. Place vapor retarders on side of construction indicated on Drawings. Extend vapor retarders to extremities of areas to protect from vapor transmission. Secure vapor retarders in place with adhesives or other anchorage system as indicated. Extend vapor retarders to cover miscellaneous voids in insulated substrates, including those filled with loose-fiber insulation.

B. Seal vertical joints in vapor retarders over framing by lapping no fewer than two studs.
   1. Fasten vapor retarders to wood framing at top, end, and bottom edges; at perimeter of wall openings; and at lap joints. Space fasteners 16 inches O.C.
   2. Before installing vapor retarders, apply urethane sealant to flanges of metal framing including runner tracks, metal studs, and framing around door and window openings. Seal overlapping joints in vapor retarders with vapor-retarder tape according to vapor-retarder manufacturer's written instructions. Seal butt joints with vapor-retarder tape. Locate all joints over framing members or other solid substrates.
   3. Firmly attach vapor retarders to metal framing and solid substrates with vapor-retarder fasteners as recommended by vapor-retarder manufacturer.

C. Seal joints caused by pipes, conduits, electrical boxes, and similar items penetrating vapor retarders with vapor-retarder tape to create an airtight seal between penetrating objects and vapor retarders.

D. Repair punctures or tears in vapor retarder facing by taping. Follow tape manufacturer's application recommendations.

E. Repair tears or punctures in vapor retarders immediately before concealment by other work. Cover with vapor-retarder tape or another layer of vapor retarders.

F. Protect insulation from damage and from becoming wet before, during and after installation.

END OF SECTION

# SECTION 07 31 00

# ASPHALT ROOF SHINGLES

## PART 1 GENERAL

### 1.1 SECTION INCLUDES

A. Asphalt Roofing Shingles.

B. Leak Barrier and Moisture Shedding Roof Deck Protection.

C. Metal Flashing Associated with Shingle Roofing.

D. Related Accessories.

### 1.2 REFERENCES

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

B. Asphalt Roofing Manufacturers Association (ARMA).

C. American Society of Civil Engineers (ASCE).

D. ASTM International (ASTM).

E. National Roofing Contractors Association (NRCA).

F. Occupational Safety and Health Administration (OSHA).

G. Sheet Metal and Air Conditioning Contractors' National Association (SMACNA).

H. Underwriters Laboratories (UL).

I. U.S. Green Building Council (USGBC).

### 1.3 SUBMITTALS

A. Submit under provisions of Section 01 30 00.

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

C. Submit Material Safety Data Sheets (MSDS) prior to commencement of work for review and for filing at job site as required.

D. Selection Samples: Two complete sets of color cards representing manufacturer's full range of available colors and patterns.

1.4 QUALITY ASSURANCE

A. Installer Minimum Qualifications:
   1. Installer shall be classified as an Authorized contractor as defined and certified by manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened labeled packaging until ready for installation.

B. Store products in a covered, ventilated area, at temperature not more than 110 degrees F (43 degrees C); do not store near steam pipes, radiators, or in sunlight.

C. Store bundles on flat surface to maximum height recommended by manufacturer; store rolls on end.

D. Store and dispose of solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.6 WEATHER CONDITIONS

A. Proceed with work only when existing and forecasted weather conditions will permit work to be performed in accordance with manufacturer recommendations.

1.7 WARRANTY

A. Provide Manufacturer's standard warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers: Subject to compliance with requirements, available manufactures offering products that may incorporated into the Work include the following:
   1. Atlas Roofing Corporation.
   2. CertainTeed Corporation.
   3. GAF.
   4. Owens Corning.
   5. PABCO Roofing Products.

B. Substitutions: or approved equal.

C. Requests for substitutions will be considered in accordance with Section 01 60 00.
   1. When submitting request for substitution, provide complete product data and sample warranty specified above under submittals, for each substitute product.

2.2 ASPHALT SHINGLES

A. Style: 3 Tab asphalt shingle or match existing.
   1. Shingle Thickness: Match existing.
   2. Color: Match existing or selected by Owner.
   3. Warranty: Match original warranty of existing materials.

2.3 HIP AND RIDGE SHINGLES

A. Hip and ridge cap shingle field fabricated from the same color and type of field shingle.

2.4 STARTER STRIP

A. Self sealing starter shingle designed for all roof shingles.

2.5 UNDERLAYMENT

A. #15 Roofing Underlayment: Water repellent breather type cellulose fiber building paper. Meets or exceeds the requirements of ASTM D 4869 Type I.

B. Plywood Sheathing; replacement and/or repair of existing sheathing as required during course of construction.

2.6 ACCESSORY PRODUCTS

A. Fasteners
   1. Standard round wire shingle type, zinc-coated steel or aluminum; 10 to 12 gauge (3.416 mm to 2.657 mm for steel) (2.588 mm to 2.052 mm for aluminum), barbed or deformed shank, with heads 3/8 inch (9.5 mm) to 7/16 inch (11 mm) in diameter; length sufficient to penetrate at least 3/4 inch (19 mm) into solid wood or just through plywood or oriented strand board.

B. Roofing Cement:
   1. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.

C. Metal Flashing:
   1. 16 oz/sq ft (0.56 mm) copper sheet, complying with ASTM B 370.
   2. 0.032 inch (0.8 mm) aluminum sheet, complying with ASTM B 209.
   3. Use metal flashings at:
      a. Eave edges: Match existing materials.
      b. Rake edges: Match existing materials.
      c. Step flashing at chimneys, side walls and dormers: Match existing materials.
      d. Valleys: Match existing materials.

D. Metal Flashing:
   1. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions metal, and other characteristics of the item.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until roof deck has been properly prepared.

3.2 REMOVAL OF EXISTING ROOFING

A. Remove all existing roofing down to the roof deck.

B. Verify that deck is dry, sound, clean and smooth, free of depressions, waves and projections.

C. Cover with sheet metal all holes over 1 inch (25 mm) diameter, cracks over 1/2 inch (12 mm) in width, loose knots and excessively resinous areas.

D. Replace damaged deck with new materials.

E. Clean deck surfaces thoroughly prior to installation of eaves protection membrane and underlayment

3.3 PREPARATION

A. Clean deck surfaces thoroughly prior to installation of leak barrier and roof deck protection.

B. At areas to receive leak barrier, fill knot holes and cracks with latex filler.

3.4 INSTALLATION OF UNDERLAYMENT

A. Install using methods recommended by manufacturer in accordance with local building code. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.

B. Eaves:
1. Place eave edge metal flashing tight with fascia boards; lap joints 2 inches (50 mm) and seal with plastic cement; nail at top of flange.
2. Install leak barrier up the slope from eave edge to 36 inches from the edge or at least 24 inches (610 mm) beyond the interior face of the warm exterior wall, whichever is greater; lap ends 6 inches (150 mm) and bond.

C. Valleys:
1. Install leak barrier at least 36 inches wide centered on valley; lap ends 6 inches (150 mm) and seal.
2. Where valleys are indicated to be "open valleys", install metal flashing over leak barrier before roof deck protection is installed; DO NOT NAIL THROUGH metal flashing; secure by nailing at 18 inches (457 mm) on center just beyond edge of flashing so that nail heads hold down edge.

D. Hip and Ridge:
1. Install leak barrier along entire lengths. If ridge vents are to be installed, position the leak barrier so that the ridge slots will not be covered.

E. Penetrations:
1. At vent pipes, install a 24 inch (610 mm) square piece of leak barrier lapping over roof deck protection; seal tightly to pipe.
2. At vertical walls, install leak barrier extending at least 6 inches (150 mm) up the wall and 12 inches (305 mm) on to the roof surface lapping over roof deck protection.
3. At skylights and roof hatches, install leak barrier up the sides of the frame and 12 inches (305 mm) on to the roof surface on all sides, lapping over roof deck protection.
4. At chimneys, install leak barrier around entire chimney extending at least 6 inches (152 mm) up the wall and 12 inches (305 mm) on to the roof surface lapping over roof deck protection.

5. At rake edges, install metal edge flashing over leak barrier and roof deck protection; set tight to rake boards; lap joints at least 2 inches (50 mm) and seal with plastic cement; secure with nails.
6. At hips and ridges, install leak barrier along entire lengths. If ridge vents are to be installed, position the leak barrier so that the ridge slots are not covered.

## 3.5 INSTALLATION OF SHINGLES

A. Install in accordance with manufacturer's instructions and requirements of local building code.
   1. Avoid breakage of shingles by avoiding dropping bundles on edge, by separating shingles carefully (not by "breaking" over ridge or bundles), and by taking extra precautions in temperatures below 40 degrees F (4 degrees C).
   2. Handle carefully in hot weather to avoid damaging shingle edges.
   3. Secure with 4 to 6 nails per shingle; use number of nails required by manufacturer or by code, whichever is greater. Nails must be long enough to penetrate through plywood or OSB, or 3/4 inch (19 mm) into dimensional lumber.

B. Install hip, ridge, and valley shingles as required by the manufacturer.
   1. At ridges, install hip and ridge shingles over ridge or ridge vent material.

C. All penetrations are to be flashed according to manufacturer, ARMA and NRCA application instructions and construction details.

D. For skylights, consult the manufacturer of the skylight or roof hatch for specific installation recommendations. Skylights and roof hatches shall be installed with pre-fabricated metal flashings specifically designed for the application of the unit.

END OF SECTION

# SECTION 07 71 23

# GUTTERS AND DOWNSPOUTS

## PART 1 GENERAL

### 1.1 SECTION INCLUDES

A. Gutters and Downspouts.

B. Related Accessories.

### 1.2 REFERENCES

A. American Architectural Manufacturers Association (AAMA).

B. ASTM International (ASTM).

C. Occupational Safety and Health Administration (OSHA).

D. Sheet Metal and Air Conditioning Contractors' National Association (SMACNA).

### 1.3 SUBMITTALS

A. Submit under provisions of Section 01 30 00.

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

C. Submit Material Safety Data Sheets (MSDS) prior to commencement of work for review and for filing at job site as required.

D. Maintenance Data: Include recommended cleaning methods and cleaning materials.

### 1.4 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store products to prevent twisting, bending, and abrasion, and to provide ventilation. Slope stored materials to drain.

C. During storage prevent contact with materials capable of causing discoloration, staining, or other damage.

### 1.5 WARRANTY

A. Provide Manufacturer's standard warranty.

## PART 2 PRODUCTS

2.1 GENERAL

A. Gutter Material Thickness: Match existing materials.

B. Downspout Material Thickness: Match existing materials.

2.2 GUTTERS

A. Gutter Stock (Aluminum, Vinyl, Etc): Match existing materials.
1. Gutter Size: Match existing.
2. Profile: Match existing.
3. Texture: Match existing.
4. Finish: Match existing finish; applied to sides as matching.
5. Color: Match existing.

B. Accessories:
1. Gutter Protection System: Match existing. Size and shape as required for gutter size, style and gutter support. Provide factory fabricated inside and outside corners.
2. Miscellaneous Components: Provide all necessary inside and outside corners, corner reinforcing, eave tubes, and end caps required for a complete installation.

2.3 DOWNSPOUTS

A. Downspout Stock (Aluminum, Vinyl, Etc): Match existing materials.
1. Downspout Size: Match existing.
2. Profile: Match existing.
3. Texture: Match existing.
4. Finish: Match existing finish; applied to sides as matching.
5. Color: Match existing.

B. Accessories:
1. Downspout Support: Match existing materials. Profile and color to match existing.
2. Miscellaneous components: Provide all necessary elbows, downspout offset sections, and pop rivets as required for a complete installation. All miscellaneous components shall match downspouts.

2.4 RELATED ACCESSORIES

A. Fasteners: Match existing materials.
1. Finish: Match existing finish.
2. Size: As recommended by manufacturer.

B. Flashings: Match existing or where installation is recommended by Manufacturer. Colors to match existing.

C. Sealants: Mildew-Resistant Joint Sealant as recommended by Manufacturer at gutter joints. Color shall match existing.

D. Splash Pans: Match existing in materials, size, shape, and color.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that substrates are in place and ready for installation of gutters and downspouts.

3.2 INSTALLATION

A. General: Install gutters and downspouts per manufacturer's written installation instructions. Install Work securely in place and provide for expansion and contraction of components using lapped and sealed joints.

B. Install roof apron flashings at roof edge conditions as required for proper installation, and matching existing conditions.

C. Gutters:
1. Install gutter supports as per Manufacturer recommendations.
2. Slope gutters evenly to downspouts; provide end caps at gutter ends and seal watertight per Manufacturer's instructions.
3. Install eave tubes at all downspout locations, seal watertight.
4. Apply joint sealants at gutter joints per Manufacturer's installation instructions.
5. Install gutter protection per manufacturer's instructions; provide factory fabricated corners at all inside and outside corners.

D. Downspouts:
1. Install downspouts, provide elbows and offsets, and secure downspouts to wall construction using downspout supports spaced as per Manufacturer's instructions. Provide 45 degree elbow at bottom of downspout to direct water away from wall surface or foundation.
2. Where downspout connects to building perimeter drainage system, lap downspout and perimeter drainage pipe a minimum of 3 inches. At concrete perimeter drainage pipe, grout downspout in place, slope grout to shed rain away from downspout.
3. Install splash pans under downspouts.

END OF SECTION

# SECTION 07 92 00

# JOINT SEALANTS

## PART 1 GENERAL

### 1.1 SECTION INCLUDES

A. Silicone Joint Sealants.

B. Urethane Joint Sealants.

C. Latex Joint Sealants.

D. Related Accessories.

### 1.2 REFERENCES

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

B. ASTM International (ASTM).

C. Occupational Safety and Health Administration (OSHA).

D. Underwriters Laboratories (UL).

### 1.3 SUBMITTALS

A. Submit under provisions of Section 01 30 00.

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

C. Submit Material Safety Data Sheets (MSDS) prior to commencement of work for review and for filing at job site as required.

### 1.4 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

### 1.5 WARRANTY

A. Provide Manufacturer's standard warranty.

## PART 2 PRODUCTS

### 2.1 SILICONE JOINT SEALANTS

A. Acceptable Manufacturers: Subject to compliance with requirements, available

manufactures offering products that may incorporated into the Work include the following:

1. BASF Building Systems.
2. Dow Corning Corporation.
3. GE Advanced Materials - Silicones.
4. May National Associates, Inc.
5. Pecora Corporation.
6. Polymeric Systems, Inc.
7. Schnee-Morehead, Inc.
8. Sika Corporation; Construction Products Division.
9. Tremco Incorporated.

B. Type: Single component (S).

C. Grade: Pourable (P).

D. Class: 100/50.

E. Uses Related to Exposure: Traffic (T) and Nontraffic (NT).

## 2.2 URETHANE JOINT SEALANTS

A. Acceptable Manufacturers: Subject to compliance with requirements, available manufactures offering products that may incorporated into the Work include the following:

1. BASF Building Systems.
2. Bostik, Inc.
3. Lymtal. International. Inc.
4. May National Associates, Inc.
5. Pacific Polymers International. Inc.
6. Pecora Corporation.
7. Polymeric Systems, Inc.
8. Schnee-Morehead, Inc.
9. Sika Corporation; Construction Products Division.
10. Tremco Incorporated.

B. Type: Single component (S).

C. Grade: Pourable (P).

D. Class: 100/50.

E. Uses Related to Exposure: Traffic (T) and Nontraffic (NT).

## 2.3 LATEX JOINT SEALANTS

A. Acceptable Manufacturers: Subject to compliance with requirements, available manufactures offering products that may incorporated into the Work include the following:

1. BASF Building Systems.
2. Bostik, Inc.
3. May National Associates, Inc.
4. Pecora Corporation.
5. Schnee-Morehead, Inc.

6. Tremco Incorporated.

B. Latex: Acrylic latex or siliconized acrylic latex.

2.4 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 1 EXECUTION

1.1 PREPERATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.
   1. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

1.1 INSTALLATION

A. Install sealant types compatible with adjacent surfaces, materials, and finishes to whihc sealant may come in contact with.

B. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
   1. Do not leave gaps between ends of sealant backings.
   2. Do not stretch, twist, puncture, or tear sealant backings.
   3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
   1. Place sealants so they directly contact and fully wet joint substrates.
   2. Completely fill recesses in each joint configuration.
   3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint:
   1. Remove excess sealant from surfaces adjacent to joints.
   2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.

F. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

END OF SECTION

# SECTION 08 50 00

# WINDOWS

## PART 1 GENERAL

### 1.1 SECTION INCLUDES

A. Awning Window Units.

B. Casement Window Units.

C. Double-Hung Window Units.

D. Fixed Window Units.

E. Related Accessories.

### 1.2 REFERENCES

A. American Architectural Manufacturers Association (AAMA).

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

C. ASTM International (ASTM).

D. Insulating Glass Certification Council (IGCC).

E. Occupational Safety and Health Administration (OSHA).

F. Underwriters Laboratories (UL).

G. Window and Door Manufacturers of America (WDMA).

### 1.1 SUBMITTALS

A. Submit under provisions of Section 01 30 00.

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

C. Submit Material Safety Data Sheets (MSDS) prior to commencement of work for review and for filing at job site as required.

D. Selection Samples: For each finish product specified, a complete set of color chips representing manufacturer's full range of available colors.

E. Hardware Selection: Submit complete descriptive literature, including finishes, for each type of new door hardware and accessory.

H. Operation and Maintenance Data: Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance.

1.1 DELIVERY, STORAGE, AND HANDLING

A. Deliver windows, materials and components in Manufacturer's original, unopened, undamaged containers with identification labels intact.

B. Store window units as recommended by Manufacturer.

1.1 WARRANTY

A. Provide Manufacturer's standard warranty.

PART 2 PRODUCTS

1.2 MANUFACTURERS

A. Acceptable Manufacturers: Subject to compliance with requirements, available manufactures offering products that may incorporated into the Work include the following:
   1. Andersen Corporation.
   2. JELD-WEN, inc.
   3. Marvin Windows and Doors.
   4. Pella Corporation.

B. Substitutions: or equal.

C. Requests for substitutions will be considered in accordance with Section 01 60 00.
   1. When submitting request for substitution, provide complete product data and MSDS sheet for each substitute product.

2.1 WINDOW UNITS

A. Frame: Match existing materials and finishes.

B. Sash: Match existing materials and finishes.

C. Exterior Trim: Match existing materials.

D. Factory Applied Extension Jambs: Provide on four sides of frame interior, if required to match existing installation.

E. Weatherstripping: Match existing materials.

F. Hardware: Match existing materials.

G. Glazing: Match existing type and coating.
   1. Tempered insulating glass units certified through the Insulating Glass Certification Council as conforming to the requirements of IGCC. Provide dual sealed units consisting of polyisobutylene primary seal and silicone secondary seal. Provide metal spacers with bent or soldered corners.

H. Finish: Match existing finish and color, as approved by Owner.

2.2 WINDOW ACCESSORlES

A. Insect Screens: Match existing materials, if required.

B. Grilles: Match existing materials.

C. Flashing: Match existing materials, or as per Manufacturer recommendations.

D. Sealants: Provide manufacturer recommended sealants maintain watertight conditions.

PART 3 EXECUTION

3.1 PREPERATION

A. Inspect rough opening for compliance with window manufacturer recommendations. Verify rough opening conditions are within recommended tolerances.

3.2 INSTALLATION

A. Install window unit assembly per Manufacturer’s instructions.
   1. Install window unit level and plumb. Center window unit in opening and secure window unit by nailing through nail fin and screw through jambs as indicated in manufacturer's instructions.
   2. Apply sealant around perimeter of window unit between nail fin and exterior sheathing of wall.
   3. Flash window in accordance with AAMA's "Standard Practice for Installation of Windows with a Mounting Flange in Stud Frame Construction".
   4. Insulate between window frame and rough opening with insulation type that complies with Manufacturer's recommendation.
   5. Refer to, and comply with, additional requirements in manufacturer’s installation guides for all applied finishes.
   6. Clean units using cleaning material and methods specifically recommended by window manufacturer.
   7. Install optional hardware and unit accessories after cleaning.
   8. Adjust hardware and accessories for smooth operation and per the approval of Owner.

END OF SECTION

# SECTION 09 26 00

# GYPSUM BOARD ASSEMBLIES

## PART 1 GENERAL

### 1.1 SECTION INCLUDES

A. Gypsum Board and Joint Treatments.

B. Mold and Mildew Resistant Gypsum Board.

C. Related Accessories.

### 1.2 REFERENCES

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

B. ASTM International (ASTM).

C. Gypsum Association (GA).

D. Occupational Safety and Health Administration (OSHA).

E. Underwriters Laboratories (UL).

### 1.3 SUBMITTALS

A. Submit under provisions of Section 01 30 00.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Submit Material Safety Data Sheets (MSDS) prior to commencement of work for review and for filing at job site as required.

D. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

### 1.4 DELIVERY, STORAGE, AND HANDLING

A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

B. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

C. Do not install panels that are wet, those that are moisture damaged, and those that are mold

damaged.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers: Subject to compliance with requirements, available manufactures offering products that may incorporated into the Work include the following:
   1. American Gypsum.
   2. CertainTeed Gypsum, Inc.
   3. Georgia-Pacific Gypsum
   4. National Gypsum Co.
   5. Pabco Gypsum, Inc.
   6. USG Corporation.

B. Substitutions: or equal.

C. Requests for substitutions will be considered in accordance with Section 01 60 00.
   1. When submitting request for substitution, provide complete product data and MSDS sheet for each substitute product.

2.2 GYPSUM PRODUCTS, GENERAL

A. Size: Provide maximum lengths and widths available that will minimize joints in each area that correspond with the support system indicated.

B. Recycled Content: Provide gypsum panel products with recycled content such that post consumer recycled content plus one-half of pre-consumer recycled content constitutes a minimum 50 percent by weight.

2.3 INTERIOR GYPSUM MATERIALS

A. Regular Gypsum Board: Gypsum core panel surfaced with paper on front and back edges and complying with ASTM C 1396 and ASTM C 36.
   1. Thickness: 1/2 inch (12.7 mm), unless otherwise indicated.
   2. Width: 48 inches (1219 mm).
   3. Length: Use longest length available, avoiding unnecessary joints.
   4. Edges: Use square, rounded tapered, or tapered per required application.

B. Regular Mold Resistant Gypsum Board: Gypsum core panel enhanced with moisture-resistant wax emulsion and chemically treated to resist mold and mildew in the core and surfaced with mold and mildew resistant paper on front, back and long edges and complying with ASTM C 1396 Section 7 and ASTM C 630.
   1. Thickness: 1/2 inch (12.7 mm), unless otherwise indicated.
   2. Width: 48 inches (1219 mm).
   3. Length: Use longest length available, avoiding unnecessary joints.
   4. Edges: Use square, rounded tapered, or tapered per required application.
   5. Mold and Mildew Resistance: Panel score of 10 when tested in accordance with ASTM D 3273.

2.4 GYPSUM JOINT TREATMENT AND FINISH PRODUCTS

A. Joint Treatment Tape: Complying with ASTM C 475 and GA-216.

B. Joint Compound: Vinyl type pre-mixed compound; complying with ASTM C 475.

C. Joint Compound: Level Five vinyl type pre-mixed compound; off-white color or tinted gray color; complying with ASTM C 475 and fulfilling ASTM C 840; designed for joint finishing of Level Five gypsum board.

2.5 ACCESSORY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

B. Corner Bead: Formed galvanized steel angle, min. base steel 0.014 in. thick, and complying with ASTM C 1047.

C. Casing Bead: Formed galvanized steel or vinyl trim, matching existing application and complying with ASTM C 1047, type(s) as follows:
1. J-shaped U-bead, for face nailing and finishing with joint treatment.
2. J-shaped U-bead, requiring no finishing.
3. L-shaped, for application over edge and finishing with joint treatment.

D. Control Joint: Extruded vinyl formed with V-shaped slot covered with removable flexible vinyl strip; complying with ASTM C 1047.

E. Control Joint: Bent zinc sheet formed with V-shaped slot, covered with plastic tape, with perforated flanges; complying with ASTM C 1047.

F. Screws: ASTM C 954 or ASTM C 1002 or both with heads, threads, points, and finish as recommended by panel manufacturer.

G. Nails: ASTM C 514 with heads, lengths, configurations, and finish as recommended by panel manufacturer.

H. Acoustical Sealant: Nondrying, nonhardening, nonskinning, nonstaining, nonbleeding, gunnable type as recommended by panel manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

A. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.2 INSTALLATION

A. Application: Apply and maintain conditions during installation in accordance with GA-216 and GA-238 and as follows:
1. Keep gypsum board dry throughout application.
2. Do not use gypsum board that has visible mold growth.
3. Apply gypsum board on walls with a minimum 1/4 inch (6.4 mm) gap between the gypsum board and the floor.

4. Do not apply gypsum board over other building materials where conditions exist that are favorable to mold growth.
5. Maintain a sound weather-tight building envelope including, such elements as the roof, sealants, windows, etc.
6. Immediate and appropriate remediation measures must be taken as soon as water leaks or condensation sources are identified.
7. If gypsum board is damaged by water, assess the need for replacement in accordance with GA-231.

B. Install accordance with GA 216 and the following:
1. Gypsum Sheathing Board: ASTM C 1280 and GA-253.
2. Gypsum Board and Joint Treatment: ASTM C 840 and GA-214.
3. Gypsum panel manufacturer's published recommendations.

C. Finishing: Tape, fill, sand and finish joints in accordance with ASTM C 840 and GA-214.
1. Level 2: Water resistant gypsum backing board indicated to receive tile.
2. Level 4: Gypsum board indicated to receive light textured coatings and light-grade wall coverings.
3. Level 5: All other gypsum board.

END OF SECTION

# SECTION 09 64 00

# WOOD FLOORING

## PART 1 GENERAL

### 1.1 SECTION INCLUDES

A. Solid Hardwood Flooring.

B. Engineered Hardwood Flooring.

C. Flooring Underlayment.

D. Related Accessories.

### 1.2 REFERENCES

A. Minimum standards for work in this Section shall be in conformity with the National Wood Flooring Association Installation Guidelines, latest edition (NWFA).

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

C. ASTM International (ASTM).

D. Occupational Safety and Health Administration (OSHA).

E. Underwriters Laboratories (UL).

### 1.3 SUBMITTALS

A. Submit under provisions of Section 01 30 00.

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

C. Submit Material Safety Data Sheets (MSDS) prior to commencement of work for review and for filing at job site as required.

D. Selection Samples: Submit a complete set of floor profiles that represent the full range of manufacturer's products, colors and finish available.

### 1.4 DELIVERY, STORAGE, AND HANDLING

A. Store Products in a fully enclosed, ventilated, clean and dry storage space, located in areas of installation for minimum of 24 hours prior to commencing work.

B. Environmental Requirements:
   1. Do not install Products until wet construction work is completed and ambient air at installation space has moisture content stabilized.
   2. Maintain room temperature at 65 degrees F and 35 to 55 percent relative humidity for 3 to 5 days prior to delivery of materials, during installation, and after installation.
   3. Maintain minimum temperature of 65 degrees], and maintain relative humidity between 40 and 50% within area of installation until final acceptance.

1.5 WARRANTY

A. Standard Manufacturers warranty for each type of factory-fabricated product.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. MANUFACTURERS: Subject to compliance with requirements, available manufactures offering products that may incorporated into the Work include the following:
   1. Anderson Hardwood Floors.
   2. Armstrong World Industries.
   3. Millstead Wood Flooring.
   4. Mohawk Industries.
   5. USFloors Inc.

B. Substitutions: or equal.

C. Requests for substitutions will be considered in accordance with Section 01 60 00.
   1. When submitting request for substitution, provide complete product data and MSDS sheet for each substitute product.

2.2 FLOORING MATERIALS, GENERAL

A. Hardwood shall meet grading requirements of NOFMA and NWFA. Provide species and grade stamp on underside of each piece of flooring.

2.3 SOLID HARDWOOD FLOORING

A. Species: Match existing materials.

B. Grade: Match existing materials.

C. Finish:
   1. Factory Finish: Match existing, as approved by Owner.
   2. Field Finish: Match existing color and coats, as approved by Owner.

D. Thickness: Match existing materials.

E. Board Width: Match existing materials.

F. Edging: Match existing materials.

2.4 ENGINEERED HARDWOOD FLOORING

A. Species: Match existing materials.

B. Grade: Match existing materials.

C. Finish:
1. Factory Finish: Match existing, as approved by Owner.
2. Field Finish: Match existing color and coats, as approved by Owner.

D. Thickness: Match existing materials.

E. Board Width: Match existing materials.

F. Edging: Match existing materials.

2.5 GLUELESS ENGINEERED HARDWOOD FLOORING

A. Species: Match existing materials.

B. Grade: Match existing materials.

C. Finish:
1. Factory Finish: Match existing, as approved by Owner.
2. Field Finish: Match existing color and coats, as approved by Owner.

D. Thickness: Match existing materials.

E. Board Width: Match existing materials.

F. Edging: Match existing materials.

2.6 ACCESSORIES

A. Subfloor Filler:
1. Wood putty: Per Manufacturer's specifications, if required.
2. Floor leveling compound: Per Manufacturer's specifications, if required.

B. Vapor Barrier:
1. Asphalt-saturated #15 felt (tar paper): Per Manufacturer's specifications, if required.
2. Rosin paper: Per Manufacturer's specifications, if required.

C. Hardwood Trim: Stair Nosing, Reducer, T-molding, Quarter Round, Threshold, Carpet Molding; matching wood species, color and finish to match existing.

D. Nails: Purpose designed barbed nails for power nailing or as recommended by Manufacturer

E. Staples: Purpose designed staples for power stapling or as recommended by Manufacturer

F. Adhesive: As recommended by Manufacturer.

2.7 FLOORING UNDERLAYMENT

A. Materials:
   1. Plywood: Use CDX grade, matching existing thickness.
   2. Foam: As required per Manufacturer's requirements, matching existing thickness.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify wood subfloor is properly secured, is smooth and flat, free of oil, grease, dust, and foreign substance. Ensure that all nail heads are set flush with or below surface.

B. Comply with the manufacturer's instructions, specified industry standards and recommendations for acceptable subfloor conditions.

3.2 INSTALLATION

A. Prepare subfloor with the manufacturer's instructions, specified industry standards and recommendation.

B. Lay flooring parallel to walls and perpendicular or at a 45 degree angle to the direction of the floor joists, to a pattern that matches existing or as per Manufacturer requirements.

C. Set flooring boards flush and tight.

D. Provide divider/reducer boards at centerline of door openings and where flooring terminates.

E. Provide expansion space at walls and other interruptions as per Manufacturer requirements.

F. Protect finished floor from abuse by other trades using heavy Kraft paper or equivalent. Keep traffic out of spaces and areas where flooring is being installed until adhesive has set.

G. Comply with the manufacturer's instructions, specified industry standards and recommendations for cleaning, traffic, furnishings installation and equipment installation.

END OF SECTION

# SECTION 09 90 00

# PAINTS AND COATINGS

## PART 1 GENERAL

### 1.1 SECTION INCLUDES

A. Interior Paint and Coatings Systems Including Surface Preparation.

B. Exterior Paint and Coatings Systems Including Surface Preparation.

### 1.2 REFERENCES

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

B. ASTM International (ASTM).

C. Master Painters Institute (MPI)

D. Occupational Safety and Health Administration (OSHA).

E. Painting and Decorating Contractors of America (PDCA).

F. The Society for Protective Coatings (SSPC).

G. Underwriters Laboratories (UL).

### 1.3 SUBMITTALS

A. Product Data: For each paint system indicated, including.
   1. Product characteristics.
   2. Surface preparation instructions and recommendations.
   3. Primer requirements and finish specification.
   4. Storage and handling requirements and recommendations.
   5. Application methods.
   6. Cautions for storage, handling and installation.

B. Submit Material Safety Data Sheets (MSDS) prior to commencement of work for review and for filing at job site as required.

C. Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer's products, colors and sheens available.

D. Coating Maintenance Manual: upon conclusion of the project, the Contractor or paint manufacture/supplier shall furnish a coating maintenance manual. Manual shall include an Area Summary with finish schedule, Area Detail designating where each product/color/finish was used, product data pages, Material Safety Data Sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

E. Field Coating of Vinyl Siding Methods and Procedures:

1. Manufacturer Guarantee: Submit letter from Manufacturer with acceptable product and application methods for coatings used on vinyl siding systems.
2. Quality Assurance Plan: Submit methods and procedure plan for protection of adjacent environmental items, equipment, vehicles, adjacent structures, etc.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information.
1. Product name, and type (description).
2. Application and use instructions.
3. Surface preparation.
4. VOC content.
5. Environmental handling.
6. Batch date.
7. Color number.

B. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

C. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.

1.5 EXTRA MATERIALS

A. Furnish Owner with any unused materials. Properly seal canisters and label with finish and finish location for proper Owner storage.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers: Subject to compliance with requirements, available manufactures offering products that may incorporated into the Work include the following:
1. BEHR Process Corporation.
2. Benjamin Moore & Co.
3. Dunn-Edwards Corporation.
4. The Sherwin-Williams Company.

B. Substitutions: or equal.

C. Requests for substitutions will be considered in accordance with Section 01 60 00.
1. When submitting request for substitution, provide complete product data and MSDS sheet for each substitute product.

2.2 PAINT MATERIALS - GENERAL

A. Paints and Coatings.
1. Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless

such procedure is specifically described in manufacturer's product instructions.

2. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color. Or follow manufactures product instructions for optimal color conformance.

B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.

C. Coating Application Accessories: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required, per manufacturer's specifications.

D. Application to Materials: Apply paints and coatings manufacturer's specifications for application to Wood, Drywall, Plaster, Metals, etc.

E. VOC Content: Provide materials that comply with VOC limits of authorities having jurisdiction.

F. Color: Refer to existing finishes or as selected by Owner.

## 2.3 INTERIOR PAINT SYSTEMS

A. Interior Painting:
1. Finish: Gloss, Semi-Gloss, Satin or Flat to match existing. If matching is not required, finish per Manufacturer or industry requirements for interior applications.
2. Coats: Apply quantity of coats to match existing. If matching is not required, finish per Manufacturer or industry requirements for interior applications.

B. Interior Primers/Sealers:
1. Interior primers/sealers to be latex or as per Manufacturer/Industry requirements for interior applications.

C. Interior Wood Sealers:
1. Wood primers to be latex or as per Manufacturer/Industry requirements for interior applications.

## 2.4 EXTERIOR PAINT SYSTEMS

A. Exterior Painting:
1. Finish: Gloss, Semi-Gloss, Satin or flat to match existing. If matching is not required, finish per Manufacturer or industry requirements for exterior applications.
2. Coats: Apply quantity of coats to match existing. If matching is not required, finish per Manufacturer or industry requirements for exterior applications.

B. Exterior Primers/Sealers:
1. Water based primers/sealers to be alkali resistant and/or bonding or as per Manufacturer or industry requirements for exterior applications.

C. Exterior Wood Sealers:
1. Wood primers to be alkyd and/or latex or as per Manufacturer or industry requirements for exterior applications.

D. Vinyl Siding:
   1. Primers and finishes as per manufacturer or industry requirements for vinyl application.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared; notify Architect of unsatisfactory conditions before proceeding. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

B. Proceed with work only after conditions have been corrected and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions.
   1. Previously Painted Surfaces: Verify that existing painted surfaces do not contain lead based paints, notify Architect immediately if lead based paints are encountered.

3.2 SURFACE PREPARATION

A. General: Surfaces shall be dry and in sound condition. Remove oil, dust, dirt, loose rust, peeling paint or other contamination to ensure good adhesion.
   1. Remove mildew before painting by washing with a solution of 1 part liquid household bleach and 3 parts of warm water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with clean water and allow the surface to dry a minimum of 48 hours before painting. Wear protective glasses or goggles, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.
   2. Remove items including but not limited to thermostats, electrical outlets, switch covers and similar items prior to painting. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
   3. No exterior painting should be done immediately after a rain, during foggy weather, when rain is predicted, or when the temperature is below 50 degrees F (10 degrees C), unless products are designed specifically for these conditions. On large expanses of metal siding, the air, surface and material temperatures must be 50 degrees F (10 degrees F) or higher to use low temperature products.

B. Drywall - Interior: Must be clean and dry. All nail heads must be set and spackled. Joints must be taped and covered with a joint compound. Spackled nail heads and tape joints must be sanded smooth and all dust removed prior to painting.

C. Plaster: Must be allowed to dry thoroughly for at least 30 days before painting, unless the products are designed to be used in high pH environments. Room must be ventilated while drying; in cold, damp weather, rooms must be heated. Damaged areas must be repaired with an appropriate patching material. Bare plaster must be cured and hard. Textured, soft, porous, or powdery plaster should be treated with a solution of 1 pint household vinegar to 1 gallon of water. Repeat until the surface is hard, rinse with clear water and allow to dry.

D. Vinyl Siding, Architectural Plastics, EIFS and Fiberglass: Clean vinyl siding thoroughly by

scrubbing with a warm, soapy water solution. Rinse thoroughly. Do not paint vinyl siding with any color darker than the original color unless approved by Manufacturer.

E. Wood: Must be clean and dry. Prime and paint as soon as possible. Knots and pitch streaks must be scraped, sanded, and spot primed before a full priming coat is applied. Patch all nail holes and imperfections with a wood filler or putty and sand smooth.

## 3.3 INSTALLATION

A. Apply all coatings and materials with the manufacturer’s specifications in mind. Mix and thin coatings according to manufacturer's recommendations.

B. Apply primer to all materials receiving a finish coat of paint.

C. Do not apply to wet or damp surfaces. Wait at least 30 days before applying to new concrete or masonry. Or follow manufacturer's procedures to apply appropriate coatings prior to 30 days. Test new concrete for moisture content. Wait until wood is fully dry after rain or morning fog or dew.

D. Apply coatings using methods recommended by manufacturer and uniformly apply coatings without runs, drips, or sags, without brush marks, and with consistent sheen.

E. Apply coatings at spreading rate required to achieve the manufacturers recommended dry film thickness. Regardless of number of coats specified, apply as many coats as necessary for complete hide, and uniform appearance.

F. Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.

G. Comply with the manufacturer's instructions, specified industry standards and recommendations for cleaning, traffic, furnishings installation and equipment installation.

END OF SECTION

# SECTION 09 93 00

# STAINING AND TRANSPARENT FINISHING

## PART 1 GENERAL

### 1.1 SECTION INCLUDES

A. Exterior Coating With Transparent and Semi-Transparent Finishes.

B. Interior Coating With Transparent and Semi-Transparent Finishes.

### 1.2 REFERENCES

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

B. ASTM International (ASTM).

C. Occupational Safety and Health Administration (OSHA).

D. The Society for Protective Coatings (SSPC).

E. Underwriters Laboratories (UL).

### 1.3 SUBMITTALS

A. Product Data: For each paint system indicated, including.
   1. Product characteristics.
   2. Surface preparation instructions and recommendations.
   3. Primer requirements and finish specification.
   4. Storage and handling requirements and recommendations.
   5. Application methods.
   6. Cautions for storage, handling and installation.

B. Submit Material Safety Data Sheets (MSDS) prior to commencement of work for review and for filing at job site as required.

C. Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer's products, colors and sheens available.

D. Coating Maintenance Manual: upon conclusion of the project, the Contractor or paint manufacture/supplier shall furnish a coating maintenance manual. Manual shall include an Area Summary with finish schedule, Area Detail designating where each product/color/finish was used, product data pages, Material Safety Data Sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

### 1.4 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information.
   1. Product name, and type (description).

2. Application and use instructions.
3. Surface preparation.
4. VOC content.
5. Environmental handling.
6. Batch date.
7. Color number.

B. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

C. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.

1.5 EXTRA MATERIALS

A. Furnish Owner with any unused materials. Properly seal canisters and label with finish and finish location for proper Owner storage.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers: Subject to compliance with requirements, available manufactures offering products that may incorporated into the Work include the following:
1. Dura Seal.
2. Minwax Company.
3. Rust-Oleum Corporation.
4. The Sherwin-Williams Company.
5. United Gilsonite Laboratories.

B. Substitutions: or equal.

C. Requests for substitutions will be considered in accordance with Section 01 60 00.
1. When submitting request for substitution, provide complete product data and MSDS sheet for each substitute product.

2.2 STAIN MATERIALS - GENERAL

A. Stains and Coatings - General:
1. Unless otherwise indicated, provide factory-mixed materials. Mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials unless such procedure is specifically described in manufacturer's product instructions.
2. Supply each material in quantity required to complete entire project's work from a single production run.

B. Back Primer for Transparent-Finished Woodwork:
1. Same as finish coat.
2. 1 coat nitrocellulose lacquer sanding sealer (for use under lacquer).
3. 1 coat vinyl toluene copolymer(for use under polyurethane).

C. Wood Filler: Use products as appropriate to repair per Manufacturer's instructions.

D. Stain Touch-Up: Use products as appropriate to repair per Manufacturer's instructions.

E. Shellac, Lacquer, and Varnish Remover: Use products as appropriate to repair per Manufacturer's instructions.

F. Application Accessories: Provide all primers, sealers, cleaning agents, tools, cleaning cloths, sanding materials, and clean-up materials required and per Manufacturer recommendations.

## 2.3 INTERIOR FINISH SYSTEMS

A. Interior Wood:
1. Finish: Low Luster, Satin, Semi-Gloss, or High-Gloss to match existing. If matching is not required, finish per Manufacturer or industry requirements for interior applications.
2. Coats: Apply quantity of coats to match existing. If matching is not required, finish per Manufacturer or industry requirements for interior applications.
3. Color: Match existing and per Owner's approval.

## 2.4 EXTERIOR PAINT SYSTEMS

A. Exterior Wood:
1. Finish: Gloss, Semi-Gloss, Satin or flat to match existing. If matching is not required, finish per Manufacturer or industry requirements for exterior applications.
2. Coats: Apply quantity of coats to match existing. If matching is not required, finish per Manufacturer or industry requirements for exterior applications.
3. Color: Match existing and per Owner's approval.

## 2.5 EXAMINATION

A. Do not begin application of coatings until substrates have been properly prepared.

## 2.6 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

## 2.7 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Stir before and during application as recommended by manufacturer.

C. Do not apply to wet or damp surfaces.

D. Apply using methods recommended by manufacturer.

E. Apply without runs, drips, or sags, without brush marks, and with consistent sheen.

F. Apply at spreading rate required to achieve the manufacturer's recommended film thickness.

G. Regardless of number of coats specified, apply as many coats as necessary for complete hide, and uniform appearance.

H. Exterior Woodwork: If final painting must be delayed more than 2 weeks after installation of woodwork, apply primer within 2 weeks and final coating within 2 weeks.

I. Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.

J. Comply with the manufacturer's instructions, specified industry standards and recommendations for cleaning, traffic, furnishings installation and equipment installation.

END OF SECTION