



Dannel P. Malloy
Governor

STATE OF CONNECTICUT
DEPARTMENT OF HOUSING



Evonne M. Klein
Commissioner

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

**Owner Occupied Rehabilitation and Rebuilding Program
(OORR)**

BID PACKAGE

For

Rehabilitation/Reconstruction work for:

William Onkey

8 Third Avenue

Stratford, CT 06615

Prepared By:

Martinez Couch & Associates, LLC

1084 Cromwell Avenue Suite A-2

Rocky Hill, CT

860-436-4364

Project #: 2035 – 8 Third Avenue



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Section 1

ADVERTISEMENT FOR BIDS

Project # 2035 – 8 Third Avenue

DOH: _____

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 2035 – 8 Third Avenue will be received by Martinez, Couch and Associates LLC until 4 o’clock PM on October 31, 2014, and then at said office publicly opened and read aloud.

The Information to Bidders, Form of Bid, Form of Contract, Plans, Specifications, and Form of Bid Bond, Performance and Payment Bond, 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 for each set. Requests for copies of plans shall provide 2 business days notice to Martinez, Couch and Associates, LLC.

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

Each bidder must deposit with his bid, security in the amount, form and subject to the conditions provided in the Information to Bidders.

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 hereto, all blanks of which must be appropriately filled. Bids will be received by DOH at the office of Martinez, Couch and Associates, LLC until 4 o'clock PM on October, 31, 2014 and then at said office publicly opened and read aloud. The envelopes containing the bids must be sealed, addressed to Mr. Richard Couch, P.E. at Martinez, Couch and Associates, LLC and designated as bid for Project - 8 Third Avenue, Stratford, CT.

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 Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement there considered.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

Mandatory Walk Through: All bidders must attend a mandatory walk through of the property designated above. The date and time of the walk through is set for 9 o'clock AM on October, 17, 2014.

Preparation of Bids:

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

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

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

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

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

Qualifications of Bidder: The DOH may make such investigations as he/she deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the DOH all such

information and date for this purpose as the DOH may request. The DOH reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the DOH that such bidder is properly 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 listed in Exhibit G and also are available at the Department of Housing's Hurricane Sandy Recovers website www.ct.gov/doh/ and click on the "Hurricane Sandy" link.

Bid Security: Each bid must be accompanied by an irrevocable letter of credit from the bank, certified check, or bank cashier's check in the amount not less than five percent (5%) of the bid. Bid bonds may be accepted as bid security. Such checks will be returned to all except the three lowest bidders within three days after the opening of bids, and the remaining cash, or checks will be returned promptly after DOH and the accepted bidder have executed the contract, or opening of bids, upon demand or the bidder at any time thereafter, so long as he/she has been notified of the acceptance of his/her bid.

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: Mr. Richard Couch, P.E. at Martinez, Couch and Associates, LLC and to be given consideration must be received at least seven 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.

Security for Faithful Performance: Simultaneously with his/her delivery of the executed contract, the Contractor shall furnish a surety bond or bonds as security for faithful performance of this contract and for the payment of all persons performing labor on the project under this contract and furnishing materials in connection with this contract, as specified in the General Conditions included herein. The surety on such bond or bonds shall be a duly authorized surety company satisfactory to the DOH.

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.

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.

Power of Attorney: Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

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 to 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.

BID FORM

The undersigned, being familiarized with the local conditions affecting the cost of the work and with the Drawings, Specifications, Invitation to Bidders, Instructions to Bidders, General Conditions, Bid Form, Form of Contract and Form of Bonds for Project No. 2035 – 8 Third Avenue Stratford, CT and Addenda No. _____ and _____ thereto, as prepared by Martinez, Couch and Associates, LLC, Connecticut, and on file in the office of DOH, hereby proposes to furnish all permits, labor, materials, tools, equipment, and related items required for the rehabilitation and reconstruction for said Project No. 8 Third Avenue Stratford, CT located at 8 Third Avenue in Stratford, CT, State of Connecticut, all in accordance with the Drawings and Specifications, for the sum of:

_____ Dollars (\$ _____)

		Subcontractor	Lump Sum Price (\$)
	General Requirements & Temporary Facilities		
02 83 13	Lead Hazard Remediation		
02 85 00	Mold Remediation		
03 30 00	Concrete		
	Building Lifting		
	Helical Piles		
05 12 00	Structural Steel		
06 10 00	Wood Framing		
06 15 33	Wood Decking		
	Insulation		
07 71 23	Gutters and Downspouts		
	Finishes		
	Plumbing		
	H.V.A.C		
	Electrical		
	Site Clearing/Earth Moving		
	Turfs and Grasses/Plants		
	Asphalt Paving		
	Allowance 1		
	Allowance 2		

Total Lump Sum _____

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.

<i>Item</i>	<i>Rate (\$/Per)</i>
Roofer Labor Rate	/H.R.

The undersigned agrees to commence the work on a date to be specified in the contract and to complete such work within 270 consecutive calendar days.

The undersigned agrees that if within the period of thirty (30) calendar 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) calendar days thereafter deliver to 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 the DOH, prior to the time named for delivery of this proposal, together with a 100% Performance Bond of a Surety Company, which Surety must be authorized to transact business in the State of Connecticut, and duly qualified therefore, and in the form constituting part of the Specification and a letter indicating those Small/Minority Business Enterprises that will perform work and/or provide materials, equipment or services as part of the contract.

In submitting this bid, it is understood that the right is reserved by the abovementioned DOH to reject any and all bids; and it is agreed that this bid may not be withdrawn for a period of thirty calendar (30) days from the date of bid opening or until the next work day immediately following said period if such period ends on weekend or a State holiday.

Security in the sum of _____ Dollars (\$ _____)
in the form of _____ is submitted herewith in accordance with the Specifications.

The undersigned bidder agrees to comply with the Section 3 plan included herein and all Federal requirements pertaining to conditions of employment to be observed and minimum wage rates to be paid under the contract, Segregated Facilities, Section 109 and Executive Order 11246.

Attached hereto is an affidavit, in proof that the undersigned has not entered into any collusion with any person in respect to this proposal, or any other proposal, or the submitting of proposals for the above Project. Also attached is a statement of contractor's qualifications, Certification of Bidder Regarding Equal Employment Opportunity, Certification of Bidder Regarding Section 3 and Segregated Facilities.

Date

Firm Name

Address

By: _____

Title: _____

(Bank Letterhead)

BID SECURITY

IRREVOCABLE LETTER OF CREDIT

Dear _____:

We hereby authorize you to draw on us to the aggregate amount of \$ _____
(five percent of the amount of the bid) in the event _____ withdraws
its bid within the bid holding period, or upon being awarded a contract, fails to provide adequate
performance and payment security as required by the Contract documents.

Such drafts must be accompanied by the following document:

A written certification by you that the proceeds of any draft drawn on this Letter of Credit will be
used solely to indemnify the DOH against loss or damage suffered by it resulting from any act or
omission described in the above paragraph.

We warrant to you that all drafts drawn in compliance with the terms of this Letter of Credit will be
unconditionally and duly honored upon delivery of the documentation specified and presented to this
office.

This Letter of Credit is irrevocable and shall be in full force and effect until notification in writing is
received from you that a contract for Project 2035 – 8 Third Avenue, Stratford, CT has been awarded and
executed, whereupon this Letter of Credit shall automatically be canceled.

This Letter of Credit shall not be modified or amended except upon the written agreement of this Bank
and the DOH.

Sincerely yours,

President

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. 2035 – 8 Third Avenue, Stratford, CT

Location 8 Third Avenue, Stratford, CT

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 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 Occupation 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; and that he will comply fully with all laws and regulations applicable to awards of subcontracts subject to section 44F.

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

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____ as Principal, and _____ Surety, are hereby held and firmly bound unto _____ as DOH in the penal sum of _____, for the payment of which, well and truly be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns. Signed this _____ day of _____, 2014.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted to _____ a certain Bid, attached hereto and hereby made a part hereof to enter into a contract in writing, for the _____

NOW, THEREFORE,

1. If said Bid shall be rejected, or in the alternate,
2. If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with the Bid) and shall furnish a bond for this faithful performance of said contract, and for the payment of all person performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid,

Then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any or all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time which the DOH may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

_____ (L.S)
Principal

Surety

SEAL

By: _____

PERFORMANCE AND PAYMENT BOND

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.)

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the
_____ Secretary of the corporation
named as Principal in the foregoing bond; that _____, who
signed the bond on behalf of the Principal, was then _____ of said
corporation; that I know his/her signature thereto is genuine; and that said bond was fully signed, sealed,
and attested for and in behalf of said corporation by authority of its governing body.

SUBCONTRACTOR IDENTIFICATION

(Provide additional forms for more subcontractors, as needed prior to 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

NAME AND TITLE OF SIGNER (Please type.)

SIGNATURE

DATE

CERTIFICATION OF BIDDERS REGARDING SECTION 3 AND SEGREGATED FACILITIES

Project Name:

Project No:

Name of Prime Contractor:

The undersigned hereby certifies that:

1. Section 3 provisions are included in the Contract
2. A written Section 3 plan was prepared and submitted as part of the bid proceedings (if bid equals or exceeds \$100,000.00)
3. No segregated facilities will be maintained.

Name and Title of Signer (Print or Type)

Signature

Date

CONTRACTOR

Section 3 Plan Format

_____ agrees to implement the following specific affirmative action steps directed at increasing the utilization of lower income residents and business within the _____.

- A. To ascertain from the DOH the exact boundaries of the Section 3 covered project area and where advantageous, seek the assistance of local officials in preparing and implementing the affirmative action plans.
- B. To attempt to recruit from within the city the necessary number of lower income residents through: local advertising media, signs placed at the proposed site for the project, and community organizations and public or private institutions operating within or serving the project area such as Service Employment and Redevelopment (SER), Opportunities Industrialization Center (OIC), Urban League, Concentrated Employment Program, Hometown Plan, or the U. S. Employment Service.
- C. To maintain a list of all lower income residents who have applied either on their own or on referral from any source, and to employ such persons, if otherwise eligible and if a vacancy exists.
- D. To insert this Section 3 plan in all bid documents, and to require all bidders on subcontracts to submit a Section 3 Affirmative Action Plan including utilization goals and the specific steps planned to accomplish these goals.
- E. To insure that contracts which are typically let on a negotiated rather than a bid basis in areas other than Section 3 covered project areas, are also let on a negotiated basis, wherever feasible, when let in a Section 3 covered project area.
- F. To formally contact unions, subcontractors and trade associations to secure their cooperation for this program.
- G. To insure that all appropriated project area business concerns are notified or pending subcontractural opportunities
- H. To maintain records, including copies of correspondence, memoranda, etc., that document all above affirmative action steps have been taken.
- I. To appoint or recruit an executive official of the company or agency as Equal Opportunity Officer to coordinate the implementation of the Section 3 plan.
- J. To list on Table A, information related to subcontracts to be awarded.
- K. To list on Table B, all projected workforce needs for all phases of this project by occupation, trade, skill level and number of positions.

As officers and representatives of _____

We, the undersigned, have read and fully agree to this Affirmative Action Plan, and become a party to the full implementation of this program.

Signature

Title

Date

Loans, grants, contracts and subsidies for less than \$100,000.00 will be exempt.

Table B

Estimated Project Workforce Breakdown

<i>Column 1</i>	<i>Column 2</i>	<i>Column 3</i>	<i>Column 4</i>	<i>Column 5</i>
Job Category	Total Estimated Population	No. Positions Currently Occupied by Permanent Employees	No. Positions Not Currently Occupied	No. Positions to be filled with LIPAR*
Officers/Supervisors				
Professionals				
Technicians				
Housing Sales/Rental Management				
Office Clerical				
Service Workers				
Others				
TRADE:				
Journeyman				
Helpers				
Apprentices				
Maximum No. of Trainees				
Others				
TRADE:				
Journeyman				
Helpers				
Apprentices				
Maximum No. of Trainees				
Others				
TRADE:				
Journeyman				
Helpers				
Apprentices				
Maximum No. of Trainees				
Others				
Total				

**Lower Income Project Area Residents. Individuals residing within the project area whose family income does not exceed 80% of the area median income in the SMSA.*

Company

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.

N/A

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 \geq R-19 insulation in contact with the subfloor in buildings with floor systems over vented crawl spaces. Install a 6-mil vapor barrier in contact with 100% of the floor of the crawl space (the ground), overlapping seams and piers at least 6 inches.

N/A

Duct Sealing (if applicable to building type)

In buildings with ducted forced-air heating and cooling systems, seal all penetrations of the air distribution system to reduce leakage in order to meet or exceed ENERGY STAR for Homes' duct leakage standard.

N/A

Air Barrier System

Ensure continuous unbroken air barrier surrounding all conditioned space and dwelling units. Align insulation completely and continuously with the air barrier.

N/A

Radiant Barriers: Roofing

When replacing or making a substantial repair to the roof, use radiant barrier sheathing or other radiant barrier material; if economically feasible, also use cool roofing materials.

N/A

Windows

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

X

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.

- | | |
|-----|---|
| X | <p>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.</p> |
| X | <p>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.]</p> |
| X | <p>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.</p> |
| N/A | <p>Clothes Dryer Exhaust
Vent clothes dryers directly to the outdoors using rigid-type duct work.</p> |
| X | <p>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.</p> |
| X | <p>Combustion Equipment
When installing new space and water-heating equipment, specify power-vented or direct vent combustion equipment.</p> |
| N/A | <p>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.</p> |
| X | <p>Mold Prevention: Surfaces
When replacing or repairing bathrooms, kitchens, and laundry rooms, use materials that have durable, cleanable surfaces.</p> |
| N/A | <p>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.</p> |
| N/A | <p>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.]</p> |
| X | <p>Lead-Safe Work Practices</p> |

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 for Construction Contracts

Based on HUD form 5370

Applicability. This form is applicable to any construction/development contract greater than \$100,000.

This form includes those clauses required by OMB's common rule on grantee procurement, implemented at HUD in 24 CFR 85.36, and those requirements set forth in Section 3 of the Housing and Urban Development Act of 1968 and its amendment by the Housing and Community Development Act of 1992, implemented by HUD at 24 CFR Part 135.

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1. Definitions

- (a) "Architect" means the person or other entity engaged by DOH to perform architectural, engineering, design, and other services related to the work as provided for in the contract. When DOH uses an engineer to act in this capacity, the terms "architect" and "engineer" shall be synonymous. The Architect shall serve as a technical representative of the Contracting Officer. The Architect's authority is as set forth elsewhere in this contract.
- (b) "Contract" means the contract entered into between DOH and the Contractor. It includes the forms of Bid, the Bid Bond, the Performance and Payment Bond or Bonds or other assurance of completion, the Certifications, Representations, and Other Statements of Bidders (form HUD-5370), these General Conditions of the Contract for Construction (form HUD-5370), the applicable wage rate determinations from the U.S. Department of Labor (when applicable), any special conditions included elsewhere in the contract, the specifications, and drawings. It includes all formal changes to any of those documents by addendum, change order, or other modification.
- (c) "Contracting Officer" means the person delegated the authority by DOH to enter into, administer, and/or terminate this contract and designated as such in writing to the Contractor. The term includes any successor Contracting Officer and any duly authorized representative of the Contracting Officer also designated in writing. The Contracting Officer shall be deemed the authorized agent of DOH in all dealings with the Contractor.
- (d) "Contractor" means the person or other entity entering into the contract with DOH to perform all of the work required under the contract.
- (e) "Drawings" means the drawings enumerated in the schedule of drawings contained in the Specifications and as described in the contract clause entitled Specifications and Drawings for Construction herein.
- (f) "DOH" means the State Department of Housing including the Commissioner, or any other person designated to act on its behalf.
- (g) "HUD" means the United States of America acting through the Department of Housing and Urban Development including the Secretary, or any other person designated to act on its behalf. HUD has agreed, subject to the provisions of an Annual Contributions Contract (ACC), to provide financial assistance to DOH, which includes assistance in financing the work to be performed under this contract. As defined elsewhere in these General Conditions or the contract documents, the determination of HUD may be required to authorize changes in the work or for release of funds to DOH for payment to the Contractor. Notwithstanding HUD's role, nothing in this contract shall be construed to create any contractual relationship between the Contractor and HUD.
- (h) "Grantee" means the State of Connecticut Department of Housing (DOH).
- (i) "Homeowner" means the owner(s) of the real property for which project is taking place and is a party to the contract.
- (j) "Project" means the entire project, whether construction or rehabilitation, the work for which is provided for in whole or in part under this contract.
- (k) "Specifications" means the written description of the technical requirements for construction and includes the criteria and tests for determining whether the requirements are met.
- (l) "Work" means materials, workmanship, and manufacture and fabrication of components.

2. Contractor's Responsibility for Work

- (a) The Contractor shall furnish all necessary labor, materials, tools, equipment, and transportation necessary for performance of the work. The Contractor shall also furnish all necessary water, heat, light, and power not made available to the Contractor by the Homeowner pursuant to the clause entitled Access to the Premises Section 5.3 of Homeowner Rehabilitation Agreement herein.
- (b) The Contractor shall perform on the site, and with its own organization, work equivalent to at least 15 percent of the total amount of work to be performed under the order. This percentage may be reduced by a supplemental agreement to this order if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of DOH.

- (c) At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the work site a competent superintendent who is satisfactory to the Contracting Officer and has authority to act for the Contractor.
- (d) The Contractor shall be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence, and shall take proper safety and health precautions to protect the work, the workers, the public, and the property of others. The Contractor shall hold and save DOH, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract.
- (e) The Contractor shall lay out the work from base lines and bench marks indicated on the drawings and be responsible for all lines, levels, and measurements of all work executed under the contract. The Contractor shall verify the figures before laying out the work and will be held responsible for any error resulting from its failure to do so.
- (f) The Contractor shall confine all operations (including storage of materials) on Homeowner premises to areas authorized or approved by the Contracting Officer.
- (g) The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. After completing the work and before final inspection, the Contractor shall (1) remove from the premises all scaffolding, equipment, tools, and materials (including rejected materials) that are not the property of the Homeowner and all rubbish caused by its work; (2) leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer; (3) perform all specified tests; and, (4) deliver the installation in complete and operating condition.
- (h) The Contractor's responsibility will terminate when all work has been completed, the final inspection made, and the work accepted by the Contracting Officer. The Contractor will then be released from further obligation except as required by the warranties specified elsewhere in the contract.

3. Architect's Duties, Responsibilities, and Authority

- (a) The Architect for this contract, and any successor, shall be designated in writing by the Contracting Officer.
- (b) The Architect shall serve as the Contracting Officer's technical representative with respect to architectural, engineering, and design matters related to the work performed under the contract. The Architect may provide direction on contract performance. Such direction shall be within the scope of the contract and may not be of a nature which: (1) institutes additional work outside the scope of the contract; (2) constitutes a change as defined in the Changes clause herein; (3) causes an increase or decrease in the cost of the contract; (4) alters the Construction Progress Schedule; or (5) changes any of the other express terms or conditions of the contract.
- (c) The Architect's duties and responsibilities may include but shall not be limited to:
 - (1) Making periodic visits to the work site, and on the basis of his/her on-site inspections, issuing written reports to DOH which shall include all observed deficiencies. The Architect shall file a copy of the report with the Contractor's designated representative at the site;
 - (2) Making modifications in drawings and technical specifications and assisting the Contracting Officer in the preparation of change orders and other contract modifications for issuance by the Contracting Officer;
 - (3) Reviewing and making recommendations with respect to - (i) the Contractor's construction progress schedules; (ii) the Contractor's shop and detailed drawings; (iii) the machinery, mechanical and other equipment and materials or other articles proposed for use by the Contractor; and, (iv) the Contractor's price breakdown and progress payment estimates; and,
 - (4) Assisting in inspections, signing Certificates of Completion, and making recommendations with respect to acceptance of work completed under the contract.

4. Other Contracts

DOH may undertake or award other contracts for additional work at or near the site of the work under this contract. The Contractor shall fully cooperate with the other contractors and with DOH employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by DOH employees

5. Pre-construction Conference and Notice to Proceed

- (a) Upon scheduling of the contract execution, and prior to the commencement of work, the Contractor shall attend a preconstruction conference with representatives of DOH, its Architect, and other interested parties convened by DOH. The conference will serve to acquaint the participants with the general plan of the construction operation and all other requirements of the contract. DOH or its Architect will provide the Contractor with the date, time, and place of the conference.
- (b) The contractor shall begin work upon receipt of a written Notice to Proceed from the Contracting Officer or designee. The Contractor shall not begin work prior to receiving such notice. Such notice shall not be prior to the homeowners three (3) day Notice of Cancellation period.

6. Site Investigation and Conditions Affecting the Work

- (a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to, (1) conditions bearing upon transportation, disposal, handling, and storage of materials; (2) the availability of labor, water, electric power, and roads; (3) uncertainties of weather, river stages, tides, or similar physical conditions at the site; (4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by DOH, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to DOH.
- (b) DOH assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by DOH. Nor does DOH assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in the contract.

7. Differing Site Conditions

- (a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of (1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or (2) unknown physical conditions at the site(s), of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.
- (b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. Work shall not proceed at the affected site, except at the Contractor's risk, until the Contracting Officer has provided written instructions to the Contractor. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work

under this contract, whether or not changed as a result of the conditions, the Contractor shall file a claim in writing to DOH within ten days after receipt of such instructions and, in any event, before proceeding with the work. An equitable adjustment in the contract price, the delivery schedule, or both shall be made under this clause and the contract modified in writing accordingly.

- (c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required; provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.
- (d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

8. Specifications and Drawings for Construction

- (a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.
- (b) Wherever in the specifications or upon the drawings the words “directed”, “required”, “ordered”, “designated”, “prescribed”, or words of like import are used, it shall be understood that the “direction”, “requirement”, “order”, “designation”, or “prescription”, of the Contracting Officer is intended and similarly the words “approved”, “acceptable”, “satisfactory”, or words of like import shall mean “approved by”, or “acceptable to”, or “satisfactory to” the Contracting Officer, unless otherwise expressly stated.
- (c) Where “as shown”, “as indicated”, “as detailed”, or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word “provided” as used herein shall be understood to mean “provide complete in place” that is “furnished and installed”.
- (d) “Shop drawings” means drawings, submitted to DOH by the Contractor, subcontractor, or any lower tier subcontractor, showing in detail (1) the proposed fabrication and assembly of structural elements and (2) the installation (i.e., form, fit, and attachment details) of materials of equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the Contractor to explain in detail specific portions of the work required by the contract. DOH may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.
- (e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with other contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor’s approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate DOH’s reasons therefore. Any work done before such approval shall be at the Contractor’s risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.
- (f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Architect approves any such variation and the Contracting Officer concurs, the Contracting Officer shall issue an appropriate modification to the contract, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.
- (g) It shall be the responsibility of the Contractor to make timely requests of DOH for such large scale and full size drawings, color schemes, and other additional information, not already in his possession, which

shall be required in the planning and production of the work. Such requests may be submitted as the need arises, but each such request shall be filed in ample time to permit appropriate action to be taken by all parties involved so as to avoid delay.

- (h) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by DOH and one set will be returned to the Contractor. As required by the Contracting Officer, the Contractor, upon completing the work under this contract, shall furnish a complete set of all shop drawings as finally approved. These drawings shall show all changes and revisions made up to the time the work is completed and accepted.
- (i) This clause shall be included in all subcontracts at any tier. It shall be the responsibility of the Contractor to ensure that all shop drawings prepared by subcontractors are submitted to the Contracting Officer.

9. Material and Workmanship

- (a) All equipment, material, and articles furnished under this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the contract to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of, and as approved by the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.
- (b) Approval of equipment and materials.
 - (1) The Contractor shall obtain the Contracting Officer's approval of the machinery and mechanical and other equipment to be incorporated into the work. When requesting approval, the Contractor shall furnish to the Contracting Officer the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the machinery and mechanical and other equipment. When required by this contract or by the Contracting Officer, the Contractor shall also obtain the Contracting Officer's approval of the material or articles which the Contractor contemplates incorporating into the work. When requesting approval, the Contractor shall provide full information concerning the material or articles. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.
 - (2) When required by the specifications or the Contracting Officer, the Contractor shall submit appropriately marked samples (and certificates related to them) for approval at the Contractor's expense, with all shipping charges prepaid. The Contractor shall label, or otherwise properly mark on the container, the material or product represented, its place of origin, the name of the producer, the Contractor's name, and the identification of the construction project for which the material or product is intended to be used.
 - (3) Certificates shall be submitted in triplicate, describing each sample submitted for approval and certifying that the material, equipment or accessory complies with contract requirements. The certificates shall include the name and brand of the product, name of manufacturer, and the location where produced.
 - (4) Approval of a sample shall not constitute a waiver of DOH right to demand full compliance with contract requirements. Materials, equipment and accessories may be rejected for cause even though samples have been approved.
 - (5) Wherever materials are required to comply with recognized standards or specifications, such specifications shall be accepted as establishing the technical qualities and testing methods, but shall not govern the number of tests required to be made nor modify other contract requirements. The Contracting Officer may require laboratory test reports on items submitted for approval or may approve materials on the basis of data submitted in certificates with samples. Check tests will be made on materials delivered for use only as frequently as the Contracting Officer determines necessary to insure compliance of materials with the specifications. The Contractor will assume all costs of

retesting materials which fail to meet contract requirements and/or testing materials offered in substitution for those found deficient.

- (6) After approval, samples will be kept in the Project office until completion of work. They may be built into the work after a substantial quantity of the materials they represent has been built in and accepted.
- (c) Requirements concerning lead-based paint. 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, HUD's Lead Safe Housing Rule and EPA's Repair Renovation, and Painting Rule at 40 CFR.80 Subpart E.

10. Permits and Codes

The Contractor shall give all notices and comply with all applicable laws, ordinances, codes, rules and regulations. Notwithstanding the requirement of the Contractor to comply with the drawings and specifications in the contract, all work installed shall comply with all applicable codes and regulations as amended by any waivers. Before installing the work, the Contractor shall examine the drawings and the specifications for compliance with applicable codes and regulations bearing on the work and shall immediately report any discrepancy it may discover to the Contracting Officer. Where the requirements of the drawings and specifications fail to comply with the applicable code or regulation, the Contracting Officer shall modify the contract by change order pursuant to the clause entitled Changes herein to conform to the code or regulation.

- (a) The Contractor shall secure and pay for all permits, fees, and licenses necessary for the proper execution and completion of the work. Where DOH can arrange for the issuance of all or part of these permits, fees and licenses, without cost to the Contractor, the contract amount shall be reduced accordingly.

11. Health, Safety, and Accident Prevention

- (a) In performing this contract, the Contractor shall:
 - (1) Ensure that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his/her health and/or safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation;
 - (2) Protect the lives, health, and safety of other persons;
 - (3) Prevent damage to property, materials, supplies, and equipment; and,
 - (4) Avoid work interruptions.
- (b) For these purposes, the Contractor shall:
 - (1) Comply with regulations and standards issued by the Secretary of Labor at 29 CFR Part 1926. Failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54, 83 Stat. 96), 40 U.S.C. 3701 et seq.; and
 - (2) Include the terms of this clause in every subcontract so that such terms will be binding on each subcontractor.
- (c) The Contractor shall maintain an accurate record of exposure data on all accidents incident to work performed under this contract resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment, and shall report this data in the manner prescribed by 29 CFR Part 1904.

- (d) The Contracting Officer shall notify the Contractor of any noncompliance with these requirements and of the corrective action required. This notice, when delivered to the Contractor or the Contractor's representative at the site of the work, shall be deemed sufficient notice of the noncompliance and corrective action required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to take corrective action promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not base any claim or request for equitable adjustment for additional time or money on any stop order issued under these circumstances.
- (e) The Contractor shall be responsible for its subcontractors' compliance with the provisions of this clause. The Contractor shall take such action with respect to any subcontract as DOH, the Secretary of Housing and Urban Development, or the Secretary of Labor shall direct as a means of enforcing such provisions.

12. Temporary Heating

The Contractor shall provide and pay for temporary heating, covering, and enclosures necessary to properly protect all work and materials against damage by dampness and cold, to dry out the work, and to facilitate the completion of the work. Any permanent heating equipment used shall be turned over to the Homeowner in the condition and at the time required by the specifications.

13. Availability and Use of Utility Services

- (a) The Homeowner shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. The Contractor shall carefully conserve any utilities furnished without charge.
- (b) The Contractor, at its expense and in a manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines. Before final acceptance of the work by DOH, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

14. Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements

- (a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed under this contract, and which do not unreasonably interfere with the work required under this contract.
- (b) The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during performance of this contract, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.
- (c) The Contractor shall protect from damage all existing improvements and utilities (1) at or near the work site and (2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. Prior to disturbing the ground at the construction site, the Contractor shall ensure that all underground utility lines are clearly marked.
- (d) The Contractor shall shore up, brace, underpin, secure, and protect as necessary all foundations and other parts of existing structures adjacent to, adjoining, and in the vicinity of the site, which may be affected by the excavations or other operations connected with the construction of the project.
- (e) Any equipment temporarily removed as a result of work under this contract shall be protected, cleaned,

and replaced in the same condition as at the time of award of this contract.

- (f) New work which connects to existing work shall correspond in all respects with that to which it connects and/or be similar to existing work unless otherwise required by the specifications.
- (g) No structural members shall be altered or in any way weakened without the written authorization of the Contracting Officer, unless such work is clearly specified in the plans or specifications.
- (h) If the removal of the existing work exposes discolored or unfinished surfaces, or work out of alignment, such surfaces shall be refinished, or the material replaced as necessary to make the continuous work uniform and harmonious. This, however, shall not be construed to require the refinishing or reconstruction of dissimilar finishes previously exposed, or finished surfaces in good condition, but in different planes or on different levels when brought together by the removal of intervening work, unless such refinishing or reconstruction is specified in the plans or specifications.
- (i) The Contractor shall give all required notices to any adjoining or adjacent property owner or other party before the commencement of any work.
- (j) The Contractor shall indemnify and save harmless DOH from any damages on account of settlement or the loss of lateral support of adjoining property, any damages from changes in topography affecting drainage, and from all loss or expense and all damages for which DOH may become liable in consequence of such injury or damage to adjoining and adjacent structures and their premises.
- (k) The Contractor shall repair any damage to vegetation, structures, equipment, utilities, or improvements, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

15. Temporary Buildings and Transportation of Materials

- (a) Temporary buildings (e.g., storage sheds, shops, offices, sanitary facilities) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to DOH. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.
- (b) The Contractor shall, as directed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any federal, state, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

16. Clean Air and Water

The contractor shall comply with the Clean Air Act, as amended, 42 USC 7401 et seq., the Federal Water Pollution Control Water Act, as amended, 33 U.S.C. 1251 et seq., and standards issued pursuant thereto in the facilities in which this contract is to be performed.

17. Energy Efficiency

The Contractor shall comply with mandatory standards and policies relating to energy efficiency which are contained in the energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub.L. 94-163) for the State in which the work under the contract is performed.

18. Green Building Standards

DOH will require that all replacement of residential properties, including reconstruction and new construction of substantially damaged properties meet the Enterprise Green Communities Standard.

For those buildings that are non-substantially damaged, DOH will require that they be rehabilitated following the HUD CPD Green Buildings Retrofit Checklist. The requirement for rehabilitation is that to the extent possible strive to meet the checklist standard where there are Energy Star, Water Sense and Federal Management Program-designed products available.

DOH strongly encourages the use of green infrastructure techniques to mitigate against storm water run-off and flooding and incorporate EPA's Green Infrastructure resources to the extent feasible.

19. Inspection and Acceptance of Construction

- (a) Definitions. As used in this clause -
 - (1) "Acceptance" means the act of an authorized representative of DOH by which DOH approves of the work performed under this contract. Acceptance may be partial or complete.
 - (2) "Inspection" means examining and testing the work performed under the contract (including, when appropriate, raw materials, equipment, components, and intermediate assemblies) to determine whether it conforms to contract requirements.
 - (3) "Testing" mean that element of inspection that determines the properties or elements, including functional operation of materials, equipment, or their components, by the application of established scientific principles and procedures.
- (b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. All work is subject to DOH inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.
- (c) DOH inspections and tests are for the sole benefit of DOH and do not: (1) relieve the Contractor of responsibility for providing adequate quality control measures; (2) relieve the Contractor of responsibility for loss or damage of the material before acceptance; (3) constitute or imply acceptance; or, (4) affect the continuing rights of DOH after acceptance of the completed work under paragraph (j) below.
- (d) The presence or absence of DOH inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specifications without the Contracting Officer's written authorization. All instructions and approvals with respect to the work shall be given to the Contractor by the Contracting Officer.
- (e) The Contractor shall promptly furnish, without additional charge, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. DOH may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. DOH shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.
- (f) DOH may conduct routine inspections of the construction site on a daily basis.
- (g) The Contractor shall, without charge, replace or correct work found by DOH not to conform to contract requirements, unless DOH decides that it is in its interest to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.

- (h) If the Contractor does not promptly replace or correct rejected work, DOH may (1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor, or (2) terminate for default the Contractor's right to proceed.
- (i) If any work requiring inspection is covered up without approval of DOH, it must, if requested by the Contracting Officer, be uncovered at the expense of the Contractor. If at any time before final acceptance of the entire work, DOH considers it necessary or advisable, to examine work already completed by removing or tearing it out, the Contractor, shall on request, promptly furnish all necessary facilities, labor, and material. If such work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray all the expenses of the examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the contract, the Contracting Officer shall make an equitable adjustment to cover the cost of the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.
- (j) The Contractor shall notify the Contracting Officer, in writing, as to the date when in its opinion all or a designated portion of the work will be substantially completed and ready for inspection. If the Architect determines that the state of preparedness is as represented, DOH will promptly arrange for the inspection. Unless otherwise specified in the contract, DOH shall accept, as soon as practicable after completion and inspection, all work required by the contract or that portion of the work the Contracting Officer determines and designates can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or DOH's right under any warranty or guarantee.

20. Use and Possession Prior to Completion

- (a) If applicable, the Homeowner may have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the Contracting Officer shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the Homeowner intends to take possession of or use. However, failure of the Contracting Officer to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the contract. The Homeowner's possession or use shall not be deemed an acceptance of any work under the contract.
- (b) While the Homeowner has such possession or use, the Contractor shall be relieved of the responsibility for (1) the loss of or damage to the work resulting from the Homeowner's possession or use, notwithstanding the terms of the clause entitled Permits and Codes herein; (2) all maintenance costs on the areas occupied; and, (3) furnishing heat, light, power, and water used in the areas occupied without proper remuneration therefore. If prior possession or use by the Homeowner delays the progress of the work or causes additional expense to the Contractor, an equitable adjustment shall be made in the contract price or the time of completion, and the contract shall be modified in writing accordingly.

21. Warranty of Title

The Contractor warrants good title to all materials, supplies, and equipment incorporated in the work and agrees to deliver the premises together with all improvements thereon free from any claims, liens or charges, and agrees further that neither it nor any other person, firm or corporation shall have any right to a lien upon the premises or anything appurtenant thereto.

22. Warranty of Construction

- (a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (j) of this clause, that work performed under this contract conforms to the contract

requirements and is free of any defect in equipment, material, or workmanship performed by the Contractor or any subcontractor or supplier at any tier. This warranty shall continue for a period of **one year** from the date of final acceptance of the work. If the Homeowner takes possession of any part of the work before final acceptance, this warranty shall continue for a period of (one year unless otherwise indicated) from the date that the Homeowner takes possession.

- (b) The Contractor shall remedy, at the Contractor's expense, any failure to conform, or any defect. In addition, the Contractor shall remedy, at the Contractor's expense, any damage to Homeowner-owned or controlled real or personal property when the damage is the result of—
 - (1) The Contractor's failure to conform to contract requirements; or
 - (2) Any defects of equipment, material, workmanship or design furnished by the Contractor.
- (c) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for (one year unless otherwise indicated) from the date of repair or replacement.
- (d) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect or damage.
- (e) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, DOH shall have the right to replace, repair or otherwise remedy the failure, defect, or damage at the Contractor's expense.
- (f) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall:
 - (1) Obtain all warranties that would be given in normal commercial practice;
 - (2) Require all warranties to be executed in writing, for the benefit of the homeowner; and,
 - (3) Enforce all warranties for the benefit of the homeowner.
- (g) In the event the Contractor's warranty under paragraph(a) of this clause has expired, the homeowner may bring suit at its own expense to enforce a subcontractor's, manufacturer's or supplier's warranty.
- (h) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defect of material or design furnished by the homeowner nor for the repair of any damage that results from any defect in DOH furnished material or design.
- (i) Notwithstanding any provisions herein to the contrary, the establishment of the time periods in paragraphs (a) and (c) above relate only to the specific obligation of the Contractor to correct the work, and have no relationship to the time within which its obligation to comply with the contract may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to its obligation other than specifically to correct the work.
- (j) This warranty shall not limit DOH's/Homeowner's rights under the Inspection and Acceptance of Construction clause of this contract with respect to latent defects, gross mistakes or fraud.

23. Contract Period

The Contractor shall complete all work required under this contract within 270 calendar days of the effective date of the contract, or within the time schedule established in the notice to proceed issued by the Contracting Officer.

24. Order of Provisions

In the event of a conflict between these General Conditions and the Specifications, the General Conditions shall prevail. In the event of a conflict between the contract and any applicable state or local law or regulation, the state or local law or regulation shall prevail; provided that such state or local law or regulation does not conflict with, or is less restrictive than applicable federal law, regulation, or Executive Order. In the event of such a conflict, applicable federal law, regulation, and Executive Order shall prevail.

25. Payments

- (a) DOH/Homeowner shall pay the Contractor the price as provided in this contract.
- (b) 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.
- (c) 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.
- (d) 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.
- (e) 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.
- (f) 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.
- (g) 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.
- (h) 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.
- (i) 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.

- (j) 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.
- (k) 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.

26. Contract Modifications

- (a) Only the Contracting Officer has authority to modify any term or condition of this contract. Any contract modification shall be authorized in writing.
- (b) The Contracting Officer may modify the contract unilaterally (1) pursuant to a specific authorization stated in a contract clause (e.g., Changes); or (2) for administrative matters which do not change the rights or responsibilities of the parties (e.g., change in DOH/homeowner's address). All other contract modifications shall be in the form of supplemental agreements signed by the Contractor and the Contracting Officer.
- (c) When a proposed modification requires the approval of DOH prior to its issuance (e.g., a change order that exceeds DOH's approved threshold), such modification shall not be effective until the required approval is received by DOH.

27. Changes

- (a) The Contracting Officer may, at any time, without notice to the sureties, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract including changes:
 - (1) In the specifications (including drawings and designs);
 - (2) In the method or manner of performance of the work;
 - (3) Directing the acceleration in the performance of the work.
- (b) Any other written order or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating (1) the date, circumstances and source of the order and (2) that the Contractor regards the order as a change order.
- (c) Except as provided in this clause, no order, statement or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.
- (d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for a adjustment based on defective specifications, no proposal for any change under paragraph (b) above shall be allowed for any costs incurred more than 20 days (5 days for oral

orders) before the Contractor gives written notice as required. In the case of defective specifications for which DOH is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.

- (e) The Contractor must assert its right to an adjustment under this clause within 30 days after (1) receipt of a written change order under paragraph (a) of this clause, or (2) the furnishing of a written notice under paragraph(b) of this clause, by submitting a written statement describing the general nature and the amount of the proposal. If the facts justify it, the Contracting Officer may extend the period for submission. The proposal may be included in the notice required under paragraph (b) above. No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.
- (f) The Contractor's written proposal for equitable adjustment shall be submitted in the form of a lump sum proposal supported with an itemized breakdown of all increases and decreases in the contract in at least the following details:
 - (1) Direct Costs. Materials (list individual items, the quantity and unit cost of each, and the aggregate cost); Transportation and delivery costs associated with materials; Labor breakdowns by hours or unit costs (identified with specific work to be performed); Construction equipment exclusively necessary for the change; Costs of preparation and/ or revision to shop drawings resulting from the change; Worker's Compensation and Public Liability Insurance; Employment taxes under FICA and FUTA; and, Bond Costs when size of change warrants revision.
 - (2) Indirect Costs. Indirect costs may include overhead, general and administrative expenses, and fringe benefits not normally treated as direct costs.
 - (3) Profit. The amount of profit shall be negotiated and may vary according to the nature, extent, and complexity of the work required by the change.

The allowability of the direct and indirect costs shall be determined in accordance with the Contract Cost Principles and Procedures for Commercial Firms in Part 31 of the Federal Acquisition Regulation (48 CFR 1-31), as implemented by HUD Handbook 2210.18, in effect on the date of this contract. The Contractor shall not be allowed a profit on the profit received by any subcontractor. Equitable adjustments for deleted work shall include a credit for profit and may include a credit for indirect costs. On proposals covering both increases and decreases in the amount of the contract, the application of indirect costs and profit shall be on the net- change in direct costs for the Contractor or subcontractor performing the work

- (g) The Contractor shall include in the proposal its request for time extension (if any), and shall include sufficient information and dates to demonstrate whether and to what extent the change will delay the completion of the contract in its entirety.
- (h) The Contracting Officer shall act on proposals within 30 days after their receipt, or notify the Contractor of the date when such action will be taken.
- (i) Failure to reach an agreement on any proposal shall be a dispute under the clause entitled Disputes herein. Nothing in this clause, however, shall excuse the Contractor from proceeding with the contract as changed.
- (j) Except in an emergency endangering life or property, no change shall be made by the Contractor without a prior order from the Contracting Officer.

28. Suspension of Work

- (a) The Contracting Officer may order the Contractor in writing to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of DOH/Homeowner.

If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified (or within a reasonable time if not specified) in this contract an adjustment may be made for any increase in the cost of performance of the contract

(excluding profit) necessarily caused by such unreasonable suspension, delay, or interruption and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor or for which any equitable adjustment is provided for or excluded under any other provision of this contract.

(b) A claim under this clause shall not be allowed without prior written approval of the Contracting Officer.

29. Disputes

- (a) "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.
- (b) 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.
- (c) All claims by the Contractor shall be made in writing and submitted to the Contracting Officer for a written decision.
- (d) A claim by the Homeowner against the Contractor shall be subject to a written decision by the Contracting Officer.
- (e) The Contracting Officer shall, within 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.
- (f) 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) days after receipt of the Contracting Officer's decision.
- (g) 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.

30. Default

- (a) If the Contractor refuses or fails to prosecute the work, or any separable part thereof, with the diligence that will insure its completion within the time specified in this contract, or any extension thereof, or fails to complete said work within this time, the Contracting Officer may, by written notice to the Contractor, terminate the right to proceed with the work (or separable part of the work) that has been delayed. In this event, DOH may take over the work and complete it, by contract or otherwise, and may take possession of and use any materials, equipment, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to DOH/Homeowner resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by DOH/Homeowner in completing the work.
- (b) The Contractor's right to proceed shall not be terminated or the Contractor charged with damages under this clause if—
 - (1) The delay in completing the work arises from unforeseeable causes beyond the control and without

the fault or negligence of the Contractor. Examples of such causes include (i) acts of God, or of the public enemy, (ii) acts of DOH or other governmental entity in either its sovereign or contractual capacity, (iii) acts of another contractor in the performance of a contract with DOH, (iv) fires, (v) floods, (vi) epidemics, (vii) quarantine restrictions, (viii) strikes, (ix) freight embargoes, (x) unusually severe weather, or (xi) delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and

(2) The Contractor, within days (5 days unless otherwise indicated) from the beginning of such delay (unless extended by the Contracting Officer) notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of the delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, time for completing the work shall be extended by written modification to the contract. The findings of the Contracting Officer shall be reduced to a written decision which shall be subject to the provisions of the Disputes clause of this contract

(c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been for convenience of DOH.

31. Liquidated Damages

(a) If the Contractor fails to complete the work within the time specified in the contract, or any extension, as specified in the clause entitled Default of this contract, the Contractor may pay to DOH as liquidated damages, the sum of \$100.00 for each day of delay. If different completion dates are specified in the contract for separate parts or stages of the work, the amount of liquidated damages shall be assessed on those parts or stages which are delayed. To the extent that the Contractor's delay or nonperformance is excused under another clause in this contract, liquidated damages shall not be due DOH. The Contractor remains liable for damages caused other than by delay.

(b) If DOH terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned DOH in completing the work.

(c) If DOH does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.

32. Termination for Convenience

(a) The Contracting Officer may terminate this contract in whole, or in part, whenever the Contracting Officer determines that such termination is in the best interest of DOH/Homeowner. Any such termination shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which the performance of the work under the contract is terminated, and the date upon which such termination becomes effective.

(b) If the performance of the work is terminated, either in whole or in part, DOH/Homeowner shall be liable to the Contractor for reasonable and proper costs resulting from such termination upon the receipt by DOH of a properly presented claim setting out in detail: (1) the total cost of the work performed to date of termination less the total amount of contract payments made to the Contractor; (2) the cost (including reasonable profit) of settling and paying claims under subcontracts and material orders for work performed and materials and supplies delivered to the site, payment for which has not been made by DOH to the Contractor or by the Contractor to the subcontractor or supplier; (3) the cost of preserving and protecting the work already performed until DOH or assignee takes possession thereof or assumes responsibility therefore; (4) the actual or estimated cost of legal and accounting services reasonably necessary to prepare and present the termination claim to DOH/Homeowner; and (5) an amount constituting a reasonable profit on the value of the work performed by the Contractor.

(c) The Contracting Officer will act on the Contractor's claim within days (60 days unless otherwise

indicated) of receipt of the Contractor's claim.

- (d) Any disputes with regard to this clause are expressly made subject to the provisions of the Disputes clause of this contract.

33. Assignment of Contract

The Contractor shall not assign or transfer any interest in this contract; except that claims for monies due or to become due from DOH/Homeowner under the contract may be assigned to a bank, trust company, or other financial institution. Such assignments of claims shall only be made with the written concurrence of the Contracting Officer. If the Contractor is a partnership, this contract shall inure to the benefit of the surviving or remaining member(s) of such partnership as approved by the Contracting Officer.

34. Insurance

- (a) Before commencing work, the Contractor and each subcontractor shall furnish DOH with certificates of insurance listing DOH and the Homeowner as additionally insured A.T.I.M.A. showing the following insurance is in force and will insure all operations under the Contract:
 - (1) Workers' Compensation, in accordance with state or Territorial Workers' Compensation laws.
 - (2) Commercial General Liability with a combined single limit for bodily injury and property damage of not less than \$1,000,000 per occurrence to protect the Contractor and each subcontractor against claims for bodily injury or death and damage to the property of others. This shall cover the use of all equipment, hoists, and vehicles on the site(s) not covered by Automobile Liability under (3) below. If the Contractor has a "claims-made" policy, then the following additional requirements apply: the policy must provide a "retroactive date" which must be on or before the execution date of the Contract; and the extended reporting period may not be less than five years following the completion date of the Contract.
 - (3) Automobile Liability on owned and non-owned motor vehicles used on the site(s) or in connection therewith for a combined single limit for bodily injury and property damage of not less than \$1,000,000 per occurrence.
 - (4) Cargo Insurance in the amount of \$250,000 is required when the project involves raising the structure above the Base Flood Elevation.
- (b) Before commencing work, the Contractor shall furnish DOH with a certificate of insurance evidencing that Builder's Risk (fire and extended coverage) Insurance on all work in place and/or materials stored at the building site(s), including foundations and building equipment, is in force. The Builder's Risk Insurance shall be for the benefit of the Contractor, the Homeowner and DOH as their interests may appear and each shall be named in the policy or policies as an insured. The Contractor in installing equipment supplied by DOH shall carry insurance on such equipment from the time the Contractor takes possession thereof until the Contract work is accepted by DOH. The Builder's Risk Insurance need not be carried on excavations, piers, footings, or foundations until such time as work on the superstructure is started. It need not be carried on landscape work. Policies shall furnish coverage at all times for the full cash value of all completed construction, as well as materials in place and/or stored at the site(s), whether or not partial payment has been made by DOH. The Contractor may terminate this insurance on buildings as of the date taken over for occupancy by the Homeowner. The Contractor is not required to carry Builder's Risk Insurance for modernization work which does not involve structural alterations or additions and where the Homeowner's existing fire and extended coverage policy can be endorsed to include such work.
- (c) All insurance shall be carried with companies which are financially responsible and admitted to do business in the State in which the project is located with a minimum Best rating of A-. If any such insurance is due to expire during the construction period, the Contractor (including subcontractors, as applicable) shall not permit the coverage to lapse and shall furnish evidence of coverage to the

Contracting Officer. All certificates of insurance, as evidence of coverage, shall provide that no coverage may be canceled or non-renewed by the insurance company until at least 30 days prior written notice has been given to the Contracting Officer.

35. Subcontracts

- (a) Definitions. As used in this contract -
 - (1) "Subcontract" means any contract, purchase order, or other purchase agreement, including modifications and change orders to the foregoing, entered into by a subcontractor to furnish supplies, materials, equipment, and services for the performance of the prime contract or a subcontract.
 - (2) "Subcontractor" means any supplier, vendor, or firm that furnishes supplies, materials, equipment, or services to or for the Contractor or another subcontractor.
- (b) The Contractor shall not enter into any subcontract with any subcontractor who has been temporarily denied participation in a HUD program or who has been suspended or debarred from participating in contracting programs by any agency of the United States Government or of the state in which the work under this contract is to be performed.
- (c) The Contractor shall be as fully responsible for the acts or omissions of its subcontractors, and of persons either directly or indirectly employed by them as for the acts or omissions of persons directly employed by the Contractor.
- (d) The Contractor shall insert appropriate clauses in all subcontracts to bind subcontractors to the terms and conditions of this contract insofar as they are applicable to the work of subcontractors.
- (e) Nothing contained in this contract shall create any contractual relationship between any subcontractor and DOH or between the subcontractor and HUD.

36. Subcontracting with Small and Minority Firms, Women's Business Enterprise, and Labor Surplus Area Firms

The Contractor shall take the following steps to ensure that, whenever possible, subcontracts are awarded to small business firms, minority firms, women's business enterprises, and labor surplus area firms:

- (a) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
- (b) Ensuring that small and minority businesses and women's business enterprises are solicited whenever they are potential sources;
- (c) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses and women's business enterprises;
- (d) Establishing delivery schedules, where the requirements of the contract permit, which encourage participation by small and minority businesses and women's business enterprises; and
- (e) Using the services and assistance of the U.S. Small Business Administration, the Minority Business Development Agency of the U.S. Department of Commerce, and State and local governmental small business agencies.

37. Equal Employment Opportunity

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

- (a) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, or handicap.
- (b) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, national origin, or

handicap. Such action shall include, but not be limited to, (1) employment, (2) upgrading, (3) demotion, (4) transfer, (5) recruitment or recruitment advertising, (6) layoff or termination, (7) rates of pay or other forms of compensation, and (8) selection for training, including apprenticeship.

- (c) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.
- (d) The Contractor shall, 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, national origin, or handicap.
- (e) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.
- (f) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.
- (g) The Contractor shall furnish all information and reports required by Executive Order 11246, as amended, Section 503 of the Rehabilitation Act of 1973, as amended, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto. The Contractor shall permit access to its books, records, and accounts by the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (h) In the event of a determination that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, 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 under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended, the rules, regulations, and orders of the Secretary of Labor, or as otherwise provided by law.
- (i) The Contractor shall include the terms and conditions of this clause in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor. The Contractor shall take such action with respect to any subcontract or purchase order as the Secretary of Housing and Urban Development or the Secretary of Labor may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.
- (j) Compliance with the requirements of this clause shall be to the maximum extent consistent with, but not in derogation of, compliance with section 7(b) of the Indian Self-Determination and Education Assistance Act and the Indian Preference clause of this contract.

38. Employment, Training, and Contracting Opportunities for Low-Income Persons, Section 3 of the Housing and Urban Development Act of 1968.

- (a) The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (Section 3). The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by Section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.
- (b) The parties to this contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement Section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the Part 135 regulations.
- (c) The contractor agrees to send to each labor organization or representative of workers with which the

contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this Section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the Section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

- (d) The contractor agrees to include this Section 3 clause in every subcontract subject to compliance with regulations in 24 CFR Part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this Section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR Part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR Part 135.
- (e) The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR Part 135.
- (f) Noncompliance with HUD's regulations in 24 CFR Part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.
- (g) With respect to work performed in connection with Section 3 covered Indian housing assistance, section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of Section 3 and Section 7(b) agree to comply with Section 3 to the maximum extent feasible, but not in derogation of compliance with section 7(b).

39. Interest of Members of Congress

No member of or delegate to the Congress of the United States of America shall be admitted to any share or part of this contract or to any benefit that may arise therefrom.

40. Interest of Members, Officers, or Employees and Former Members, Officers, or Employees

No member, officer, or employee of DOH, no member of the governing body of the locality in which the project is situated, no member of the governing body of the locality in which DOH was activated, and no other public official of such locality or localities who exercises any functions or responsibilities with respect to the project, shall, during his or her tenure, or for one year thereafter, have any interest, direct or indirect, in this contract or the proceeds thereof.

41. Limitations on Payments made to Influence Certain Federal Financial Transactions

- (a) The Contractor agrees to comply with Section 1352 of Title 31, United States Code which prohibits the use of Federal appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.
- (b) The Contractor further agrees to comply with the requirement of the Act to furnish a disclosure (OMB Standard Form LLL, Disclosure of Lobbying Activities) if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be

paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

42. Royalties and Patents

The Contractor shall pay all royalties and license fees. It shall defend all suits or claims for infringement of any patent rights and shall save DOH/Homeowner harmless from loss on account thereof; except that DOH shall be responsible for all such loss when a particular design, process or the product of a particular manufacturer or manufacturers is specified and the Contractor has no reason to believe that the specified design, process, or product is an infringement. If, however, the Contractor has reason to believe that any design, process or product specified is an infringement of a patent, the Contractor shall promptly notify the Contracting Officer. Failure to give such notice shall make the Contractor responsible for resultant loss.

43. Examination and Retention of Contractor's Records

- (a) DOH, HUD, or Comptroller General of the United States, or any of their duly authorized representatives shall, until 3 years after final payment under this contract, have access to and the right to examine any of the Contractor's directly pertinent books, documents, papers, or other records involving transactions related to this contract for the purpose of making audit, examination, excerpts, and transcriptions.
- (b) The Contractor agrees to include in first-tier subcontracts under this contract a clause substantially the same as paragraph (a) above. "Subcontract," as used in this clause, excludes purchase orders not exceeding \$10,000.
- (c) The periods of access and examination in paragraphs (a) and (b) above for records relating to (1) appeals under the Disputes clause of this contract, (2) litigation or settlement of claims arising from the performance of this contract, or (3) costs and expenses of this contract to which DOH, HUD, or Comptroller General or any of their duly authorized representatives has taken exception shall continue until disposition of such appeals, litigation, claims, or exceptions.

44. Labor Standards - Davis-Bacon and Related Acts

Except for housing rehabilitation/reconstruction projects designed to contain fewer than eight (8) units, if the total amount of this contract exceeds \$2,000, the Federal labor standards set forth in the clause below shall apply to the development or construction work to be performed under the contract.

(a) Minimum Wages.

- (1) All laborers and mechanics employed under this contract in the development or construction of the project(s) involved will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof (if applicable), regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the regular weekly period, are deemed to be constructively made or incurred during such weekly period. If applicable, such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR

5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers (if applicable).

- (2) (i) Any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met: (A) The work to be performed by the classification requested is not performed by a classification in the wage determination; and (B) The classification is utilized in the area by the construction industry; and (C) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
 - (ii) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employee Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary.
 - (iii) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary.
 - (iv) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (a)(2)(ii) or (iii) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in classification.
 - (3) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
 - (4) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.
- (b) Withholding of funds. HUD or its designee shall, upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working in the construction or development of the project, all or part of the wages required by the contract, HUD or its designee may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee

may, after written notice to the Contractor, disburse such amounts withheld for and on account of the Contractor or subcontractor to the respective employees to whom they are due.

(c) Payrolls and basic records.

(1) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working in the construction or development of the project. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found, under 29 CFR 5.5(a)(1)(iv), that the wages of any laborer or mechanic include the amount of costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(2)

(i) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under subparagraph (c)(1) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The Contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1214-0149.)

(ii) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

- a. That the payroll for the payroll period contains the information required to be maintained under paragraph (c) (1) of this clause and that such information is correct and complete;
- b. That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3; and
- c. That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(iii) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirements for submission of the "Statement of Compliance" required by subparagraph (c)(2)(ii) of this clause.

(iv) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.

(3) The Contractor or subcontractor shall make the records required under subparagraph (c)(1) available for inspection, copying, or transcription by authorized representatives of HUD or its designee, the Contracting Officer, or the Department of Labor and shall permit such representatives to interview

employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

- (d) (1) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship and Training, Employer and Labor Services (OATELS), or with a State Apprenticeship Agency recognized by OATELS, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by OATELS or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in this paragraph, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator of the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event OATELS, or a State Apprenticeship Agency recognized by OATELS, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- (2) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate in the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program,

- the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- (3) Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.
 - (e) Compliance with Copeland Act requirements. The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.
 - (f) Contract termination; debarment. A breach of this contract clause may be grounds for termination of the contract and for debarment as a Contractor and a subcontractor as provided in 29 CFR 5.12.
 - (g) Compliance with Davis-Bacon and related Act requirements. All rulings and interpretations of the Davis-Bacon and related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.
 - (h) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this clause shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and DOH, HUD, the U.S. Department of Labor, or the employees or their representatives.
 - (i) Certification of eligibility.
 - (1) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
 - (2) No part of this contract shall be subcontracted to any person or firm ineligible for award of a United States Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
 - (3) The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U.S.C. 1001.
 - (j) Contract Work Hours and Safety Standards Act. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.
 - (1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics, including watchmen and guards, shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.
 - (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the provisions set forth in subparagraph (j)(1) of this clause, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic (including watchmen and guards) employed in violation of the provisions set forth in subparagraph (j)(1) of this clause, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by provisions set forth in subparagraph (j)(1) of this clause.
 - (3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such contract or any Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime Contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the provisions set forth in subparagraph (j)(2) of this clause.
 - (k) Subcontracts. The Contractor or subcontractor shall insert in any subcontracts all the provisions contained

in this clause, and such other clauses as HUD or its designee may by appropriate instructions require, and also a clause requiring the subcontractors to include these provisions in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all these provisions

45. . Non-Federal Prevailing Wage Rates

- (a) Any prevailing wage rate (including basic hourly rate and any fringe benefits), determined under State or tribal law to be prevailing, with respect to any employee in any trade or position employed under the contract, is inapplicable to the contract and shall not be enforced against the Contractor or any subcontractor, with respect to employees engaged under the contract whenever such non-Federal prevailing wage rate exceeds:
 - (1) The applicable wage rate determined by the Secretary of Labor pursuant to the Davis-Bacon Act (40 U.S.C. 3141 et seq.) to be prevailing in the locality with respect to such trade;
- (b) An applicable apprentice wage rate based thereon specified in an apprenticeship program registered with the U.S. Department of Labor (DOL) or a DOL- recognized State Apprenticeship Agency; or
- (c) An applicable trainee wage rate based thereon specified in a DOL-certified trainee program.

46. Procurement of Recovered Materials.

- (a) In accordance with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, the Contractor shall procure items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR Part 247 that contains the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition. The contractor shall procure items designated in the EPA guidelines that contain the highest percentage of recovered materials practicable unless the Contractor determines that such items: (1) are not reasonably available in a reasonable period of time; (2) fail to meet reasonable performance standards, which shall be determined on the basis of the guidelines of the National Institute of Standards and Technology, if applicable to the item; or (3) are only available at an unreasonable price.
- (b) Paragraph (a) of this clause shall apply to items purchased under this contract where: (1) the Contractor purchases in excess of \$10,000 of the item under this contract; or (2) during the preceding Federal fiscal year, the Contractor: (i) purchased any amount of the items for use under a contract that was funded with Federal appropriations and was within a Federal agency or a State agency of a political subdivision of a State; and (ii) purchased a total of in excess of \$10,000 of the item both under and outside that contract.

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 2035 – 8 Third Avenue, Connecticut Department of Housing, Community Development Block Grant, Disaster Recovery Program , Owner Occupied Rehabilitation and Rebuilding Program, dated 9/30/2014, 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 T0.00
 2. General Notes and Site Plan – Sheet C-1.0
 3. Details – Sheet C-2.0
 4. Details – Sheet C-2.1
 5. Building Elevations – Sheet A-1.0
 6. Foundation Design - Existing Conditions Plan & Structural Notes – Sheet S1
 7. Foundation Design - Foundation Plan – Sheet S2
 8. Foundation Design - First Floor Framing and Support Plan –Sheet S3
 9. Foundation Design - Section & Details – Sheet S4

END OF SECTION

SECTION 00 31 26

EXISTING HAZARDOUS MATERIAL INFORMATION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. "Hazardous Material Inspection Report, 8 Third Avenue, Stratford, Stratford Connecticut" July 23, 2014

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION



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**

**8 Third Avenue
Stratford, Connecticut**

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

July 23, 2014

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

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

I. Introduction

Facility Support Services, LLC (FSS) was contracted by Martinez, Couch & Associates, LLC (MCA) to perform a limited scope hazardous materials survey of 8 Third Avenue in Stratford, Connecticut. The purpose of this inspection was to identify the presence of asbestos, PCBs, lead paint and mold in certain building materials proposed for removal/demolition that qualify for the repair/replacement of items damaged by the October 2012 Tropical Storm Sandy under the Connecticut Department of Housing (DOH), Community Development Block Grant – Disaster Recovery Owner Occupied Recovery and Rehabilitation Program. Due to the proposed raising of the residence above grade to accommodate flood levels, FSS did not perform radon testing.

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 June 16, 2014. Testing for total spores in air was conducted for the following areas of 8 Third Avenue in Stratford, Connecticut to identify concerns with indoor air quality related to mold and fungi:

- Living Room
- 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
8 Third Avenue, Stratford, Connecticut

Sample Number & Location	Raw Count	Total Fungi (Count/m ³)	Spore Types Present
20140616_2035_MS1 Living Room	1,014	21,420	Ascospores, Aspergillus/Penicillium, Basidiospores, Cladosporium, Ganoderma, Myxomycetes
20140616_2035_MS2 Outside	726	15,300	Alternaria, Ascospores, Basidiospores, Cladosporium, Epicoccum, Fusarium, Ganoderma, Myzomycetes, rust, Cercospora

The primary mold species in the both indoor and outdoor samples was Ascospores.

Ascospores – Encompasses a wide range of genera worldwide and associated with member of the Phylum Ascomycota. This spore type is found everywhere in nature.

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 8 Third Avenue residence of to 21,420/m³, which is above the 10,000/m³ 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 sample at a level above the outside sample, well above the 1/3 level noted in the previous paragraph.

III. Asbestos

FSS conducted a limited scope asbestos inspection and bulk sampling on June 16, 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:

- White insulation in crawl space
- White insulation in attic
- Green and white linoleum in kitchen
- Black mastic associated with green and white linoleum
- Ceramic tiles and grout in kitchen
- Sheetrock and taping compound (living room and kitchen)
- Spackle (living room b/w bath and closet)
- Grey caulk (exterior window)
- White caulk (interior window)

This asbestos inspection was performed in accordance with the EPA, NESHAP regulations for building renovations and demolition, 40 CFR Part 61, Amended

11/20/1990. The bulk asbestos samples collected during this inspection were delivered under full chain of custody and analyzed by EMSL Analytical, Inc., via EPA/600/R-93/116. This is currently the approved EPA test method, which uses Polarized Light Microscopy (PLM). EMSL Analytical, Inc. is an accredited asbestos laboratory (NVLAP # 200700-0) and is a State of Connecticut approved public health laboratory for asbestos analysis. Copies of the laboratory analytical results can be found in Attachment D of this report.

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

IV. PCBs

Following an inspection of building materials proposed for renovations, one suspected PCB-containing materials were identified:

- Mastic associated with green and white linoleum

FSS collected a sample of these materials for laboratory analysis for PCBs by EPA Method 8082A with Soxhlet Extraction. Laboratory data indicates that the PCB content of the interior window glazing was not detected (<0.80 ppm), below the 1 ppm action level for PCBs. No further investigations, or special disposal requirements (for PCBs) are required for these materials.

V. Lead

The subject residential structure was built prior to 1978 (1923) and therefore the likelihood that lead painted surfaces are present is increased. As a residential structure built prior to 1978 the removal of lead painted materials where a child under 6 is housed, or may visit, would trigger the EPA Renovation, Repair and Painting (RRP) rule. Furthermore, adherence to the requirements of The Lead-Safe Housing Rule (US Department of Housing and Urban development, HUD) are stipulated by the Connecticut

Department of Housing (DOH) as part of the Community Development Block Grant – Disaster Recovery Owner Occupied Recovery and Rehabilitation Program.

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

- Exterior Areas
 - overhang
 - vertical white trim
 - column under house

A copy of the Gilbertco Lead Inspection Report is provided in Appendix E. Following the HUD Lead-Safe Housing Guidelines, on-intact materials should undergo interim measures to abatement the hazard. Non-intact lead containing materials have been identified as the following:

- Exterior Areas
 - overhang
 - vertical white trim
 - column under house

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

VI. Conclusions & Recommendations

When the structure is renovated, all removed debris should be sent to an appropriate landfill for final disposal following all appropriate regulations. Any work involving lead-containing paints should be conducted under the EPA's RRP Renovation, Repair and Painting Rule. Any material discovered during renovation activities which

have not been included in this survey must be presumed to contain asbestos, lead and PCBs until such time that the material can be evaluated and sampled.

Asbestos – No Asbestos containing materials (>1% asbestos) were identified in materials tested.

PCBs - One suspected PCB-containing materials was identified in proposed renovation materials and sampled. Results indicates that the mastic associated with the green and white linoleum located in the kitchen did not contained detectable levels of PCBs (<0.80 ppm), below the 1 ppm action level for PCBs, and therefore this materials is unregulated for handling and disposal.

Mold – Mold spore count analysis indicates accelerated mold growth in the residence (when comparing indoor mold spore count numbers to exterior spore count numbers). A mold abatement plan should be incorporated into proposed renovations for this residence.

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

- Exterior Areas
 - overhang
 - vertical white trim
 - column under house

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

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: 241402260
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:
Received: 06/16/2014
Analyzed: 06/19/2014

Proj: 22214-2035

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

Lab Sample Number:	241402260-0001			241402260-0002		
Client Sample ID:	20140616-2035-MS1			20140616-2035-MS2		
Volume (L):	150			150		
Sample Location:	Living room			Outside		
Spore Types	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total
Alternaria	-	-	-	2	40	0.3
Ascospores	520	11000	51.4	276	5820	38
Aspergillus/Penicillium	3	60	0.3	-	-	-
Basidiospores	442	9330	43.6	271	5720	37.4
Bipolaris++	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-
Cladosporium	18	380	1.8	81	1700	11.1
Curvularia	-	-	-	-	-	-
Epicoccum	-	-	-	4	80	0.5
Fusarium	-	-	-	32	680	4.4
Ganoderma	11	230	1.1	19	400	2.6
Myxomycetes++	20	420	2	22	460	3
Pithomyces	-	-	-	-	-	-
Rust	-	-	-	15	320	2.1
Scopulariopsis	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-
Torula	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-
Cercospora	-	-	-	4	80	0.5
Total Fungi	1014	21420	100	726	15300	100
Hyphal Fragment	10	210	1	21	440	2.9
Insect Fragment	-	-	-	-	-	-
Pollen	3	60	0.3	35	740	4.8
Analyt. Sensitivity 600x	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	2	-	-	2	-
Fibrous Particulate (1-4)	-	2	-	-	-	-
Background (1-5)	-	4	-	-	2	-

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

Gloria V. Oriol, Laboratory Manager
or Other Approved Signatory

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

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: 06/19/2014 16:35:02

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



EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Microbiology Chain of Custody

EMSL Order Number (Lab Use Only):

241402260

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

Company: Facility Support Services, LLC		EMSL-Bill to: <input type="checkbox"/> Different <input checked="" type="checkbox"/> Same <small>If Bill to is Different note instructions in Comments**</small>	
Street: 2685 State Street		<i>Third Party Billing requires written authorization from third party</i>	
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 - 2035		Please Provide Results: <input type="checkbox"/> FAX <input checked="" type="checkbox"/> E-mail <input type="checkbox"/> Mail	
U.S. State Samples Taken: CT		Connecticut Samples: <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> 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	• M173 Allegro M2	• M004 Allergenco	• M032 Allergenco-D	• M172 Versa Trap
• M049 BioSIS	• M003 Burkard	• M043 Cyclex	• M002 Cyclex-d	
• M030 Micro 5	• M174 MoldSnap	• M176 Relle Smart	• M130 Via-Cell	

Other Microbiology Test Codes

<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • M014 Endotoxin Analysis • M015 Heterotrophic Plate Count • M180 Real Time Q-PCR-ERMI 36 • Panel • M018 Total Coliform (Membrane Filtration) • M020 Fecal <i>Streptococcus</i> (Membrane Filtration) • M210-215 <i>Legionella</i> Detection • M026 Recreational Water Screen • M027 Mycotoxin Analysis 	<ul style="list-style-type: none"> • M029 <i>Enterococci</i> • M019 Fecal Coliform • M133 MRSA Analysis • M028 <i>Cryptococcus neoformans</i> Detection • M120 <i>Histoplasma capsulatum</i> Detection • M033-39 Allergen Testing • M044 Group Allergen (Cat, Dog, Cockroach, Dustmites) • Other See Analytical Price Guide
---	---	---

Preservation Method (Water):

Name of Sampler:	Signature of Sampler:
------------------	-----------------------

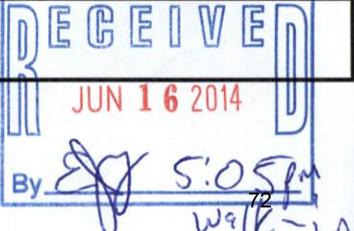
Sample #	Sample Location	Sample Type	Test Code	Volume/Area	Date/Time Collected
Example: A1	Kitchen	Air	M001	75L	1/1/12 4:00 PM
20140616-2035-MS1	Living Room	AIR	M001	150L	
20140616-2035-MS2	Outside	AIR	M001	150L	

Client Sample # (s): MS1 - MS2	Total # of Samples: 2
--------------------------------	-----------------------

Relinquished (Client): Kevin Bogue	Date: 6/16/14	Time:
------------------------------------	---------------	-------

Received (Client):	Date:	Time:
--------------------	-------	-------

Comments:



ATTACHMENT B

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

Kevin Bogue
SIGNATURE

Joel Muller
COMMISSIONER

ATTACHMENT C
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: 241402261
CustomerID: FSS93
CustomerPO:
ProjectID:

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

Hamden, CT 06517

Project: 22214-2035

Phone: (203) 288-1281
Fax: (203) 248-4409
Received: 06/16/14 5:05 PM
Analysis Date: 6/17/2014
Collected:

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
20140616-2035-S1A 241402261-0001	Crawl space - white insulation	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
20140616-2035-S1B 241402261-0002	Crawl space - white insulation	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
20140616-2035-S2A 241402261-0003	Attic - white insulation	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
20140616-2035-S2B 241402261-0004	Attic - white insulation	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
20140616-2035-S3A 241402261-0005	Kitchen - green + white linoleum	Brown/White/Green Fibrous Homogeneous	3% Cellulose 30% Synthetic	67% Non-fibrous (other)	None Detected
sample is a composite of vinyl and backing layer					
20140616-2035-S3B 241402261-0006	Kitchen - green + white linoleum	Brown/White Non-Fibrous Homogeneous	20% Synthetic 5% Cellulose	75% Non-fibrous (other)	None Detected
sample is a composite of vinyl and backing layer					
20140616-2035-S3C 241402261-0007	Kitchen - green + white linoleum	Gray/Green Fibrous Homogeneous	<1% Synthetic 8% Glass 5% Cellulose	35% Ca Carbonate 52% Non-fibrous (other)	None Detected
This is a composite result of both vinyl and backing layers.					

Analyst(s)

Lauren Brennan (11)
Santino Ferraro (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 06/18/2014 09:59:31



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: 241402261
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Attn: **Kevin Bogue**
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2685 State Street

Hamden, CT 06517

Project: 22214-2035

Phone: (203) 288-1281
Fax: (203) 248-4409
Received: 06/16/14 5:05 PM
Analysis Date: 6/17/2014
Collected:

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
20140616-2035-S4A 241402261-0008	Kitchen - black mastic assoc. w/linoleum	Black Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
20140616-2035-S4B 241402261-0009	Kitchen - black mastic assoc. w/linoleum	Black Non-Fibrous Homogeneous	<1% Cellulose	<1% Ca Carbonate 100% Non-fibrous (other)	None Detected
20140616-2035-S5A-Floor Tile 241402261-0010	Kitchen - floor tile + grout	Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
20140616-2035-S5A-Grout 241402261-0010A	Kitchen - floor tile + grout	Gray Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
20140616-2035-S5B-Floor Tile 241402261-0011	Kitchen - floor tile + grout	Beige Non-Fibrous Homogeneous	3% Cellulose	97% Non-fibrous (other)	None Detected
20140616-2035-S5B-Grout 241402261-0011A	Kitchen - floor tile + grout	Gray Non-Fibrous Homogeneous	4% Cellulose	15% Quartz 81% Non-fibrous (other)	None Detected
20140616-2035-S6A 241402261-0012	Living room + kitchen - sheetrock	Gray Fibrous Homogeneous	9% Glass 6% Cellulose	85% Non-fibrous (other)	None Detected
20140616-2035-S6B 241402261-0013	Living room + kitchen - sheetrock	Gray Fibrous Homogeneous	4% Cellulose 7% Glass	89% Non-fibrous (other)	None Detected

Analyst(s)

Lauren Brennan (11)
Santino Ferraro (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 06/18/2014 09:59:31 77



EMSL Analytical, Inc.

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

EMSL Order: 241402261
CustomerID: FSS93
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Attn: **Kevin Bogue**
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2685 State Street

Hamden, CT 06517

Project: 22214-2035

Phone: (203) 288-1281
Fax: (203) 248-4409
Received: 06/16/14 5:05 PM
Analysis Date: 6/17/2014
Collected:

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
20140616-2035-S6C 241402261-0014	Living room + kitchen - sheetrock	Gray Fibrous Homogeneous	5% Cellulose 2% Glass	15% Gypsum 78% Non-fibrous (other)	None Detected
20140616-2035-S7A 241402261-0015	Main floor - taping compound	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
20140616-2035-S7B 241402261-0016	Main floor - taping compound	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
20140616-2035-S7C 241402261-0017	Main floor - taping compound	White Non-Fibrous Homogeneous		60% Ca Carbonate 40% Non-fibrous (other)	None Detected
20140616-2035-S8A 241402261-0018	Living Rm (b/w bath + closet) - spackle	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
20140616-2035-S8B 241402261-0019	Living Rm (b/w bath + closet) - spackle	White Non-Fibrous Homogeneous	<1% Cellulose	65% Ca Carbonate 35% Non-fibrous (other)	None Detected
20140616-2035-S9A 241402261-0020	Exterior window - grey caulk	Gray Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
20140616-2035-S9B 241402261-0021	Exterior window - grey caulk	Gray Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected

Analyst(s)
Lauren Brennan (11)
Santino Ferraro (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 06/18/2014 09:59:31



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: 241402261
CustomerID: FSS93
CustomerPO:
ProjectID:

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

Hamden, CT 06517

Project: 22214-2035

Phone: (203) 288-1281
Fax: (203) 248-4409
Received: 06/16/14 5:05 PM
Analysis Date: 6/17/2014
Collected:

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
20140616-2035-S9C <i>241402261-0022</i>	Exterior window - grey caulk	Gray Non-Fibrous Homogeneous		20% Ca Carbonate 80% Non-fibrous (other)	None Detected
20140616-2035-S10A <i>241402261-0023</i>	Interior window - white caulk	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
20140616-2035-S10B <i>241402261-0024</i>	Interior window - white caulk	White Non-Fibrous Homogeneous	<1% Cellulose	25% Ca Carbonate 75% Non-fibrous (other)	None Detected

Analyst(s)

Lauren Brennan (11)
Santino Ferraro (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 06/18/2014 09:59:31



EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only):*

241402261

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

Company: Facility Support Services, LLC		EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different <small>If Bill to is Different note instructions in Comments**</small>	
Street: 2685 State Street		<small>Third Party Billing requires written authorization from third party</small>	
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 - 2035 2035		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email <input type="checkbox"/> Mail	
U.S. State Samples Taken: CT		CT Samples: <input type="checkbox"/> Commercial/Taxable <input checked="" type="checkbox"/> 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
<input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%)	<input type="checkbox"/> TEM EPA NOB - EPA 600/R-93/116 Section 2.5.5.1
<input type="checkbox"/> PLM EPA NOB (<1%)	<input type="checkbox"/> NY ELAP Method 198.4 (TEM)
Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)	<input type="checkbox"/> Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)	<input type="checkbox"/> TEM % by Mass - EPA 600/R-93/116 Section 2.5.5.2
<input type="checkbox"/> NIOSH 9002 (<1%)	<input type="checkbox"/> TEM Qualitative via Filtration Prep Technique
<input type="checkbox"/> NY ELAP Method 198.1 (friable in NY)	<input type="checkbox"/> TEM Qualitative via Drop Mount Prep Technique
<input type="checkbox"/> NY ELAP Method 198.6 NOB (non-friable-NY)	Other
<input type="checkbox"/> OSHA ID-191 Modified	<input type="checkbox"/>
<input type="checkbox"/> Standard Addition Method	

Check For Positive Stop - Clearly Identify Homogenous Group **Date Sampled:**

Samplers Name: _____ **Samplers Signature:** _____

Sample #	HA #	Sample Location	Material Description
20140616-2035 S1A	1	white ms. latex - into crawl space	white ms. latex
S1B	1	" " "	white ms. latex
20140616-2035-52A	2	Attic	white ms. latex
S2B	2	Attic	white ms. latex
20140616-2035-53A	3	Kitchen	green/white linoleum
S3B	3	↓	↓
S3C	3	↓	↓
20140616-2035-54A	4	Kitchen	black mosaic assoc w/ linoleum
S4B	4	↓	↓

Client Sample # (s): S1A - S10B **Total # of Samples:** 24

Relinquished (Client): Kevin Bogue **Date:** 6/16/14 **Time:**

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

Comments/Special Instructions:

RECEIVED

JUN 16 2014

By: *[Signature]* S: 5:05 PM
Walk-in

ATTACHMENT D
LEAD ANALYTICAL DATA



GILBERTCO LEAD INSPECTIONS, LLC

“LEAD BASED PAINT SPECIALIST”

June 16, 2014

Job 9928-9-0008

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

Re: Lead Based Paint Inspection: 8 3rd Avenue, Stratford, Connecticut

Gilbertco Lead Inspections LLC performed a limited XRF inspection for the presence of lead based paint at 8 3rd Ave., Stratford, Connecticut. The inspection was requested by Facility Support Services in response to planned renovations to the site by State of Connecticut Department of Housing Community Block Grant Disaster Recovery Program

The site inspected consists of an updated single family ranch style home. The house is scheduled to be raised to meet new Flood Zone Requirements. It was vacant at the time of inspection.

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.

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...”. 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.

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
287 MAIN STREET
ANSONIA, CONNECTICUT 06401

PROJECT ADDRESS: 8 3rd AVENUE
STRATFORD, CONNECTICUT

PROJECT NUMBER: 9928-9-8

TEST DATE: JUNE 16, 2014

REQUIREMENTS: CHAPTER 7 HUD GUIDELINES
LEAD INSPECTION- SURFACE BY SURFACE

INSTRUMENTATION: SCITEC MAP4 PORTABLE X-RAY (BRUKER HANDHELD)
FLUOROSCOPE SPECTRUM ANALYZER
(XRF) COBALT 57 SOURCE

REPORT MEDIUM: MG PB/CM2 (MILLIGRAMS OF LEAD
PER SQUARE CENTIMETER)

CALIBRATION: TO MEASURE LEAD K-SHELL EMISSIONS.
FACTORY CALIBRATED WITH HUD APPROVED
REFERENCE STANDARDS. CALIBRATION FIELD
CHECKED HOURLY AS RECOMMENDED BY
MANUFACTURER

OPERATORS CERTIFICATION: LEAD CONSULTANT CONTRACTOR-CC270
LEAD INSPECTOR RISK ASSESSOR- IR 1172
LEAD ABATEMENT SUPERVISOR- 2383

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

Maureen Orman 6-16-14

#8 3rd Avenue, Stratford, Connecticut

June 16, 2014

Room Type	Room #	Wall #	Component	Substrate	Condition	K Shell	Decision
Calibration						1.26	Okay
Entry	1	1	Door	Metal	Intact	-0.02	Negative
Entry	1	1	Door Casing	Wood	Intact	0.63	Negative
Entry	1	1	Wall	Sheetrk	Intact	0.09	Negative
Entry	1	1	Wall	Sheetrk	Intact	0.57	Negative
Entry	1	1	Window Trim	Wood	Intact	-0.18	Negative
Entry	1	1	Window Sash	Wood	Intact	-0.08	Negative
Entry	1	1	Window Apron	Wood	Intact	0.3	Negative
Entry	1	1	Baseboard	Wood	Intact	-0.09	Negative
Entry	1	2	Wall	Sheetrk	Intact	0.02	Negative
Entry	1	2	Baseboard	Wood	Intact	-0.3	Negative
Entry	1	3	Door	Wood	Intact	0.01	Negative
Entry	1	3	Door Jamb	Wood	Intact	-0.02	Negative
Entry	1	3	Door Casing	Wood	Intact	-0.08	Negative
Entry	1	3	Wall	Sheetrk	Intact	0.05	Negative
Entry	1	3	Baseboard	Wood	Intact	-0.09	Negative
Entry	1	4	Wall	Sheetrk	Intact	-0.04	Negative
Entry	1	4	Baseboard	Wood	Intact	0.06	Negative
Hallway	2	1	Door	Wood	Intact	-0.41	Negative
Hallway	2	1	Door Casing	Wood	Intact	0.38	Negative
Hallway	2	1	Wall	Sheetrk	Intact	0.06	Negative
Hallway	2	2	Wall	Sheetrk	Intact	0.09	Negative
Hallway	2	2	Window Trim	Wood	Intact	0	Negative
Hallway	2	2	Window Sill	Wood	Intact	0.14	Negative
Hallway	2	2	Window Apron	Wood	Intact	-0.2	Negative
Hallway	2	2	Baseboard	Wood	Intact	0.17	Negative
Hallway	2	4	Closet Door	Wood	Intact	0.04	Negative
Hallway	2	4	Clo Dr Csng	Wood	Intact	-0.47	Negative
Hallway	2	4	Shelf	Wood	Intact	-0.1	Negative
Hallway	2	4	Shelf Support	Wood	Intact	-0.17	Negative
Hallway	2	4	Ceiling	Sheetrk	Intact	-0.01	Negative
Master BR	3	2	Door	Wood	Intact	0.21	Negative
Master BR	3	2	Door Casing	Wood	Intact	-0.67	Negative
Master BR	3	2	Wall	Sheetrk	Intact	-0.01	Negative
Master BR	3	3	Wall	Sheetrk	Intact	0.15	Negative
Master BR	3	3	Baseboard	Wood	Intact	0.26	Negative
Master BR	3	3	Closet Door	Wood	Intact	-0.12	Negative
Master BR	3	3	Clo Dr Csng	Wood	Intact	0.04	Negative
Master BR	3	3	Shelf in closet	Wood	Intact	-0.01	Negative
Master BR	3	3	Shelf Support	Wood	Intact	0	Negative
Master BR	3	3	Ceiling in closet	Sheetrk	Intact	-0.01	Negative
Master BR	3	1	Ceiling	Sheetrk	Intact	0.19	Negative

#8 3rd Avenue, Stratford, Connecticut

June 16, 2014

Master BR	3	4	Wall	Sheetrk	Intact	0.03	Negative
Master BR	3	4	Baseboard	Wood	Intact	-0.11	Negative
Master BR	3	4	Window Trim	Wood	Intact	-0.08	Negative
Master BR	3	4	Window Sill	Wood	Intact	-0.24	Negative
Master BR	3	4	Window Aprion	Wood	Intact	-0.04	Negative
Master BR	3	1	Wall	Sheetrk	Intact	-0.01	Negative
Master BR	3	1	Baseboard	Wood	Intact	0.13	Negative
Master BR	3	1	Door Casing	Wood	Intact	0.42	Negative
Master BR	3	1	Door Jamb	Wood	Intact	0.29	Negative
Sitting Area	4	2	Wall	Sheetrk	Non-intact	-0.1	Negative
Sitting Area	4	2	Baseboard	Wood	Non-intact	-0.1	Negative
Sitting Area	4	1	Wall	Sheetrk	Non-intact	0	Negative
Sitting Area	4	1	Window Trim	Wood	Intact	-0.19	Negative
Sitting Area	4	1	Window Sill	Wood	Intact	-0.15	Negative
Sitting Area	4	1	Window Sash	Wood	Intact	0.08	Negative
Sitting Area	4	1	Window Apron	Wood	Intact	-0.34	Negative
Sitting Area	4	1	Baseboard	Wood	Intact	-0.19	Negative
Sitting Area	4	4	Wall	Sheetrk	Intact	0.16	Negative
Sitting Area	4	4	Baseboard	Wood	Intact	0.23	Negative
Sitting Area	4	1	Ceiling	Sheetrk	Intact	0.39	Negative
Living Room	5	1	Wall	Sheetrk	Intact	0.06	Negative
Living Room	5	1	Baseboard	Wood	Intact	-0.08	Negative
Living Room	5	2	Wall	Sheetrk	Intact	-0.09	Negative
Living Room	5	2	Window Sill	Wood	Intact	-0.09	Negative
Living Room	5	2	Window Trim	Wood	Intact	-0.13	Negative
Living Room	5	2	Window Apron	Wood	Intact	-0.05	Negative
Living Room	5	4	Wall	Sheetrk	Intact	0.12	Negative
Living Room	5	4	Wall	Sheetrk	Intact	0.1	Negative
Living Room	5	4	Door	Wood	Intact	0.26	Negative
Living Room	5	4	Door Casing	Wood	Intact	0.17	Negative
Living Room	5	4	Ceiling	Sheetrk	Intact	0.09	Negative
Living Room	5	3	Wall	Sheetrk	Intact	0.05	Negative
Living Room	5	3	Shelf	Wood	Intact	-0.13	Negative
Living Room	5	3	Baseboard	Wood	Intact	-0.07	Negative
Kitchen	6	1	Wall	Sheetrk	Intact	0.1	Negative
Kitchen	6	4	Wall	Sheetrk	Intact	0.13	Negative
Kitchen	6	4	Window Trim	Wood	Intact	-0.18	Negative
Kitchen	6	4	Window Apron	Wood	Intact	0.14	Negative
Kitchen	6	4	Window Sill	Wood	Intact	0.2	Negative
Kitchen	6	4	Ceiling	Wood	Intact	-0.17	Negative
Kitchen	6	3	Wall	Sheetrk	Intact	-0.53	Negative
Kitchen	6	3	Door Trim	Wood	Non-intact	0	Negative
Kitchen	6	3	Baseboard	Wood	Non-intact	-0.03	Negative
Kitchen	6	2	Wall	Sheetrk	Intact	-0.01	Negative

#8 3rd Avenue, Stratford, Connecticut

June 16, 2014

Kitchen	6	1 Ceiling	Sheetrk	Intact	0.13	Negative
Kitchen	6	4 Closet Door	Wood	Intact	-0.46	Negative
Kitchen	6	4 Clo Dr Csng	Wood	Intact	-0.15	Negative
Bath	7	2 Door	Wood	Intact	-0.23	Negative
Bath	7	2 Door Jamb	Wood	Intact	0.34	Negative
Bath	7	2 Door Casing	Wood	Intact	0.01	Negative
Bath	7	2 Wall	Sheetrk	Intact	-0.01	Negative
Bath	7	3 Wall	Sheetrk	Intact	-0.16	Negative
Bath	7	4 Wall	Sheetrk	Intact	0.23	Negative
Bath	7	1 Cabinet	Wood	Intact	-0.01	Negative
Bath	7	1 Wall	Sheetrk	Intact	-0.3	Negative
Bath	7	1 Ceiling	Sheetrk	Intact	0.19	Negative
Bedroom	8	2 Door	Wood	Intact	-0.35	Negative
Bedroom	8	2 Door Jamb	Wood	Intact	-0.15	Negative
Bedroom	8	2 Door Casing	Wood	Intact	-0.08	Negative
Bedroom	8	2 Wall	Sheetrk	Intact	0.02	Negative
Bedroom	8	2 Baseboard	Wood	Intact	-0.2	Negative
Bedroom	8	2 Closet Door	Wood	Intact	-0.27	Negative
Bedroom	8	2 Clo Dr Csng	Wood	Intact	-0.16	Negative
Bedroom	8	2 Shelf	Wood	Intact	-0.29	Negative
Bedroom	8	2 Shelf Support	Wood	Intact	-0.07	Negative
Bedroom	8	1 Wall	Sheetrk	Intact	-0.14	Negative
Bedroom	8	1 Baseboard	Wood	Intact	0.14	Negative
Bedroom	8	4 Wall	Sheetrk	Intact	-0.32	Negative
Bedroom	8	4 Window Trim	Wood	Intact	-0.11	Negative
Bedroom	8	4 Window Sill	Wood	Intact	-0.04	Negative
Bedroom	8	4 Window Apron	Wood	Intact	0.01	Negative
Bedroom	8	4 Window Trim	Wood	Intact	0.18	Negative
Bedroom	8	3 Baseboard	Wood	Intact	0.25	Negative
Bedroom	8	1 Ceiling	Sheetrk	Intact	-0.24	Negative
Bedroom	8	3 Wall	Sheetrk	Intact	-0.07	Negative
Bedroom	8	3 Baseboard	Wood	Intact	-0.33	Negative
Exterior	9	1 Door	Metal	Intact	0.05	Negative
Exterior	9	1 Door Jamb	Wood	Intact	-0.3	Negative
Exterior	9	1 Door Casing	Wood	Stain/varnish	0.4	Negative
Exterior	9	1 Shingles	Wood	Stain/varnish	0	Negative
Exterior	9	1 Wood under shingle	Wood	Non-intact	0.19	Negative
Exterior	9	1 Overhang	Wood	Non-intact	7.38	Positive
Exterior	9	1 Kickplate	Wood	Stain/varnish	0.09	Negative
Exterior	9	1 Floor	Wood	Stain/varnish	-0.49	Negative
Exterior	9	1 Railing	Wood	Stain/varnish	0.44	Negative
Exterior	9	2 Baseboard	Wood	Non-intact	0.3	Negative
Exterior	9	2 Vertical white trim	Wood	Non-intact	1.33	Positive
Exterior	9	2 Vertical white trim	Wood	Non-intact	2.76	Positive

#8 3rd Avenue, Stratford, Connecticut

June 16, 2014

Exterior	9	2 Column under house	Wood	Non-intact	1.95	Positive
Exterior	9	2 Window Trim	Wood	Non-intact	0.32	Negative
Exterior	9	2 Window Trim	Wood	Non-intact	0.62	Negative
Exterior	9	2 Window Sill	Wood	Non-intact	0.3	Negative
Exterior	9	3 Floor	Wood	Non-intact	0.08	Negative
Exterior	9	3 Railing	Wood	Stain/varnish	0.12	Negative
Exterior	9	3 Overhang	Wood	Stain/varnish	-0.12	Negative
Exterior	9	3 Soffit	Wood	Stain/varnish	-0.23	Negative
Exterior	9	4 Window Sill	Wood	Non-intact	0.64	Negative
Exterior	9	4 Window Trim	Wood	Non-intact	0.3	Negative
Exterior	9	4 White trim	Wood	Non-intact	0.55	Negative
Exterior	9	4 White trim	Wood	Non-intact	1.93	Positive
Exterior	9	4 Overhang	Wood	Non-intact	3	Positive

Part 1 General

1.1 SCOPE

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

Property Information:

Address: 8 Third Avenue, Stratford, CT
(A single family residence)

Property Owner: Applicant #2035

Lead Testing Performed by:

Maureen Monaco – Lead Inspector /Risk Assessor #1172

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

Date of testing: May 22, 2014

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

Resident Information:

vacant

- B. Prior to abatement or interim controls, repair work including but not limited to the repair of any leaks related to the deterioration of lead based painted surfaces is required. House is to be lifted and reset on foundation.
- C. Abatement or Lead Hazard Remediation includes the following methods:
- Replacement by removing components such as windows, doors, and trim that have lead painted surfaces and installing new lead free components.
 - Rigid enclosure using enclosure system by mechanically attaching a rigid durable barrier covering building components with all edges and

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

Appropriate enclosure materials include:

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

- Liquid Encapsulation by application of an approved liquid coating that acts as a barrier between lead based paint and the environment.
- Paint removal by separation of lead paint from the surface of components. This activity may include the following methods when performed with the proper conditions and engineering controls:
 1. Mechanical removal by wet scraping or HEPA needle gun.
 2. Chemical removal by use of strippers in accordance with manufacturer’s specifications.
 3. Heat Gun by heating the painted surface utilizing proper engineering controls and when temperature does not exceed 700 degrees F.
- Soil Hazard Reduction Methods may include
 1. Removal and replacement of lead contaminated soil by removing the top 2-6 inches of lead contaminated soil, disposing it in accordance with federal and state standards and replacing it with new lead free soil. EPA Guidance recommends this method when lead levels exceed 500 ppm.
 2. Permanent Cover of bare soil areas with concrete, asphalt, or other permanent materials; EPA Guidance recommends this method when lead concentrations in soil exceed 5000 ppm.
 3. Interim controls may include covering lead contaminated soil with grass, gravel, mulch, or restrictive elements such as fences, shrubbery, or decking to prevent access to contaminated soil. Interim controls require periodic monitoring to ensure that the cover or controls are in place.

- D. Interim controls may be performed by personnel who have received the Renovate Right Certification from the EPA. Interim Controls are measures designed to temporarily reduce human exposure or likely exposure to lead paint hazards, including specialized cleaning, repairs, maintenance painting, and temporary containments.
- E. The Contractor shall provide all labor, materials, equipment, services, insurance, supervision, and incidentals which are necessary or required to perform the work of lead paint remediation in accordance with applicable governmental regulations and these specifications.
- F. The Contractor is responsible for restoring all auxiliary areas utilized during abatement to conditions equal to or better than original. The contractor shall, at no additional expense to the building owner, repair any damage caused to auxiliary areas during the performance of abatement activities.
- G. The Contractor will protect and preserve in operating conditions, including all utilities transversing the building and site. Damage to any utility due to work under this contract shall be repaired to the reasonable satisfaction and at no cost to the building owner.
- H. The Contractor shall coordinate work schedule and site access with the building owner. The contractor shall submit a schedule of work and shall be approved by the building owner prior to the commencement of work. The contractor shall be responsible for securing the building for the duration of the work.
- I. The Contractor shall be responsible for removing and decontaminating movable objects from the work area. This should be coordinated with the building owner.

1.2 DESCRIPTION OF WORK

- A. The site is an older, renovated ranch style cottage. The exterior of the home is stained shingles with vinyl replacements windows throughout with the exception of the front entry windows.
- B. The scope of work includes rigid encapsulation of the overhangs and soffits and vertical white trim. The painted column under the home will be removed and disposed.
- C. A CT Licensed Lead Abatement Contractor will be utilized to perform the required work.

- D. All required lead based paint abatement work shall be conducted in compliance with HUD regulation 24 CFR Part 35.
- E. Lead based paint is present on the similar painted components in the areas of the project as found in the inspection report attached. It is the responsibility of the Contractor to comply with the OSHA Construction industry Standard 29 CFR 1926.62 when conducting abatement activities which may disturb materials with lead based paint.

1.3 PERSONAL PROTECTION

- A. Prior to commencement of work, instruct all workers in all aspects of personal protection, work procedures, emergency evacuation procedures and use of all equipment. A formal respiratory protection program including respiratory protection must be implemented in accordance with 29 CFR 1926.26 and 29 CFR 1910.134.
- B. Contractor will provide appropriate respiratory and filters for protection equipment for each worker and ensure usage during potential dust exposure. Respirators shall be approved by the National Institute for Occupational Safety and Health under 30 CFR Part 11.
- C. Contractor will provide and require workers to wear protective clothing in work areas where lead dust concentrations exceed permissible exposure limits established OSHA. This includes impervious coveralls with elastic wrists and ankles, head covering, gloves, and foot coverings.

1.4 PREPARATION OF LEAD CONTROL AREA

- A. Post warning signs meeting EPA Renovate Right Program at each entrance and exit. Notification to tenants or owner must be made in writing.
- B. Install an impermeable cloth or vinyl on ground under work area to collect paint dust, chips, and debris.

1.5 LEAD REMOVAL

- A. A competent person shall be on the job site at all times to ensure proper work practices are followed.
- B. Utilize wet methods to remove lead based paint and painted components in accordance with 29 CFR 1926.62 utilizing fine mist to moisten surface to prevent lead dust from becoming airborne.

- C. At the end of each work shift remove and place all visible accumulation of paint chips and associated dust and debris. This includes rags, sponges and protective clothing.
- D. The following practices are prohibited:
 - Dry scraping
 - Power tools for grinding, sanding, and cutting without HEPA vacuum dust collection

1.6 CLEAN-UP, VISUAL INSPECTION, FINAL INSPECTION

- A. After a visual inspection, the Contractor will remove impermeable drop cloths.
- B. The contractor will call Gilbertco Lead Inspections LLC (1-800-959-2985) or Facilities Support Services LLC at 1-203-288-1281 to do a visual inspection of the interior and exterior of the project to detect incomplete work, visible debris, or damage cause by abatement or remediation activity. Clearance testing of surfaces in the vicinity of remediation work will be obtained until reoccupancy criteria of 40mg/ft² on floors and 250 mg/ft² on window sills is met. Contractor is responsible for providing lead free surfaces around all work areas following completion of activity.

1.7 DISPOSAL OF HAZARDOUS LEAD BEARING WASTE

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

- C. Contractor can wipe clean polyethylene sheeting and dispose of it as construction debris.
- D. Dumpsters containing hazardous waste are to be kept covered and locked when not in active use for lading of materials.
- E. All containers of hazardous lead bearing material shall carry the following label in accordance with 29 CFR 1926.62.

HAZARDOUS LEAD WASTE

Federal Law prohibits improper disposal.
If found, contact the nearest police or public safety authority,
or the U.S. Environmental Protection Agency

Generator Information:

Facility Name: _____

Facility Address: _____

Facility Phone Number: _____

EPA ID / Manifest Document #: _____

Accumulation Start Date: _____

EAP Waste #: _____

HAZARDOUS WASTE SOLID NUMBERS

ORM-E NA 9189 D008

HANDLE WITH CARE

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

ATTACHMENT E
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# 4060451

Report Date: June 23, 2014
Project: 22214
Project Number: 22214-2035, Stratford

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



New York Certification: 11982
Florida Laboratory Certification: E871064

CET #:4060451

Project: 22214

Project Number: 22214-2035, Stratford

QUALITY CONTROL SECTION

Batch B4F1817 - 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 (B4F1817-BLK1)					Prepared: 6/18/2014 Analyzed: 6/19/2014				
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							
<i>Surrogate: TCMX</i>					76.6	50 - 150			
<i>Surrogate: DCB</i>					87.2	50 - 150			
LCS (B4F1817-BS1)					Prepared: 6/18/2014 Analyzed: 6/19/2014				
PCB-1016	0.771	0.20	1.000		77.1	50 - 150			
PCB-1260	0.865	0.20	1.000		86.5	50 - 150			
<i>Surrogate: TCMX</i>					82.8	50 - 150			
<i>Surrogate: DCB</i>					93.5	50 - 150			
Calibration Check (B4F1817-CCV1)					Prepared: 6/18/2014 Analyzed: 6/20/2014				
PCB-1016	0.966	0.20	1.000		96.6	80 - 120			
PCB-1260	0.968	0.20	1.000		96.8	80 - 120			
<i>Surrogate: TCMX</i>					118	50 - 150			
<i>Surrogate: DCB</i>					121	50 - 150			

CET #:4060451

Project: 22214

Project Number: 22214-2035, Stratford

SAMPLE SUMMARY

The sample(s) were received at 2.4°C.

This report contains analytical data associated with following samples only.

Sample ID	Laboratory ID	Matrix	Collection Date/Time	Receipt Date
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20140616-2035-P1	4060451-01	Solid	6/16/2014	06/17/2014
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Client Sample ID 20140616-2035-P1

Lab ID: 4060451-01

PCBs by Soxhlet

Method: EPA 8082A

Analyst: SJ

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	B4F1817	06/18/2014	06/20/2014 18:52	
PCB-1221	ND	0.80	4	EPA 3540C	B4F1817	06/18/2014	06/20/2014 18:52	
PCB-1232	ND	0.80	4	EPA 3540C	B4F1817	06/18/2014	06/20/2014 18:52	
PCB-1242	ND	0.80	4	EPA 3540C	B4F1817	06/18/2014	06/20/2014 18:52	
PCB-1248	ND	0.80	4	EPA 3540C	B4F1817	06/18/2014	06/20/2014 18:52	
PCB-1254	ND	0.80	4	EPA 3540C	B4F1817	06/18/2014	06/20/2014 18:52	
PCB-1260	ND	0.80	4	EPA 3540C	B4F1817	06/18/2014	06/20/2014 18:52	
PCB-1268	ND	0.80	4	EPA 3540C	B4F1817	06/18/2014	06/20/2014 18:52	
PCB-1262	ND	0.80	4	EPA 3540C	B4F1817	06/18/2014	06/20/2014 18:52	

<i>Surrogate: TCMX</i>	<i>71.5 %</i>	<i>50 - 150</i>			B4F1817	06/18/2014	<i>06/20/2014 18:52</i>	
<i>Surrogate: DCB</i>	<i>97.4 %</i>	<i>50 - 150</i>			B4F1817	06/18/2014	<i>06/20/2014 18:52</i>	



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 Batch	An analytical standard analyzed with each set of samples to verify initial calibration of the system. 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	Result from the duplicate analysis of a sample. 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

CET #:4060451

Project: 22214

Project Number: 22214-2035, Stratford

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 Homogeneity may be a problem.

+ - The Surrogate was diluted out.

*- The analyte has a QC outlier. Please refer to QC section of the report for details.

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.

The State of Connecticut Department of Housing
Community Development Block Grant
Disaster Recovery Program (CDBG-DR)
Owner Occupied Rehabilitation and Rebuilding Program

Bid Documents
Project# 2035
8 Third Avenue
Stratford, CT

SECTION 00 31 32

GEOTECHNICAL DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

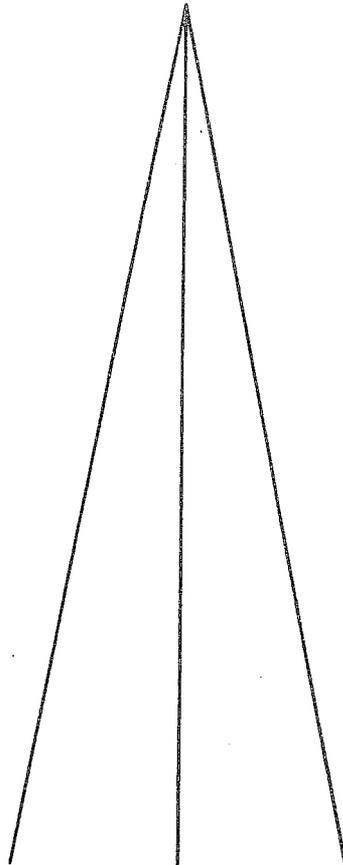
- A. 'Geotechnical Engineering Report' prepared by The Geotechnical Department, LLC for Soil Testing Inc, dated July 7, 2014.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION – NOT USED

SOILTESTING, INC.

TO Martinez Couch & Associates, LLC DATE July 10, 2014
ADDRESS 1084 Cromwell Avenue, Rocky Hill, CT 06067
SITE LOCATION 8 Third Avenue, Stratford, CT
REPORT SENT TO Matthew Ranando
SAMPLES SENT TO Storage (Max. 60 days)



90 DONOVAN ROAD
Oxford, Connecticut 06478

(203) 262-9328

Branch Office:
White Plains, New York 10607
914-946-4850

JOB NO.
G120-9752-14

Phone
(203) 262-9328

Telefax
(203) 264-3414



WHITE PLAINS, N.Y.
(914) 946-4850

SOILTESTING, INC.

90 DONOVAN ROAD - OXFORD, CONN. 06478-1028

GEOTECHNICAL / ENVIRONMENTAL SUBSURFACE INVESTIGATIONS - Test Borings - Core Drilling
Monitoring Wells - Recovery Wells - Direct Push/Probe Sampling
UNDERPINNING - HELICAL PILES - SOIL NAILS



July 10, 2014

Martinez Couch & Associates, LLC
1084 Cromwell Avenue
Rocky Hill, CT 06067
860-436-4364

Attn: Matthew Ranando

Re: 8 Third Avenue
Stratford, CT

G120-9752-14

Dear Mr. Ranando,

Enclosed are boring logs and location plan for the above referenced project site.

Also enclosed is a geotechnical report completed by The Geotechnical Department, LLC.

If you have any questions, please do not hesitate to contact us.

Very truly yours,

SOILTESTING, INC.

James A. DeAngelis
President

JAD:lg



SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: Martinez Couch & Associates	SHEET <u>1</u> OF <u>1</u>
	PROJECT NO. G120-9752-14	HOLE NO. B-1
FOREMAN - DRILLER RW/ad	PROJECT NAME 8 Third Avenue	BORING LOCATIONS as directed
INSPECTOR	LOCATION Stratford, CT	OFFSET
GROUND WATER OBSERVATIONS AT <u>4</u> FT AFTER <u>0</u> HOURS	CASING TYPE HSA	CORE BAR SS
AT <u> </u> FT AFTER <u> </u> HOURS	SIZE I.D. 4 1/4"	1 3/8"
	HAMMER WT. 140#	BIT
	HAMMER FALL 30"	DATE START 6/23/14
		DATE FINISH 6/23/14
		SURFACE ELEV.
		GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE					BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE)			CORE TIME PER FT (MIN)	DENSITY OR CONSIST	STRATA CHANGE DEPTH	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
		NO	Type	PEN	REC.	DEPTH @ BOT	0 - 6	6 - 12	12 - 18				
5		1	ss	24"	14"	2'0"	12	20		moist		2" ASPHALT	
							15	28		dense		brn FM SAND, sm silt, lit C sand, tr F gravel	
		2	ss	24"	13"	4'0"	26	19		wet	4'0"	lt brn gry FM SAND, tr C sand, silt (fill)	
							17	14		dense			
		3	ss	24"	16"	6'0"	1	1 1/2"		wet		dark brn organic SILT, lit peat	
10								6		v soft			
		4	ss	24"	8"	8'0"	1	1		wet		dark brn F SAND & organic SILT, tr F gravel	
							2	2		v loose			
		5	ss	24"	18"	10'0"	1	2		wet	9'6"		
							3	6		loose		brn VFF SAND & SILT, tr roots	
15		6	ss	24"	16"	12'0"	9	14		wet		brn VFF SAND, sm silt	
							12	14		compact			
		7	ss	24"	14"	17'0"	4	7		wet		lt brn gry VF SAND, tr MC sand, F gravel	
							21	30		compact		soil change - cobbles	
20													
		8	ss	24"	11"	22'0"	5	8		wet		brn FM SAND, lit C sand, tr F gravel, silt	
							11	8		compact			
		9	ss	24"	24"	27'0"	11	13		wet		brn FMC SAND, lit F gravel, silt	
25							12	19		compact			
30		10	ss	24"	17"	32'0"	4	13		wet		lt brn FM SAND, tr C sand	
							24	31		dense			
35		11	ss	11"	23"	35'11"	17	50/5"		wet		lt brn FM SAND, tr C sand, F gravel	
										compact	35'11"	E.O.B. 35'11"	
40													

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____ FT. USED _____ CASING THEN _____ CASING TO _____ FT.	HOLE NO. B-1
A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST	
WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE 106	
SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM	
PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND = 35 - 50%	F = FINE

8 Third

B-12
⊕

8th Ave

JOB NO.
G120-9752-14
SOILTESTING, INC.
90 Donovan Road
Oxford CT 06478

Geotechnical Engineering Report

by

The Geotechnical Department, LLC

for

Soiltesting, Inc.

Dated: July 7, 2014

Martinez Couch & Associates

G120-9752-14

The Geotechnical Department, LLC

Consulting Engineers

41 Blanche Avenue, Demarest, NJ 07627

201-784-4444 • Fax: 201-768-0222

July 7, 2014
Project No. 2058

Martinez Couch & Associates, LLC
1084 Cromwell Avenue, Suite A-2
Rocky Hill, Connecticut 06067

Attn: Matthew Ranando

Re: Geotechnical Engineering Report
Proposed Alterations to Raise House
8 Third Avenue
Stratford, Connecticut

This report is submitted as per our agreement with Soiltesting Inc. and the attached "Geotechnical Limitations." It includes our findings, conclusions and recommendations related to the geotechnical aspects of design and construction for raising the house for future flood protection.

One (1) test boring was performed by Soiltesting Inc. on June 23, 2014. The location plan and record sheet are attached as part of this report. This information was used in preparation of this report.

Based on our interpretation of field conditions and the scope of the project it was deemed unnecessary to perform laboratory soil tests to assist with the identification of soil and the evaluation of their engineering properties.

Subsurface conditions include soil fill consisting of sand with silt and gravel to a depth of four (4) feet. Soft organic silt and sand with peat then exists to a depth of nine-feet-six-inches (9'6"). Medium dense fine sand with gravel and occasional cobbles continues the soil profile to a depth of thirty-five feet eleven inches (35'11"), the maximum depth of exploration.

Water was observed in the borehole at a depth of four (4) feet at the time the boring was completed.

The following were considered in developing the conclusions and recommendations of this report:

1. An aerial photograph showing the house plan and boring location.
2. The proposed work is to raise the existing building foundation for flood protection.
3. Differential settlement should not be greater than three-quarters (3/4) of an inch across the house footprint.
4. Design and construction shall be in accordance with the Connecticut Building Code (Code).

The in-place sand fill and organic layer are not suitable for the support of conventional spread footings. Spread footings bearing on the suitable soil below the fill and organics or on quality compacted soil fill placed after removal of the fill and organics are foundation alternatives. These alternatives, however, are considered impractical due to equipment access constraints, the quantity of excavation and backfill and the need for dewatering the excavation to allow construction.

Deep foundations are deemed a more appropriate foundation alternative. Drilled-in piles could be installed with the tips bearing in the undisturbed medium dense sand system below the in-place fill and organic silt and peat. Driven piles are not an option due to equipment access issues.

The following geotechnical design and construction recommendations are offered:

1. Use drilled-in pile foundations for support of the existing and/or altered house foundation.
2. Tabulated below are design recommendations for several typical pile sections. The capacities refer to the soil/pile interaction, not the structural capacity of the section performing as a column.

Drilled-In Pile Type	Design Capacity (tons)	Installed Capacity* (tons)
Grouted Pipe: 7" diameter	17	20
Auger (Helical)	9	12
Resistance Pier	8	10

** These values consider downdrag on the pile due to settlement of surrounding miscellaneous fill and organics.*

3. The pile tips should penetrate to a minimum depth of fifteen (15) feet below the existing site grades.
3. One (1) drilled-in pile should be load-tested in accordance with the ASTM D1143 Standard prior to installing the production piles.
4. The piles should be delivered to the project with a design-test-install type contract/ agreement. The design, testing and installation should be performed under the direction and signature of the subcontractor's licensed engineer.
5. The project structural and geotechnical engineer should review the design, test results and installation records.

We trust these recommendations will allow you to complete the design and construction of the alterations.

Very truly yours,
THE GEOTECHNICAL DEPARTMENT, LLC



Thomas H. Otto, P.E.

Attachments: Geotechnical Limitations
Boring Location Plan
Boring Record Sheet

Cc: Soiltesting Inc.

GEOTECHNICAL LIMITATIONS

Explorations

- The analyses and recommendations submitted in this report are based in part upon the data obtained from subsurface explorations. The nature and extent of variations between and apart from these explorations may not become evident until construction. If variations then appear evident, it will be necessary to reevaluate the recommendations of this report.
- The generalized soil profile described in the text is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretations of widely spaced explorations and samples; actual soil transitions are probably more erratic.
- Water level readings have been made in the drill holes at times and under conditions stated on the boring logs. These data have been reviewed and interpretations have been made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, and other factors occurring since the time measurements were made. More precise determinations of groundwater levels would require the installation of groundwater observation wells and water level readings taken over an extended period of time.

Review

- In the event that any changes in the nature, design or location of the proposed building are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing by this firm. Further, it is recommended that this firm be provided the opportunity for a general review of final design and specifications in order that earthwork and foundation recommendations may be properly interpreted and implemented in the design and specifications.

Construction

- It is recommended that this firm be retained to provide geotechnical engineering services during construction of the excavation and foundation phases of the work. This is to observe compliance with the design concepts, specifications, and recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to start of construction.

Use of Report

- This report has been prepared for the exclusive use of Martinez Couch & Associates for specific application to construction at 8 Third Avenue, Stratford, Connecticut, all in accordance with generally accepted soil and foundation engineering practices. No other warranty, expressed or implied, is made.
- This report is for *design* purposes only and is not sufficient to prepare construction cost estimates or bids.

SECTION 011000

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.

Prepare for initiate, elevate an existing residential structure sufficient to construct a new foundation with 5,000 Psi concrete and epoxy coated rebar, founded on helical piles. Lower home onto new foundation and remove lifting equipment, and provide all utility coordination and connection, and the construction of new access stairs from all existing means of egress. Contractor is responsible for obtaining and all costs associated with required permits from authorities having jurisdiction. All disturbed surfaces are to be restored to property owners satisfaction. All work to be performed in accordance with contract drawings, specifications, and applicable codes. Contractor is expected to complete their own due diligence during the bid process. Any need for clarification shall be presented to MCA for resolution prior to bid submission. Bid submission is statement of understanding work required for successful completion at the stipulated fee.

PROJECT SCOPE

1. FRAMING & ROUGH CARPENTRY

- 1.1. Repair wall framing, including providing all temporary supports to complete the work.
 - 1.1.1. Plumb wood stud wall framing including; framed openings, headers, top plates, and bottom plates that have shifted.
 - 1.1.2. Remove and replace, or provide new "sister" support to framing that has been compromised
- 1.2. Remove and dispose of damaged plywood subflooring, including subflooring removed to make framing repairs.
- 1.3. Construct decks in accordance with drawings. Stain wood to match existing finish.

2. ARCHITECTURAL WOODWORK

- 2.1. Detach, salvage, and reinstall interior and exterior trims, casings, vanities, cabinetry, and etc required to complete work.
- 2.2. Remove and dispose of interior and exterior trim (casings) at openings that require replacement.
- 2.3. Remove and dispose, or repair if possible, damaged trim along base of siding.
- 2.4. Furnish and install new trim where previously removed.

3. INSULATION

- 3.1. Remove and dispose of spray insulation at underside of floor joist system.
- 3.2. Remove and dispose of exterior wall insulation as required for framing repairs.
- 3.3. Furnish and install new spray insulation on underside of floor joist system.
- 3.4. Furnish and install new fiberglass batt insulation at exterior walls, where removed.

4. GUTTERS

- 4.1. Re-connect and/or reset components of gutter system as required.

5. DOORS & WINDOWS

- 5.1. Remove and dispose of front door unit, rear patio slider, and front window units, including frames.
 - 5.1.1. Remove, salvage, and reinstall front door hardware.
- 5.2. Furnish and install door, slider, and windows, where removed, to match existing.
 - 5.2.1. Provide all hardware and accessories to match existing units.

6. FINISHES

- 6.1. Remove and dispose of drywall walls and ceilings with damaged or required for framing repairs.
 - 6.1.1. Detach, salvage, and reinstall any building materials required to complete the work.
- 6.2. Remove and dispose of all remaining flooring finishes.
 - 6.2.1. The majority of carpet flooring has been removed by others.
- 6.3. Remove and dispose of bathroom wall tile.
 - 6.3.1. Detach, salvage, and reinstall bathroom accessories as required to complete the work.
- 6.4. Furnish and install 1/2" gypsum board where removed.
 - 6.4.1. Provide taping of gypsum board to match adjacent finishes.
- 6.5. Furnish and install flooring finishes throughout the residence.
 - 6.5.1. Provide any flooring accessories including, but not limited to, carpet padding, grout, glues, and transitions.
 - 6.5.2. Provide any floor leveling or other floor preparation required to complete the work.
- 6.6. Provide priming and painting of all gypsum board walls and ceilings, trims, casings, and openings.

7. PLUMBING

- 7.1. Disconnect, remove and dispose of kitchen closet water heater.

7.2. Disconnect, detach, salvage, and reinstall kitchen and bathroom fixtures and appliances required to make finish repairs.

7.3. Furnish and install water heater.

7.3.1. Make repairs to water heater piping.

7.4. Remove existing natural gas piping beneath building, Furnish and install new natural gas piping

8. ELECTRICAL

8.1. Disconnect, remove, and dispose electrical outlets, switches, and associated wiring.

8.2. Disconnect, safe-off, and reconnect light fixtures and other electrical components required for finish repair.

8.3. Furnish and install all electrical components where removed.

9. ELECTRICAL

9.1. Test entire electrical system.

9.1.1. Disconnect, remove, and dispose damaged electrical outlets, switches, and associated wiring.

9.1.2. Disconnect, safe-off, and reconnect undamaged electrical outlets and switches.

9.2. Disconnect, safe-off, and reconnect light fixtures and other electrical components required for finish repair.

9.3. Furnish and install all electrical components where removed.

10. ENVIRONMENTAL

10.1. Provide all necessary work, labor and materials required for Division 02 83 13 – Lead Hazard Remediation.

10.2. Provide all necessary work, labor and materials required for Division 02 85 00 – Mold Remediation.

END OF SECTION

SECTION 012100

ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
 - 1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
 - 1. Lump-sum allowances.
 - 2. Testing and inspecting allowances.
- C. Related Requirements:
 - 1. Section 014000 "Quality Requirements" for procedures governing the use of allowances for testing and inspecting.

1.3 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Architect from the designated supplier.

1.4 ACTION SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

1.5 INFORMATIONAL SUBMITTALS

- A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.6 COORDINATION

- A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.7 LUMP-SUM ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include taxes, freight, and delivery to Project site.
- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials selected by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.
- C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
 - 1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.8 TESTING AND INSPECTING ALLOWANCES

- A. Testing and inspecting allowances include the cost of engaging testing agencies, actual tests and inspections, and reporting results.
- B. The allowance does not include incidental labor required to assist the testing agency or costs for retesting if previous tests and inspections result in failure. The cost for incidental labor to assist the testing agency shall be included in the Contract Sum.
- C. Costs of services not required by the Contract Documents are not included in the allowance.
- D. At Project closeout, credit unused amounts remaining in the testing and inspecting allowance to Owner by Change Order.

1.9 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
 - 1. Include installation costs in purchase amount only where indicated as part of the allowance.
 - 2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
 - 3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
 - 4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.

- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.
 - 1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
 - 2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

- A. Allowance No. 1:

The State of Connecticut Department of Housing
Community Development Block Grant
Disaster Recovery Program (CDBG-DR)
Owner Occupied Rehabilitation and Rebuilding Program

Bid Documents
Project# 2035
8 Third Avenue
Stratford, CT

1. Anticipated costs and charges originating from utility companies for coordination with, connection, all costs of work from the face of the building to the provided utility
- B. Allowance No.2:
 1. Testing and Inspecting in accordance with Section 014000

END OF SECTION 012100

SECTION 012500

SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
 - 1. Section 012100 "Allowances" for products selected under an allowance.
 - 2. Section 012300 "Alternates" for products selected under an alternate.
 - 3. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
 - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
 - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Use CSI Form 13.1A.
 - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

- a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects with project names and addresses and names and addresses of MCA's and owners.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. MCA's Action: If necessary, MCA will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. MCA will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or MCA's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if MCA does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

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

1.6 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
 - 1. Conditions: MCA will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, MCA will return requests without action, except to record noncompliance with these requirements:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Requested substitution provides sustainable design characteristics that specified product provided.
 - c. Substitution request is fully documented and properly submitted.
 - d. Requested substitution will not adversely affect Contractor's construction schedule.
 - e. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - f. Requested substitution is compatible with other portions of the Work.
 - g. Requested substitution has been coordinated with other portions of the Work.
 - h. Requested substitution provides specified warranty.
 - i. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: MCA will consider requests for substitution if received within 60 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of MCA.
 - 1. Conditions: MCA will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, MCA will return requests without action, except to record noncompliance with these requirements:

- a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to MCA for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
- b. Requested substitution does not require extensive revisions to the Contract Documents.
- c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
- d. Substitution request is fully documented and properly submitted.
- e. Requested substitution will not adversely affect Contractor's construction schedule.
- f. Requested substitution has received necessary approvals of authorities having jurisdiction.
- g. Requested substitution is compatible with other portions of the Work.
- h. Requested substitution has been coordinated with other portions of the Work.
- i. Requested substitution provides specified warranty.
- j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012900 –
PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
 - 1. Section 012100 "Allowances" for procedural requirements governing the handling and processing of allowances.
 - 2. Section 013200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

1.3 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
 - 1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:
 - a. Application for Payment forms with continuation sheets.
 - b. Submittal schedule.
 - c. Items required to be indicated as separate activities in Contractor's construction schedule.
 - 2. Submit the schedule of values to MCA at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.

3. Subschedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values coordinated with each phase of payment.
 4. Subschedules for Separate Elements of Work: Where the Contractor's construction schedule defines separate elements of the Work, provide subschedules showing values coordinated with each element.
 5. Subschedules for Separate Design Contracts: Where the Owner has retained design professionals under separate contracts who will each provide certification of payment requests, provide subschedules showing values coordinated with the scope of each design services contract as described in Section 011000 "Summary."
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Architect's project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 2. Arrange schedule of values consistent with format of AIA Document G703 or EJCDC Document C-620 Arrange the schedule of values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
 - 1) Labor.
 - 2) Materials.
 - 3) Equipment.
 3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
 - a. Include separate line items under principal subcontracts for project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.
 4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.

5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. If required, include evidence of insurance.
6. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
8. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate owner payments or deposits, if any, and balance to be paid by Contractor.
9. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
10. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by MCA.
 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: Submit Application for Payment to MCA by the 7th day of the month. The period covered by each Application for Payment is one month in accordance with Section 2 of the general conditions section of this document.
 1. Submit draft copy of Application for Payment 10 days prior to due date for review by Architect.
- C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.
- D. Application for Payment Forms: Use forms acceptable to MCA and Owner for Applications for Payment. Submit forms for approval with initial submittal of schedule of values.

- E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. MCA will return incomplete applications without action.
1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
 4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.
- F. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
 2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
 3. Provide summary documentation for stored materials indicating the following:
 - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
 - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
 - c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.
- G. Transmittal: Submit three signed and notarized original copies of each Application for Payment to MCA by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- H. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit conditional final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.

4. Waiver Forms: Submit executed waivers of lien on forms acceptable to MCA.
- I. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit conditional final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
 5. Waiver Forms: Submit executed waivers of lien on forms, acceptable to MCA.
- J. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of values.
 3. LEED submittal for project materials cost data.
 4. Contractor's construction schedule (preliminary if not final).
 5. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor.
 6. Products list (preliminary if not final).
 7. LEED action plans.
 8. Schedule of unit prices.
 9. Submittal schedule (preliminary if not final).
 10. List of Contractor's staff assignments.
 11. List of Contractor's principal consultants.
 12. Copies of building permits.
 13. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 14. Initial progress report.
 15. Report of preconstruction conference.
 16. Certificates of insurance and insurance policies.
 17. Performance and payment bonds.
 18. Data needed to acquire Owner's insurance.
- K. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

- L. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
 5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
 6. AIA Document G707, "Consent of Surety to Final Payment."
 7. Evidence that claims have been settled.
 8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
 9. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 01 31 00 –

PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Coordination drawings.
 - 3. Requests for Information (RFIs).
 - 4. Project meetings.
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.
- C. Related Requirements:
 - 1. Section 013200 "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
 - 2. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 - 3. Section 017700 "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

- A. RFI: Request from, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Use CSI Form 1.5A. Include the following information in tabular form:
 - 1. Name, address, and telephone number of entity performing subcontract or supplying products.

2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1.5 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of subcontractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

1.6 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
 1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
 - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
 - b. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
 - c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
 - e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
 - f. Indicate required installation sequences.
 - g. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to MCA indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
- B. Coordination Drawing Organization: Organize coordination drawings as follows:
 1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
 2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on Drawings. Indicate areas of conflict between light fixtures and other components.

3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
 4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
 5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
 6. Mechanical and Plumbing Work: Show the following:
 - a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
 - b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
 - c. Fire-rated enclosures around ductwork.
 7. Electrical Work: Show the following:
 - a. Runs of vertical and horizontal conduit 1-1/4 inches (32 mm) in diameter and larger.
 - b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire-alarm locations.
 - c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
 - d. Location of pull boxes and junction boxes, dimensioned from column center lines.
 8. Fire-Protection System: Show the following:
 - a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
 9. Review: MCA will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If MCA determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, MCA will so inform Contractor, who shall make changes as directed and resubmit.
 10. Coordination Drawing Prints: Prepare coordination drawing prints according to requirements in Section 013300 "Submittal Procedures."
- C. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:
1. File Preparation Format: Same digital data software program, version, and operating system as original Drawings.
 2. File Preparation Format: DWG, Version 2013, operating in Microsoft Windows operating system.
 3. File Submittal Format: Submit or post coordination drawing files using format same as file preparation format and Portable Data File (PDF) format.

4. MCA will furnish Contractor one set of digital data files of Drawings for use in preparing coordination digital data files.
 - a. MCA makes no representations as to the accuracy or completeness of digital data files as they relate to Drawings.
 - b. Digital Data Software Program: Drawings are available in AutoCAD 2013.
 - c. Contractor shall execute a data licensing agreement in the form of AIA Document C106 or other Agreement form acceptable to MCA.

1.7 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
 1. MCA will return RFIs submitted to MCA by other entities controlled by Contractor with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
 1. Project name.
 2. Project number.
 3. Date.
 4. Name of Contractor.
 5. Name of Contract
 6. RFI number, numbered sequentially.
 7. RFI subject.
 8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 12. Contractor's signature.
 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: AIA Document G716 or Software-generated form with substantially the same content as indicated above, acceptable to MCA.
 1. Attachments shall be electronic files in Adobe Acrobat PDF format.

- D. MCA's Action: MCA will review each RFI, determine action required, and respond. Allow seven working days for MCA's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of MCA's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. MCA's action may include a request for additional information, in which case MCA's time for response will date from time of receipt of additional information.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log monthly Use CSI Log Form 13.2B. Include the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of MCA.
 4. RFI number including RFIs that were returned without action or withdrawn.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date MCA's response was received.
- F. On receipt of MCA's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify MCA within seven days if Contractor disagrees with response.
1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

1.8 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and MCA of scheduled meeting dates and times.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including MCA, within three days of the meeting.

- B. Preconstruction Conference: MCA will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and MCA, but no later than 10 days after a notice to proceed.
1. Conduct the conference to review responsibilities and personnel assignments.
 2. Attendees: Authorized representatives of Owner, Owner's Commissioning Authority, MCA, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Lines of communications.
 - f. Procedures for processing field decisions and Change Orders.
 - g. Procedures for RFIs.
 - h. Procedures for testing and inspecting.
 - i. Procedures for processing Applications for Payment.
 - j. Distribution of the Contract Documents.
 - k. Submittal procedures.
 - l. Preparation of record documents.
 - m. Use of the premises and existing building.
 - n. Work restrictions.
 - o. Working hours.
 - p. Owner's occupancy requirements.
 - q. Responsibility for temporary facilities and controls.
 - r. Procedures for moisture and mold control.
 - s. Procedures for disruptions and shutdowns.
 - t. Construction waste management and recycling.
 - u. Parking availability.
 - v. Office, work, and storage areas.
 - w. Equipment deliveries and priorities.
 - x. First aid.
 - y. Security.
 - z. Progress cleaning.
 4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and MCA, but no later than 90 days prior to the scheduled date of Substantial Completion.
1. Conduct the conference to review requirements and responsibilities related to Project closeout.

2. Attendees: Authorized representatives of Owner, MCA and its consultants, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
 - a. Preparation of record documents.
 - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
 - c. Submittal of written warranties.
 - d. Requirements for preparing operations and maintenance data.
 - e. Requirements for delivery of material samples, attic stock, and spare parts.
 - f. Requirements for demonstration and training.
 - g. Preparation of Contractor's punch list.
 - h. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
 - i. Submittal procedures.
 - j. Coordination of separate contracts.
 - k. Owner's partial occupancy requirements.
 - l. Installation of Owner's furniture, fixtures, and equipment.
 - m. Responsibility for removing temporary facilities and controls.
 4. Minutes: Entity conducting meeting will record and distribute meeting minutes.
- D. Progress Meetings: Conduct progress meetings at biweekly intervals.
1. Coordinate dates of meetings with preparation of payment requests.
 2. Attendees: In addition to representatives of Owner, Owner's Commissioning Authority and MCA and its consultants, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.

- 2) Sequence of operations.
 - 3) Deliveries.
 - 4) Off-site fabrication.
 - 5) Access.
 - 6) Site utilization.
 - 7) Temporary facilities and controls.
 - 8) Progress cleaning.
 - 9) Quality and work standards.
 - 10) Status of correction of deficient items.
 - 11) Field observations.
 - 12) Status of RFIs.
 - 13) Status of proposal requests.
 - 14) Pending changes.
 - 15) Status of Change Orders.
 - 16) Pending claims and disputes.
 - 17) Documentation of information for payment requests.
4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
- a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013200

CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
1. Startup construction schedule.
 2. Contractor's construction schedule.
 3. Construction schedule updating reports.
 4. Daily construction reports.
 5. Material location reports.
 6. Site condition reports.
 7. Special reports.
- B. Related Requirements:
1. Section 013300 "Submittal Procedures" for submitting schedules and reports.
 2. Section 014000 "Quality Requirements" for submitting a schedule of tests and inspections.

1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
 2. Predecessor Activity: An activity that precedes another activity in the network.
 3. Successor Activity: An activity that follows another activity in the network.
- B. Cost Loading: The allocation of the schedule of values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum unless otherwise approved by MCA.

- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Event: The starting or ending point of an activity.
- E. Float: The measure of leeway in starting and completing an activity.
 - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
 - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
 - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- F. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

1.4 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:
 - 1. Working electronic copy of schedule file, where indicated.
 - 2. PDF electronic file.
 - 3. Two paper copies.
- B. Startup construction schedule.
 - 1. Approval of cost-loaded, startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.
- C. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.
- D. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
 - 1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.
- E. Construction Schedule Updating Reports: Submit with Applications for Payment.
- F. Daily Construction Reports: Submit at weekly intervals.
- G. Material Location Reports: Submit at weekly intervals.
- H. Site Condition Reports: Submit at time of discovery of differing conditions.

- J. Qualification Data: For scheduling consultant.

1.5 QUALITY ASSURANCE

- A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within 24 hours of MCA's request.
- B. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to the preliminary construction schedule and Contractor's construction schedule, including, but not limited to, the following:
1. Review software limitations and content and format for reports.
 2. Verify availability of qualified personnel needed to develop and update schedule.
 3. Discuss constraints, including phasing work, stages area, separations, interim milestones, and partial Owner occupancy.
 4. Review delivery dates for Owner-furnished products.
 5. Review schedule for work of Owner's separate contracts.
 6. Review submittal requirements and procedures.
 7. Review time required for review of submittals and resubmittals.
 8. Review requirements for tests and inspections by independent testing and inspecting agencies.
 9. Review time required for Project closeout and Owner startup procedures, including commissioning activities.
 10. Review and finalize list of construction activities to be included in schedule.
 11. Review procedures for updating schedule.

1.6 COORDINATION

- A. Coordinate Contractor's construction schedule with the schedule of values, list of subcontracts (where applicable), submittal schedule, progress reports, payment requests, and other required schedules and reports.
1. Secure time commitments for performing critical elements of the Work from entities involved.
 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for the Notice of Award to date of final completion.
1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each main element of the Work. Comply with the following:
1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by MCA.
 2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 3. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
 4. Startup and Testing Time: If required for project systems include no fewer than 15 days for startup and testing.
 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for MCA's administrative procedures necessary for certification of Substantial Completion.
 6. Punch List and Final Completion: Include not more than 45 days for completion of punch list items and final completion.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
1. Phasing: Arrange list of activities on schedule by phase.
 2. Work under More Than One Contract: Include a separate activity for each contract.
 3. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
 4. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
 5. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Partial occupancy before Substantial Completion.
 - e. Use of premises restrictions.
 - f. Provisions for future construction.

- g. Seasonal variations.
 - h. Environmental control.
 6. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
 - a. Submittals.
 - b. Installation.
 - c. Tests and inspections.
 - d. Adjusting.
 - e. Curing.
 7. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
 - a. New Foundation Structural Completion.
 - b. Completion of building utility connection and service restoration
 - c. Completion of mechanical installation.
 - d. Completion of electrical installation.
 - e. Substantial Completion.
 8. Other Constraints: Not Used.
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion, and the following interim milestones:
1. Re-occupancy of property by owner.
- E. Cost Correlation: Superimpose a cost correlation timeline, indicating planned and actual costs. On the line, show planned and actual dollar volume of the Work performed as of planned and actual dates used for preparation of payment requests.
1. See Section 012900 "Payment Procedures" for cost reporting and payment procedures.
- F. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
1. Unresolved issues.
 2. Unanswered Requests for Information.
 3. Rejected or unreturned submittals.
 4. Notations on returned submittals.
 5. Pending modifications affecting the Work and Contract Time.
- G. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished.

- H. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.
 - 1. Software shall be Microsoft Project or other software acceptable to MCA.

2.2 STARTUP CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Submit startup, horizontal, bar-chart-type construction schedule within 10 days of date established for the Notice of Award.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 60 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.
- C. Format: Submit Microsoft Excel format, latest software version or other software acceptable to MCA.

2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Submit a comprehensive, fully developed, horizontal, bar-chart-type, Contractor's construction schedule within 15 days of date established for the commencement of Work. Base schedule on the startup construction schedule and additional information received since the start of Project.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
 - 1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.
- C. Format: Submit using Microsoft Project file format for Windows Operating Systems or other software acceptable to MCA

2.4 REPORTS

- A. Weekly Construction Reports: Prepare a weekly construction report recording the following information concerning events at Project site:
 - 1. List of subcontractors at Project site.
 - 2. List of separate contractors at Project site.
 - 3. Approximate count of personnel at Project site.
 - 4. Equipment at Project site.
 - 5. Material deliveries.
 - 6. High and low temperatures and general weather conditions, including presence of rain or snow.
 - 7. Accidents.
 - 8. Meetings and significant decisions.

9. Unusual events (see special reports).
10. Stoppages, delays, shortages, and losses.
11. Meter readings and similar recordings.
12. Emergency procedures.
13. Orders and requests of authorities having jurisdiction.
14. Change Orders received and implemented.
15. Construction Change Directives received and implemented.
16. Services connected and disconnected.
17. Equipment or system tests and startups.
18. Partial completions and occupancies.
19. Substantial Completions authorized.

B. Material Location Reports: At biweekly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site. Indicate the following categories for stored materials:

1. Material stored prior to previous report and remaining in storage.
2. Material stored prior to previous report and since removed from storage and installed.
3. Material stored following previous report and remaining in storage.

C. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.5 SPECIAL REPORTS

- A. General: Submit special reports directly to MCA within one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At biweekly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 3. As the Work progresses, indicate final completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to MCA, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 013200

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.

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 01 40 00

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and -control services required by Construction Manager, or authorities having jurisdiction are not limited by provisions of this Section.
- C. The contractor shall bear sole responsibility for the costs of complying with quality requirements Section 01 40 00.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Architect: Where referenced in this section, Architect is defined as Wayne Garrick, AIA
- C. MCA: Where referenced in this section, MCA is defined as Martinez Couch and Associates, LLC.

- D. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect or Construction Manager.
- E. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- F. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- G. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- J. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- K. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to the Construction Manager for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 ACTION SUBMITTALS

1.6 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- B. Qualification Data : For Contractor's quality-control personnel.
- C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:
 - 1. Seismic-force-resisting system, designated seismic system.
 - 2. Main wind-force-resisting system.
- D. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
 - 1. Specification Section number and title.
 - 2. Entity responsible for performing tests and inspections.
 - 3. Description of test and inspection.
 - 4. Identification of applicable standards.
 - 5. Identification of test and inspection methods.
 - 6. Number of tests and inspections required.
 - 7. Time schedule or time span for tests and inspections.
 - 8. Requirements for obtaining samples.
 - 9. Unique characteristics of each quality-control service.

1.7 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Quality-Control Plan, General: Submit quality-control plan within 15 days of Notice to Proceed, and not less than five days prior to preconstruction conference. Submit in format acceptable to Architect and MCA. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.
- B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
 - 1. Project quality-control manager may also serve as Project superintendent.

- C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
- D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
 - 1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
 - 2. Special inspections required by authorities having jurisdiction and indicated in paragraph 1.11 of this section
 - 3. Verification of architectural features by the Architect.
- E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.8 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address, and telephone number of testing agency.
 - 4. Dates and locations of samples and tests or inspections.
 - 5. Names of individuals making tests and inspections.
 - 6. Description of the Work and test and inspection method.
 - 7. Identification of product and Specification Section.
 - 8. Complete test or inspection data.
 - 9. Test and inspection results and an interpretation of test results.
 - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 - 12. Name and signature of laboratory inspector.
 - 13. Recommendations on retesting and reinspecting.

- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of technical representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that products at Project site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of factory-authorized service representative making report.
 2. Statement that equipment complies with requirements.
 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 4. Statement whether conditions, products, and installation will affect warranty.
 5. Other required items indicated in individual Specification Sections.
- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.9 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to MCA, the Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

1.10 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 2. Payment for these services will be made from testing and inspecting allowances, as authorized by Change Orders.
 3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."
- D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

- F. Testing Agency Responsibilities: Cooperate with MCA, the Architect, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify MCA, the Architect, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.
- G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services as required by Martinez Couch and Associates, LLC, the Construction Manager Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.
1. Distribution: Distribute schedule to Martinez Couch and Associates, LLC the Construction Manager, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.11 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:
1. Cast in Place Concrete –
 - a. Mix Design – Inspector Certification shall be ACI-CCT or ICC-RCSI. Inspector scope shall review concrete batch tickets and verify compliance with approved mix design. Verification that water added at the site does not exceed that allowed by mix design.
 - b. Reinforcement Installation – Inspector certification shall be ACI-CCI or ICC-RCSI. Inspection scope shall include size, spacing, cover, positioning and grade of reinforcing steel. Verification that reinforcing bars are free from deleterious materials, adequate bar ties, chair supports or bolsters, bar laps, and mechanical splices shall be included in inspection scope.
 - c. Welding of Reinforcing – Inspector certification shall be AWS-CWI. Inspection scope shall include visual inspection of all reinforcing steel welds, verification of weldability of reinforcing steel, and preheating of steel when required.
 - d. Concrete Placement – Inspector certification shall be ACI-CCI or ICC-RCSI. Inspection scope shall include the verification of concrete conveyance and depositing avoids segregation or contamination, proper consolidation, and placement of concrete
 - e. Sampling and Testing of Concrete – Inspector certification shall be ACI-CFTT, ACI-STT to sample;
 - 1) Concrete Compressive Strength, ASTM C31 & C39
 - 2) Concrete Slump, ASTM C143
 - 3) Concrete Air Content, ASTM C231 or ASTM C173
 - 4) Temperature, ASTM C1064
 - f. Curing and Protection – Inspector Certification shall be ACI-CCI or ICC-RCSI. Inspection scope shall verify cold weather protection and hot weather protection procedures as necessary.
 2. Structural Steel –
 - a. Material Certification – Inspector Certification shall be AWS/AISC-SSI or ICC-SWSI. Inspection scope shall include review certified mill test reports and identification marking on wide flange shapes, high strength bolts, nuts and welding electrodes.
 - b. Bolting – Inspector certification shall be AWS/AISC-SSI or ICC-SWSI. Inspection scope shall include installation and tightening of high strength bolts and verification of proper tightening sequence.
 - c. Welding – Inspector certification shall be AWS-CWI or ASNT. Inspection scope shall include visual inspection of all welds, surface preparation between passes, and verification of size and length of fillet welds.
 3. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
 4. Notifying MCA and the Architect, and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 5. Submitting a certified written report of each test, inspection, and similar quality-control service to MCA and the Architect, with copy to Contractor and to authorities having jurisdiction.

6. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
7. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
8. Retesting and reinspecting corrected work.
9. Where appropriate a Professional Engineer, P.E., designated by MCA or the Architect shall be allowed to inspect structural steel and cast in place concrete work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
 1. Date test or inspection was conducted.
 2. Description of the Work tested or inspected.
 3. Date test or inspection results were transmitted to Architect.
 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for the Construction Manager's reference during normal working hours.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

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 CO₂ 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.

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Community Development Block Grant
Disaster Recovery Program (CDBG-DR)
Owner Occupied Rehabilitation and Rebuilding Program

Bid Documents
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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 016000

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
 - 1. Section 012100 "Allowances" for products selected under an allowance.
 - 2. Section 012300 "Alternates" for products selected under an alternate.
 - 3. Section 012500 "Substitution Procedures" for requests for substitutions.

1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other

characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.4 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
 2. MCA's Action: If necessary, MCA will request additional information or documentation for evaluation within one week of receipt of a comparable product request. MCA will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or 10 days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: As specified in Section 013300 "Submittal Procedures."
 - b. Use product specified if MCA does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
 2. If a dispute arises between contractors over concurrently selectable but incompatible products, MCA will determine which products shall be used.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.

2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
 3. See other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," MCA will make selection.
 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
 6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures:
1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 3. Products:
 - a. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
 4. Manufacturers:
 - a. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
 5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable

Products" Article for consideration of an unnamed product by one of the other named manufacturers.

- C. Visual Matching Specification: Where Specifications require "match MCA's sample", provide a product that complies with requirements and matches MCA's sample. MCA's decision will be final on whether a proposed product matches.
 - 1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by MCA from manufacturer's full range" or similar phrase, select a product that complies with requirements. MCA will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration: MCA will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, MCA may return requests without action, except to record noncompliance with these requirements:
 - 1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 - 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - 3. Evidence that proposed product provides specified warranty.
 - 4. List of similar installations for completed projects with project names and addresses and names and addresses of MCAs and owners, if requested.
 - 5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300

EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Coordination of Owner-installed products.
6. Progress cleaning.
7. Starting and adjusting.
8. Protection of installed construction.

- B. Related Requirements:

1. Section 011000 "Summary" for limits on use of Project site.
2. Section 013300 "Submittal Procedures" for submitting surveys.
3. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of-accepted deviations from indicated lines and levels, and final cleaning.
4. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.
5. Section 078413 "Penetration Firestopping" for patching penetrations in fire-rated construction.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For land surveyor or professional engineer.
- B. Certificates: Submit certificate signed by land surveyor and professional engineer where applicable certifying that location and elevation of improvements comply with requirements.
- C. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:
 - 1. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
 - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.
- D. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.
- E. Certified Surveys: Submit two copies signed by land surveyor.
- F. Final Property Survey: Submit 5 copies showing the Work performed and record survey data.

1.5 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Structural Elements: New Structural elements shall not be cut as part of project work unless approved by MCA or its consultants.
 - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:
 - a. Primary operational systems and equipment.
 - b. Fire separation assemblies.
 - c. Air or smoke barriers.
 - d. Fire-suppression systems.
 - e. Mechanical systems piping and ducts.
 - f. Control systems.
 - g. Communication systems.

- h. Fire-detection and -alarm systems.
 - i. Conveying systems.
 - j. Electrical wiring systems.
 - k. Operating systems of special construction.
 - l. Home Security Systems
 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
 - a. Water, moisture, or vapor barriers.
 - b. Membranes and flashings.
 - c. Exterior curtain-wall construction.
 - d. Sprayed fire-resistive material.
 - e. Equipment supports.
 - f. Piping, ductwork, vessels, and equipment.
 - g. Noise- and vibration-control elements and systems.
 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- C. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- D. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to MCA for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
1. Description of the Work.
 2. List of detrimental conditions, including substrates.
 3. List of unacceptable installation tolerances.
 4. Recommended corrections.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to

other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. General: Engage a [**land surveyor**] [**professional engineer**] to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish limits on use of Project site.
 - 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 4. Inform installers of lines and levels to which they must comply.
 - 5. Check the location, level and plumb, of every major element as the Work progresses.
 - 6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
 - 7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

- A. Identification: Owner will identify existing benchmarks, control points, and property corners.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
 - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Benchmarks: Establish and maintain a minimum of one Insert number permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 - 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- D. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.
- E. Final Property Survey: Engage a **[land surveyor]** **[professional engineer]** to prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by **[land surveyor]** **[professional engineer]**, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.
 - 1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.
 - 2. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.

2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
 4. Maintain minimum headroom clearance of 96 inches (2440 mm) in occupied spaces and 90 inches (2300 mm) in unoccupied spaces.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 2. Allow for building movement, including thermal expansion and contraction.
 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- G. Cutting: Where Authorized by MCA or its consultants, cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.

2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 OWNER-INSTALLED PRODUCTS

- A. If indicated in "Section 011000 – Summary" comply with this section.
- B. Site Access: Provide access to Project site for Owner's construction personnel.
- C. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
 2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

3.8 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 - 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls." And Section 017419 "Construction Waste Management and Disposal."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.9 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.10 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

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 33 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 applicable.
- 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 architect substantial completion inspection list of items to be completed or corrected (punch list), endorsed and dated by architect. 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, architect will either proceed with inspection or notify contractor of unfulfilled requirements. Architect 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 architect 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 architect 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 of 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 017419

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Salvaging nonhazardous demolition and construction waste.
 - 2. Recycling nonhazardous demolition and construction waste.
 - 3. Disposing of nonhazardous demolition and construction waste.
- B. Related Requirements:
 - 1. Section 024116 "Structure Demolition" for disposition of waste resulting from demolition of buildings, structures, and site improvements.
 - 2. Section 024119 "Selective Demolition" for disposition of waste resulting from partial demolition of buildings, structures, and site improvements.
 - 3. Section 311000 "Site Clearing" for disposition of waste resulting from site clearing and removal of above- and below-grade improvements.

1.3 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

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

1.4 PERFORMANCE REQUIREMENTS

- A. General: Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials.

1.5 ACTION SUBMITTALS

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

1.6 INFORMATIONAL SUBMITTALS

- A. Waste Management Plan: Submit plan within 30 days of date established for commencement of the Work.

1.7 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

1.8 WASTE MANAGEMENT PLAN

- A. General: Develop a waste management plan. Plan shall distinguish between demolition and construction waste.
 - 1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
 - 2. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
 - 1. Comply with operation, termination, and removal requirements in Section 015000 "Temporary Facilities and Controls."
- B. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, and reused.
 - 2. Comply with Section 015000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 SALVAGING DEMOLITION WASTE

- A. Salvaged Items for Reuse in the Work: Salvage items for reuse and handle as follows:
 - 1. Clean salvaged items.
 - 2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
 - 3. Store items in a secure area until installation.
 - 4. Protect items from damage during transport and storage.
 - 5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.

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

3.4 RECYCLING DEMOLITION WASTE

- A. Asphalt Paving: Break up and transport paving to asphalt-recycling facility at contractors option.
- B. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.
1. If concrete is to be recycled, pulverize concrete to maximum 1-1/2-inch (38-mm) size.
- C. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.
1. If masonry is to be recycled, pulverize masonry to maximum 1-inch (25-mm) size.
- D. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.

3.5 RECYCLING CONSTRUCTION WASTE

- A. Packaging:
1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
 2. Polystyrene Packaging: Separate and bag materials.
 3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
 4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
- B. Wood Materials:

1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

3.6 DISPOSAL OF WASTE

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

END OF SECTION 017419

SECTION 02 41 19

SELECTIVE DEMOLITION

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 CONDITIONS

- 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 Architect and Owner. Hazardous materials will be removed per the written directive of the CTDOH 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 Architect.

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

The State of Connecticut Department of Housing
Community Development Block Grant
Disaster Recovery Program (CDBG-DR)
Owner Occupied Rehabilitation and Rebuilding Program
SECTION 02 83 13

Bid Documents
Project# 2035
8 Third Avenue
Stratford, CT

LEAD HAZARD REMEDIATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. 'Lead Hazard Remediation Project, 8 Third Avenue, Stratford, CT' prepared by Gilberto Lead Inspections LLC.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION

All work, labor, and materials shall be accordance with 'Lead Hazard Remediation Project, 8 Third Avenue, Stratford, CT' prepared by Gilberto Lead Inspections LLC.

Part 1 General

1.1 SCOPE

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

Property Information:

Address: 8 Third Avenue, Stratford, CT
(A single family residence)

Property Owner: Applicant #2035

Lead Testing Performed by:

Maureen Monaco – Lead Inspector /Risk Assessor #1172

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

Date of testing: May 22, 2014

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

Resident Information:

vacant

- B. Prior to abatement or interim controls, repair work including but not limited to the repair of any leaks related to the deterioration of lead based painted surfaces is required. House is to be lifted and reset on foundation.
- C. Abatement or Lead Hazard Remediation includes the following methods:
- Replacement by removing components such as windows, doors, and trim that have lead painted surfaces and installing new lead free components.
 - Rigid enclosure using enclosure system by mechanically attaching a rigid durable barrier covering building components with all edges and

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

Appropriate enclosure materials include:

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

- Liquid Encapsulation by application of an approved liquid coating that acts as a barrier between lead based paint and the environment.
- Paint removal by separation of lead paint from the surface of components. This activity may include the following methods when performed with the proper conditions and engineering controls:
 1. Mechanical removal by wet scraping or HEPA needle gun.
 2. Chemical removal by use of strippers in accordance with manufacturer’s specifications.
 3. Heat Gun by heating the painted surface utilizing proper engineering controls and when temperature does not exceed 700 degrees F.
- Soil Hazard Reduction Methods may include
 1. Removal and replacement of lead contaminated soil by removing the top 2-6 inches of lead contaminated soil, disposing it in accordance with federal and state standards and replacing it with new lead free soil. EPA Guidance recommends this method when lead levels exceed 500 ppm.
 2. Permanent Cover of bare soil areas with concrete, asphalt, or other permanent materials; EPA Guidance recommends this method when lead concentrations in soil exceed 5000 ppm.
 3. Interim controls may include covering lead contaminated soil with grass, gravel, mulch, or restrictive elements such as fences, shrubbery, or decking to prevent access to contaminated soil. Interim controls require periodic monitoring to ensure that the cover or controls are in place.

- D. Interim controls may be performed by personnel who have received the Renovate Right Certification from the EPA. Interim Controls are measures designed to temporarily reduce human exposure or likely exposure to lead paint hazards, including specialized cleaning, repairs, maintenance painting, and temporary containments.
- E. The Contractor shall provide all labor, materials, equipment, services, insurance, supervision, and incidentals which are necessary or required to perform the work of lead paint remediation in accordance with applicable governmental regulations and these specifications.
- F. The Contractor is responsible for restoring all auxiliary areas utilized during abatement to conditions equal to or better than original. The contractor shall, at no additional expense to the building owner, repair any damage caused to auxiliary areas during the performance of abatement activities.
- G. The Contractor will protect and preserve in operating conditions, including all utilities transversing the building and site. Damage to any utility due to work under this contract shall be repaired to the reasonable satisfaction and at no cost to the building owner.
- H. The Contractor shall coordinate work schedule and site access with the building owner. The contractor shall submit a schedule of work and shall be approved by the building owner prior to the commencement of work. The contractor shall be responsible for securing the building for the duration of the work.
- I. The Contractor shall be responsible for removing and decontaminating movable objects from the work area. This should be coordinated with the building owner.

1.2 DESCRIPTION OF WORK

- A. The site is an older, renovated ranch style cottage. The exterior of the home is stained shingles with vinyl replacements windows throughout with the exception of the front entry windows.
- B. The scope of work includes rigid encapsulation of the overhangs and soffits and vertical white trim. The painted column under the home will be removed and disposed.
- C. A CT Licensed Lead Abatement Contractor will be utilized to perform the required work.

- D. All required lead based paint abatement work shall be conducted in compliance with HUD regulation 24 CFR Part 35.
- E. Lead based paint is present on the similar painted components in the areas of the project as found in the inspection report attached. It is the responsibility of the Contractor to comply with the OSHA Construction industry Standard 29 CFR 1926.62 when conducting abatement activities which may disturb materials with lead based paint.

1.3 PERSONAL PROTECTION

- A. Prior to commencement of work, instruct all workers in all aspects of personal protection, work procedures, emergency evacuation procedures and use of all equipment. A formal respiratory protection program including respiratory protection must be implemented in accordance with 29 CFR 1926.26 and 29 CFR 1910.134.
- B. Contractor will provide appropriate respiratory and filters for protection equipment for each worker and ensure usage during potential dust exposure. Respirators shall be approved by the National Institute for Occupational Safety and Health under 30 CFR Part 11.
- C. Contractor will provide and require workers to wear protective clothing in work areas where lead dust concentrations exceed permissible exposure limits established OSHA. This includes impervious coveralls with elastic wrists and ankles, head covering, gloves, and foot coverings.

1.4 PREPARATION OF LEAD CONTROL AREA

- A. Post warning signs meeting EPA Renovate Right Program at each entrance and exit. Notification to tenants or owner must be made in writing.
- B. Install an impermeable cloth or vinyl on ground under work area to collect paint dust, chips, and debris.

1.5 LEAD REMOVAL

- A. A competent person shall be on the job site at all times to ensure proper work practices are followed.
- B. Utilize wet methods to remove lead based paint and painted components in accordance with 29 CFR 1926.62 utilizing fine mist to moisten surface to prevent lead dust from becoming airborne.

- C. At the end of each work shift remove and place all visible accumulation of paint chips and associated dust and debris. This includes rags, sponges and protective clothing.
- D. The following practices are prohibited:
 - Dry scraping
 - Power tools for grinding, sanding, and cutting without HEPA vacuum dust collection

1.6 CLEAN-UP, VISUAL INSPECTION, FINAL INSPECTION

- A. After a visual inspection, the Contractor will remove impermeable drop cloths.
- B. The contractor will call Gilbertco Lead Inspections LLC (1-800-959-2985) or Facilities Support Services LLC at 1-203-288-1281 to do a visual inspection of the interior and exterior of the project to detect incomplete work, visible debris, or damage cause by abatement or remediation activity. Clearance testing of surfaces in the vicinity of remediation work will be obtained until reoccupancy criteria of 40mg/ft² on floors and 250 mg/ft² on window sills is met. Contractor is responsible for providing lead free surfaces around all work areas following completion of activity.

1.7 DISPOSAL OF HAZARDOUS LEAD BEARING WASTE

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

- C. Contractor can wipe clean polyethylene sheeting and dispose of it as construction debris.
- D. Dumpsters containing hazardous waste are to be kept covered and locked when not in active use for lading of materials.
- E. All containers of hazardous lead bearing material shall carry the following label in accordance with 29 CFR 1926.62.

HAZARDOUS LEAD WASTE

Federal Law prohibits improper disposal.
If found, contact the nearest police or public safety authority,
or the U.S. Environmental Protection Agency

Generator Information:

Facility Name: _____

Facility Address: _____

Facility Phone Number: _____

EPA ID / Manifest Document #: _____

Accumulation Start Date: _____

EAP Waste #: _____

HAZARDOUS WASTE SOLID NUMBERS

ORM-E NA 9189 D008

HANDLE WITH CARE

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

SECTION 02 85 00

MOLD REMEDIATION

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 emptied 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 033000

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

PART 2 - PRODUCTS

- 2.1 All products in accordance with drawings and specifications

PART 3 - EXECUTION

- 3.1 All work, labor and materials in accordance with drawings and specifications

END OF SECTION 033000

SECTION 051200

STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

PART 2 - PRODUCTS

- 2.1 All products in accordance with drawings

PART 3 - EXECUTION

- 3.1 All work, labor, and materials in accordance with drawings and specifications

END OF SECTION 051200

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Dimensional Lumber.
- B. Wall, Floor, and Roof Sheathing.
- C. Miscellaneous Lumber.
- D. Related Accessories.

1.2 REFERENCES

- A. American Forest and Paper Association (AF&PA).
- B. American Lumber Standard Committee (ALSC).
- C. American National Standards Institute (ANSI/ASSE).
- D. ASTM International (ASTM).
- E. American Wood Preservers Association (AWPA).
- F. Douglas Fir Protection Association (DFPA).
- G. National Fire Protection Association (NFPA).
- H. National Lumber Grades Authority (NLGA).
- I. Northeastern Lumber Manufacturers Association (NeLMA).
- J. Occupational Safety and Health Administration (OSHA).
- K. Underwriters Laboratories (UL).
- L. West Coast Lumber Inspection Bureau (WCLIB).
- M. Western Wood Products Association (WWPA).

PART 2 PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules

indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
 2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece.
 3. Provide dressed lumber, ss per local and national governing industry standards.
- B. Maximum Moisture Content of Lumber: As per local and national governing industry standards.
- C. Engineered Wood Products: Provide engineered wood products acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.
1. Allowable Design Stresses: Provide engineered wood products with allowable design stresses, as published by manufacturer, that meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

2.2 DIMENSION LUMBER FRAMING

- A. Non-Load-Bearing Interior Partitions: As per local and national governing industry standards.
1. Application: Interior partitions not indicated as load-bearing.
 2. Species:
 - a. Mixed southern pine.
 - b. Northern species.
 - c. Eastern softwoods.
 - d. Western woods.
- B. Framing Other Than Non-Load-Bearing Interior Partitions: As per local and national governing industry standards.
1. Application: Framing other than interior partitions.
 2. Species:
 - a. Hem-fir (north).
 - b. Southern pine.
 - c. Douglas fir-larch.
 - d. Mixed southern pine.
 - e. Spruce-pine-fir.
 - f. Douglas fir-south.
 - g. Hem-fir.
 - h. Douglas fir-larch (north).
 - i. Spruce-pine-fir (south).

2.3 WALL, FLOOR, AND ROOF SHEATHING

- A. Sheathing: As per local and national governing industry standards.
1. Application: Wall sheathing.
 2. Application: Subflooring.
 3. Application: Roof decking.
 4. Material: Match existing materials or comply with final install product instructions,

specified industry standards and recommendations application.

2.4 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
 - 3. Cants.
 - 4. Furring.
 - 5. Grounds.
- B. For items of dimension lumber size, provide lumber per local and national governing industry standards.
- C. For concealed boards, provide lumber per local and national governing industry standards. following species and grades:
 - 1. Mixed southern pine.
 - 2. Eastern softwoods.
 - 3. Northern species.
 - 4. Western woods.

2.5 FASTENERS

- A. General: Provide fasteners as per local and national governing industry standards.

PART 3 EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- B. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- C. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.
- D. Do not splice structural members between supports unless otherwise indicated.
- E. Comply with, specified industry standards and recommendations for installation of all applications.

END OF SECTION

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 CABINETS

- 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 lighting 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 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 072119

FOAMED-IN-PLACE INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Closed-cell spray polyurethane foam.
 - 2. Open-cell spray polyurethane foam.
- B. Related Requirements:

1.3 ACTION SUBMITTALS

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

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Test Reports: For each product, for tests performed by a qualified testing agency.
- C. Evaluation Reports: For spray-applied polyurethane foam-plastic insulation, from ICC-ES.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

PART 2 - PRODUCTS

2.1 CLOSED-CELL SPRAY POLYURETHANE FOAM

- A. Closed-Cell Spray Polyurethane Foam: ASTM C 1029, Type II, minimum density of 1.5 lb/cu. ft. (24 kg/cu. m) and minimum aged R-value at 1-inch (25.4-mm) thickness of 6.2 deg F x h x sq. ft./Btu at 75 deg F (43 K x sq. m/W at 24 deg C).
 - 1. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - a. Flame-Spread Index: 25 or less.
 - b. Smoke-Developed Index: 450 or less.
 - 2. Fire Propagation Characteristics: Passes NFPA 285 testing as part of an approved assembly.

2.2 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by insulation manufacturer where required for adhesion of insulation to substrates.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Verify that substrates are clean, dry, and free of substances that are harmful to insulation.
- B. Priming: Prime substrates where recommended by insulation manufacturer. Apply primer to comply with insulation manufacturer's written instructions. Confine primers to areas to be insulated; do not allow spillage or migration onto adjoining surfaces.

3.2 INSTALLATION

- A. Comply with insulation manufacturer's written instructions applicable to products and applications.
- B. Spray insulation to envelop entire area to be insulated and fill voids.
- C. Apply in multiple passes to not exceed maximum thicknesses recommended by manufacturer. Do not spray into rising foam.
- D. Framed Construction: Install into cavities formed by framing members to achieve thickness indicated on Drawings.

- E. Cavity Walls: Install into cavities to fully fill void.
- F. Miscellaneous Voids: Apply according to manufacturer's written instructions.

3.3 PROTECTION

- A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes.

END OF SECTION 072119

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 which 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 10 00

DOORS AND FRAMES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Exterior Door Units.
- B. Interior Door Units.
- C. Door Hardware.
- D. Related Accessories.

1.2 REFERENCES

- A. American National Standards Institute (ANSI/ASSE).
- B. ASTM International (ASTM).
- C. Insulating Glass Certification Council (IGCC).
- D. Occupational Safety and Health Administration (OSHA).
- E. Underwriters Laboratories (UL).
- F. Window and Door Manufacturers of America (WDMA).

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. Hardware Selection: Submit complete descriptive literature, including finishes, for each type of new door hardware and accessory.
- A. Operation and Maintenance Data: Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance.

1.2 DELIVERY, STORAGE, AND HANDLING

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

- B. Store door units as recommended by Manufacturer.

1.3 WARRANTY

- A. Provide Manufacturer's standard warranty.

PART 2 PRODUCTS

1.4 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. Masonite International Corporation.
 - 5. 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 EXTERIOR DOOR UNITS

- A. Faces: Match existing materials.
- B. Door edges: Match existing materials.
- C. Door bottom edge: Match existing materials.
- D. Core: Match existing materials.
- E. Factory-glazed: Match existing materials.
- F. Gasketing, weatherstripping: Match existing materials.
- G. Hinges, strikes: Match existing materials.
- H. Frames: Match existing materials.
- I. Sill: Match existing materials.
- J. Hardware: For each exterior door, provide the same hardware as existing including, but not limited to, locksets, lever handles, and trims matching the finishes as existing materials.

2.2 INTERIOR DOOR UNITS

- A. Faces: Match existing materials.
- B. Door edges: Match existing materials.

- C. Door bottom edge: Match existing materials.
- D. Core: Match existing materials.
- E. Hinges, strikes: Match existing materials.
- F. Frames: Match existing materials.
- G. Sill: Match existing materials.
- H. Hardware: For each interior door, provide the same hardware as existing including, but not limited to, locksets, lever handles, and trims matching the finishes as existing materials.

PART 3 EXECUTION

3.1 PREPERATION

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

3.2 INSTALLATION

- A. Install door unit assembly per Manufacturer's instructions.
 - 1. Shim jambs straight. Inspect jamb for square, level and plumb.
 - 2. Fasten jamb to studs.
 - 3. Structurally secure sill.
 - 4. Apply sealant to interior side of jamb between outside of jamb and stud to seal gaps.
 - 5. Install hardware.
 - 6. Install interior and exterior trim.
 - 7. Set all nails below surface and fill holes with wood matched putty stick.
 - 8. Install weatherstrip wedges.
- B. Weatherproofing: Apply in accordance with manufacturer's recommendations.

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 30 00

TILING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Floor and Wall Tile.
- B. Trims.
- C. Tile Setting Materials.
- 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).
- E. Tile Council of North America (TCNA).

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. Selection Samples: Submit a complete set of tile samples that represent the full range of manufacturer's products, colors and patterns available.
- E. Maintenance Data: Include recommended cleaning methods, cleaning materials, stain removal methods, and polishes and waxes.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging until ready for installation.
- B. Protect adhesives and liquid additives from freezing or overheating in accordance with

manufacturer's instructions.

- C. Store tile and setting materials on elevated platforms, under cover and in a dry location and protect from contamination, dampness, freezing or overheating.

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 Olean Tile Co.
 - 2. Daltile Corporation.
 - 3. Interceramic Inc.
 - 4. Merola Tile.
- 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 TILE, GENERAL

- A. Tile shall also be provided in accordance with the following:
 - 1. Factory Blending: For tile exhibiting color variations within the ranges selected under Submittal of samples, blend tile in the factory and package so tile taken from one package shows the same range of colors as those taken from other packages.
 - 2. Mounting: For factory mounted tile, provide back or edge mounted tile assemblies as standard with the manufacturer, unless otherwise specified.
 - 3. Factory Applied Temporary Protective Coatings: Where existing, to match, protect exposed surfaces of tile against adherence of mortar and grout by precoating with a continuous film of petroleum paraffin wax applied hot. Do not coat unexposed tile surfaces.

2.3 FLOOR AND WALL TILE

- A. Product: Match existing materials with best efforts.
- B. Size and Shape: Match existing materials.
- C. Surface Finish: Match existing materials.
- D. Colors: Match existing materials.
- E. Pattern: Match existing materials.
- F. Trim Units: Matching bullnose, bullnose corner, cove/inside finger cove, radius cap, sink rail, sink rail incorner/outcorner, cove base, outside cove corner, Cement Bullnose, Cove Base, Cove Base Corner, Fabric Bullnose, Groover Bullnose shapes in sizes coordinated with field tile shapes.

2.4 TRIM AND ACCESSORIES

- A. Ceramic Accessories: Match existing finish, same color and finish as adjacent field tile; same manufacturer as tile.
 - 1. Soap Dish: With wash cloth holder, clam shell design, surface mounted or recessed; cast strength sufficient to resist lateral pull force of 75 lbs (34 Kg).
 - 2. Toilet Tissue Holder: Surface mounted or recessed, for single roll, with spring loaded holder.
 - 3. Towel Bars: Standard design, surface mounted with extensions for casting into small wall openings; cast strength sufficient to resist lateral pull force of 30 lbs (14 Kg).
 - 4. Corner Shelf.
- B. Non-Ceramic Trim: Match material, finish, style and dimensions as existing and to suit application, for setting using tile mortar or adhesive; use in the following locations:
 - 1. Open edges of floor tile.
 - 2. Transition between floor finishes of different heights.
 - 3. Thresholds at door openings.
 - 4. Expansion and control joints, floor and wall.
- C. Stone Thresholds: Provide stone thresholds uniform in color and finish and fabricated to match existing material type, size and finish.
 - 1. Provide to provide transition between tile surface and adjoining finishes where required.

2.5 SETTING MATERIALS

- A. Organic or Epoxy Adhesive: Thinset per Manufacturer requirements.
- B. Mortar Bed Materials: Match existing materials or per Manufacturer requirements.
- C. Mortar Bond Coat Materials: Match existing materials or per Manufacturer requirements.
- D. Standard Grout: Cement grout, sanded or unsanded, as specified by Manufacturer; color to match existing.
- E. Polymer modified cement grout, sanded or unsanded, as specified by Manufacturer; color to match existing.
- F. Epoxy Grout: As specified by Manufacturer; color to match existing.
- G. Silicone Sealant: Silicone sealant, moisture and mildew resistant type, as specified by Manufacturer; color to match existing.
- H. Waterproofing membranes: Match existing materials or per Manufacturer requirements.
- I. Cementitious Backer Board: Match existing materials or per Manufacturer requirements.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that wall surfaces are free of substances which would impair bonding of setting materials, smooth and flat within tolerances specified by Manufacturer, and are ready to receive tile.
- B. Verify that sub-floor surfaces are dust-free, and free of substances which would impair bonding of setting materials to sub-floor surfaces, and are smooth and flat within tolerances specified by Manufacturer.

3.2 INSTALLATION

- A. Preparation: Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.
 - 1. Remove any curing compounds or other contaminates.
 - 2. Vacuum clean surfaces and damp clean.
 - 3. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.
 - 4. Install cementitious backer board in accordance with Manufacturer requirements and board manufacturer's instructions. Tape joints and corners, cover with skim coat of dry-set mortar to a feather edge.
- B. Install tile, grout and setting materials in accordance with applicable requirements of manufacturer's instructions, and TCA Handbook recommendations.
- C. Lay tile to pattern to match existing application. Arrange pattern so that a full tile or joint is centered on each wall and that no tile less than 1/2 width is used. Do not interrupt tile pattern through openings.
- D. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.
- E. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar, or excess grout.
- F. Install non-ceramic trim in accordance with manufacturer's instructions.
- G. Install thresholds where required.
- H. Sound tile after setting. Replace hollow sounding units.
- I. Keep expansion joints free of adhesive or grout. Apply sealant to joints.
- J. Allow tile to set for a minimum of 48 hours prior to grouting.
- K. Grout tile joints. Use standard grout unless otherwise indicated.
- L. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.
- M. Comply with the manufacturer's instructions, specified industry standards and recommendations for cleaning, traffic, furnishings installation and equipment installation.

END OF SECTION

SECTION 09 68 00

CARPETING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Carpet.
- B. Carpet Padding.
- C. Related Accessories.

1.2 REFERENCES

- A. American National Standards Institute (ANSI/ASSE).
- B. ASTM International (ASTM).
- C. Carpet Cushion Council (CCC).
- D. Carpet and Rug Institute (CRI).
- E. Occupational Safety and Health Administration (OSHA).
- F. 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, physical characteristics, durability, resistance to fading and flame resistance characteristics for each type of carpet material and installation accessory.
 - 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 carpet samples that represent the full range of manufacturer's products, colors and sheens available.
- E. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Transport carpet in a manner that prevents damage and distortion. Bending or folding

individual carpet rolls or cuts from rolls is not recommended. When bending or folding is unavoidable for delivery purposes, the carpet is required to be unrolled and allowed to lie flat immediately upon arrival at the installation site.

- B. Deliver carpet and adhesives in manufacturer's original wrappings and packages clearly labeled with manufacturer's name, brand, name, size, dye lot number and related information.
- C. Store carpet and related materials in a climate-controlled, dry space. Protect carpet from soil, dust, moisture and other contaminants and store on a flat surface. Stacking heavy objects on top of carpet rolls or stacking more than three rolls is prohibited.

1.5 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. Fabrica.
 - 2. Dixie Home.
 - 3. Masland Carpets.
 - 4. Mohawk Industries.
- 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 CARPETING, GENERAL

- A. Provide carpet free of visual blemishes, streaks, poorly dyed areas, fuzzing of pile yarn, spots or stains and other physical and manufacturing defects.

2.3 CARPETING

- A. Carpet Type: Match existing materials.
 - 1. Fiber Content: Match existing.
 - 2. Pile Characteristics: Match existing.
 - 3. Dye Process: Match existing.
 - 4. Density: Match existing.
 - 5. Color: Match existing and as approved by Owner.

2.4 CARPET PADDING

- A. Product as recommended in writing by the carpet manufacturer for the application indicated and which will not void the specified warranties, (if required).

2.5 CARPETING ACCESSORIES

- A. Trowelable Leveling and Patching Compounds: Portland cement based formulation provided by or recommended by Manufacturer. Do not use gypsum based compounds.
- B. Carpet Adhesives: Water-resistant, mildew resistant, and nonstaining, high solids, low VOC emitting formulations that are specifically recommended by the carpet manufacturer, as verified through compatibility and adhesion testing for the intended substrate and application, and that comply with flammability requirements for installed carpet.
- C. Tackless Carpet Stripping (Stretch-In Installations): Materials as specifically recommended by the carpet manufacturer, thickness to match cushion thickness, with fasteners as specifically recommended by the carpet manufacturer .
- D. Plastic Coated Fabric Tape (Stretch-In and Double Stick Broadloom Cushion Installations): Woven fabric impregnated with plastic and coated with adhesive having high-tack adhesion forming a secure bond for application to cushion top seams to resist peaking. Provide water-resistant plastic-coated tape which will unwind without adhesive transfer.
- E. Seaming Tape: Hot melt adhesive tape as recommended by the Manufacturer and as suitable for backing specified.
- F. Seaming Cement: Water-resistant and flame-resistant carpet adhesive for sealing raw edges, seaming, reinforcing seams and patching. Provide fast drying, easy spreading carpet seaming adhesive having excellent aging characteristics recommended by the carpet manufacturer.
- G. Metal Edge Strips: Extruded aluminum with mill finish, matching existing width, of height required to protect exposed edge of carpet, and of maximum lengths to minimize running joints (if required).
- H. Carpet Edging: Provide rubber composition carpet edging in single lengths wherever possible, keeping the number of joints or splices to a minimum (if required).
- I. Floor Sealer: Type as recommended and manufactured by the carpet manufacturer for the matching existing applications.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that finishes of substrates comply with tolerances and other requirements specified by Manufacturer installation requirements and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.
- B. Provide Carpet free of visual blemishes, streaks, poorly dyed areas, fuzzing of pile yarn, spots or stains and other physical and manufacturing defects.

3.2 INSTALLATION

- A. Preparation: Prepare substrates according Manufacturer written instructions.
 - 1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

2. Verify that wood substrates are structurally sound, flat, dry and securely anchored. Substrates, such as plywood, hardwood, particleboard, oriented strand board, or other materials, and installed according to manufacturer specifications. Irregularities, imperfections and joints are required to be properly patched and prepared. It is required that all protrusions be properly prepared.
 3. Fill all cracks, voids and holes. Flooring irregularities are required to be repaired to ensure a smooth, finished appearance, prevent accelerated wear and telegraphing substrate irregularities. Patching compounds are required to be suitable for the use application.
 4. Perform moisture, relative humidity, alkalinity, and adhesion testing as per Manufacturer installation requirements.
 5. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.
 6. Properly prepare all edges that are used for seams in strict compliance with carpet Manufacturer recommendations.
- B. Carpeting:
1. Comply with the manufacturer's instructions, specified industry standards and recommendations, and as required to match the existing installations.
 2. Cut and fit carpet to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet manufacturer.
 3. Extend carpet into closets and offsets, and under movable equipment of the rooms and spaces shown or scheduled to receive carpet, including recessed covers within those spaces.
 4. Provide cutouts as required for removable access covers in substrates as recommended by carpet manufacturer.
 5. At doorways, center seams under door in closed position; do not place seams perpendicular to door frame in direction of traffic through doorway.
 6. Do not leave visible seams.
- C. Carpet Padding:
1. Comply with the manufacturer's instructions, specified industry standards and recommendations when installing carpet on stairs.
- D. Carpet Accessories:
1. Apply adhesives and/or other carpeting accessories in accordance with manufacturer's directions.
 2. Install edge strip at every location where edge of carpet is exposed, unless otherwise indicated. Install in single lengths and secure in accordance with manufacturer's directions.
 3. Anchor metal strips to floor with suitable fasteners. Apply adhesive to edge strips, insert carpet into lip and press it down over carpet.
 4. Anchor vinyl edge strip to floor with adhesive apply adhesive to edge strip and insert carpet into lip and press lip down over carpet.
- E. Comply with the manufacturer's instructions, specified industry standards and recommendations when installing carpet on stairways, stair treads, or any non-flooring area.
- F. Comply with the manufacturer's instructions, specified industry standards and

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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