



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)

RE-BID PACKAGE

For

Rehabilitation/Reconstruction work to:

Kaminsky Residence

3 Weed Circle

Stamford, CT 06902

Merritt Construction Services, Inc.

1177 High Ridge Road

Stamford, CT 06905

Project #2097



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Project #2097

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 **Project #2097, Kaminsky Residence, 3 Weed Circle, Stamford, CT 06902** will be received by Merritt Construction Services, Inc., located at 1177 High Ridge Road, Stamford, CT 06905 until **4:00 PM on Wednesday, July 6, 2016**, and then at said office publicly opened and read aloud.

Mandatory Walk-Through: All bidders must attend a mandatory walk-through of the property designated above. The date and time of the walk through is set for 11:00 AM on Wednesday, June 22, 2016.

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, and at the office of Merritt Construction Services, Inc., located at 1177 High Ridge Road, Stamford, CT 06905.

Copies of plans may be downloaded directly from the Department of Housing website under bid notices or obtained at the office of Merritt Construction Services, Inc., located at 1177 High Ridge Road, Stamford, CT 06905, upon payment of \$15 for each set.

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 Merritt Construction Services, Inc. until **4:00 PM on Wednesday, July 6, 2016** and then at said office publicly opened and read aloud. The envelopes containing the bids must be sealed, addressed to **Andrew Peters, Project Director at Merritt Construction Services, Inc., 1177 High Ridge Road, Stamford, CT 06905**, and designated as bid for **Project #2097, Kaminsky Residence, 3 Weed Circle, Stamford, CT 06902**.

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 Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement there considered.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

Mandatory Walk-Through: All bidders must attend a mandatory walk-through of the property designated above. The date and time of the walk through is set for 11:00 AM on Wednesday, June 22, 2016.

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: **Andrew Peters, Project Director at Merritt Construction Services, Inc., located at 1177 High Ridge Road, Stamford, CT 06905** or emailed to ctsandy@merrittconstructionservices.net, 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. 2097** and Addenda No. _____ and _____ thereto, as prepared by Merritt Construction Services, Inc., Stamford, 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 including general construction, site improvements, plumbing, heating, electrical, and finish items for said **Project No. 2097, located at 3 Weed Circle in Stamford, State of Connecticut**, all in accordance with the Drawings and Specifications, for the sum of: _____ Dollars (\$ _____)

Contractor shall complete Section 7, Contractor Bid Breakdown, AND Section 8, Contractor Bid Breakdown ADD ALT, in their entirety, providing line-by-line entries.

Contractor shall complete and sign Bid Form, Page 7 and Page 8.

ALTERNATE PROPOSALS

The undersigned bidder further proposes and agrees that should any or all of the following Alternates be accepted and included in the Contract, the amount of the Base Bid, as heretofore stated, shall be adjusted by the amount stated for each Alternate. All materials and workmanship shall be in strict accordance with the Drawings and Specifications and shall be in-place prices.

Alternates

- No. ___ _____ \$
- No. ___ _____ \$
- No. ___ _____ \$
- No. ___ _____ \$

The undersigned agrees to commence the work on a date to be specified in the contract and to complete such work within _____ 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 _____ 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. _____

Location _____

Signature

Name and Title

Date

(Signature should be notarized.)

BIDDER'S CERTIFICATION OF ELIGIBILITY

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

- (1) Be awarded contracts by any agency of the United States Government or HUD; or,
- (2) Participate in HUD programs pursuant to 24 CFR part 24.

(Name of Bidder)

(Address)

BY: _____

Title: _____

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

CERTIFICATION OF GENERAL BIDDERS ON CDBG-DR CONSTRUCTION PROJECTS

I. CERTIFICATION REGARDING HEALTH AND SAFETY

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

II. CERTIFICATION REGARDING NON-COLLUSION AND DEBARMENT

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

Date: _____

Name of General Bidder

By _____

Signature

Print name and Title

Business Address

Street Address City and State

OSHA-10 OSHA-10

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

I. CERTIFICATION REGARDING HEALTH AND SAFETY

The undersigned hereby certifies that he 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.

Principal (L.S)

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

Name and Title

(Signatures must be notarized.)

(Power-of-Authority 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

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
SUBCONTRACTOR CERTIFICATION 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 subcontractor shall be required to submit a compliance report before the owner approves the subcontract or permits work to begin under the subcontract.

SUBCONTRACTOR'S CERTIFICATION

Name and address of SUBCONTRACTOR (include zip code)

1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause. () YES () NO
2. Compliance reports were required to be filed in connection with such contract or subcontract. () YES () NO
3. Bidder has filed all compliance reports due under applicable instructions, including SF.100. () YES () NO () NOT REQUIRED
4. Have you ever seen or are you being considered for sanction due to violation of Executive Order 11246, as amended?
() YES
() NO
5. No segregated facilities will be maintained.

NAME AND TITLE OF SIGNER
(Please type.)

SIGNATURE

DATE

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

Project #2097, Kaminsky Residence, 3 Weed Circle, Stamford, CT 06902

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

- 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]

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

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

- 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.

- 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.

- 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.

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

- 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.

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

- N/A** **Sizing of Heating and Cooling Equipment**
When replacing, size heating and cooling equipment in accordance with the Air Conditioning Contractors of America (ACCA) Manuals, Parts J and S, or 2012 ASHRAE Handbook--HVAC Systems and Equipment or most recent edition.
- N/A** **Domestic Hot Water Systems**
When replacing domestic water heating system(s), ensure the system(s) meet or exceed the efficiency requirements of ENERGY STAR for Homes' Reference Design. Insulate pipes by at least R-4.
- N/A** **Efficient Lighting: Interior Units**
Follow the guidance appropriate for the project type: install the ENERGY STAR Advanced Lighting Package (ALP); **OR** follow the ENERGY STAR MFHR program guidelines, which require that 80% of installed lighting fixtures within units must be ENERGY STAR-qualified or have ENERGY STAR-qualified lamps installed; **OR** when replacing, new fixtures and ceiling fans must meet or exceed ENERGY STAR efficiency levels.
- N/A** **Efficient Lighting: Common Areas and Emergency Lighting** (if applicable to building type)
Follow the guidance appropriate for the project type: use ENERGY STAR-labeled fixtures or any equivalent high-performance lighting fixtures and bulbs in all common areas; **OR** when replacing, new common space and emergency lighting fixtures must meet or exceed ENERGY STAR efficiency levels. For emergency lighting, if installing new or replacing, all exist signs shall meet or exceed LED efficiency levels and conform to local building codes.
- N/A** **Efficient Lighting: Exterior**
Follow the guidance appropriate for the project type: install ENERGY STAR-qualified fixtures or LEDs with a minimum efficacy of 45 lumens/watt; **OR** follow the ENERGY STAR MFHR program guidelines, which require that 80% of outdoor lighting fixtures must be ENERGY STAR-qualified or have ENERGY STAR-qualified lamps installed; **OR** when replacing, install ENERGY STAR compact fluorescents or LEDs with a minimum efficacy of 45 lumens/watt.

INDOOR AIR QUALITY

- N/A** **Air Ventilation: Single Family and Multifamily** (three stories or fewer)
Install an in-unit ventilation system capable of providing adequate fresh air per ASHRAE 62.2 requirements.
- N/A** **Air Ventilation: Multifamily** (four stories or more)
Install apartment ventilation systems that satisfy ASHRAE 62.2 for all dwelling units and common area ventilation systems that satisfy ASHRAE 62.1 requirements. If economically feasible, consider heat/energy recovery for 100% of corridor air supply.
- N/A** **Composite Wood Products that Emit Low/No Formaldehyde**
Composite wood products must be certified compliant with California 93120. If using a composite wood product that does not comply with California 93120, all exposed edges and sides must be sealed with low-VOC sealants.
- N/A** **Environmentally Preferable Flooring**
When replacing flooring, use environmentally preferable flooring, including the FloorScore certification. Any carpet products used must meet the Carpet and Rug Institute's Green Label or Green Label Plus certification for carpet, pad, and carpet adhesives.

- 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.]
- 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.
- Clothes Dryer Exhaust**
Vent clothes dryers directly to the outdoors using rigid-type duct work.
- 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.
- Combustion Equipment**
When installing new space and water-heating equipment, specify power-vented or direct vent combustion equipment.
- 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.
- Mold Prevention: Surfaces**
When replacing or repairing bathrooms, kitchens, and laundry rooms, use materials that have durable, cleanable surfaces.
- 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.
- 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.]
- Lead-Safe Work Practices**
For properties built before 1978, if the project will involve disturbing painted surfaces or cleaning up lead contaminated dust or soil, use certified renovation or lead abatement contractors and workers using lead-safe work practices and clearance examinations consistent with the more stringent of EPA's Renovation, Repair, and Painting Rule and HUD's Lead Safe Housing Rule.
- 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

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

Construction Requirements

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.

"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.

- (1) "Testing" means 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

Administrative Requirements

23. Contract Period

The Contractor shall complete all work required under this contract within _____ 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

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.

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 no wise 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.

which shall be subject to the provisions of the Disputes clause of this contract.

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

- (b) 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.



STATE OF CONNECTICUT
DEPARTMENT OF HOUSING



Change orders with Dollar Values of \$25,000 or Less

(Per DAS standards, any change order in value over \$25,000 will be capped at 12%.)

CHANGE ORDERS:

- A. Work Performed by General Contractor – 15% overhead & profit above the direct costs (10% overhead and 5% profit)

 - B. Work Performed by Subcontractor – 15% overhead & profit above the direct costs (10% overhead & 5% profit) for the subcontractor, 7 ½% overhead & profit above the direct costs (5% overhead & 2 ½% profit) for the general contractor
-

CHANGE ORDERS

A. For all change orders, the general contractor shall be allowed 10% for overhead, above the direct costs and 5% for profit, above the direct costs to be calculated at 15% total above direct costs, for work performed by the general contractor.

B. For all change orders, the sub-contractors shall be allowed 10% for overhead, above the direct costs and 5% for profit, above the direct costs to be calculated at 15% total above direct costs, for work performed by the sub-contractor.

C. For all change orders, the general contractor shall be allowed 5% for overhead, above the direct costs and 2-1/2% for profit, above the direct costs to be calculated at 7-1/2% total above direct costs, for work performed by the sub-contractor."

Section 3

Description of Work

Section 3

DESCRIPTION OF WORK

The proposed scope of work for the 3 Weed Circle property includes raising the structure above the flood zone elevation at its current location. The subject structure is a two-bedroom, single-family residential house constructed in 1955. The work zone for the rehabilitation project involves the basement, first floor, and attic area within the structure.

Triton Environmental, Inc. (Triton) has completed building materials surveys within the proposed work area that have resulted in the identification of asbestos, mold, and PCBs. The contractor will be required to address these items in accordance with all appropriate regulatory requirements and industry standards and guidelines as described below.

Lead Abatement

XRF testing completed for the work zone (interior of the basement and garage) did not identify surfaces containing lead based paint.

Additional Lead Hazard Areas

In addition to the work zone inspection, Triton completed a lead hazard risk assessment that identified lead hazards at the residence including exterior window trim on the enclosed porch windows as well as all of the exterior components of the garage windows. Given that the overall level of anticipated funding for this project exceeds \$25,000.00, interim controls are required for these exterior hazards. Section 3.1.2.5 of the NEPA Environmental Report summarizes available lead hazard control options for the site. Upon review by Merritt Construction Services, Inc. (Merritt), the Contractor, and the homeowner, a site specific lead hazard control plan should be agreed upon and implemented.

Interim controls are allowed for exterior components only if the components are not disturbed by the rehabilitation. Therefore, if lead paint on the exterior garage and porch windows is disturbed or deteriorated, full abatement will be needed (paint removal or building component removal). Lead-containing materials should be abated in accordance with local, state, and federal regulations including, but not limited to, *Housing and Urban Development – Lead Based Paint Poisoning Prevention in Certain Residential Structures – Rehabilitation Regulations (24 CFR 35(J))* as well as the EPA's Renovation, Repair, and Painting Rule (RRP) of 40 CFR Part 745.

Additional testing of leachable lead using the Toxicity Characteristic Leaching Procedure (TCLP) will be needed (to be collected by Triton) to characterize any waste stream for disposal. **The abatement contractor must provide credentials/adequate qualification documentation and a work plan for abatement work with its bid for review by Merritt and Triton.** Work should meet safe work practices specified in 24 CFR 35.1350(b) including notifications to occupants and cleanup procedures. Clearance testing will be completed by Triton following the work in accordance with HUD protocols.

Asbestos Abatement

Approximately 25 linear feet of asbestos-containing pipe wrap was identified in the basement and garage. To be protective of the health of occupants, this material will require removal by a licensed asbestos abatement contractor. All abatement activities must be conducted in accordance with local, state, and federal regulations including, but not limited to, project design, containment structures, air monitoring, and clearance sampling by a licensed project monitor. Waste materials must also be properly disposed of at an appropriately

permitted disposal facility. **The abatement contractor must provide credentials/adequate qualification documentation and a work plan for abatement work with its bid for review by Merritt and Triton.**

Mold Abatement

Mold was observed within the work zone on wood-paneled walls and on the wooden rafters above the drop ceiling panels in the basement, which was flooded. Mold may be present in other interior areas that could not be observed during the inspection (i.e. behind walls). Due to the intended demolition of the basement, abatement of the mold on (and possibly within) the walls will not be required. However, mold on the ceiling rafters that will remain following raising will require abatement to protect occupant health. Any porous materials containing visible mold that are encountered during the renovation should be removed in accordance with local, state, and federal regulations including, but not limited to, the guidelines put forward in the most recent version of the *Institute for Inspection, Cleaning, and Restoration Certificate (IICRC) Standard and Reference Guide for Mold Remediation* as well as the *Connecticut Guidelines for Mold Abatement Contractors*. **The abatement contractor must provide credentials/adequate qualification documentation and a work plan for abatement work with its bid for review by Merritt and Triton.** Pre-abatement and clearance air testing will be completed by Triton to evaluate pre- and post-abatement conditions.

PCB Abatement

Two windows were identified in the laundry room that contain PCBs in the caulking based on the representative sampling. The laundry room is located in the basement, which will be abandoned following raising of the dwelling. Therefore, abatement to specifically be protective of the health of occupants from this material will not be required. However, removal and proper disposal at a landfill permitted to accept PCBs at concentrations greater than 1 mg/kg will be required as a component of demolition of the basement. All disposal activities must be conducted in accordance with local, state, and federal regulations including, but not limited to, handling and transportation. Based on the testing conducted, the window caulk is not believed to be PCB bulk product waste and is considered an excluded PCB product under the Toxic Substances Control Act (TSCA). Therefore, this material is not believed to be subject to federal TSCA regulations. However, the Connecticut Department of Energy and Environmental Protection (DEEP) regulates PCBs under Sections 22a-463 through 22a-469 of the Connecticut General Statutes. Waste materials must also be properly disposed of at an appropriately permitted disposal facility. It is also critical to avoid a "release" of PCB to the environment during the process. **The disposal contractor must provide credentials/adequate qualification documentation and a work plan for removal and disposal with its bid for review by Merritt and Triton.** Following removal of the PCB-containing materials, confirmatory testing of adjacent porous surfaces and indoor air will be conducted by Triton to verify remaining concentrations.

The above items are intended to provide professional contractors with the basis with which to provide a bid for abatement services and are not intended to serve as a formal bid specification or design documents.

Reference Document:

NEPA ENVIRONMENTAL REVIEW REPORT Ref. No. 104318/13/R01, dated July 2014, prepared by Triton Environmental, Inc.

Section 4
Specifications

Section 4

SPECIFICATIONS

All work shall be done in accordance with the General Conditions provisions established in Section 2 of this bid package.

Protection of finished surfaces is the responsibility of the General Contractor (GC). All flooring, door jambs, walls are to be protected during construction. Any damage will be the responsibility of the GC.

In general:

All work to conform to all CT building & local codes, standards and statutes.

Technical specifications pertaining to the actual items of work are shown and described on the contract drawings and within item descriptions in the Bill of Quantities.

Some of the below Spec pertains to the Add Alternate design as noted within the design drawings.

Abatement

Asbestos, Lead, Mold and PCBs were identified within or on the exterior of the residence. All abatement activities should be done prior to or in conjunction with demolition. See the Environmental Report for details.

Demolition

Disconnect all MEP. Save all MEP items as noted on contract drawings for relocation and re-installation. Demolish and remove basement (all inclusive) as noted on contract drawings.

Windows

Abatement per Environmental Report. Remove, replace and install as indicated on contract drawings. Match like, kind, and quality.

Doors

Where necessary per contract drawings

1 $\frac{3}{8}$ inch Interior: Colonist raised panel, solid core, pre-hung, pre-primed. Schlage builders grade hardware or equal, brass.

Adjust as required

Insulation

R-19 vapor barrier batts (walls, bathroom addition)

R-30 vapor barrier batts (ceiling, bathroom addition)

R-30 Polyurethane Cell Foam insulation (Joists under structure)

Drywall

½ inch water and mold resistant drywall bathroom addition

Patch and repair drywall throughout where necessary

5/8 inch water and mold resistant drywall (exterior below structure)

Trim

3/4 inch ranch style (finger joint, pine, primed)

2/4 inch ranch style casing (finger joint, pine, primed)

Shoe, standard, wood, primed

Paint

Trim, casing, sills and aprons, doors interior (where replaced or new), semi-gloss interior water-based paint

Walls and ceilings (new drywall, master bedroom, all areas where drywall repairs are necessary) interior washable satin

Walls and ceilings (drywall, kitchen, master bathroom) interior washable eggshell finish

**Sherwin Williams Pro Mar 400, or equal

**1 Coat primer, two coats finish on all walls and ceilings

**2 Coats finish on all pre-primed trim and doors

Cabinetry

Bathroom Vanity (Home Depot, Lowes in stock quality), bathroom counter tops (Solid Surface), pulls (standard grade single hole drawer and door pulls)

Flooring

Master Bathroom, 6x6 standard grade white ceramic tile, matte finish, towel bars, paper holder, soap ceramic, white to match, incorporated

Lighting

See MEP Drawings for Scope

Plumbing fixtures

See MEP Drawings for Scope

Electrical fixtures

See MEP Drawings for Scope

HVAC











See MEP Drawings for Scope

Section 5

Contractor Bid Breakdown

2097-KAMINSKI_REBID

General

DESCRIPTION	QNTY
1. Dumpster load - Approx. 30 yards, 5-7 tons of debris	3.00 EA
2. R&R Temporary power - overhead hookup	1.00 EA
3. Temporary toilet (per month)	6.00 MO
 4/1/2014 IMG_8999	
 4/1/2014 IMG_9020	
 4/1/2014 IMG_9021	
 4/1/2014 IMG_9022	
 4/1/2014 IMG_9019	
 4/1/2014 IMG_9018	
 4/1/2014 IMG_9017	
 4/1/2014 IMG_9016	
 4/1/2014 IMG_9014	
 4/1/2014 IMG_9013	

NOTES:

Elevate Structure

DESCRIPTION	QNTY
4. Elevate Structure	1.00 LS
Elevate Structure to allow new foundation to be placed. Includes disconnecting utilities and everything associated with lifting the structure initially and setting the structure after the new foundation has been placed.	

NOTES:

Site Work

DESCRIPTION	QNTY
5. Asphalt paving - 2" with 6" base - Residential	500.00 SF
6. Concrete slab on grade - 6" - finished in place	300.00 SF
7. Backfill Basement	350.00 CY
8. Gravel-under srtructure	75.00 CY
9. General Laborer - per hour	16.00 HR
Final Site Clean-up. Rake and seed, materials and labor.	
10. Rake and Seed-Final site cleanup	1.00 LS
11. Masonry Walkways and Steps - match existing	1.00 LS
12. Silt Fencing	400.00 LF
13. Site Controls, Track pad and tree protection	1.00 LS

NOTES:

Foundation

DESCRIPTION	QNTY
14. Concrete Foundations	1.00 LS
Includes everything associated with the building foundation. Exisitng basement interior demolition , Footers, Piers, Etc. See drawings for detail.	

NOTES:

Entrances

DESCRIPTION	QNTY
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CONTINUED - Entrances

DESCRIPTION	QNTY
15. Provide Exterior Entrances Per Specification	1.00 LS

NOTES:

Mechanicals

DESCRIPTION	QNTY
16. Electrical Per Specifications-All Inclusive	1.00 LS
17. HVAC Per Specification-All Inclusive	1.00 LS
18. Plumbing Per Specifications-All Inclusive	1.00 LS

NOTES:

Under Structure Insulation

DESCRIPTION	QNTY
19. 5/8" gypsum panel - fiber reinforced - abuse resistant	2000.00 SF
20. Sprayed polyurethane foam	2000.00 SF

NOTES:

Exterior

DESCRIPTION	QNTY
21. Gutter / downspout - aluminum - up to 5" Extend leaders	100.00 LF

NOTES:

First Floor

Stairway

DESCRIPTION	QNTY
34. Interior Stairway to attic-complete Includes all items associated with creating a stairway fo the attic. Complete, finished.	1.00 LS

NOTES:

Interior Repair

DESCRIPTION	QNTY
35. Interior repairs throughout-Repairs as necessary to finishes Crack and drywall repair throughout home. Wallpaper removal (walls) and painting throughout kitchen and adjoining breakfast area (W&C). Repairs limited to only the surface damaged.	1.00 LS

CONTINUED - Interior Repair

DESCRIPTION	QNTY
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NOTES:

Bathroom , Laundry Renovation

DESCRIPTION	QNTY
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36. Interior Renovations-Bathroom	1.00 LS
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Includes all select demo, structure and finishes Per Specification to remove existing shower and replace with Laundry Closet as well as plumbing changes to existing tub/shower.

NOTES:

Attic

DESCRIPTION	QNTY
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37. Interior Renovations-Attic HVAC Room	1.00 LS
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NOTES:

Asbestos Abatement

DESCRIPTION	QNTY
38. Asbestos Abatement Per Specification	1.00 LS

NOTES:

Lead Abatement

DESCRIPTION	QNTY
39. Lead Abatement Per Specification	1.00 LS

NOTES:

PCB Abatement

DESCRIPTION	QNTY
40. PCB Abatement Per Specification	1.00 LS

NOTES:



1 IMG_8999

Date Taken: 4/1/2014

Taken By: APETERS



2 IMG_9020

Date Taken: 4/1/2014

Taken By: APETERS



3 IMG_9021 Date Taken: 4/1/2014 Taken By: APETERS



4 IMG_9022

Date Taken: 4/1/2014

Taken By: APETERS



5 IMG_9019

Date Taken: 4/1/2014

Taken By: APETERS



6 IMG_9018

Date Taken: 4/1/2014

Taken By: APETERS



7 IMG_9017

Date Taken: 4/1/2014

Taken By: APETERS



8 IMG_9016

Date Taken: 4/1/2014

Taken By: APETERS



9 IMG_9014

Date Taken: 4/1/2014

Taken By: APETERS



10 IMG_9013

Date Taken: 4/1/2014

Taken By: APETERS

Section 6

Bill of Materials/Quantities ADD ALT

2097-KAMINSKI_ADDALT

General

DESCRIPTION	QNTY
1. Dumpster load - Approx. 30 yards, 5-7 tons of debris	1.00 EA

NOTES:

Foundation

DESCRIPTION	QNTY
14. Concrete Foundations	1.00 LS

Includes everything associated with the building foundation. Exisitng basement interior demolition , Footers, Piers, Etc. See drawings for detail.

NOTES:

Mechanicals

DESCRIPTION	QNTY
16. Electrical Per Specifications-All Inclusive	1.00 LS
17. HVAC Per Specification-All Inclusive	1.00 LS
18. Plumbing Per Specifications-All Inclusive	1.00 LS

CONTINUED - Mechanicals

DESCRIPTION	QNTY
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NOTES:

Under Structure Insulation

DESCRIPTION	QNTY
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19. 5/8" gypsum panel - fiber reinforced - abuse resistant	67.00 SF
20. Sprayed polyurethane foam	67.00 SF

NOTES:

Exterior

DESCRIPTION	QNTY
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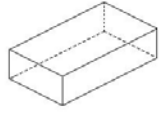
21. Gutter / downspout - aluminum - up to 5" Extend leaders	100.00 LF
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NOTES:

First Floor

Master Bedroom

LxWxH 16' 7" x 14' 3" x 8'



493.33 SF Walls	236.31 SF Ceiling
729.65 SF Walls & Ceiling	236.31 SF Floor
26.26 SY Flooring	61.67 LF Floor Perimeter
132.67 SF Long Wall	114.00 SF Short Wall
61.67 LF Ceil. Perimeter	

DESCRIPTION

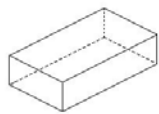
QNTY

22. Drywall Installer / Finisher - per hour	8.00 HR
23. Baseboard - 3 1/4"	16.58 LF
24. Casing - 2 1/4"	80.00 LF
25. R&R Window trim set (casing & stop)	60.00 LF
26. Paint baseboard - two coats	61.67 LF
27. Paint door or window opening - 2 coats (per side)	4.00 EA
28. Paint door or window opening - Large - 2 coats (per side)	3.00 EA
29. Paint the walls and ceiling - two coats	729.65 SF
30. Seal & paint wood window (per side)	3.00 EA
31. R&R Wood window - casement, 12-23 sf, Match Existing	2.00 EA
32. R&R Wood window - double hung, 13-19 sf, Match Existing	1.00 EA

NOTES:

Bathroom Addition

LxWxH 9' 11" x 6' 6" x 8'



262.67 SF Walls	64.46 SF Ceiling
327.13 SF Walls & Ceiling	64.46 SF Floor
7.16 SY Flooring	32.83 LF Floor Perimeter
79.33 SF Long Wall	52.00 SF Short Wall
32.83 LF Ceil. Perimeter	

DESCRIPTION

QNTY

33. Bathroom Addition per Specification	1.00 LS
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Includes everything with the exception of the foundation, insulation, GWB below, and MEP's. Those items are considered in other locations throughout the bid break down.

CONTINUED - Bathroom Addition

DESCRIPTION	QNTY
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NOTES:

Grand Total Areas:

756.00 SF Walls	300.77 SF Ceiling	1,056.77 SF Walls and Ceiling
300.77 SF Floor	33.42 SY Flooring	94.50 LF Floor Perimeter
212.00 SF Long Wall	166.00 SF Short Wall	94.50 LF Ceil. Perimeter
0.00 Floor Area	0.00 Total Area	0.00 Interior Wall Area
0.00 Exterior Wall Area	0.00 Exterior Perimeter of Walls	
0.00 Surface Area	0.00 Number of Squares	0.00 Total Perimeter Length
0.00 Total Ridge Length	0.00 Total Hip Length	

Section 7

Contractor Bid Breakdown

2097-KAMINSKI_REBID

Room: General

0.00 SF Walls	0.00 SF Ceiling
0.00 SF Walls & Ceiling	0.00 SF Floor
0.00 SY Flooring	0.00 LF Floor Perimeter
0.00 SF Long Wall	0.00 SF Short Wall
0.00 LF Ceil. Perimeter	

DESCRIPTION

DESCRIPTION	QNTY	UNIT COST	TOTAL
1. Remove Dumpster load - Approx. 30 yards, 5-7 tons of debris	3.00 EA	_____	= _____ []
2. Replace Temporary power - overhead hookup	1.00 EA	_____	= _____ []
3. Remove Temporary power - overhead hookup	1.00 EA	_____	= _____ []
4. Replace Temporary toilet (per month)	6.00 MO	_____	= _____ []
ITEM TOTAL - General:		= _____	

Room: Elevate Structure

0.00 SF Walls	0.00 SF Ceiling
0.00 SF Walls & Ceiling	0.00 SF Floor
0.00 SY Flooring	0.00 LF Floor Perimeter
0.00 SF Long Wall	0.00 SF Short Wall
0.00 LF Ceil. Perimeter	

DESCRIPTION

DESCRIPTION	QNTY	UNIT COST	TOTAL
1. Replace Elevate Structure	1.00 LS	_____	= _____ []
Elevate Structure to allow new foundation to be placed. Includes disconnecting utilities and everything associated with lifting the structure initially and setting the structure after the new foundation has been placed.			
ITEM TOTAL - Elevate Structure:		= _____	

Room: Site Work

0.00 SF Walls	0.00 SF Ceiling
0.00 SF Walls & Ceiling	0.00 SF Floor
0.00 SY Flooring	0.00 LF Floor Perimeter
0.00 SF Long Wall	0.00 SF Short Wall
0.00 LF Ceil. Perimeter	

DESCRIPTION

DESCRIPTION	QNTY	UNIT COST	TOTAL
-------------	------	-----------	-------

1. Replace Asphalt paving - 2" with 6" base - Residential	500.00 SF	_____	=	_____	[]
2. Replace Concrete slab on grade - 6" - finished in place	300.00 SF	_____	=	_____	[]
3. Replace Backfill Basement	350.00 CY	_____	=	_____	[]
4. Replace Gravel-under structure	75.00 CY	_____	=	_____	[]
5. Replace General Laborer - per hour	16.00 HR	_____	=	_____	[]
Final Site Clean-up. Rake and seed, materials and labor.					
6. Replace Rake and Seed-Final site cleanup	1.00 LS	_____	=	_____	[]
7. Replace Masonry Walkways and Steps - match existing	1.00 LS	_____	=	_____	[]
8. Replace Silt Fencing	400.00 LF	_____	=	_____	[]
9. Replace Site Controls, Track pad and tree protection	1.00 LS	_____	=	_____	[]

ITEM TOTAL - Site Work: = _____

Room: Foundation

0.00 SF Walls	0.00 SF Ceiling
0.00 SF Walls & Ceiling	0.00 SF Floor
0.00 SY Flooring	0.00 LF Floor Perimeter
0.00 SF Long Wall	0.00 SF Short Wall
0.00 LF Ceil. Perimeter	

DESCRIPTION

	QNTY	UNIT COST		TOTAL	
1. Replace Concrete Foundations	1.00 LS	_____	=	_____	[]

Includes everything associated with the building foundation. Existing basement interior demolition, Footers, Piers, Etc. See drawings for detail.

ITEM TOTAL - Foundation: = _____

Room: Entrances

0.00 SF Walls	0.00 SF Ceiling
0.00 SF Walls & Ceiling	0.00 SF Floor
0.00 SY Flooring	0.00 LF Floor Perimeter
0.00 SF Long Wall	0.00 SF Short Wall
0.00 LF Ceil. Perimeter	

DESCRIPTION	QNTY	UNIT COST	TOTAL
1. Replace Provide Exterior Entrances Per Specification	1.00 LS		[]

ITEM TOTAL - Entrances: = _____

Room: Mechanicals

0.00 SF Walls	0.00 SF Ceiling
0.00 SF Walls & Ceiling	0.00 SF Floor
0.00 SY Flooring	0.00 LF Floor Perimeter
0.00 SF Long Wall	0.00 SF Short Wall
0.00 LF Ceil. Perimeter	

DESCRIPTION	QNTY	UNIT COST	TOTAL
1. Replace Electrical Per Specifications-All Inclusive	1.00 LS		[]
2. Replace HVAC Per Specification-All Inclusive	1.00 LS		[]
3. Replace Plumbing Per Specifications-All Inclusive	1.00 LS		[]

ITEM TOTAL - Mechanicals: = _____

Room: Under Structure Insulation

0.00 SF Walls	0.00 SF Ceiling
0.00 SF Walls & Ceiling	0.00 SF Floor
0.00 SY Flooring	0.00 LF Floor Perimeter
0.00 SF Long Wall	0.00 SF Short Wall
0.00 LF Ceil. Perimeter	

DESCRIPTION	QNTY	UNIT COST	TOTAL
1. Replace 5/8" gypsum panel - fiber reinforced - abuse resistant	2,000.00 SF		[]
2. Replace Sprayed polyurethane foam	2,000.00 SF		[]

ITEM TOTAL - Under Structure Insulation: = _____

Room: Exterior

0.00 SF Walls	0.00 SF Ceiling
0.00 SF Walls & Ceiling	0.00 SF Floor
0.00 SY Flooring	0.00 LF Floor Perimeter

0.00 SF Long Wall
0.00 LF Ceil. Perimeter

0.00 SF Short Wall

DESCRIPTION

QNTY

UNIT COST

TOTAL

1. Replace Gutter / downspout - aluminum - up to 5"
100.00 LF

= []

Extend leaders

ITEM TOTAL - Exterior:

=

First Floor

Room: Stairway

0.00 SF Walls

0.00 SF Ceiling

0.00 SF Walls & Ceiling

0.00 SF Floor

0.00 SY Flooring

0.00 LF Floor Perimeter

0.00 SF Long Wall

0.00 SF Short Wall

0.00 LF Ceil. Perimeter

DESCRIPTION

QNTY

UNIT COST

TOTAL

1. Replace Interior Stairway to attic-complete
1.00 LS

= []

Includes all items associated with creating a stairway fo the attic. Complete, finished.

ITEM TOTAL - Stairway:

=

Room: Interior Repair

0.00 SF Walls

0.00 SF Ceiling

0.00 SF Walls & Ceiling

0.00 SF Floor

0.00 SY Flooring

0.00 LF Floor Perimeter

0.00 SF Long Wall

0.00 SF Short Wall

0.00 LF Ceil. Perimeter

DESCRIPTION

QNTY

UNIT COST

TOTAL

1. Replace Interior repairs throughout-Repairs as necessary to finishes
1.00 LS

= []

Crack and drywall repair throughout home. Wallpaper removal (walls) and painting throughout kitchen and adjoining breakfast area (W&C). Repairs limited to only the surface damaged.

ITEM TOTAL - Interior Repair:

=

**Room: Bathroom , Laundry
Renovation**

0.00 SF Walls

0.00 SF Ceiling

0.00 SF Walls & Ceiling

0.00 SF Floor

0.00 SY Flooring

0.00 LF Floor Perimeter

0.00 SF Long Wall
0.00 LF Ceil. Perimeter

0.00 SF Short Wall

DESCRIPTION	QNTY	UNIT COST	TOTAL
1. Replace Interior Renovations-Bathroom	1.00 LS		[]
Includes all select demo, structure and finishes Per Specification to remove existing shower and replace with Laundry Closet as well as plumbing changes to existing tub/shower.			
ITEM TOTAL - Bathroom , Laundry Renovation:			=

Room: Attic

0.00 SF Walls	0.00 SF Ceiling
0.00 SF Walls & Ceiling	0.00 SF Floor
0.00 SY Flooring	0.00 LF Floor Perimeter
0.00 SF Long Wall	0.00 SF Short Wall
0.00 LF Ceil. Perimeter	

DESCRIPTION	QNTY	UNIT COST	TOTAL
1. Replace Interior Renovations-Attic HVAC Room	1.00 LS		[]
ITEM TOTAL - Attic:			=

Room: Asbestos Abatement

0.00 SF Walls	0.00 SF Ceiling
0.00 SF Walls & Ceiling	0.00 SF Floor
0.00 SY Flooring	0.00 LF Floor Perimeter
0.00 SF Long Wall	0.00 SF Short Wall
0.00 LF Ceil. Perimeter	

DESCRIPTION	QNTY	UNIT COST	TOTAL
1. Replace Asbestos Abatement Per Specification	1.00 LS		[]
ITEM TOTAL - Asbestos Abatement:			=

Room: Lead Abatement

0.00 SF Walls	0.00 SF Ceiling
0.00 SF Walls & Ceiling	0.00 SF Floor
0.00 SY Flooring	0.00 LF Floor Perimeter
0.00 SF Long Wall	0.00 SF Short Wall
0.00 LF Ceil. Perimeter	

DESCRIPTION

	QNTY	UNIT COST	TOTAL
1. Replace Lead Abatement Per Specification	1.00 LS	_____	= _____ []

ITEM TOTAL - Lead Abatement:

= _____

Room: PCB Abatement

0.00 SF Walls	0.00 SF Ceiling
0.00 SF Walls & Ceiling	0.00 SF Floor
0.00 SY Flooring	0.00 LF Floor Perimeter
0.00 SF Long Wall	0.00 SF Short Wall
0.00 LF Ceil. Perimeter	

DESCRIPTION

	QNTY	UNIT COST	TOTAL
1. Replace PCB Abatement Per Specification	1.00 LS	_____	= _____ []

ITEM TOTAL - PCB Abatement:

= _____

Total Bid: _____

Section 8

Contractor Bid Breakdown ADD ALT

2097-KAMINSKY_ADDALT

CNC CONCRETE & ASPHALT

CNC MISC + Concrete Foundations
1.00 LS _____ = _____ []

TOTAL CONCRETE & ASPHALT = _____

DMO GENERAL DEMOLITION

DMO DUMP> - Dumpster load - Approx. 30 yards, 5-7 tons of debris
1.00 EA _____ = _____ []

DMO WOP - Window trim set (casing & stop)
60.00 LF _____ = _____ []

DMO C++ - Wood window - casement, 12-23 sf, Match Existing
2.00 EA _____ = _____ []

DMO D>+ - Wood window - double hung, 13-19 sf, Match Existing
1.00 EA _____ = _____ []

TOTAL GENERAL DEMOLITION = _____

DRY DRYWALL

DRY 5/8FR + 5/8" gypsum panel - fiber reinforced - abuse resistant
67.00 SF _____ = _____ []

DRY LAB + Drywall Installer / Finisher - per hour
8.00 HR _____ = _____ []

TOTAL DRYWALL = _____

ELE ELECTRICAL

ELE MISC + Electrical Per Specifications-All Inclusive
1.00 LS _____ = _____ []

TOTAL ELECTRICAL = _____

FNC FINISH CARPENTRY / TRIMWORK

FNC	B3	+	Baseboard - 3 1/4"	16.58 LF	_____	=	_____	[]	
FNC	C	+	Casing - 2 1/4"	80.00 LF	_____	=	_____	[]	
FNC	WOP	+	Window trim set (casing & stop)	60.00 LF	_____	=	_____	[]	
TOTAL FINISH CARPENTRY / TRIMWORK							=	_____	

HVC HEAT, VENT & AIR CONDITIONING

HVC	MISC	+	HVAC Per Specification-All Inclusive	1.00 LS	_____	=	_____	[]	
TOTAL HEAT, VENT & AIR CONDITIONING							=	_____	

INS INSULATION

INS	SPFOC6	+	Sprayed polyurethane foam	67.00 SF	_____	=	_____	[]	
TOTAL INSULATION							=	_____	

PLM PLUMBING

PLM	MISC	+	Plumbing Per Specifications-All Inclusive	1.00 LS	_____	=	_____	[]	
TOTAL PLUMBING							=	_____	

PNT PAINTING

PNT	B2	+	Paint baseboard - two coats	61.67 LF	_____	=	_____	[]
PNT	OP	+	Paint door or window opening - 2 coats (per side)	4.00 EA	_____	=	_____	[]

PNT	OP>	+	Paint door or window opening - Large - 2 coats (per side)	3.00 EA	_____	=	_____	[]	
PNT	P2	+	Paint {V} - two coats	729.65 SF	_____	=	_____	[]	
PNT	WDW	+	Seal & paint wood window (per side)	3.00 EA	_____	=	_____	[]	
TOTAL PAINTING							=	_____	

SFG SOFFIT, FASCIA, & GUTTER

SFG	GUTA	+	Gutter / downspout - aluminum - up to 5"	100.00 LF	_____	=	_____	[]	
TOTAL SOFFIT, FASCIA, & GUTTER							=	_____	

WDW WINDOWS - WOOD

WDW	C++	+	Wood window - casement, 12-23 sf, Match Existing	2.00 EA	_____	=	_____	[]	
WDW	D>+	+	Wood window - double hung, 13-19 sf, Match Existing	1.00 EA	_____	=	_____	[]	
TOTAL WINDOWS - WOOD							=	_____	

XST EXTERIOR STRUCTURES

XST	MISC	+	Bathroom Addition per Specification	1.00 LS	_____	=	_____	[]	
TOTAL EXTERIOR STRUCTURES							=	_____	

Total Bid: _____

Appendix A

Soil Borings Report

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: Merritt Construction Services	SHEET <u>1</u> OF <u>1</u>
	PROJECT NO. G9-9939-15	HOLE NO. B-1
	PROJECT NAME 3 Weed Circle	BORING LOCATIONS per Plan
FOREMAN - DRILLER BD/rp	LOCATION Stamford, CT	
INSPECTOR	CASING TYPE HSA	SAMPLER SS
GROUND WATER OBSERVATIONS AT <u>8</u> FT AFTER <u>0</u> HOURS	SIZE I.D. 3 3/4"	CORE BAR 1 3/8"
AT <u> </u> FT AFTER <u> </u> HOURS	HAMMER WT. 140#	BIT BIT
	HAMMER FALL 30"	OFFSET
		DATE START 1/26/15
		DATE FINISH 1/26/15
		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				
5	1	ss	8"	5"	5'8"	23	50/2"		dry v dense		brn F-C GRAVEL & F-C SAND brn F-C SAND, sm F-C gravel	
10	2	ss	24"	12"	12'0"	23	33		wet v dense		brn F-C SAND, tr silt, F gravel	
15	3	ss	24"	16"	17'0"	12	12		wet dense	17'0"	brn VF F-C SAND AUGER REFUSAL	
20											E.O.B. 17'0"	
25											Offset 5'0" to B-1A	
30												
35												
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
 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

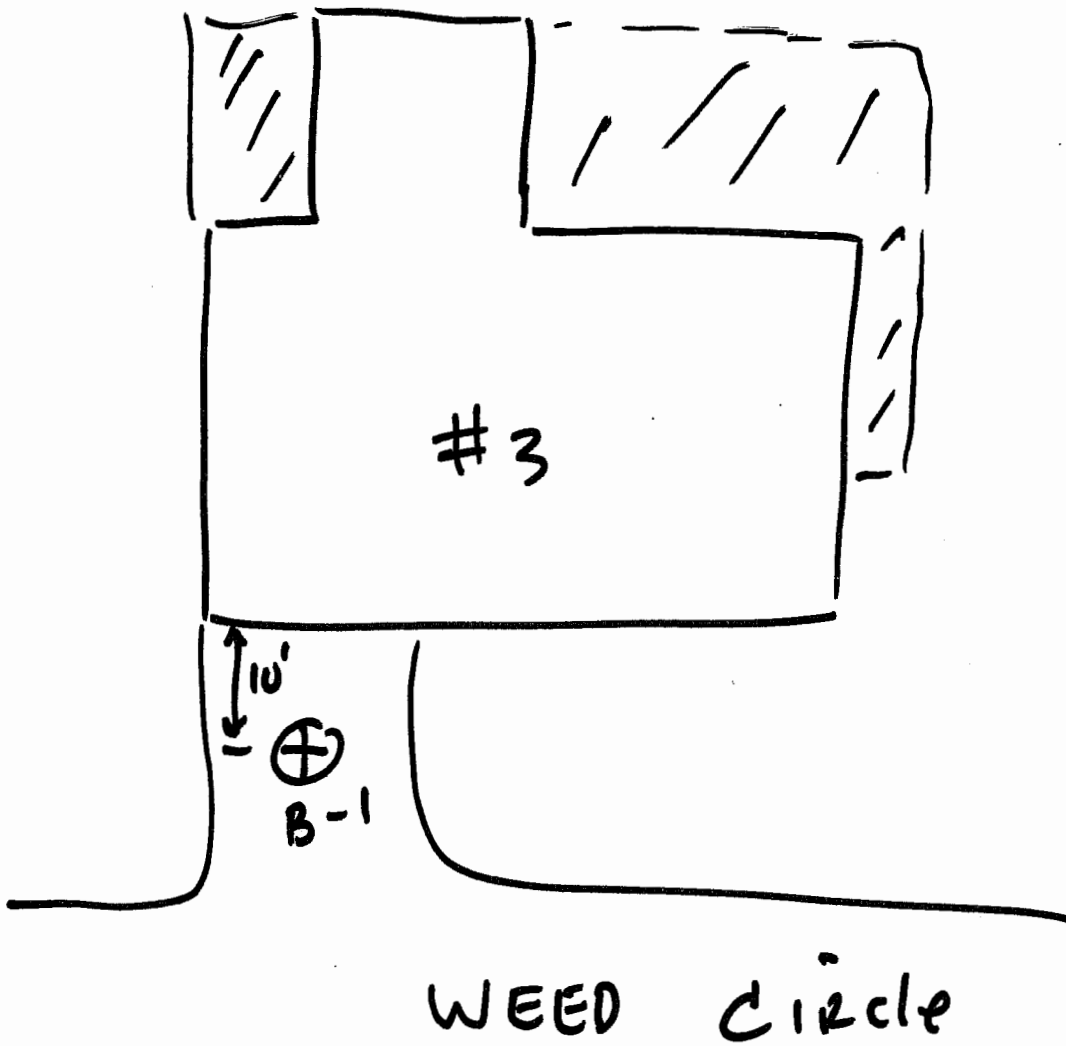
SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: Merritt Construction Services	SHEET <u>1</u> OF <u>1</u>
	PROJECT NO. G9-9939-15	HOLE NO. B-1A
	PROJECT NAME 3 Weed Circle	BORING LOCATIONS per Plan
FOREMAN - DRILLER BD/rp	LOCATION Stamford, CT	
INSPECTOR	CASING TYPE HSA SAMPLER SS CORE BAR	OFFSET
GROUND WATER OBSERVATIONS AT <u>8</u> FT AFTER <u>0</u> HOURS	SIZE I.D. 3 3/4" 1 3/8"	DATE START 1/26/15
AT <u> </u> FT AFTER <u> </u> HOURS	HAMMER WT. 140# BIT	DATE FINISH 1/26/15
	HAMMER FALL 30"	SURFACE ELEV.
		GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE					BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 6 - 12 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST MOIST	STRATA CHANGE DEPTH ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
		NO	Type	PEN	REC.	DEPTH @ BOT					
5										Offset 5'0" from B-1	
10										SAME as B-1	
15									16'0"	AUGER REFUSAL	
20										E.O.B. 16'0"	
0											
5											
10											
15											

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-1A**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST
 WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE
 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



Appendix B

Wave Analysis Report

3 Weed Circle:
Wave Load Calculation

Prepared For:
The DiSalvo Engineering Group

March 3, 2015

Project No. 201505



Prepared By:



ROBERGE ASSOCIATES
Coastal Engineers, LLC

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Outline:

Wave Load Calculation

- I) Purpose
- II) Water Surface Variations
- III) Site Exposure
- IV) Wind Speed for Design
- V) Design Wave
- VI) Scour Potential
- VII) Load Calculation
- VIII) References

Attachment A: CEM Calculations

Attachment B: Load Diagrams

I) **Purpose:** To develop potential scour and wave loads at and around proposed foundations at 3 Weed Circle in Stamford, CT.

II) **Water Surface Variations:**
 1% Annual Chance Stillwater Elevation (SWL) = 10.7' NAVD 88
 1% Annual Chance total water level (TWL)= 11.5' NAVD 88
 (FEMA FIS No. 09001CV001C October 16, 2013)

Note: TWL = SWL + Wave Setup

III) **Site Exposure:** The site located on Holly Pond is exposed from approximately N-30°-W to (clockwise) S.

Bearing (deg)	Fetch Length (ft)	Bearing (deg)	Fetch Length (ft)
330	2390	80	1960
340	1680	90	2460
350	1330	100	3110
0	1310	110	3880
10	1260	120	2810
20	1110	130	2630
30	1000	140	2670
40	1030	150	2310
50	1220	160	1880
60	1500	170	1360
70	1760	180	1220

IV) **Wind Speed for Design:**

- 50-yr, 3-second gust at 33', $U_{50-yr,3-sec} = 105$ MPH (CT Building Code 2009 Amendment – Appendix K)
- Conversion factor to 100-yr, 3-second gust at 33', $U_{100-yr,3-sec}$ is 1.07 (ASCE 7-05 – Table C6-7)

$$U_{100-yr,3-sec} = 105 \text{ mph} * 1.07 = 112.4 \text{ mph}$$

- V) **Design Wave:** The Fetch Radials and Wind Speed were input into ACES 4.02 *Wind Speed & Wave Growth* Application (See Below).

Computed Wave:

Case: Windspeed						
Windspeed Adjustment and Wave Growth						
Breaking criteria		0.780				
Item	Value	Units	Wind Obs Type		Wind Fetch Options	
El of Observed Wind (Zobs)	33.00	feet	Shore (windward)		Deep restricted	
Observed Wind Speed (Uobs)	112.35	mph	Restricted Fetch Geometry			
Air Sea Temp. Diff. (dT)	0.00	deg F	#	Fetch Angle (deg)	Fetch Length (feet)	
Dur of Observed Wind (DurO)	3.00	sec	1	330.00	2390.00	
Dur of Final Wind (DurF)	1.00	hours	2	340.00	1680.00	
Lat. of Observation (LAT)	41.00	deg	3	350.00	1330.00	
Results			4	0.00	1310.00	
Wind Fetch Length (F)	3545.40	FEET	5	10.00	1260.00	
Wind Direction (WDIR)	110.00	deg	6	20.00	1110.00	
Eq Neutral Wind Speed (Ue)	66.91	mph	7	30.00	1000.00	
Adjusted Wind Speed (Ua)	111.05	mph	8	40.00	1030.00	
Mean Wave Direction (THETA)	109.00	deg	9	50.00	1220.00	
Wave Height (Hmo)	2.56	feet	10	60.00	1500.00	
Wave Period (Tp)	2.82	sec	11	70.00	1760.00	
Wave Growth: Deep			12	80.00	1960.00	
			13	90.00	2460.00	
			14	100.00	3110.00	
			15	110.00	3880.00	
			16	120.00	2810.00	
			17	130.00	2630.00	
			22	180.00	1220.00	

$$H_{mo} = 2.56'$$

$$T_p = 2.82 \text{ Sec}$$

1. 1st Row of Piles:

Depth Limited Wave (at 1st row of piles grade = El. +7):

$$H_{dl} = 0.78(d) = 0.78(swl - grade) = 0.78(10.7 - 7) = 2.9'$$

Wave Breaking:

$$H_{dl} > H_{mo} \therefore \text{wave is not breaking \& wave setup} = 0$$

Wave Setup: No wave breaking, wave setup = 0

Wave Height for Analysis (H) = 2.56'

2. 2nd Row of Piles

Depth Limited Wave (at 2nd row of piles grade = El. +9):

$$H_{dl} = 0.78(d) = 0.78(\text{swl} - 9) = 0.78(10.7 - 9) = 1.33'$$

Wave Breaking:

$$H_{dl} < H_{mo} \therefore \text{wave is breaking}$$

Wave Setup: wave setup = TWL - SWL = 11.5' - 10.7' = 0.8'

$$H_{dl2} = 0.78(d) = 0.78(\text{TWL} - 9) = 0.78(11.5 - 9) = 1.95'$$

$$H_{dl2} < H_{mo} \therefore \text{use } H_{dl2} \text{ for analysis}$$

Wave Height for Analysis (H) = 1.95'

3. 3rd Row of Piles

Depth Limited Wave (at 3rd row of piles grade = El. +11):

Since grade is above SWL, but below TWL use TWL

$$H_{dl} = 0.78(d) = 0.78(\text{TWL} - 9) = 0.78(11.5 - 11) = 0.39'$$

Wave Breaking:

$$H_{dl} < H_{mo} \therefore \text{wave is breaking \& use } H_{dl} \text{ for analysis}$$

Wave Height for Analysis (H) = 0.39'

VI) Scour Potential:

The site is characterized by a seawall with a residential dwelling beyond it. Boring logs performed by Soiltesting, Inc. show the upper layer of the soil to be gravel & sand.

Vertical Wall:

Scour can be approximated by the height of the wave at the wall (Coastal Construction Manual, 2011). Since $H_{dl} > H_{mo}$, wave does not break & H_{mo} is the controlling wave height.

Scour Potential = 2.6'

Pile:

Scour potential around piles varies based upon pile diameter & pile shape. The table below gives scour potential for round & square piles that are 6", 12", 18", & 24" wide:

Pile Diameter (in)	Round Pile Scour Potential (ft)	Square Pile Scour Potential (ft)
6	0.9	1.0
12	1.5	1.6
18	1.9	2.1
24	2.3	2.5

VII) Load Calculation:

1. Pile Loads:

Check slenderness:

If wavelength, $\lambda > 5D$, member is slender and Morison's Equation is applicable (DNV 1991).

$$\left(\frac{2\pi}{t}\right)^2 = g \left(\frac{2\pi}{\lambda}\right) \tanh\left(\frac{2\pi}{\lambda} d\right) \quad (\text{Dean \& Dalrymple 1991})$$

t = Wave period = 2.82 sec

g = acceleration due to gravity = 32.2 ft/sec²

λ = wave length

d = water depth = swl - grade = 10.7-7 = 3.7'

$\lambda = 28' \therefore$ Pile < 5.6' considered slender & Morison Equation is valid.

18" Square Pile (grade El. +7'):

Gravity = 32.2 ft/sec²

Mass density of water = 1.99 slugs/ft³

Pile diameter (D) = $(\sqrt{1.5'^2 + 1.5'^2}) = 2.1$ ft (Take largest projected face (DNV 1991))

Drag coefficient (C_D) = 1.51 (DNV 1991)

Inertia coefficient (C_m) = 1.71 (DNV 1991)

Wave period (T) = 2.82 sec

Wave height (H) = 2.56 ft

Water depth (d) = 3.7 ft

Scout depth (S_m) = 2.1 ft

F_{max} = 340 lb @ El. + 9.5' NAVD 88 (See CEM Calc & Load Diagram Attached)

18" Square Pile (grade El. +9'):

Gravity = 32.2 ft/sec²

Mass density of water = 1.99 slugs/ft³

Pile diameter (D) = $(\sqrt{1.5'^2 + 1.5'^2}) = 2.1$ ft (Take largest projected face (DNV 1991))

Drag coefficient (C_D) = 1.51 (DNV 1991)

Inertia coefficient (C_m) = 1.71 (DNV 1991)

Wave period (T) = 2.82 sec

Wave height (H) = 1.95 ft

Water depth (d) = 2.5 ft

Scout depth (S_m) = 2.1 ft

F_{max} = 215 lb @ El. + 10.7' NAVD 88 (See CEM Calc & Load Diagram Attached)

18" Square Pile (grade El. +11'):

Gravity = 32.2 ft/sec²

Mass density of water = 1.99 slugs/ft³

Pile diameter (D) = $(\sqrt{1.5'^2 + 1.5'^2}) = 2.1$ ft (Take largest projected face (DNV 1991))

Drag coefficient (C_D) = 1.51 (DNV 1991)

Inertia coefficient (C_m) = 1.71 (DNV 1991)

Wave period (T) = 2.82 sec

Wave height (H) = 0.39 ft

Water depth (d) = 0.5 ft

Scout depth (S_m) = 2.1 ft

F_{max} = 20 lb @ El. + 11.3' NAVD 88 (See CEM Calc & Load Diagram Attached)

6x6 Square Pile (grade El. +7'):

Gravity = 32.2 ft/sec²

Mass density of water = 1.99 slugs/ft³

Pile diameter (D) = $(\sqrt{0.46'^2 + 0.46'^2}) = 0.65$ ft (Take largest projected face (DNV 1991))

Drag coefficient (C_D) = 1.51 (DNV 1991)

Inertia coefficient (C_m) = 1.71 (DNV 1991)

Wave period (T) = 2.82 sec

Wave height (H) = 2.56 ft

Water depth (d) = 3.7 ft

Scout depth (S_m) = 1.0 ft

F_{max} = 105 lb @ El. + 9.5' NAVD 88 (See CEM Calc & Load Diagram Attached)

2. Vertical Wall (grade El. +7', TOW El. +11', 2.6' scour)

Gravity = 32.2 ft/sec²

Mass density of water = 1.99 slugs/ft³

Wave Height (H) = 2.56

Water Depth at 5H from wall (h_b) = 3.7' + 2.6' = 6.3'

Water depth at fronting of structure (d) = 6.3'

Height of structure above SWL (h_c) = TOW - SWL = 11' - 10.3' = 0.3'

Vertical wall height (h_w) = 6.6'

Water depth at toe fronting structure (h_s) = 6.3'

Wave Period = 2.82 sec

Design Factor = 1.8 (CEM)

Modification factors = 1 (CEM)

$P_1 = 207 \text{ lb/ft}^2 @ \text{El.} + 10.7'$

$P_2 = 198 \text{ lb/ft}^2 @ \text{El.} + 11'$

$P_3 = P_u = 117 \text{ lb/ft}^2 @ \text{El.} + 4.4'$

$P_{\text{hydro}} = 64.2 \text{ lb/ft}^3(\text{swl-grade}) = 64.2 \text{ lb/ft}^3(10.7-4.4) = 404 \text{ lb/ft}^2$

(See CEM Calc & Load Diagram Attached)

Note: 18" square columns on top of wall are at El. +11', apply pile loads with grade @ El. + 11 to these columns.

VIII) References:

1. Federal Emergency Management Agency (FEMA), "Flood Insurance Study – Fairfield County, Connecticut (All Jurisdictions)." No. 09009CV001C. October 16, 2013.
2. State of Connecticut, 2005 Building Code. Effective December 31, 2005.
3. State of Connecticut, 2005 Connecticut Supplement, 2009 Amendment.
4. American Society of Civil Engineers (ASCE), "Minimum Design Loads for Buildings and Other Structures." ASCE 7-05. 2006.
5. Veri-Tech, "Automated Coastal Engineering System (ACES)" in "Coastal Engineering Design & Analysis System (CEDAS)." Version 4.03. 2013.
6. Federal Emergency Management Agency (FEMA), "Coastal Construction Manual." Fourth Edition. Volume 1. August 2011.
7. Dean & Dalrymple, "Water Wave Mechanics for Engineers and Scientists." 1991.
8. Det Norske Veritas (DNV), "Environmental Conditions and Environmental Loads." Classification Notes No. 30. 5. March 1991.

DiSalvo Engineering Group
March 3, 2015

Calculated by: JAP
Checked by: TD

Attachment A: CEM Calculations

GRADE DEL +7' - 18" SQ FILE

Equations VI-5-281 to 5-304 Forces on piles using linear wave theory		
Input Parameter	Value	Units
Pile diameter (D)	2.1	ft
Drag coefficient (CD)	1.51	
Inertia coefficient (CM)	1.71	
Wave period (T)	2.82	sec
Wave height (H)	2.56	ft
Water depth (d)	3.7	ft
Scour depth (SM)	2.1	ft
Deepwater wavelength (Lo)	40.7188	ft
Wavelength (L)	27.8268	ft
Si	0.527186	
Sd	0.555101	
n	0.825785	
Maximum Component Forces		
FiMax	331.527	lbf
FDMax	166.227	lbf
Maximum Component Moments		
MiMax	646.672	ft-lbf
MDMax	341.41	ft-lbf
Maximum Force	331.528	lbf
Maximum Moment	647.623	ft-lbf
Nonlinear Wave Theory		
W parameter	0.928963	
D/(gT ²)	0.0144619	
H/(gT ²)	0.0100061	
φ _m	0.255	
α _m	0.175	
Max. force	339.103	lbf
Max. moment	861.057	ft-lbf

← NONLINEAR > LINEAR
∴ USE NONLINEAR
CASE

Moment arm	2.53922	
Modified max. total moment	1573.17	ft-lbf

GARAPUDES + 9' = 18" SO PILE

Equations VI-5-281 to 5-304
 Forces on piles using
 linear wave theory

Input Parameter	Value	Units
Pile diameter (D)	2.1	ft
Drag coefficient (CD)	1.51	
Inertia coefficient (CM)	1.71	
Wave period (T)	2.82	sec
Wave height (H)	1.95	ft
Water depth (d)	2.5	ft
Scour depth (SM)	2.1	ft
Deepwater wavelength (Lo)	40.7188	ft
Wavelength (L)	23.6576	ft
Si	0.517594	
Sd	0.53556	
n	0.87852	
Maximum Component Forces		
FiMax	214.694	lbf
FDMax	96.4476	lbf
Maximum Component Moments		
MiMax	277.811	ft-lbf
MDMax	129.134	ft-lbf
Maximum Force		
Maximum Force	214.694	lbf
Maximum Moment		
Maximum Moment	277.811	ft-lbf
Nonlinear Wave Theory		
W parameter	1.21956	
D/(gT ²)	0.00977159	
H/(gT ²)	0.00762184	
φ _m	0.255	
α _m	0.175	
Max. force	196.753	lbf
Max. moment	337.567	ft-lbf

← LINEAR > NONLINEAR
 ∴ USE LINEAR CASE

Moment arm	1.71569
Modified max. total moment	750.748 ft-lbf

GRADE @ EL + 11' - 18" sea pile

Equations VI-5-281 to 5-304
Forces on piles using
linear wave theory

Input Parameter	Value	Units
Pile diameter (D)	2.1	ft
Drag coefficient (CD)	1.51	
Inertia coefficient (CM)	1.71	
Wave period (T)	2.82	sec
Wave height (H)	0.39	ft
Water depth (d)	0.5	ft
Scour depth (SM)	2.1	ft
Deepwater wavelength (Lo)	40.7188	ft
Wavelength (L)	11.1646	ft
Si	0.503273	
Sd	0.506563	
n	0.974551	
Maximum Component Forces		
FiMax	20.264	lbf
FDMax	3.8579	lbf
Maximum Component Moments		
MiMax	5.09916	ft-lbf
MDMax	0.977135	ft-lbf
Maximum Force	20.264	lbf
Maximum Moment	5.09916	ft-lbf
Nonlinear Wave Theory		
W parameter	6.09781	
D/(gT ²)	0.00195432	
H/(gT ²)	0.00152437	
φ _m	0.255	
α _m	0.175	
Max. force	7.87012	lbf
Max. moment	2.70053	ft-lbf

← LINEAR > NONLINEAR
∴ USE LINEAR CASE

Moment arm	0.343137	
Modified max. total moment	19.2278	ft-lbf

6x6 PILE, SQ, GALAPG EL=+7

**Equations VI-5-281 to 5-304
Forces on piles using
linear wave theory**

Input Parameter	Value	Units
Pile diameter (D)	0.65	ft
Drag coefficient (CD)	1.51	
Inertia coefficient (CM)	1.71	
Wave period (T)	2.82	sec
Wave height (H)	2.565	ft
Water depth (d)	3.7	ft
Scour depth (SM)	1	ft
Deepwater wavelength (Lo)	40.7188	ft
Wavelength (L)	27.8268	ft
Si	0.527186	
Sd	0.555101	
n	0.825785	
Maximum Component Forces		
FiMax	31.8239	lbf
FDMax	51.6524	lbf
Maximum Component Moments		
MiMax	62.0754	ft-lbf
MDMax	106.088	ft-lbf

Maximum Force	56.5542 lbf
Maximum Moment	115.14 ft-lbf
Nonlinear Wave Theory	
W parameter	0.286976
$D/(gT^2)$	0.0144619
$H/(gT^2)$	0.0100256
ϕ_m	0.255
α_m	0.175
Max. force	105.371 lbf
Max. moment	267.56 ft-lbf
Moment arm	2.53922
Modified max. total moment	372.931 ft-lbf

← NON LINEAR > LINEAR
 ∴ USE NON LINEAR CASE

LOAD ON VERTICAL WALL

**Table VI-5-53 / Equations VI-5-147 to 5-151
Goda formula for
irregular waves**

Input Parameter	Value	Units
Gravity	32.1719	ft/sec ²
Mean density of water (ρ_w)	1.98902	slugs/ft ³
Angle of incidence (β)	0	deg
Significant wave height (H_s)	2.56	ft
Water depth at $5H_s$ from breakwater front wall (h_b)	6.3	ft
Water depth to berm fronting structure (d)	6.3	ft
Height of structure above swl (h_c)	0.3	ft
Water depth at toe fronting structure (h_s)	6.3	ft
Design factor	1.8	
Significant wave period (T_s)	2.82	sec
Modification factor (λ_1)	1	
Modification factor (λ_2)	1	
Modification factor (λ_3)	1	
H_{design}	4.608	ft
Deepwater wavelength (L_o)	40.7188	ft
Wavelength at depth h_b (L)	33.6471	ft
α^*	0	
α_1	0.701959	
α_2	0	

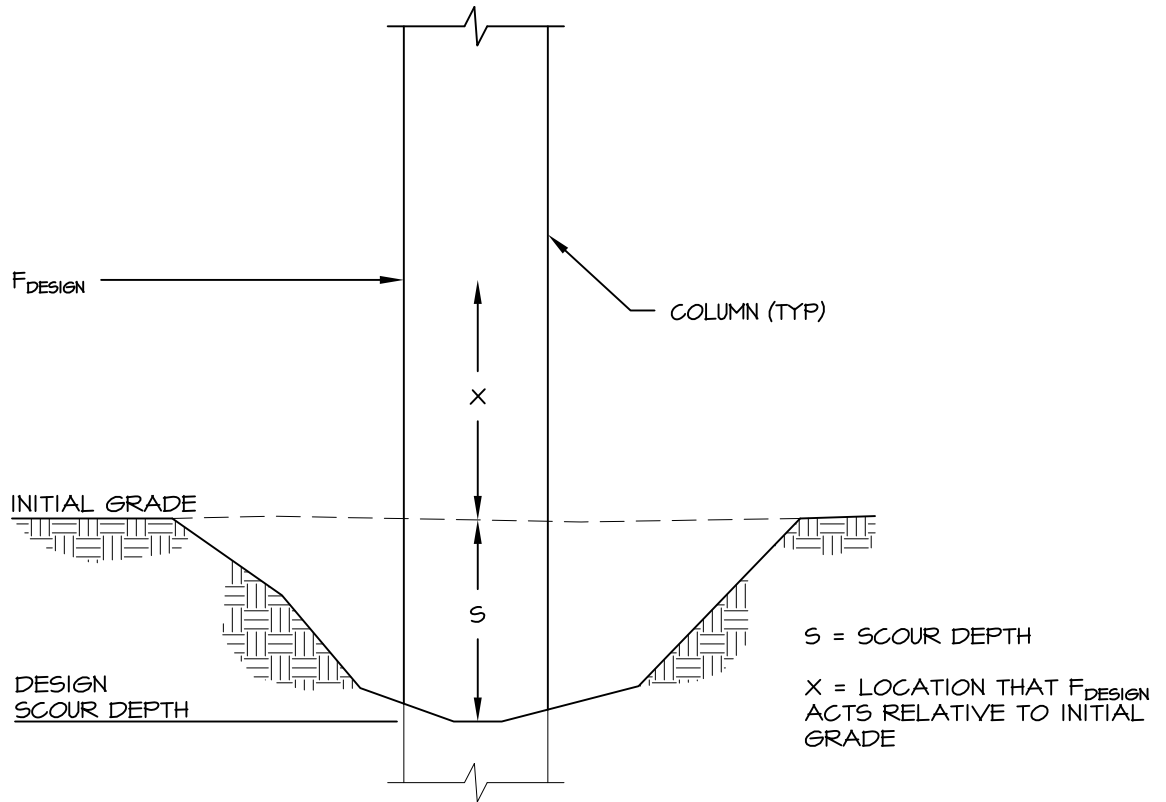
α_3	0.563189
η^*	6.912 ft
p_1	206.986 lbf/ft ²
p_2	198.002 lbf/ft ²
p_3	116.572 lbf/ft ²
p_u	116.572 lbf/ft ²

DiSalvo Engineering Group
March 3, 2015

Calculated by: JAP
Checked by: TD

Attachment B: Load Diagrams

NOTE: LOADS ARE NOT FACTORED



WAVE LOAD & SCOUR DIAGRAM

WAVE LOAD SUMMARY				
PILE TYPE	INITIAL GRADE EL (FT NAVD)	F_{DESIGN}	S	X
18" SQUARE	+7'	340 lb	2.1'	2.5'
18" SQUARE	+9'	215 lb	2.1'	1.7'
18" SQUARE	+11'	20 lb	2.1'	0.3'
6X6	+7'	105 lb	1.0'	2.5'

NOTE: SCOUR DEPTH ASSUMED TO BE CONSTANT FOR PILES OF SIMILAR DIAMETER SINCE SCOUR ON FIRST ROW OF PILES IS PRIMARILY GOVERNED BY CURRENT SPEEDS WHICH DO NOT DECREASE WITH CHANGE IN GRADE EL AS OPPOSED TO WAVE HEIGHTS WHICH DO

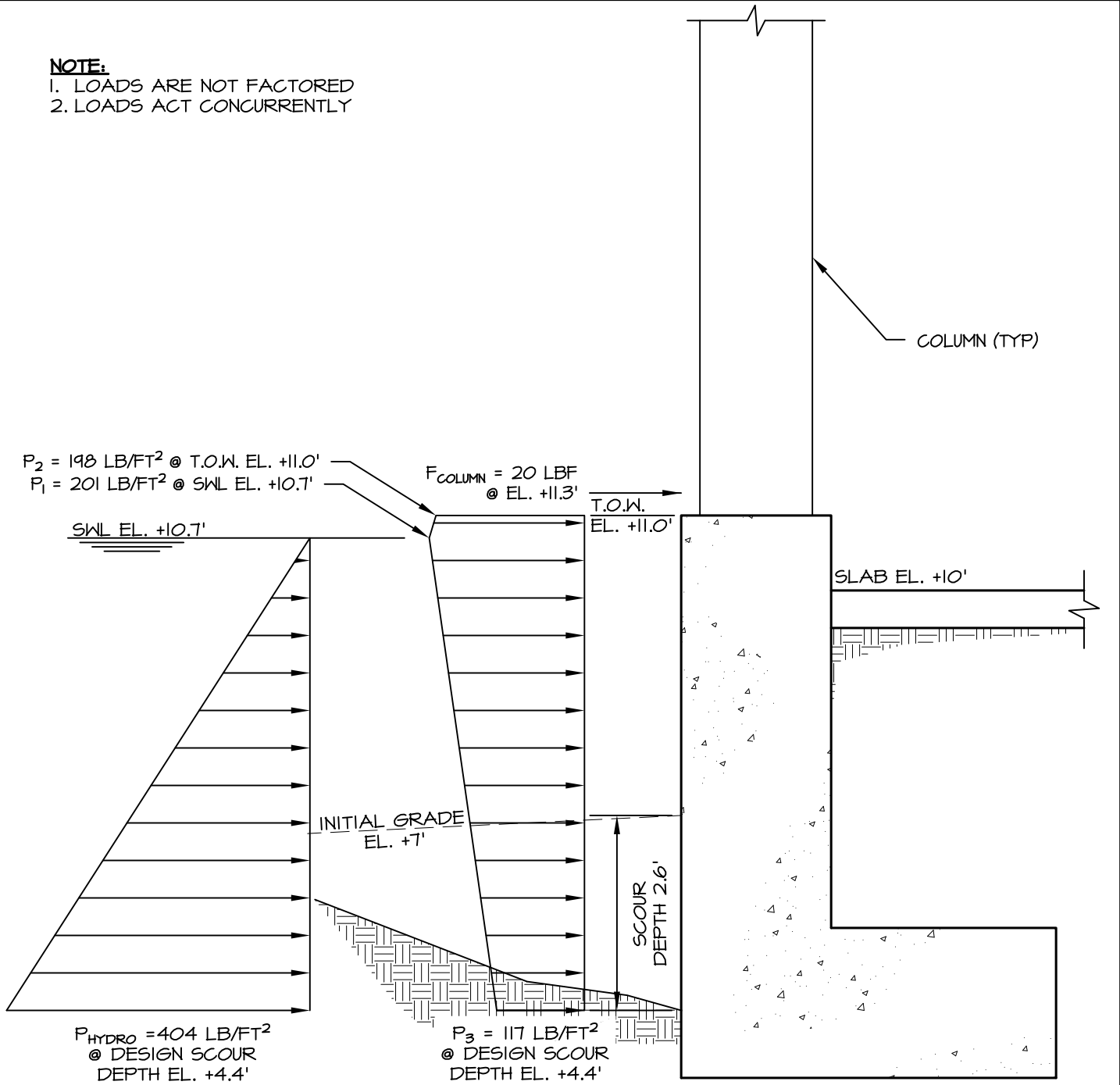
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NOT FOR CONSTRUCTION FOR CLIENT REVIEW ONLY

DRAWN BY: JAP	SEAL:	PROJECT:	ROBERGE ASSOCIATES Coastal Engineers, LLC <hr/> 611 Access Road Stratford, CT 06615 Tel: 203-377-0663 www.racellc.com
CHECKED BY: TD		3 WEED CIRCLE WAVE LOAD ANALYSIS	
DATUM: NAVD 88		CLIENT	
SCALE: 1" = 2'		THE DISALVO ENGINEERING GROUP	
DATE: 03/03/2015			
REV:			
PROJECT #: 201505	NOT VALID WITHOUT ENGINEER'S SEAL		DRAWING 1 OF 2

NOTE:


1. LOADS ARE NOT FACTORED
2. LOADS ACT CONCURRENTLY



WAVE LOAD & SCOUR DIAGRAM

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NOT FOR CONSTRUCTION FOR CLIENT REVIEW ONLY

DRAWN BY: JAP		SEAL:	PROJECT:	 <p>ROBERGE ASSOCIATES Coastal Engineers, LLC</p> <p>611 Access Road Tel: 203-377-0663</p> <p>Stratford, CT 06615 www.racellc.com</p>
CHECKED BY: TD		NOT VALID WITHOUT ENGINEER'S SEAL	3 WEED CIRCLE WAVE LOAD ANALYSIS	
DATUM: NAVD 88			CLIENT	
SCALE: 1" = 2'			THE DISALVO ENGINEERING GROUP	
DATE: 03/03/2015				
REV:				
PROJECT #: 201505				DRAWING 2 OF 2

Appendix C

City of Stamford CSPR-990 Approval

MAYOR
DAVID MARTIN



DIRECTOR OF OPERATIONS
ERNIE ORGERA

LAND USE BUREAU CHIEF
NORMAN F. COLE, A.I.C.P.
Tel: (203) 977-4714

**CITY OF STAMFORD
ZONING BOARD
LAND USE BUREAU
888 WASHINGTON BOULEVARD
P.O. Box 10152
STAMFORD, CT 06904 -2152**

May 6, 2016

Andree Kaminsky
3 Weed Circle
Stamford, CT 06902

Dear Andree Kaminsky:

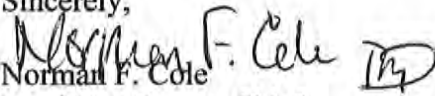
RE: CSPR-990 – ANDREE KAMINSKY, 3 Weed Circle, proposal to raise the existing 2,002 sf home above the flood hazard elevation, remove the existing basement, raise the garage and driveway, add a small addition to an existing bedroom and increase the stairs to access the building on .42 acres in an R-7-1/2 district within a coastal flood hazard zone.

This letter is to inform you that the Zoning Board at their regular meeting held on Monday, May 2, 2016 UNANIMOUSLY APPROVED AS MODIFIED the above referenced application.

Enclosed you will find a copy of the approval letter to the Zoning Enforcement Officer. Please bring the approval letter with you and be prepared to present it to other City departments and staff when securing your final approvals.

Should you have any questions please feel free to contact me at (203) 977-4714.

Sincerely,


Norman F. Cole
Land Use Bureau Chief

MAYOR
DAVID MARTIN



DIRECTOR OF OPERATIONS
ERNIE ORGERA

LAND USE BUREAU CHIEF
NORMAN F. COLE, A.I.C.P.
Tel: (203) 977-4714

**CITY OF STAMFORD
ZONING BOARD
LAND USE BUREAU**
888 WASHINGTON BOULEVARD
P.O. Box 10152
STAMFORD, CT 06904 -2152

James Lunney
Zoning Enforcement Officer
City of Stamford, CT

May 6, 2016

RE: CSPR-990 – ANDREE KAMINSKY., 3 Weed Circle

Dear Mr. Lunney:

At its regular Meeting held on Monday, May 2, 2016, the Zoning Board reviewed and UNANIMOUSLY APPROVED AS MODIFIED the above captioned application to raise the existing 2,002 sf home above the flood hazard elevation, remove the existing basement, raise the garage and driveway, add a small addition to an existing bedroom and increase the stairs to access the building on .42 acres in an R-7-1/2 district within a coastal flood hazard zone.

The Board found the project consistent with all applicable goals and policies set forth in the CAM Act and unanimously approved the project, subject to the following conditions:

Work shall comply with the following plans and correspondence:

- Correspondence from Bret Holzwarth, P.E., Redniss and Mead, dated April 6, 2016, March 28, 2016, February 4, 2016 and January 20, 2013.
- "Site Development Plan," Notes," and Details," 3 Weed Circle, Stamford, Connecticut, Sheet SE1-3, by Redniss and Mead, revised March 24, 2016.
- "Foundation Demolition Plan," Proposed Foundation Plan," Proposed First Floor Plan," "Proposed Attic Plan," "Proposed Elevations," and "Proposed Elevations," 3 Weed Circle, Stamford, Connecticut, Sheets D-1.0, A-1.0, A-2.0, A-3.0, A-4.0, A-5.0, by Aris Crist Architects, revised March 25, 2016.
- "General Notes," "Foundation Plan," and "Details," 3 Weed Circle, Stamford, Connecticut, Sheets S0, S1, and S2, by The DiSalvo Group, dated March 31, 2016.

- “Zoning Location Survey,” Depicting Proposed Improvements, #3 Weed Circle, Stamford, Connecticut, Prepared for Merritt Construction, Services, Inc., revised January 20, 2016.
 - “Existing Building Location Survey,” Depicting Proposed Improvements, #3 Weed Circle, Stamford, Connecticut, Prepared for Merritt Construction, Services, Inc., revised November 19, 2015.
 - “Basement Plumbing Plan,” 3 Weed Circle, Stamford, Connecticut, Sheet P-1.0, by Aris Crist Architects, revised September 21, 2015.
 - Correspondence from Timothy Bartolomeo, P.E., RACE, Roberge Associates, Coastal Engineers, dated March 24, 2016 and October 6, 2015.
 - “EPB Planting Plan,” 3 Weed Circle, Stamford, Connecticut , Sheet PP-1, by Environmental Land Solutions, LLC, revised November 30, 2015.
 - ‘Drainage Impact Statement, Kaminsky Residence, 3 Weed Circle, Stamford, Connecticut, by Bret Holzwarth, P.E., Redniss and Mead, revised March 24, 2016.
 - “Flood Evacuation and Preparedness Plan,” 3 Weed Circle, Stamford, Connecticut, Prepared for Andree Kaminsky, by Redniss and Mead, dated March 24, 2016.
 - “Calculations for Wave Action Analysis for New Concrete Foundation at 3 Weed Circle, Stamford, Connecticut by DiSalvo Engineering Group Structural Engineers, Inc., dated June 12, 2015.
 - “Site Logistics Plan,” by Merritt Construction Services, Inc., undated.
 - Correspondence form Susan M. Kisken, P.E., Stamford Engineering Bureau, dated February 24, 2016.
 - Certification of Flood Elevations, Proposed Residential Structures, Flood Hazard VE-14, by Kenneth D. Jones, revised September 16, 2013.
- 1) Submission of a performance bond, certified check or other acceptable form of surety to secure the timely and proper performance of sediment and erosion/construction controls, tree protection, drainage, landscaping, professional supervision, and certifications. A detailed estimate of these costs shall be supplied to EPB Staff for approval prior to the submission of the performance surety. The performance surety shall be submitted to EPB Staff prior to the start of any site activity and issuance of a building permit.
 - 2) Final civil, architectural and flood preparedness plans shall be subject to the review and approval of EPB Staff prior to the start of any site activity and issuance of a building permit. Matters to receive further attention may include the following:

- All utilities penetrating the space below the MES, shall be affixed to the landward side of the proposed columns. The anticipated locations of the risers (and any required changes to the location of associated metering) shall be noted on the design drawings.
 - Final interior and exterior stair, deck, and platform details along with appropriate floodproof design/certifications. Reference is made to "Free of Obstruction Requirements" outlined in Technical Bulletin 5, dated August 2008.
 - Affix professional floodproofing certifications to the plans as required.
 - Final Engineering Bureau endorsement of the elements reflected on the revised civil drawings.
- 3) Work areas and the limits of erosion controls shall be staked in the field by a Connecticut surveyor prior to the start of any site activity.
 - 4) Temporary erosion controls and tree protection measures shall be installed and approved in writing by EPB Staff prior to the start of any site activity.
 - 5) Upon the completion of the proposed piers/lowest horizontal members, and prior to framing/replacement of the structure, submission of an interim improvement location survey/data accumulation plan by a Connecticut surveyor to confirm the elevation of the top of the piers/lowest horizontal members, subject to the review and approval of EPB Staff.
 - 6) All disturbed earth surfaces shall be stabilized with topsoil, seed, mulch, sod, stone or other EPB approved alternatives prior to the issuance of a certificate of occupancy. This condition applies not only to disturbed earth surfaces slated for landscaping but also to areas under any exterior decks, stairs, space under the dwelling, drives, etc.
 - 7) All final grading, utilities, drainage, final stabilization measures, and other engineered elements shall be completed under the supervision of a Connecticut registered professional engineer and land surveyor with an improvement location survey (surveyor) and written certifications (engineer) submitted to EPB Staff prior to the release of surety and signature authorizing the issuance of a certificate of occupancy.
 - 8) All floodproofing shall be conducted under the supervision of a professional engineer or architect registered in the State of Connecticut. Upon the completion of the construction, and prior to the release of surety and signature authorizing the issuance of a certificate of occupancy, a Connecticut registered engineer or architect shall certify (signed and sealed correspondence) that the structure and all attendant facilities have been constructed in accordance with the provisions of Section 7.1 of the Zoning Regulations ("Flood Prone Area Regulations"), and are capable of withstanding the flood depths, pressures, velocities, impact and uplift forces and other factors associated

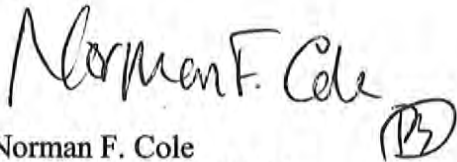
with the base flood. The letter of certification shall summarize each floodproofing measure incorporated into the building.

- 9) Upon the completion of the construction and prior to the release of surety and granting of a signature authorizing the issuance of a certificate of occupancy, a Connecticut registered professional surveyor shall:
 - Certify (signed and sealed improvement location survey) the final elevation of: i) Top of piers/bottom of lowest horizontal member, ii) lower slab level, iii) lower curb level, iv) primary floor level, v) bottom elevation of all meters, panels, and other similar devices, vi) other facilities as deemed appropriate by EPB Staff.
 - Complete a standard "National Flood Insurance Program Elevation Certificate."
- 10) All landscaping shall be implemented under the supervision of a qualified landscape professional and certified as completed (signed/lettered) prior to the issuance of a signature authorizing the granting of a certificate of occupancy and return of surety.
- 11) Prior to the release of surety, transfer of title and issuance of a signature authorizing the granting of a certificate of occupancy, the applicant shall execute and file a standard, City of Stamford "Landscape Maintenance Agreement" on the Stamford Land Records to ensure the success of the planted features.
- 12) Prior to the release of surety, transfer of title and issuance of a signature authorizing the issuance of a certificate of occupancy, the applicant shall execute and file a standard, City of Stamford "Drainage Maintenance Agreement" on the Stamford Land Records to ensure the full and proper function of all installed drainage facilities.
- 14) Prior to the release of surety, transfer of title and issuance of a signature authorizing the issuance of a certificate of occupancy, the applicant shall file a standard notice on the Stamford Land Records disclosing the following information.
 - The subject property lies within a known flood hazard area described as Zone VE 14 feet NAVD-88" as shown on Flood Insurance Rate Map 09001C0517G, dated July 8, 2013.
 - A coastal site plan review (3 Weed Circle, CSPR-990, Kamansky, 5/16) was issued by the Zoning Board of the City of Stamford to elevate and renovate an existing single family dwelling and make associated site improvements on property known to support or lie proximate to the coastal resources identified as "Coastal Flood Hazard Zone" "Modified Escarpment" and "Embayment."
 - Acknowledge the existence of the revised "Flood Preparedness Plan."
 - Restrictions prohibiting uses and/or modifications to the areas situated below the limits of the minimum elevation standard of 15 feet NAVD-88 as to render them inconsistent

with Stamford's Flood Regulations. Specific enforcement provisions for non-compliance shall be included.

15) In-ground/above ground fuel storage tanks are prohibited given the V-Zone designation and proximity to coastal resources.

Sincerely,

A handwritten signature in black ink that reads "Norman F. Cole". To the right of the signature is a circled number "13".

Norman F. Cole
Land Use Bureau Chief

cc: Applicant, Building Department, EPB

CSPR990final



MEMO TO: Norman Cole, Chief
Land Use Bureau - Stamford

FROM: Richard H. Talamelli, Environmental Planner
Environmental Protection Board

SUBJECT: 3 Weed Circle
Kaminsky Residence
Coastal Site Plan Review No. 990

DATE: April 19, 2016

REFERENCES:

- Correspondence from Bret Holzwarth, P.E., Redniss and Mead, dated April 6, 2016, March 28, 2016, February 4, 2016 and January 20, 2013.
- "Site Development Plan," Notes," and Details," 3 Weed Circle, Stamford, Connecticut, Sheet SE1-3, by Redniss and Mead, revised March 24, 2016.
- "Foundation Demolition Plan," Proposed Foundation Plan," Proposed First Floor Plan," "Proposed Attic Plan," "Proposed Elevations," and "Proposed Elevations," 3 Weed Circle, Stamford, Connecticut, Sheets D-1.0, A-1.0, A-2.0, A-3.0, A-4.0, A-5.0, by Aris Crist Architects, revised March 25, 2016.
- "General Notes," "Foundation Plan," and "Details," 3 Weed Circle, Stamford, Connecticut, Sheets S0, S1, and S2, by The DiSalvo Group, dated March 31, 2016.
- "Zoning Location Survey," Depicting Proposed Improvements, #3 Weed Circle, Stamford, Connecticut, Prepared for Merritt Construction, Services, Inc., revised January 20, 2016.
- "Existing Building Location Survey," Depicting Proposed Improvements, #3 Weed Circle, Stamford, Connecticut, Prepared for Merritt Construction, Services, Inc., revised November 19, 2015.
- "Basement Plumbing Plan," 3 Weed Circle, Stamford, Connecticut, Sheet P-1.0, by Aris Crist Architects, revised September 21, 2015.
- Correspondence from Timothy Bartolomeo, P.E., RACE, Roberge Associates, Coastal Engineers, dated March 24, 2016 and October 6, 2015.

- "EPB Planting Plan," 3 Weed Circle, Stamford, Connecticut, Sheet PP-1, by Environmental Land Solutions, LLC, revised November 30, 2015.
- 'Drainage Impact Statement, Kaminsky Residence, 3 Weed Circle, Stamford, Connecticut, by Bret Holzwarth, P.E., Redniss and Mead, revised March 24, 2016.
- "Flood Evacuation and Preparedness Plan," 3 Weed Circle, Stamford, Connecticut, Prepared for Andree Kaminsky, by Redniss and Mead, dated March 24, 2016.
- "Calculations for Wave Action Analysis for New Concrete Foundation at 3 Weed Circle, Stamford, Connecticut by DiSalvo Engineering Group Structural Engineers, Inc., dated June 12, 2015.
- "Site Logistics Plan," by Merritt Construction Services, Inc., undated.
- Correspondence form Susan M. Kiskin, P.E., Stamford Engineering Bureau, dated February 24, 2016.
- Certification of Flood Elevations, Proposed Residential Structures, Flood Hazard VE-14, by Kenneth D. Jones, revised September 16, 2013.

PROPOSAL:

To elevate and renovate an existing single family dwelling, construct a new wood deck/stair, install drainage, and implement other site improvements on property known to support or lie proximate to the coastal resources identified as "Coastal Flood Hazard Zone" "Modified Escarpment," and "Embayment."

SITE CHARACTERISTICS:

The subject parcel lies in the moderately well-developed residential neighborhood along the terminus of Weed Circle, approximately 200 feet east of Weed Avenue, and is identified as 3 Weed Circle, Lot 3, List 000-7074, Map 124, Block 150, Card N-003Z, Zone R-7.5, and ±18,283 square feet.

This waterfront property currently supports a single family dwelling, wood deck, drive, walkways, walls, underground utilities, stone masonry seawall, and other associated facilities. The dwelling is currently served by both the public water supply and sanitary sewer.

The site is characterized by gently to moderately sloping manicured uplands, coastal flood hazard areas, and a fairly typical collection of trees, shrubs and groundcover (Beech, Japanese Maple, Pine, London Planetree, Azalea, Yews, Hydrangea, Rhododendron, Mountain Laurel, Periwinkle, Baltic Ivy, Lawn Grass). To the south and east, the property abuts the shoreline of Holly Pond.

There are no wetlands on the property. The general soil manual titled "Soil Survey of Fairfield County, Connecticut by the United States Department of Agriculture, Soil Conservation Service, 1981 classifies the upland soils as Agawam, fine sandy loam (AfB). Agawam soils are gently to moderately sloping, well drained upland soils which are commonly found on plains and terraces in stream valleys. These soils are characterized by moderate permeability in the surface layer and subsoil, rapid permeability in the substratum and slight to very strong acidity. Major limitations include the potential for groundwater pollution due to the rapid permeability of the soil, instability of slopes and excavations, a moderate erosion hazard and at time slope ("Soil Survey, Fairfield County Connecticut," by the USDA, Soil Conservation Service, 1981, P. 10). Restrictions are considered "Severe" of shallow excavations, "Moderate" for small commercial buildings, "Slight" for dwellings with or without basements, local roads, septic systems and landscaping (P. 10, 95, 100).

The entire property is affected by flooding during the peak of the 100-year storm (Zone VE, 14 feet NAVD-88, Flood Insurance Rate Map - 09001C0517G, dated July 8, 2013). Based on the submitted topography, turbulent floodwaters ranging from 2-8 feet may impact the entire parcel. There is no dry access to the property. Dry pavement appears to lie approximately 740 feet to the north and west on Mathews Street. During a base flood event, flood depths over the roadway may range from 0-6 feet.

Coastal Resources found on or bordering the property may include the following: Coastal Flood Hazard Zones are those land areas inundated during coastal storm events or subject to erosion induced by such events, including flood hazard areas as defined and determined by the National Flood Insurance Act, as amended, and all erosion hazard areas as determined by the Commissioner. Modified Escarpments are bluffs and escarpments that have been temporarily stabilized by erosion control structures positioned seaward of the marine cliff or escarpment, and Embayments are protected coastal bodies of water with an open connection to the sea in which the saline sea water is measurably diluted by freshwater including tidal rivers, bays, lagoons and coves.

PROPOSAL/DISCUSSION:

The applicant proposes to elevate the existing residential dwelling, construct a deck, install drainage and implement other related improvements on the parcel. The policies and use guidelines of the CAM Act relative to the coastal resources present on and immediately adjacent to this site require applicants to limit impacts on existing resources, mitigate adverse drainage impacts, ensure consistency with the structural requirements of the "Flood Prone Area Regulations," enact measures to limit flood impacts on persons and properties, utilize measures to preserve/enhance water quality, and employ measures to enhance or limit negative visual/aesthetic impacts.

Issues and the means by which the applicant intends to address outstanding concerns as follows:

Conservation of Resources/Impacts to the Natural Character of the Land:

A detailed site development and grading plan has been developed for the parcel ("Site Development Plan," Redniss, 3/24/16). Although most of the structural work will be confined to the existing building footprint, low to moderate grade change (0-4.48 feet) is anticipated within the garage, drive and/or front/rear yard areas. Although several foundation plantings shall be removed, the loss of significantly

sized individual or groups of trees is not expected. Note that there are no direct physical encroachments in space adjoining the seawall or Holly Pond. All work proposed to date lies above the coastal jurisdiction line.

Impacts on Adjoining Properties and Drainage:

A drainage statement has been prepared by the project engineer ("Drainage Impact," Holzwarth, 3/24/16). The engineer notes that the site generally drains west to east from the street toward the waters of Holly Pond. The engineer has concluded that the project, given the de minimus increase in overall site imperviousness (approximately 70 square feet), will cause no discernable increase in peak flows leaving the site during a 25-year storm event. It is noted that proposed changes in grade to the drive will direct flows to a new drainage system consisting of a catch basin, pipes and concrete galleries, the overflow of which shall flow overland some 70 feet to the south and east before reaching the waters of Holly Pond. Given these circumstances, the engineer has concluded that the proposed development will have no adverse impact on neighboring properties, coastal resources or downstream drainage systems.

Impacts on the Dynamics of the Flood:

The coastal engineer conducted an analysis, finding that the project will have no measurable effect on flood heights or negatively impact neighboring properties due to reflected waves or other related means (DeBartolomeo, 3/24/16). The absence of impact is attributed to the minor grade alterations proposed, the fact that the proposed grade alterations lie below the 100-year stillwater elevation, and that the dwelling's lift and reconstruction will result in a reduction in the number of vertical surfaces from which waves can be reflected.

Impacts on Water Quality:

The applicant has determined to address anticipated water quality issues as follows:

- A construction and sediment and erosion control plan has been developed for the subject property ("Site Development Plan," Redniss, 3/24/16) including silt fences along the anticipated limits of disturbance, stabilized construction access, the use of predetermined stockpile areas, slash guards on gutter leader outlets not directed to structures, stone under elevated dwelling/decks/exterior stairs, and measures to stabilize disturbed soil areas, etc.
- The project shall be reconnected to the sanitary sewer ("Site Development Plan," Redniss, 3/24/16).
- Use of stormwater collection structures equipped with deep sumps and bell traps to assist in the collection of sands, silts and debris prior to discharge ("Site Development Plan," and "Details," Redniss, 3/24/16).

- Use of infiltration (12" concrete galleries) to assist in the treatment of storm water generated by a portion of the roof and drive prior to discharge ("Site Development Plan," and "Details," Redniss, 3/24/16). Infiltration seizes upon the soil's natural abilities to cool and filter runoff.
- Site shall continue to be served by natural gas. No new in or above ground storage facilities are proposed ("Site Development Plan," Redniss, 3/24/16).

Structural Floodproofing:

The applicant proposes to address the structural floodproofing requirements of the regulations for dwellings situated in a Coastal Velocity Zone (VE) as follows:

- The first floor of the improved residence shall be established at an elevation of 20.75-22.0 feet NAVD-88, which is 6.75-8.00 feet above the project base flood and 5.75-7.00 feet above the minimum elevation standard ("Site Development Plan," Redniss, 3/24/16 and "Proposed First Floor Plan," Crist, 3/25/16).
- Dwelling shall be elevated on reinforced concrete piers, the top of which shall lie at an elevation of 19.0-20.25 feet NAVD-88 ("Foundation Plan," DiSalvo Engineering Group, 3/31/16). The elevated columns enable the applicant to comply with the requirements that the lowest supporting horizontal member be located above the MES of 15 feet NAVD-88 with all space below the lowest supporting member open so as not to impede the flow water.
- A parking slab situated below the minimum elevation standard shall be raised, set at an elevation of 10.0 feet NAVD-88 ("Proposed Foundation Plan," Crist, 3/25/16). Note that the 4" concrete slab is not reinforced and is designed to breakaway ("frangible") to lessen the potential for storm damage ("Details," DiSalvo, 3/31/16).
- The mechanical room has been situated at the attic level, above the MES ("Proposed Attic Plan," Crist, 3/25/16).
- The gas meter shall be situated along the front plane of the structure above the MES. The bottom elevation shall be set at an elevation of 17.0 feet NAVD-88 ("Proposed Elevations," Crist, 3/24/16).
- The electric meter and exterior mount boxes shall be situated along the front plane of the structure above the MES. The bottom elevation shall be set at an elevation of no less than 25.6 feet NAVD-88 ("Proposed Elevations," Crist, 3/25/16).
- The condenser units shall be situated at approximately the attic floor level above the MES ("Proposed Elevations," Crist, 3/25/16).
- A basic brace/hanger detail has been provided to secure pipes penetrating space below the MES ("Basement Plumbing Plan," Crist, 9/21/15).

- Interior and exterior decks and stairs have been designed to remain in place, supporting an open design to allow for unobstructed flows below the main floor ("Proposed Elevations," Crist, 3/25/16).
- Any new below grade services or reconnects affecting the sanitary, electric, water, and gas shall be constructed per a certified flood proof detail ("Details," Redniss, 3/24/16).
- Submission of engineering/architectural certifications stating that the structure and its attendant facilities have been designed in accordance with Section 7.1 of the Stamford Zoning Regulations (Flood Prone Area Regulations of the City of Stamford) and are capable of withstanding the flood depths, pressures, velocities, impact and uplift forces and other factors associated with the base flood ("General Notes," DiSalvo, 3/31/16 and DeBartolomeo, 3/24/16).

Flood Preparedness:

A Flood Preparedness Plan has been supplied by the applicant ("Flood Evacuation and Preparedness Plan, 3 Weed Circle, Prepared for Andree Kaminsky, by Redniss and Mead, revised March 24, 2016). The generally plan defines the anticipated flood hazards, describes the flood proof design of the structure, and outlines general preparedness procedures/recommended emergency evacuation routes.

Conservation Resources:

- The applicant has developed a landscape plan ("Planting Plan, ELS, 11/30/15) to improve aesthetics, screen the garage, and enhance the overall conservation values of the parcel. The plan includes provisions of a tree (Shadblow – 1), and numerous shrubs (Red Chokeberry – 5, Clethra – 5, Shamrock Inkberry – 12, Steeds Holly – 7, Northern Bayberry – 5) and groundcovers (New England Aster – 38, Seaside Goldenrod – 25, and Switchgrass – 19) reasonably tolerant of the coastal environment.
- Fenced protection for select trees expected to be maintained in the post construction landscape ("Site Development Plan," Redniss, 3/24/16).

OPTIONS/RECOMMENDATIONS:

It is not anticipated that the development of this site will adversely impact coastal resources, affect adjoining properties or expose residents and property to substantial flood threats. Although further design details are warranted, the reconstruction will serve to lessen the potential for damages by elevating and floodproofing a structure subject to significant flood exposure and loss. Accordingly, the Board may determine that the project is consistent with the provisions of Coastal Area Management and may **APPROVE** CSPR-990 subject to the following conditions:

- 1) Work shall comply with the following plans and correspondence:

- Correspondence from Bret Holzwarth, P.E., Redniss and Mead, dated April 6, 2016, March 28, 2016, February 4, 2016 and January 20, 2013.
- "Site Development Plan," Notes," and Details," 3 Weed Circle, Stamford, Connecticut, Sheet SE1-3, by Redniss and Mead, revised March 24, 2016.
- "Foundation Demolition Plan," Proposed Foundation Plan," Proposed First Floor Plan," "Proposed Attic Plan," "Proposed Elevations," and "Proposed Elevations," 3 Weed Circle, Stamford, Connecticut, Sheets D-1.0, A-1.0, A-2.0, A-3.0, A-4.0, A-5.0, by Aris Crist Architects, revised March 25, 2016.
- "General Notes," "Foundation Plan," and "Details," 3 Weed Circle, Stamford, Connecticut, Sheets S0, S1, and S2, by The DiSalvo Group, dated March 31, 2016.
- "Zoning Location Survey," Depicting Proposed Improvements, #3 Weed Circle, Stamford, Connecticut, Prepared for Merritt Construction, Services, Inc., revised January 20, 2016.
- "Existing Building Location Survey," Depicting Proposed Improvements, #3 Weed Circle, Stamford, Connecticut, Prepared for Merritt Construction, Services, Inc., revised November 19, 2015.
- "Basement Plumbing Plan," 3 Weed Circle, Stamford, Connecticut, Sheet P-1.0, by Aris Crist Architects, revised September 21, 2015.
- Correspondence from Timothy Bartolomeo, P.E., RACE, Roberge Associates, Coastal Engineers, dated March 24, 2016 and October 6, 2015.
- "EPB Planting Plan," 3 Weed Circle, Stamford, Connecticut , Sheet PP-1, by Environmental Land Solutions, LLC, revised November 30, 2015.
- "Drainage Impact Statement, Kaminsky Residence, 3 Weed Circle, Stamford, Connecticut, by Bret Holzwarth, P.E., Redniss and Mead, revised March 24, 2016.
- "Flood Evacuation and Preparedness Plan," 3 Weed Circle, Stamford, Connecticut, Prepared for Andree Kaminsky, by Redniss and Mead, dated March 24, 2016.
- "Calculations for Wave Action Analysis for New Concrete Foundation at 3 Weed Circle, Stamford, Connecticut by DiSalvo Engineering Group Structural Engineers, Inc., dated June 12, 2015.
- "Site Logistics Plan," by Merritt Construction Services, Inc., undated.

- Correspondence form Susan M. Kiskan, P.E., Stamford Engineering Bureau, dated February 24, 2016.
 - Certification of Flood Elevations, Proposed Residential Structures, Flood Hazard VE-14, by Kenneth D. Jones, revised September 16, 2013.
- 2) Submission of a performance bond, certified check or other acceptable form of surety to secure the timely and proper performance of sediment and erosion/construction controls, tree protection, drainage, landscaping, professional supervision, and certifications. A detailed estimate of these costs shall be supplied to EPB Staff for approval prior to the submission of the performance surety. The performance surety shall be submitted to EPB Staff prior to the start of any site activity and issuance of a building permit.
 - 3) Final civil, architectural and flood preparedness plans shall be subject to the review and approval of EPB Staff prior to the start of any site activity and issuance of a building permit. Matters to receive further attention may include the following:
 - All utilities penetrating the space below the MES, shall be affixed to the landward side of the proposed columns. The anticipated locations of the risers (and any required changes to the location of associated metering) shall be noted on the design drawings.
 - Final interior and exterior stair, deck, and platform details along with appropriate floodproof design/certifications. Reference is made to "Free of Obstruction Requirements" outlined in Technical Bulletin 5, dated August 2008.
 - Affix professional floodproofing certifications to the plans as required.
 - Final Engineering Bureau endorsement of the elements reflected on the revised civil drawings.
 - 4) Work areas and the limits of erosion controls shall be staked in the field by a Connecticut surveyor prior to the start of any site activity.
 - 5) Temporary erosion controls and tree protection measures shall be installed and approved in writing by EPB Staff prior to the start of any site activity.
 - 6) Upon the completion of the proposed piers/lowest horizontal members, and prior to framing/replacement of the structure, submission of an interim improvement location survey/data accumulation plan by a Connecticut surveyor to confirm the elevation of the top of the piers/lowest horizontal members, subject to the review and approval of EPB Staff.
 - 7) All disturbed earth surfaces shall be stabilized with topsoil, seed, mulch, sod, stone or other EPB approved alternatives prior to the issuance of a certificate of occupancy. This condition

applies not only to disturbed earth surfaces slated for landscaping but also to areas under any exterior decks, stairs, space under the dwelling, drives, etc.

- 8) All final grading, utilities, drainage, final stabilization measures, and other engineered elements shall be completed under the supervision of a Connecticut registered professional engineer and land surveyor with an improvement location survey (surveyor) and written certifications (engineer) submitted to EPB Staff prior to the release of surety and signature authorizing the issuance of a certificate of occupancy.
- 9) All floodproofing shall be conducted under the supervision of a professional engineer or architect registered in the State of Connecticut. Upon the completion of the construction, and prior to the release of surety and signature authorizing the issuance of a certificate of occupancy, a Connecticut registered engineer or architect shall certify (signed and sealed correspondence) that the structure and all attendant facilities have been constructed in accordance with the provisions of Section 7.1 of the Zoning Regulations ("Flood Prone Area Regulations"), and are capable of withstanding the flood depths, pressures, velocities, impact and uplift forces and other factors associated with the base flood. The letter of certification shall summarize each floodproofing measure incorporated into the building.
- 10) Upon the completion of the construction and prior to the release of surety and granting of a signature authorizing the issuance of a certificate of occupancy, a Connecticut registered professional surveyor shall:
 - Certify (signed and sealed improvement location survey) the final elevation of: i) Top of piers/bottom of lowest horizontal member, ii) lower slab level, iii) lower curb level, iv) primary floor level, v) bottom elevation of all meters, panels, and other similar devices, vi) other facilities as deemed appropriate by EPB Staff.
 - Complete a standard "National Flood Insurance Program Elevation Certificate."
- 11) All landscaping shall be implemented under the supervision of a qualified landscape professional and certified as completed (signed/lettered) prior to the issuance of a signature authorizing the granting of a certificate of occupancy and return of surety.
- 12) Prior to the release of surety, transfer of title and issuance of a signature authorizing the granting of a certificate of occupancy, the applicant shall execute and file a standard, City of Stamford "Landscape Maintenance Agreement" on the Stamford Land Records to ensure the success of the planted features.
- 13) Prior to the release of surety, transfer of title and issuance of a signature authorizing the issuance of a certificate of occupancy, the applicant shall execute and file a standard, City of Stamford "Drainage Maintenance Agreement" on the Stamford Land Records to ensure the full and proper function of all installed drainage facilities.

14) Prior to the release of surety, transfer of title and issuance of a signature authorizing the issuance of a certificate of occupancy, the applicant shall file a standard notice on the Stamford Land Records disclosing the following information.

- The subject property lies within a known flood hazard area described as Zone VE 14 feet NAVD-88" as shown on Flood Insurance Rate Map 09001C0517G, dated July 8, 2013.
- A coastal site plan review (3 Weed Circle, CSPR-990, Kamansky, 5/16) was issued by the Zoning Board of the City of Stamford to elevate and renovate an existing single family dwelling and make associated site improvements on property known to support or lie proximate to the coastal resources identified as "Coastal Flood Hazard Zone" "Modified Escarpment" and "Embayment."
- Acknowledge the existence of the revised "Flood Preparedness Plan."
- Restrictions prohibiting uses and/or modifications to the areas situated below the limits of the minimum elevation standard of 15 feet NAVD-88 as to render them inconsistent with Stamford's Flood Regulations. Specific enforcement provisions for non-compliance shall be included.

15) In-ground/above ground fuel storage tanks are prohibited given the V-Zone designation and proximity to coastal resources.

Thank you for the opportunity to comment.

Revised March 24, 2016

City of Stamford
Environmental Protection Board
Stamford Government Center
888 Washington Boulevard
Stamford, CT 06904

Attention: Mr. Richard H. Talamelli
Environmental Planner

Reference: Flood Design for Foundation
3 Weed Circle
Stamford, CT 06902
RACE Project No. 201505

Dear Mr. Talamelli:

ROBERGE ASSOCIATES COASTAL ENGINEERS, LLC ("RACE") has been retained by to review the proposed site improvements regarding their compliance with flood zone requirements per both the Stamford Municipal Code and FEMA. These improvements are depicted on the drawings entitled, "Site Development plan" prepared by Redness & Mead, dated March 24, 2016, the architectural drawings prepared by Aris Crist Architects, dated March 25, 2016, and foundation drawings prepared by The DiSalvo Engineering Group, dated 3/15/2016, and include the lifting of an existing single family dwelling and minor re-grading and landscaping.

RACE has performed an assessment of the potential impacts during a coastal flood event, performed wave loading and erosion calculations for design of the foundation of the proposed dwelling located at 3 Weed Circle in Stamford, CT. The Stamford Municipal Code requires that the proposed work not result in an increase in flood heights or negatively impact neighboring properties by reflecting waves.

The proposed activities will not result in an increase of flood heights, i.e. increase the BFE, or redirect waves or flood waters. The proposed fill will not result in an increase of flood heights, i.e. increase the BFE, or redirect waves or flood waters. **RACE** certifies that the proposed design meets the requirements of FEMA's "Free-of-Obstruction" guidelines. The proposed improvements have been designed in accordance with the "Flood Prone Area Regulations of the City of Stamford" (Section 7.1 of the Zoning Regulations) and are capable of withstanding the flood depths, pressures, velocities, impact and uplift forces and other factors associated with the base flood.

The site is exposed to coastal flooding during storm events, i.e. hurricanes and nor'easters, which impact the region. The Federal Emergency Management Agency's (FEMA) Flood Insurance Study (FIS) No. 09001CV001C date October 16, 2013 shows the 100-yr stillwater elevation (1% chance of occurrence in any given year) to be El. +10.7' (NAVD 88) (Transect 18). The site is mapped on the FEMA's Flood Insurance Rate Map (FIRM) No. 09001C0517G and dated July 8, 2013 as a Zone VE with a Base Flood Elevation (BFE) of El. 14' (NAVD 88) and Zone AE (El 14'). The BFE is the computed elevation to which flood water is anticipated to rise during the base flood (100-yr flood recurrence), and includes the effects of stillwater level (SWL), wave heights, wave runup, and wave setup.

RACE performed detailed computations to assess the potential effects that the proposed work would have on the BFE and wave reflection on neighboring properties. **RACE** employed Veri-Tech's Automated Coastal

Engineering System's (ACES) Windspeed Adjustment and Wave Growth, Linear Wave Theory to perform the analysis.

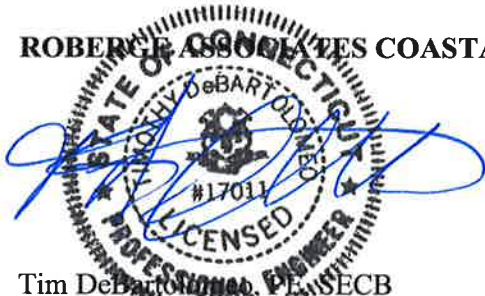
The proposed re-grading was shown to mildly decrease the wave crest elevation as the wave was propagated through the property. Wave crest elevation is primarily a function of water depth. A single transect was graphically extended through the property, running normal to the shoreline and parallel to the direction of wave propagation. The slopes and grades that are represented by this transect were used as data input to the CHAMP model to quantify wave heights and periods and to quantify any changes in the waves that could result from the site modifications. It is significant to note that the re-grading work is below the 100-yr stillwater level. Wave Runup (the maximum vertical extent of wave uprush on a beach or structure above the SWL) will be unaffected by the proposed modifications below the SWL since the site will be inundated. It is the opinion of **RACE** that there will be no increase to any flood heights or negative impacts to neighboring properties by reflecting waves due to the proposed re-grading.

The home improvements which include raising the house will also have no measurable effect on flood heights or negatively impact neighboring properties. The design grade will cause waves to break and the wave crest elevation to decrease. Since the grade will be below the 100-yr SWL, the site will be inundated and wave runup will be unaffected. The proposed improvements will also allow for more open space below the residence. No solid walls below the home are proposed. This will modify the existing condition, resulting in fewer vertical surfaces from which waves can be reflected, decreasing any potential impacts to neighboring properties due to reflected waves.

These assessments reflect the opinion of professional engineers, with extensive experience in the design and assessment of coastal structures. Should you have any questions, please contact the undersigned at 203-377-0663.

Very truly yours,

ROBERGE ASSOCIATES COASTAL ENGINEERS, LLC



Tim DeBartolo, P.E., SECB
Vice President - Structural Engineering

Drainage Impact Statement

Kaminsky Residence
3 Weed Circle, Stamford, CT
Revised March 24, 2016

The site parcel is 0.42± acres and is located on the east side of Weed Circle, a small cul-de-sac along the east side of Weed Avenue. The site is occupied by a single family residence with an associated driveway. The property is directly on the shore of Cove Pond. The property lies within the velocity zone of the regulatory 100-year flood plain, as interpreted from FEMA Flood Insurance Rate Map 09001C0517G, effective July 8, 2013. The Base Flood Elevation (BFE) for the site has been determined to be 14.0 NAVD-88.

It is proposed to raise the existing dwelling 7.3' to be above the flood hazard elevation. Construction includes removing the existing basement, raising the garage and driveway and increased stairs to access the building. Site impervious coverage will increase slightly by approximately 70sf. There is no discernable increase in peak flow leaving the site during a 25 year storm event. This small increase will not significantly impact the drainage patterns. For water quality mitigation, it is proposed to install 16LF of 12" high concrete galleries which will collect runoff from a portion of the roof and the driveway. The gallery volume can store up to approximately 1.46" of rainfall before it discharges via an area drain overflow.

The existing driveway slopes steeply down to the garage where a small drain collects runoff. The garage and basement are being removed and a slab is replacing it for car storage. The existing drain at the bottom of the driveway is being removed since it is no longer necessary. The proposed driveway is pitched towards the road and is collected via an area drain and tributary to the proposed galleries. Weed Circle roadway pitches to Weed Avenue, where it is collected via catch basins approximately 60' south of the intersection. It is then piped directly into the water.

As a water quality measure, the raised building, as well as the new stairs and deck will have gravel installed underneath to reduce erosion and scouring. A wave analysis was performed to design the columns to withstand wave action and scouring.

With proper implementation of the site development plan and sediment and erosion control measures, the proposed development will have no adverse impact on neighboring properties, coastal resources, or the downstream drainage system.



Bret D. Holzwarth, P.E.

Water Quality Volume Calculations

Project: <i>Merritt Construction</i>	Project #: 2097	Date: 3/24/2016
Location: <i>3 Weed Circle, Stamford, CT</i>	By: <i>BDH</i>	Checked: <i>BDH</i>

Treatment of Portion of Roof and Driveway

Area=	0.027	acres
Impervious Area=	0.012	acres
I=	0.444	^a
R=	0.450	^b
WQV=	0.001	ac. ft. ^c

WQV=	44.10 ft.³	
-------------	------------------------------	--

^a I=Percent Impervious Coverage

^b R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

^c WQV=(1"xRxA)/12; Water Quality Volume, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

Gallery Sizing Calculations

Project: <i>Kaminsky Residence</i>	Project #: 2097	Date: 3/24/2016
Location: <i>3 Weed Circle</i>	By: <i>BDH</i>	Checked: <i>BDH</i>

WQV Storage

12" Gallery	
Volume to Store	44.1 ft³
Interior Height	0.67 ft
Interior Width	3.5 ft
Interior Length	7.5 ft
Interior Volume	17.59 ft ³
Volume/FT	2.20 ft ³ /ft
Height Gravel Base	0.5 ft
Width Gravel Base	6 ft
Volume/Foot	3 ft ³ /ft
Gravel Void Ratio	0.40
Base Void Volume/FT	1.2 ft ³ /ft
Gravel Perimeter Height	1 ft
Gravel Perimeter Width Per Side	1 ft
Perimeter Volume/FT	2 ft ³ /ft
Perimeter Void Volume/FT	0.80 ft ³ /ft
Total Volume	4.20 ft ³ /ft
Minimum Gallery Required	10.50 ft
Number Sections Provided	2
Linear Feet Provided	16 ft
Storage Provided	67.2 ft³



Redniss & Mead

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22 FIRST STREET · STAMFORD, CONNECTICUT 06905 · (203) 327-0500

Estimated Runoff Calculations

Project: Kaminsky Residence	Project #: 1933	
Location: 3 Weed Circle	By: BDH	Date: 10/12/2015
Description: Estimated Runoff Calculations, Solved for Rainfall	Checked: BDH	Date: 10/12/2015

Storage Volume	67.2 ft ³
Area of collection	518 ft ²

Q, Runoff	1.557 in	a
-----------	----------	---

CN for Collection Area	98.0	
S, Potential Max Retention	0.2041 in	b
I _a , Initial Abstraction	0.041 in	c

P, Rainfall	0.175 in	d
	or 1.464 in	d

- a $Q = \text{Storage Volume} / \text{Area of Collection}$
- b $S = (1000/\text{CN}) - 10$; Taken from Eq. 2-4 in Chapter 2 of TR-55
- c $I_a = 0.2S$; Taken from Eq. 2-2 in Chapter 2 of TR-55
- d P=Inches of Rainfall, Derived from Eq. 2-3 in Chapter 2 of TR-55
 $Q = (P - 0.2S)^2 / (P - 0.8S)$

Flood Evacuation and Preparedness Plan

"3 Weed Circle"

STAMFORD, CT

PREPARED FOR

ANDREE KAMINSKY

Dated

March 24, 2016

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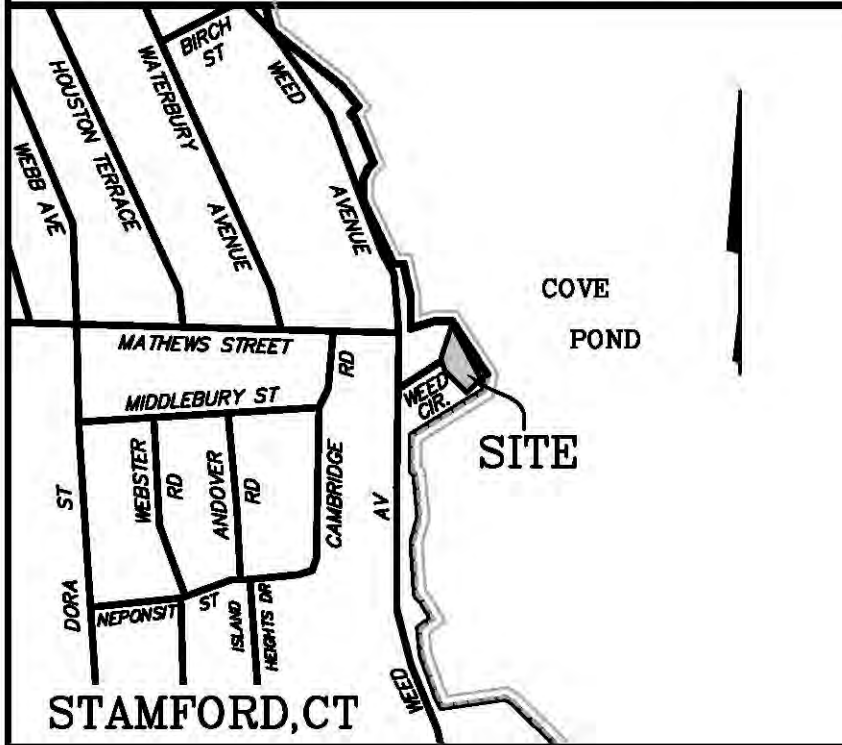
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FIGURES

- Figure 1 Site Area Inundated During a 100 Year Base Flood Event.
- Figure 2 FIRM Flood Insurance Rate Map Depicting Area Inundated During 100 Year Storm.
- Figure 3 Evacuation Route

BLOCK:150

ZONE:R-7 1/2



I. INTRODUCTION

Property Description: 3 Weed Circle is located at the eastern end of Weed Circle; roughly 150' east of Weed Avenue. The proposed improvements to the property include raising the building above flood levels. The site is approximately 0.42± acres in size and is located in the R-7.5 zone. It is located within the City of Stamford Coastal Area Management (CAM) boundary.

This Flood Preparedness and Evacuation Plan has been prepared to alert the residents at 3 Weed Circle to the nature of flooding on and around the property, to provide information to facilitate awareness and preparedness on the part of the residents, and to outline a plan so that people can safely evacuate the premises in the event of a severe flood.

Nature of Flooding: 3 Weed Circle lies within the regulatory 100-year floodplain of the Long Island Sound as established by the Federal Emergency Management Agency (FEMA). This area is illustrated on the FEMA "Flood Insurance Rate Maps" (FIRM) for the Long Island Sound, Panel No. 09001C0517G, map effective July 8, 2013. The Base Flood Elevation (BFE) for the entirety of the site has been determined to be VE 14.0. The BFE refers to the water surface elevation of Long Island Sound during the Base Flood (i.e., 100 year storm). This event, which is severe and infrequent, is defined as having a 1% chance of occurring in any given year.

The property at 3 Weed Circle is located below the BFE and is subject to inundation of floodwaters during the Base Flood. The first floor elevation of the proposed dwelling is 8.75 feet above the BFE at elevation 20.75'± (NAVD). Refer to the Site Area Inundation Exhibit, which shows the area on the property that will be subject to flooding during the 100 year Base Flood. It should be noted that Weed Circle will also be inundated with floodwaters ranging in depth from 0 to 8' deep during a 100 year Base Flood. Dry pavement can be found along the evacuation route at the intersection between Mathews Street and Waterbury Avenue.

Site Design and Permit: Several considerations have been incorporated into the design of this project to promote the health, safety and comfort of residents and their personal property during a major flood event.

- The building foundation has been designed by a professional engineer to withstand flood depths, pressures, velocities, forces and other factors associated with base flooding.
- The existing structure will be raised so that the first floor is elevated above the 500 year flood elevation for the site (i.e., at or above elevation 17.5, NAVD-88).
- The flood proofing design is in conformance with the provisions of Section 7.1 ("Flood Prone Area Regulations") of the Stamford Zoning Regulations.
- This flood preparedness plan has been prepared to inform residents of the anticipated extent of flooding on the property, and to provide a uniform method by which residents can prepare for a storm and, if necessary, evacuate the premises.
- The owner will develop and a file notice on the Stamford Land Records. This notice provides a permanent record of the flood hazard designation and acknowledges the

existence of a “Flood Preparedness Plan”.

II. FLOOD PREPAREDNESS

Awareness and Preparedness: The key to effectively reducing threats to public health and safety in flood prone areas is public awareness. Accordingly, the following is a list of suggestions in order to be best prepared in the event a flooding emergency occurs:

- The residents should maintain an updated list of critical telephone numbers such as police, fire, ambulance, doctors, pharmacies, special transportation needs, etc. This information should be kept in a prominent, easily accessible location.
- Residents should have an inventory of merchandise and property as well as flood insurance against property damage.
- Have a portable battery powered radio, a working flashlight, additional batteries, fire extinguisher, shovel, and a basic tool kit containing a hammer, screwdrivers, pliers, scissors, razor/utility knife, rope and masking tape in the house.
- Keep a supply of food that requires little cooking and no refrigeration and several containers of bottled water. It is also important to maintain a supply of paper cups, paper plates, plastic utensils, and a non-electric can opener.
- Keep adequate supplies of any special medications or dietary foods, standard first aid supplies, baby formulas and supplies, contact lenses, hearing aids (with batteries), dentures and related supplies, sanitary and toilet supplies (toilet paper, paper towels, soap, liquid detergent, feminine supplies), as well as any special provisions necessary for the maintenance of pets. Also, know where other personal items such as clothing, boots and rain gear, blankets, important documents, bank and checkbooks, and other valuable or cherished items are commonly stored. It may also be wise to keep a small amount of cash on hand as well. It is not uncommon for automatic teller machines to be out of order during a storm.
- Learn how to manually operate any garage door that is currently lifted by an electric door opener.
- Become familiar with the needs of your pets. Many smaller animals, such as fish, birds and reptiles are sensitive to changes in their environment. It is recommended that a reputable pet store or vet be consulted in advance of a storm to determine what steps can be taken to ensure survival. Also, since pets such as dogs and cats are not typically allowed into public emergency shelters, the owner should be aware of possible alternative housing arrangements for his or her animals (i.e. kennel, friend’s house,

etc.).

- Residents should familiarize themselves with both pedestrian and vehicular evacuation routes in and around the area. (Refer to subsequent section entitled "Flood Evacuation").
- The residents should periodically review the guidelines outlined in this flood preparedness plan.

Flood Warning Procedure: In the event of severe flooding, monitoring of conditions as they intensify and dissemination of appropriate emergency information will be handled through the City of Stamford Department of Emergency Communications (DEC) in conjunction with the Environmental Protection Board (EPB). In addition to flooding, the Emergency Alert System (EAS) within the DEC is responsible for the dispatch of all emergency services. Flooding conditions will be continuously monitored by the city throughout storm events so that emergency information can be updated and accordingly communicated to the public.

As part of the EAS, the City will monitor flood levels in the Long Island Sound during the storm and, when necessary, will alert appropriate media broadcasters. To receive information regarding emergency events, residents should visit the city's website at <http://www.stamfordct.gov/>, call the Emergency Information Hotline at 203-977-8840 or Citizen Services at 203-977-4140 and/or visit the City on Twitter. Broadcasts from the following list of stations will also be made available and should be monitored throughout severe storms for information regarding current flooding conditions and possible emergency evacuations:

Radio: WSTC	(1400 AM)
WGCH	(1490 AM)
Fairfield County Public Radio	(91.1 FM)
Fox Radio	(95.9 FM)
WNLK	(1350 AM)

Television: News 12 Connecticut	(Channel 12)
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If conditions continue to worsen during a flood event, residents of the dwelling may be asked to initiate action to reduce potential damages. These actions may include the following:

- Make sure there are no vehicles in front of the building or within the access drive that may impede an efficient evacuation if it becomes necessary.

- Tape windows to prevent shattering if it is anticipated that the storm will be accompanied by strong winds.
- Secure all loose objects around the property such as lawn furniture, garbage bins, potted plants, woodpiles, etc. to prevent them from washing or blowing away.
- The City of Stamford usually designates a shelter based on availability and special circumstances (traffic, weather, flooding of roads). The location of available public shelters will be broadcast over local radio and television stations.
- Be prepared to vacate the premises if an evacuation is recommended.

III. FLOOD EVACUATION:

In the event flooding conditions worsen to the degree that residents should vacate the premises and seek higher ground, the following steps are suggested:

- Do not wait until it is too late to safely evacuate. The residents should monitor the situation continuously so they can leave the premises, if necessary, *before* flood levels rise too high.
- Establish security measures (lock windows and doors) to prevent looting or vandalism.
- Vehicular Evacuation - when the option for a vehicular evacuation of the site is available, residents should proceed straight out of the driveway, heading west on Weed Circle. Turn right (north) onto Weed Avenue. Then turn left (west) onto Mathews Street. Turn right (north) onto Seaside Avenue. Continue to higher ground towards Interstate 95.
- Never drive through fast moving water or over any bridge which is inundated. Fast moving waters have been known to transfer cars and their occupants downstream - often with tragic results. Flooded bridges often seem sound; however the presence of a guardrail, street sign or other structure above flood waters does not guarantee the integrity or presence of the bridge surface.
- If your car stalls in a flooded area, abandon it immediately. Many deaths have been

attributed to occupied cars being washed downstream.

- Treat all non-working traffic lights as stop signs. Proceed cautiously at intersections.
- Pedestrian Evacuation - In the event that waters rise rapidly and there are no vehicles, persons should leave the building via the front door and proceed out onto Weed Circle. Continue to follow Weed Circle (west), then turn right (north) onto Weed Avenue. Then turn left (west) onto Mathews Street. Turn right (north) onto Seaside Avenue. Continue on Seaside Avenue (north) and proceed to higher ground.
- In the event that a safe evacuation is not possible due to high flood waters, residents are advised to move to a higher floor in the building. Bring an emergency kit, if possible, and wait for help to arrive. Residents are advised to never try to swim to safety.
- Generally, to ensure personal safety, areas of ponded/flowing water should be avoided.
- It is noted that the City of Stamford usually designates a shelter based on availability and special circumstances (traffic, weather, flooding of roads). The location of available public shelters will be broadcast over local radio and television stations.

IV. POST FLOOD:

When the flood has subsided and it has been determined safe to re-enter the building, residents may return to their property. The residents shall oversee any necessary remedial measures including the following:

- Assess any damage to the building and arrange for repair.
- If necessary, arrange any clean up which may be required, both inside the building and on the grounds.
- Secure all property that may have moved during flooding.
- Contact your insurance carrier as necessary.
- Evaluate and appropriately repair structural flood damage.

V. LIMITATIONS:

There are many limitations to any community of neighborhood flood warning system. These should be clearly understood by those operating the system and those people residing or working in the area. The major limitations are as follows:

- Rain and thunderstorms can produce intermittent and localized rainfalls with varying intensities. Because of this, it is oftentimes difficult to predict the time and height of flood crests. Also, there is the possibility that more than one flood crest will occur during a flooding situation.
- Flood flow quantities and flood flow paths are very unpredictable. Bridges or other natural stream constrictions may become blocked with debris and divert flows. New channels and directions of flow may develop, especially at stream meanders. Recent developments may also produce damages in areas previously unaffected by floods.
- Possibly the most important limitation is in the fact that the program is operated by citizens who are voluntarily committing time and property as a service to their neighborhood. Their obligation to fulfill their assigned function does not rest on any legally imposed duty, but upon a sense of moral obligation. Dangers are always present in flooding situations and no volunteer is expected to risk their life or property to potential harm.
- During an emergency, there will be some people who will panic and create problems for everyone else. This problem can be minimized through proper planning and education of all people involved.
- If the system should fail for some reason or if evacuation procedures are carried out for a storm for which there is no significant flooding to warrant the evacuation, the public may not respond adequately during the next emergency.

FIGURES

WEED CIRCLE

**PROPOSED DWELLING
FFE=20.75**

Cove Pond

Cove Pond



**SITE AREA INUNDATED
DURING BASE FLOOD (ELEV. 14.0)**

**SITE AREA INUNDATED DURING
A 100 YEAR BASE FLOOD EVENT
3 WEED CIRCLE
STAMFORD, CT**

**REDNISS
& MEAD**



MAP SCALE 1" = 500'



NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0517G

FIRM

FLOOD INSURANCE RATE MAP
FAIRFIELD COUNTY,
CONNECTICUT
(ALL JURISDICTIONS)

PANEL 517 OF 626
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:			
COMMUNITY	NUMBER	PANEL	SUFFIX
DARREN, TOWN OF STAMFORD, CITY OF	09006 090015	0517 0517	G G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

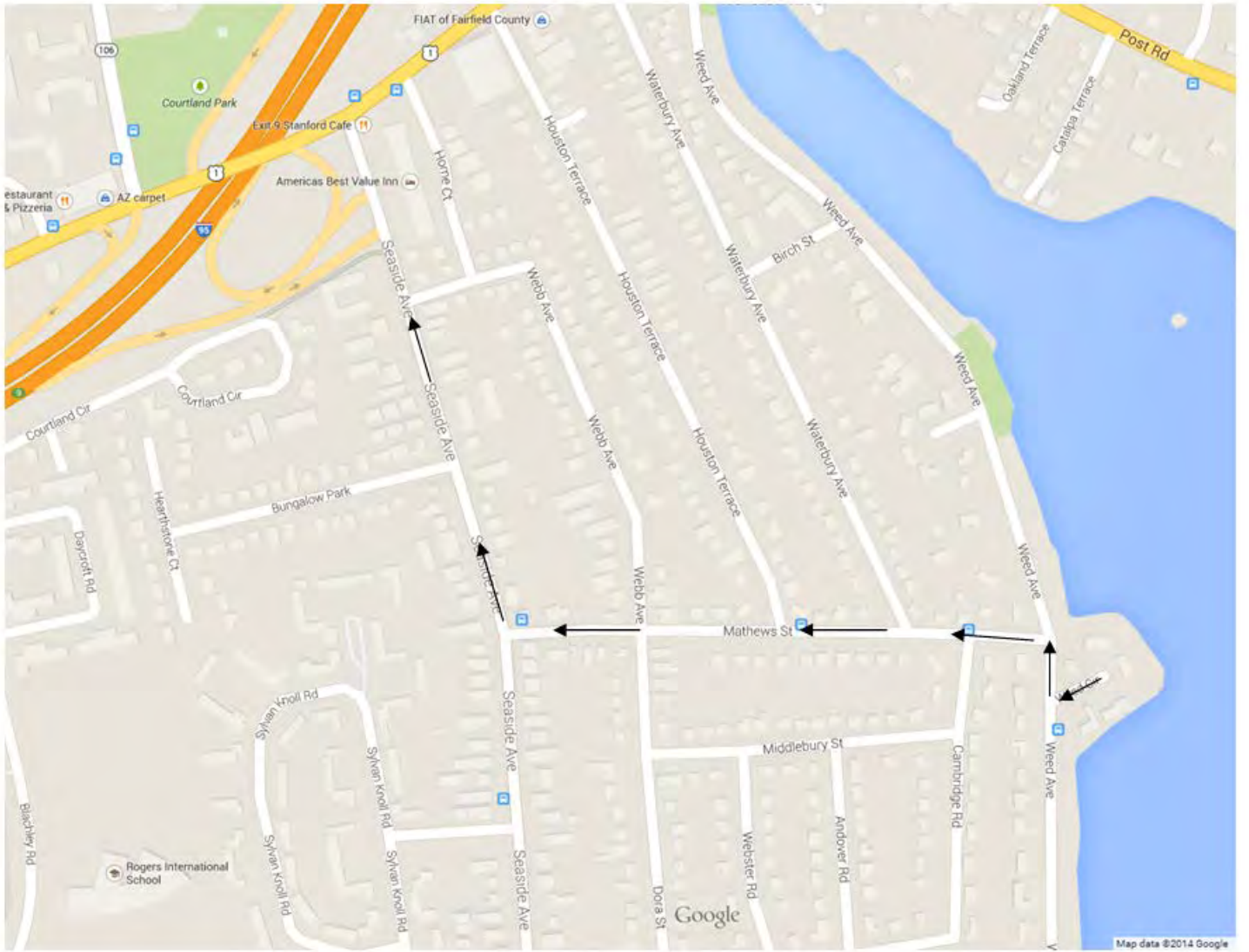


MAP NUMBER
09001C0517G
MAP REVISED
JULY 8, 2013

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov





Calculations for Wave Action Analysis
for
New Concrete Foundation
at
3 Weed Circle
Stamford, CT

Submitted by:

The Di Salvo Engineering Group
Structural Engineers, Inc.

63 Copps Hill Road

Ridgefield, CT 06877

(203) 438-9581

(203) 431-6168 fax

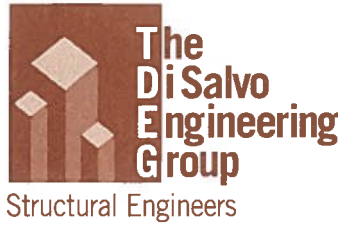
TDEG Project No. 13288.00

June 12, 2015

TABLE OF CONTENTS
STRUCTURAL CALCULATIONS

	Date	Pages
TDEG Cover Letter	6/12/15	1
Appendix:		
R.A.C.E. Calculation Package	3/3/15	1-23

63 Copps Hill Road
Ridgefield, CT 06877
Tel: (203) 438-9581
Fax: (203) 431-6168
tdeg.com



June 12, 2015

Rick Talamelli
Environmental Protection Board
888 Washington Blvd
Stamford, CT 06901

Re: Foundation Check for Wave Action
3 Weed Circle
Stamford, CT
TDEG Project No. 13288.00

Mr. Talamelli:

The purpose of this letter is to state we have reviewed the proposed concrete foundation at 3 Weed Circle in Stamford, CT, for wave action in the designated VE-14 zone. This includes the lateral forces on the above grade elements as well as the scour potential.

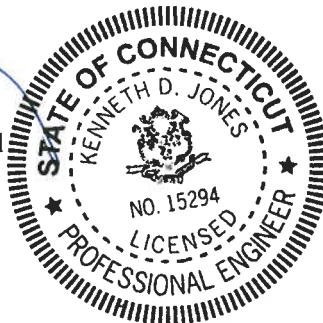
We prepared calculations and repair drawings in accordance with the structural requirements of the 2005 Connecticut State Building Code which is the 2009 International Residential Code (IRC), except as amended, altered or deleted by provisions of the 2013 Connecticut Amendments.

Roberge Associates Coastal Engineers, LLC (RACE) provided the dynamic water forces and evaluation of scour potential for the project. RACE's calculations are attached.

We are available to further discuss the structural calculations and repair drawings if required.

Sincerely,
The Di Salvo Engineering Group

Kenneth D. Jones, P.E. / Principal
CT PE Registration No. 15294
ken@tdeg.com
203-438-9581 ext. 228



Bruce D. Richardson, P.E.
Kenneth D. Jones, P.E.
H. Clay Hines, P.E.
Trevor B. Hill, P.E.

3 Weed Circle:
Wave Load Calculation

Prepared For:
The DiSalvo Engineering Group

March 3, 2015

Project No. 201505



Prepared By:



ROBERGE ASSOCIATES
Coastal Engineers, LLC

611 Access Road
Stratford, CT 06615
Tel: 203.377.0663
Fax: 203.375.6561

Outline:

Wave Load Calculation

- I) Purpose
- II) Water Surface Variations
- III) Site Exposure
- IV) Wind Speed for Design
- V) Design Wave
- VI) Scour Potential
- VII) Load Calculation
- VIII) References

Attachment A: CEM Calculations

Attachment B: Load Diagrams

I) **Purpose:** To develop potential scour and wave loads at and around proposed foundations at 3 Weed Circle in Stamford, CT.

II) **Water Surface Variations:**
 1% Annual Chance Stillwater Elevation (SWL) = 10.7' NAVD 88
 1% Annual Chance total water level (TWL)= 11.5' NAVD 88
 (FEMA FIS No. 09001CV001C October 16, 2013)

Note: TWL = SWL + Wave Setup

III) **Site Exposure:** The site located on Holly Pond is exposed from approximately N-30°-W to (clockwise) S.

Bearing (deg)	Fetch Length (ft)	Bearing (deg)	Fetch Length (ft)
330	2390	80	1960
340	1680	90	2460
350	1330	100	3110
0	1310	110	3880
10	1260	120	2810
20	1110	130	2630
30	1000	140	2670
40	1030	150	2310
50	1220	160	1880
60	1500	170	1360
70	1760	180	1220

IV) **Wind Speed for Design:**

- 50-yr, 3-second gust at 33', $U_{50-yr,3-sec} = 105$ MPH (CT Building Code 2009 Amendment – Appendix K)
- Conversion factor to 100-yr, 3-second gust at 33', $U_{100-yr,3-sec}$ is 1.07 (ASCE 7-05 – Table C6-7)

$$U_{100-yr,3-sec} = 105 \text{ mph} * 1.07 = 112.4 \text{ mph}$$

- V) **Design Wave:** The Fetch Radials and Wind Speed were input into ACES 4.02 *Wind Speed & Wave Growth* Application (See Below).

Computed Wave:

Case: Windspeed						
Windspeed Adjustment and Wave Growth						
Breaking criteria		0.780				
Item	Value	Units	Wind Obs Type		Wind Fetch Options	
El of Observed Wind (Zobs)	33.00	feet	Shore (windward)		Deep restricted	
Observed Wind Speed (Uobs)	112.35	mph	Restricted Fetch Geometry			
Air Sea Temp. Diff. (dT)	0.00	deg F	#	Fetch Angle (deg)	Fetch Length (feet)	
Dur of Observed Wind (DurO)	3.00	sec	1	330.00	2390.00	
Dur of Final Wind (DurF)	1.00	hours	2	340.00	1680.00	
Lat. of Observation (LAT)	41.00	deg	3	350.00	1330.00	
Results			4	0.00	1310.00	
Wind Fetch Length (F)	3545.40	FEET	5	10.00	1260.00	
Wind Direction (WDIR)	110.00	deg	6	20.00	1110.00	
Eq Neutral Wind Speed (Ue)	66.91	mph	7	30.00	1000.00	
Adjusted Wind Speed (Ua)	111.05	mph	8	40.00	1030.00	
Mean Wave Direction (THETA)	109.00	deg	9	50.00	1220.00	
Wave Height (Hmo)	2.56	feet	10	60.00	1500.00	
Wave Period (Tp)	2.82	sec	11	70.00	1760.00	
Wave Growth: Deep			12	80.00	1960.00	
			13	90.00	2460.00	
			14	100.00	3110.00	
			15	110.00	3880.00	
			16	120.00	2810.00	
			17	130.00	2630.00	
			22	180.00	1220.00	

$$H_{mo} = 2.56'$$

$$T_p = 2.82 \text{ Sec}$$

1. 1st Row of Piles:

Depth Limited Wave (at 1st row of piles grade = El. +7):

$$H_{dl} = 0.78(d) = 0.78(swl - grade) = 0.78(10.7 - 7) = 2.9'$$

Wave Breaking:

$$H_{dl} > H_{mo} \therefore \text{wave is not breaking \& wave setup} = 0$$

Wave Setup: No wave breaking, wave setup = 0

Wave Height for Analysis (H) = 2.56'

2. 2nd Row of Piles

Depth Limited Wave (at 2nd row of piles grade = El. +9):

$$H_{dl} = 0.78(d) = 0.78(\text{swl} - 9) = 0.78(10.7 - 9) = 1.33'$$

Wave Breaking:

$$H_{dl} < H_{mo} \therefore \text{wave is breaking}$$

Wave Setup: wave setup = TWL - SWL = 11.5' - 10.7' = 0.8'

$$H_{dl2} = 0.78(d) = 0.78(\text{TWL} - 9) = 0.78(11.5 - 9) = 1.95'$$

$$H_{dl2} < H_{mo} \therefore \text{use } H_{dl2} \text{ for analysis}$$

Wave Height for Analysis (H) = 1.95'

3. 3rd Row of Piles

Depth Limited Wave (at 3rd row of piles grade = El. +11):

Since grade is above SWL, but below TWL use TWL

$$H_{dl} = 0.78(d) = 0.78(\text{TWL} - 9) = 0.78(11.5 - 11) = 0.39'$$

Wave Breaking:

$$H_{dl} < H_{mo} \therefore \text{wave is breaking \& use } H_{dl} \text{ for analysis}$$

Wave Height for Analysis (H) = 0.39'

VI) Scour Potential:

The site is characterized by a seawall with a residential dwelling beyond it. Boring logs performed by Soiltesting, Inc. show the upper layer of the soil to be gravel & sand.

Vertical Wall:

Scour can be approximated by the height of the wave at the wall (Coastal Construction Manual, 2011). Since $H_{dl} > H_{mo}$, wave does not break & H_{mo} is the controlling wave height.

Scour Potential = 2.6'

Pile:

Scour potential around piles varies based upon pile diameter & pile shape. The table below gives scour potential for round & square piles that are 6", 12", 18", & 24" wide:

Pile Diameter (in)	Round Pile Scour Potential (ft)	Square Pile Scour Potential (ft)
6	0.9	1.0
12	1.5	1.6
18	1.9	2.1
24	2.3	2.5

VII) Load Calculation:

1. Pile Loads:

Check slenderness:

If wavelength, $\lambda > 5D$, member is slender and Morison's Equation is applicable (DNV 1991).

$$\left(\frac{2\pi}{t}\right)^2 = g \left(\frac{2\pi}{\lambda}\right) \tanh\left(\frac{2\pi}{\lambda} d\right) \quad (\text{Dean \& Dalrymple 1991})$$

t = Wave period = 2.82 sec

g = acceleration due to gravity = 32.2 ft/sec²

λ = wave length

d = water depth = swl – grade = 10.7-7 = 3.7'

$\lambda = 28' \therefore$ Pile < 5.6' considered slender & Morison Equation is valid.

18" Square Pile (grade El. +7'):

Gravity = 32.2 ft/sec²

Mass density of water = 1.99 slugs/ft³

Pile diameter (D) = $(\sqrt{1.5'^2 + 1.5'^2}) = 2.1$ ft (Take largest projected face (DNV 1991)

Drag coefficient (C_D) = 1.51 (DNV 1991)

Inertia coefficient (C_m) = 1.71 (DNV 1991)

Wave period (T) = 2.82 sec

Wave height (H) = 2.56 ft

Water depth (d) = 3.7 ft

Scout depth (S_m) = 2.1 ft

F_{max} = 340 lb @ El. + 9.5' NAVD 88 (See CEM Calc & Load Diagram Attached)

18" Square Pile (grade El. +9'):

Gravity = 32.2 ft/sec²

Mass density of water = 1.99 slugs/ft³

Pile diameter (D) = $(\sqrt{1.5'^2 + 1.5'^2}) = 2.1$ ft (Take largest projected face (DNV 1991))

Drag coefficient (C_D) = 1.51 (DNV 1991)

Inertia coefficient (C_m) = 1.71 (DNV 1991)

Wave period (T) = 2.82 sec

Wave height (H) = 1.95 ft

Water depth (d) = 2.5 ft

Scout depth (S_m) = 2.1 ft

F_{max} = 215 lb @ El. + 10.7' NAVD 88 (See CEM Calc & Load Diagram Attached)

18" Square Pile (grade El. +11'):

Gravity = 32.2 ft/sec²

Mass density of water = 1.99 slugs/ft³

Pile diameter (D) = $(\sqrt{1.5'^2 + 1.5'^2}) = 2.1$ ft (Take largest projected face (DNV 1991))

Drag coefficient (C_D) = 1.51 (DNV 1991)

Inertia coefficient (C_m) = 1.71 (DNV 1991)

Wave period (T) = 2.82 sec

Wave height (H) = 0.39 ft

Water depth (d) = 0.5 ft

Scout depth (S_m) = 2.1 ft

F_{max} = 20 lb @ El. + 11.3' NAVD 88 (See CEM Calc & Load Diagram Attached)

6x6 Square Pile (grade El. +7'):

Gravity = 32.2 ft/sec²

Mass density of water = 1.99 slugs/ft³

Pile diameter (D) = $(\sqrt{0.46'^2 + 0.46'^2}) = 0.65$ ft (Take largest projected face (DNV 1991))

Drag coefficient (C_D) = 1.51 (DNV 1991)

Inertia coefficient (C_m) = 1.71 (DNV 1991)

Wave period (T) = 2.82 sec

Wave height (H) = 2.56 ft

Water depth (d) = 3.7 ft

Scout depth (S_m) = 1.0 ft

F_{max} = 105 lb @ El. + 9.5' NAVD 88 (See CEM Calc & Load Diagram Attached)

2. Vertical Wall (grade El. +7', TOW El. +11', 2.6' scour)

Gravity = 32.2 ft/sec²

Mass density of water = 1.99 slugs/ft³

Wave Height (H) = 2.56

Water Depth at 5H from wall (h_b) = 3.7' + 2.6' = 6.3'

Water depth at fronting of structure (d) = 6.3'

Height of structure above SWL (h_c) = TOW - SWL = 11' - 10.3' = 0.3'

Vertical wall height (h_w) = 6.6'

Water depth at toe fronting structure (h_s) = 6.3'

Wave Period = 2.82 sec

Design Factor = 1.8 (CEM)

Modification factors = 1 (CEM)

$P_1 = 207 \text{ lb/ft}^2 @ \text{El.} + 10.7'$

$P_2 = 198 \text{ lb/ft}^2 @ \text{El.} + 11'$

$P_3 = P_u = 117 \text{ lb/ft}^2 @ \text{El.} + 4.4'$

$P_{\text{hydro}} = 64.2 \text{ lb/ft}^3(\text{swl-grade}) = 64.2 \text{ lb/ft}^3(10.7-4.4) = 404 \text{ lb/ft}^2$

(See CEM Calc & Load Diagram Attached)

Note: 18" square columns on top of wall are at El. +11', apply pile loads with grade @ El. + 11 to these columns.

VIII) References:

1. Federal Emergency Management Agency (FEMA), "Flood Insurance Study – Fairfield County, Connecticut (All Jurisdictions)." No. 09009CV001C. October 16, 2013.
2. State of Connecticut, 2005 Building Code. Effective December 31, 2005.
3. State of Connecticut, 2005 Connecticut Supplement, 2009 Amendment.
4. American Society of Civil Engineers (ASCE), "Minimum Design Loads for Buildings and Other Structures." ASCE 7-05. 2006.
5. Veri-Tech, "Automated Coastal Engineering System (ACES)" in "Coastal Engineering Design & Analysis System (CEDAS)." Version 4.03. 2013.
6. Federal Emergency Management Agency (FEMA), "Coastal Construction Manual." Fourth Edition. Volume 1. August 2011.
7. Dean & Dalrymple, "Water Wave Mechanics for Engineers and Scientists." 1991.
8. Det Norske Veritas (DNV), "Environmental Conditions and Environmental Loads." Classification Notes No. 30. 5. March 1991.

DiSalvo Engineering Group
March 3, 2015

Calculated by: JAP
Checked by: TD

Attachment A: CEM Calculations

GRADE DEL +7' - 18" SQ FILE

Equations VI-5-281 to 5-304 Forces on piles using linear wave theory		
Input Parameter	Value	Units
Pile diameter (D)	2.1	ft
Drag coefficient (CD)	1.51	
Inertia coefficient (CM)	1.71	
Wave period (T)	2.82	sec
Wave height (H)	2.56	ft
Water depth (d)	3.7	ft
Scour depth (SM)	2.1	ft
Deepwater wavelength (Lo)	40.7188	ft
Wavelength (L)	27.8268	ft
Si	0.527186	
Sd	0.555101	
n	0.825785	
Maximum Component Forces		
FiMax	331.527	lbf
FDMax	166.227	lbf
Maximum Component Moments		
MiMax	646.672	ft-lbf
MDMax	341.41	ft-lbf
Maximum Force	331.528	lbf
Maximum Moment	647.623	ft-lbf
Nonlinear Wave Theory		
W parameter	0.928963	
D/(gT ²)	0.0144619	
H/(gT ²)	0.0100061	
φ _m	0.255	
α _m	0.175	
Max. force	339.103	lbf
Max. moment	861.057	ft-lbf

← NONLINEAR > LINEAR
∴ USE NONLINEAR
CASE

Moment arm	2.53922	
Modified max. total moment	1573.17	ft-lbf

GARAPUDES + 9' = 18" SO PILE

Equations VI-5-281 to 5-304
 Forces on piles using
 linear wave theory

Input Parameter	Value	Units
Pile diameter (D)	2.1	ft
Drag coefficient (CD)	1.51	
Inertia coefficient (CM)	1.71	
Wave period (T)	2.82	sec
Wave height (H)	1.95	ft
Water depth (d)	2.5	ft
Scour depth (SM)	2.1	ft
Deepwater wavelength (Lo)	40.7188	ft
Wavelength (L)	23.6576	ft
Si	0.517594	
Sd	0.53556	
n	0.87852	
Maximum Component Forces		
FiMax	214.694	lbf
FDMax	96.4476	lbf
Maximum Component Moments		
MiMax	277.811	ft-lbf
MDMax	129.134	ft-lbf
Maximum Force		
Maximum Force	214.694	lbf
Maximum Moment		
Maximum Moment	277.811	ft-lbf
Nonlinear Wave Theory		
W parameter	1.21956	
D/(gT ²)	0.00977159	
H/(gT ²)	0.00762184	
φ _m	0.255	
α _m	0.175	
Max. force	196.753	lbf
Max. moment	337.567	ft-lbf

← LINEAR > NONLINEAR
 ∴ USE LINEAR CASE

Moment arm	1.71569
Modified max. total moment	750.748 ft-lbf

GRADE @ EL + 11' - 18" sea pile

Equations VI-5-281 to 5-304
Forces on piles using
linear wave theory

Input Parameter	Value	Units
Pile diameter (D)	2.1	ft
Drag coefficient (CD)	1.51	
Inertia coefficient (CM)	1.71	
Wave period (T)	2.82	sec
Wave height (H)	0.39	ft
Water depth (d)	0.5	ft
Scour depth (SM)	2.1	ft
Deepwater wavelength (Lo)	40.7188	ft
Wavelength (L)	11.1646	ft
Si	0.503273	
Sd	0.506563	
n	0.974551	
Maximum Component Forces		
FiMax	20.264	lbf
FDMax	3.8579	lbf
Maximum Component Moments		
MiMax	5.09916	ft-lbf
MDMax	0.977135	ft-lbf
Maximum Force	20.264	lbf
Maximum Moment	5.09916	ft-lbf
Nonlinear Wave Theory		
W parameter	6.09781	
D/(gT ²)	0.00195432	
H/(gT ²)	0.00152437	
φ _m	0.255	
α _m	0.175	
Max. force	7.87012	lbf
Max. moment	2.70053	ft-lbf

← LINEAR > NONLINEAR
∴ USE LINEAR CASE

Moment arm	0.343137	
Modified max. total moment	19.2278	ft-lbf

6x6 PILE, SQ, CALADK EC = 17

Equations VI-5-281 to 5-304
Forces on piles using
linear wave theory

Input Parameter	Value	Units
Pile diameter (D)	0.65	ft
Drag coefficient (CD)	1.51	
Inertia coefficient (CM)	1.71	
Wave period (T)	2.82	sec
Wave height (H)	2.565	ft
Water depth (d)	3.7	ft
Scour depth (SM)	1	ft
Deepwater wavelength (Lo)	40.7188	ft
Wavelength (L)	27.8268	ft
Si	0.527186	
Sd	0.555101	
n	0.825785	
Maximum Component Forces		
FiMax	31.8239	lbf
FDMax	51.6524	lbf
Maximum Component Moments		
MiMax	62.0754	ft-lbf
MDMax	106.088	ft-lbf

Maximum Force	56.5542 lbf
Maximum Moment	115.14 ft-lbf
Nonlinear Wave Theory	
W parameter	0.286976
D/(gT ²)	0.0144619
H/(gT ²)	0.0100256
ϕ_m	0.255
α_m	0.175
Max. force	105.371 lbf
Max. moment	267.56 ft-lbf
Moment arm	2.53922
Modified max. total moment	372.931 ft-lbf

← Nonlinear > Linear
 ∴ use Nonlinear case

LOAD ON VERTICAL WALL

Table VI-5-53 / Equations VI-5-147 to 5-151
Goda formula for
irregular waves

Input Parameter	Value	Units
Gravity	32.1719	ft/sec ²
Mean density of water (ρ_w)	1.98902	slugs/ft ³
Angle of incidence (β)	0	deg
Significant wave height (H_s)	2.56	ft
Water depth at 5 H_s from breakwater front wall (h_b)	6.3	ft
Water depth to berm fronting structure (d)	6.3	ft
Height of structure above swl (h_c)	0.3	ft
Water depth at toe fronting structure (h_s)	6.3	ft
Design factor	1.8	
Significant wave period (T_s)	2.82	sec
Modification factor (λ_1)	1	
Modification factor (λ_2)	1	
Modification factor (λ_3)	1	
H_{design}	4.608	ft
Deepwater wavelength (L_o)	40.7188	ft
Wavelength at depth h_b (L)	33.6471	ft
α^*	0	
α_1	0.701959	
α_2	0	

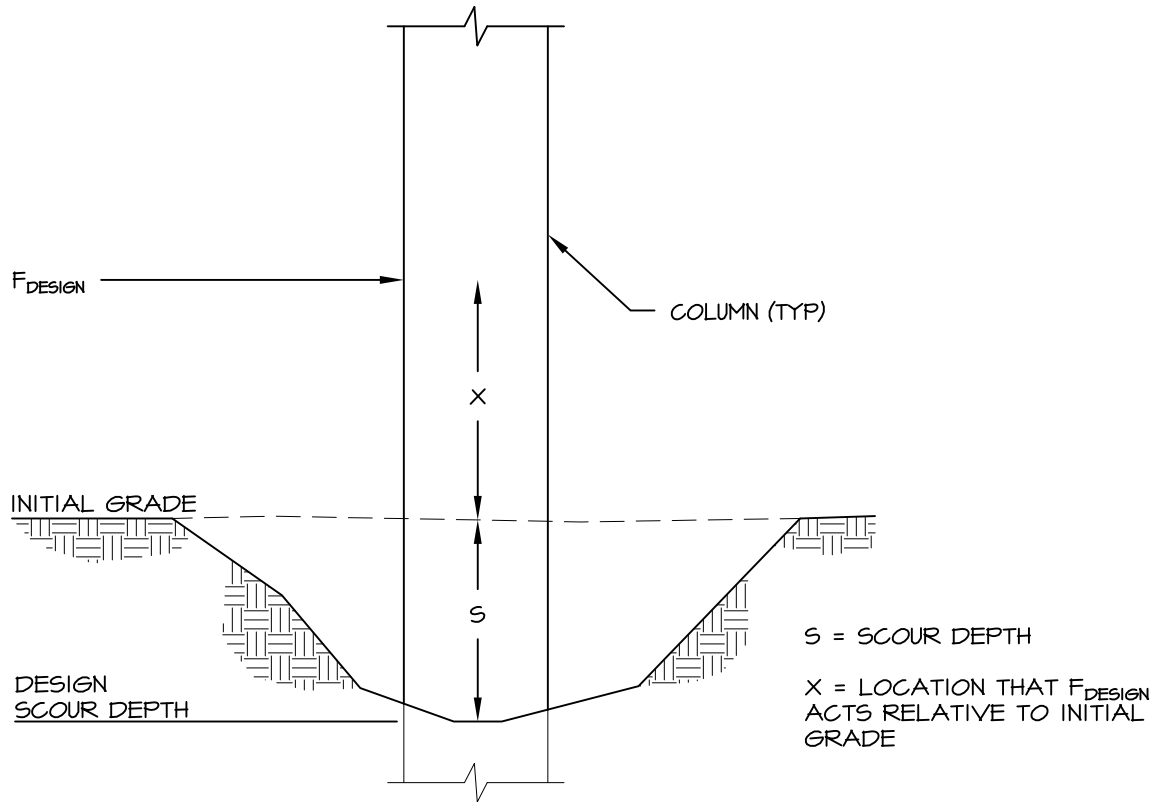
α_3	0.563189
η^*	6.912 ft
p_1	206.986 lbf/ft ²
p_2	198.002 lbf/ft ²
p_3	116.572 lbf/ft ²
p_u	116.572 lbf/ft ²

DiSalvo Engineering Group
March 3, 2015

Calculated by: JAP
Checked by: TD

Attachment B: Load Diagrams

NOTE: LOADS ARE NOT FACTORED




WAVE LOAD & SCOUR DIAGRAM

WAVE LOAD SUMMARY				
PILE TYPE	INITIAL GRADE EL (FT NAVD)	F_{DESIGN}	S	X
18" SQUARE	+7'	340 lb	2.1'	2.5'
18" SQUARE	+9'	215 lb	2.1'	1.7'
18" SQUARE	+11'	20 lb	2.1'	0.3'
6X6	+7'	105 lb	1.0'	2.5'

NOTE: SCOUR DEPTH ASSUMED TO BE CONSTANT FOR PILES OF SIMILAR DIAMETER SINCE SCOUR ON FIRST ROW OF PILES IS PRIMARILY GOVERNED BY CURRENT SPEEDS WHICH DO NOT DECREASE WITH CHANGE IN GRADE EL AS OPPOSED TO WAVE HEIGHTS WHICH DO

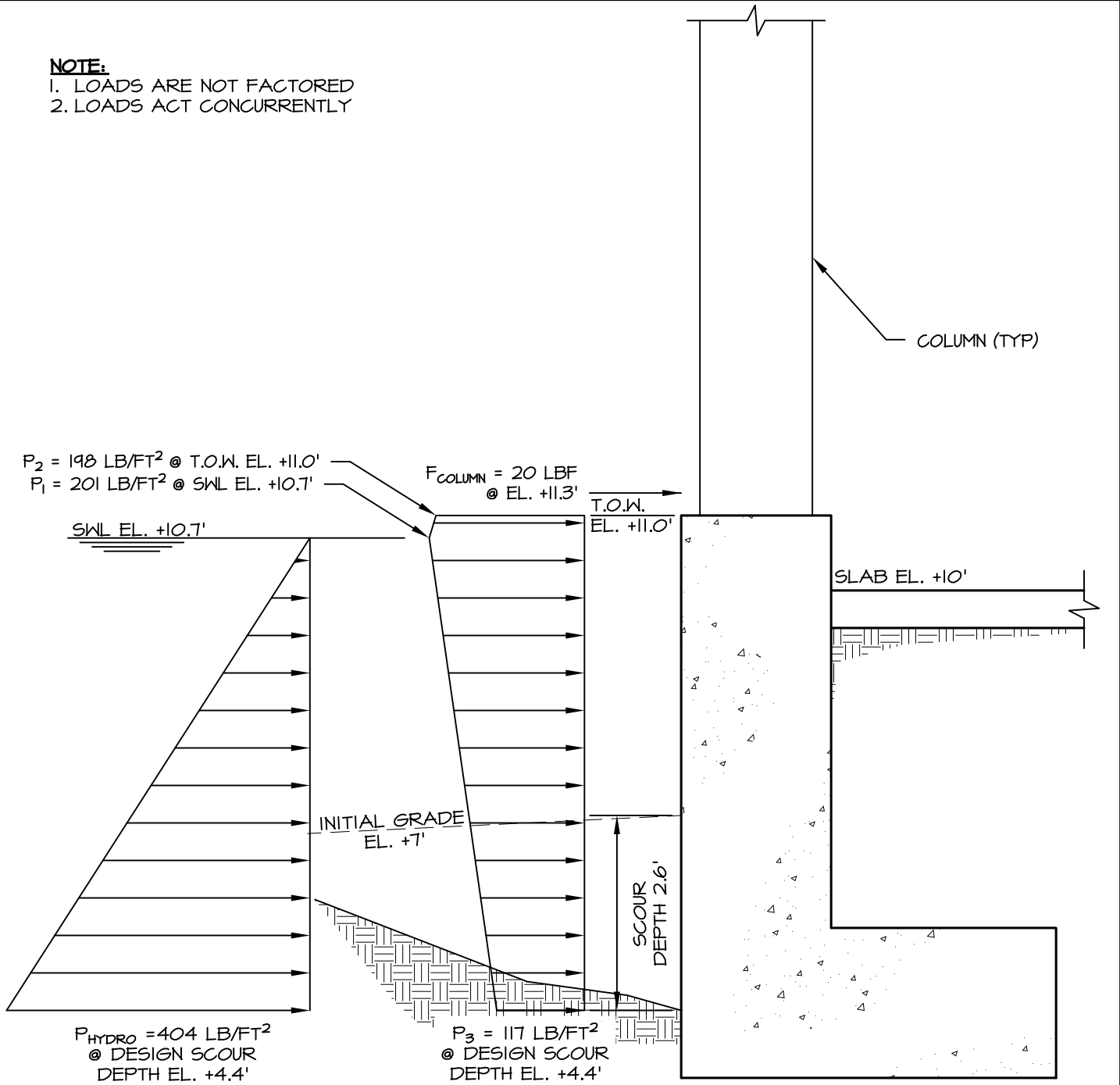
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DRAWN BY: JAP	SEAL:	PROJECT:	 <p>ROBERGE ASSOCIATES Coastal Engineers, LLC</p> <p>611 Access Road Tel: 203-377-0663</p> <p>Stratford, CT 06615 www.racellc.com</p>
CHECKED BY: TD		3 WEED CIRCLE WAVE LOAD ANALYSIS	
DATUM: NAVD 88		CLIENT	
SCALE: 1" = 2'		THE DISALVO ENGINEERING GROUP	
DATE: 03/03/2015			
REV:			
PROJECT #: 201505	NOT VALID WITHOUT ENGINEER'S SEAL		DRAWING 1 OF 2

NOTE:


1. LOADS ARE NOT FACTORED
2. LOADS ACT CONCURRENTLY



WAVE LOAD & SCOUR DIAGRAM

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NOT FOR CONSTRUCTION FOR CLIENT REVIEW ONLY

DRAWN BY: JAP	SEAL:	PROJECT:	
CHECKED BY: TD		3 WEED CIRCLE WAVE LOAD ANALYSIS	
DATUM: NAVD 88		CLIENT	ROBERGE ASSOCIATES Coastal Engineers, LLC
SCALE: 1" = 2'		THE DISALVO ENGINEERING GROUP	611 Access Road Tel: 203-377-0663
DATE: 03/03/2015			Stratford, CT 06615 www.racellc.com
REV:			
PROJECT #: 201505	NOT VALID WITHOUT ENGINEER'S SEAL		DRAWING 2 OF 2



Site Logistics Plan
DOH Project #2097
3 Weed Circle, Stamford, CT 06902

This logistics plan has been prepared prior to construction activities. Modifications or additions to this plan may be later identified. It will be the responsibility of the General Contractor to modify the plan and seek approval from the city of Stamford prior to progressing with changes.

1. Prepare site for construction activities

- a. Remove dry laid slate walkway.
- b. Remove front hedge section to allow site access.
- c. Install silt fencing, track pad, tree protection, etc as defined on SE-1.
- d. Remove all landscaping as required for access directly adjacent to home.
- e. Detach utilities.
- f. Install temp utilities.
- g. Install Port-o-let.

2. Prepare home for elevation

- a. Detach all mechanical appliances within the home and re-locate for re-use.
- b. Verify footers as detailed in structural plans.
- c. Remove top of foundations in areas identified on site by lifter to allow access for beams.
- d. Install steel support beams for lifting.

3. Elevate home

- a. Hydraulically elevate home installing cribbing as required.

4. Construction of new foundation

- a. Remove existing foundation as defined in structural drawings.
- b. Install new foundation as defined in structural drawings.
- c. Lower home onto new foundation.

5. General Construction activities

- a. Complete construction activities as defined in design drawings.

6. Site restoration

- a. Grade and finish site as defined in civil drawings.
- b. Install all structural and non-structural items as defined in design drawings.
- c. Install landscape as designed.
- d. Remove site controls.

CERTIFICATION* OF FLOOD ELEVATIONS
PROPOSED RESIDENTIAL STRUCTURES

Flood Hazard Zones VE-14

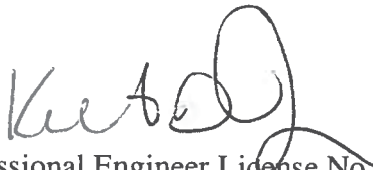
I, Kenneth D. Jones of the Di Salvo Engineering Group hereby certify* that the proposal by Andree Kaminsky for raising the existing dwelling and construction of a small addition which will be located at 3 Weed Circle, Stamford, CT within flood hazard zone VE-14 as designated by the Federal Emergency Management Agency (FEMA) as shown on the Flood Insurance Rate Map (FIRM) (panel #517 of 626, Map # 090015C0517G) revised July 8, 2013, will have the lowest floor elevated to 20.75/22.00 (NAVD-88) which is above or the base flood level of 14.0 as designated on the above referenced map. This certification* must be verified by a survey performed by a surveyor licensed in the State of Connecticut after construction has been completed.

Furthermore, I hereby certify* that the flood-proofing methods are designed in accordance with the "Flood Prone Area Regulations of the City of Stamford" (Section 7.1 of the Zoning Regulations) and are capable of withstanding the flood depths, pressures, velocities, impact and uplift forces and other factors associated with the base flood as defined in *ASCE/SEI 07-02 Minimum Design Loads for Buildings and other Structures* referenced in the 2003 International Building Code for One- and Two-Family Dwellings Portion of the 2005 State Building Code of Connecticut.

Additionally, I hereby certify* that the building is designed to be adequately anchored to prevent floatation, collapse or lateral movement of the structure for the pressures and forces defined above and will be constructed with materials resistant to flood damage as defined in *ASCE/ SEI 24 - 05 Flood Resistant Design and Construction* referenced in the 2003 International Building Code for One- and Two-Family Dwellings Portion of the 2005 State Building Code of Connecticut.

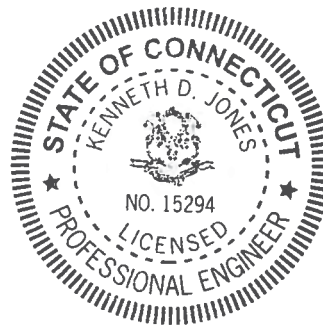
* Certify/ Certification means to submit a professional opinion/ a professional opinion and shall not be interpreted to mean otherwise.

Signature:



Conn. Professional Engineer License No. 15294

(Refer to Section 118-1100 Flood Hazard Zone)



REVISED 9/16/13

Appendix D

Contractor Bid Submission Checklist

CONTRACTOR BID SUBMISSION CHECKLIST (for Bidder's Use)
PROJECT #2097, KAMINSKY RESIDENCE

- BID FORM/ACKNOWLEDGMENT OF BIDDER COMPLETE ()**
- BID SECURITY - IRREVOCABLE LETTER OF CREDIT ()**
- FORM OF NON-COLLUSIVE AFFIDAVIT ()**
- BIDDER'S CERTIFICATION OF ELIGIBILITY ()**
- CERTIFICATION OF GENERAL BIDDERS ()**
- CERTIFICATION OF SUB-BIDDERS (IF ANY) ()**
- BID BOND ()**
- PERFORMANCE AND PAYMENT BOND ()**
- CERTIFICATE AS TO CORPORATE PRINCIPAL ()**
- SUBCONTRACTOR IDENTIFICATION ()**
- CERTIFICATION OF BIDDER REGARDING EEO ()**
- SUBCONTRACTOR CERTIFICATION REGARDING EEO ()**
- CERTIFICATION OF BIDDERS REGARDING SECTION 3 ()**
 - Contractor Section 3 Plan Format ()**
 - Table A ()**
 - Table B ()**
- CONTRACTOR BID BREAKDOWN ()**
- CONTRACT WORK SCHEDULE ()**
- ACKNOWLEDGEMENT OF ADDENDA ()**
- SPECIFICATION-REQUIRED BID SUBMISSIONS**
 - N/A ()**
 - ABATEMENT WORK PLANS ()**
 - OTHER ()**