



TOWN OF HAMDEN

CONNECTICUT

TOWN OF HAMDEN INVITATION TO BID BID #2816 Salt Shed Foundation

The Town of Hamden is publicly seeking competitive bids from qualified companies for the above-referenced work at Town Center Park, Hamden CT.

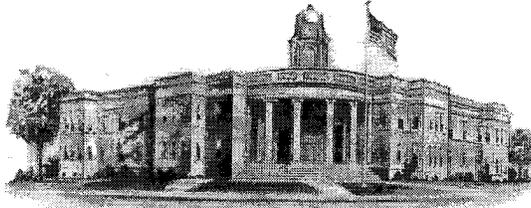
Sealed proposals (1 original and 3 copies) will be received at the Finance Office to be held in the Purchasing lock box until **11:00 A.M. on July 28, 2016** at which time they will be publicly opened and read aloud. Bids received after the time set will be considered informal and will be rejected.

It is the sole responsibility of the bidder to see that the bid is in the hands of the proper authority prior to the bid opening time.

Specifications for this Bid/RFP may be downloaded at www.biznet.ct.gov or a PDF version may be obtained by e-mailing a request to purchasing@hamden.com or may be obtained at the Purchasing Office, Hamden Government Center 2750 Dixwell Avenue, Hamden, CT between the hours of 8:30 A.M. and 4:30 P.M., Telephone (203) 287-7110.

The Town of Hamden reserves the right to accept or reject any or all options, bids, or proposals, to waive any technicality in a bid or part thereof submitted, and to accept the bid deemed to be in the best interest of the Town of Hamden.

Philip W. Goodwin
Purchasing Agent



**TOWN OF HAMDEN
CONNECTICUT
ENGINEERING DEPARTMENT**

PROJECT MANUAL

**CAST IN PLACE CONCRETE
SALT SHED FOUNDATION**

**PUBLIC WORKS FACILITY
1125 SHEPARD AVENUE
HAMDEN, CONNECTICUT**

AUGUST 2016

BID No. 2816

Honorable Curt Balzano Leng, Mayor

Craig Cesare, Director of Public Works

**CAST IN PLACE
SALT SHED FOUNDATION
1125 SHEPARD AVENUE
HAMDEN, CONNECTICUT**

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NOTICE TO BIDDERS

The Town of Hamden is seeking responses from qualified vendors to construct a concrete floating foundation system to support a 65' x 125' fabric/membrane type Salt Storage Building to be located at our Public Works facility at 1125 Shepard Avenue, Hamden, CT.

Sealed bids marked "Salt Storage Building Foundation" will be received by the Town of Hamden Finance Department, 2750 Dixwell Avenue, Hamden, CT 06518

Submissions will be received no later than July 28, 2016 at 11:00 a.m. EDT. Bids received after that time will be rejected.

Contractors may make an appointment to visit the site during our normal operating hours by calling Mr. Craig Cesare, Director of Public works at 203.287.2600. Visitors will not be permitted to inspect the site without a prior arranged appointment.

Bid package, including specifications and forms on which bids must be submitted may be obtained from the Town of Hamden Purchasing Department, 2750 Dixwell Avenue, Hamden, CT 06518.

Each Respondent, by making their bid, represents that they have read and understand the bid documents. The Town reserves the right to reject any and all bids not deemed to be in the best interests of the Town of Hamden.

Any questions about this invitation to bid must be in writing and addressed to:

Philip W. Goodwin, Purchasing at 2750 Dixwell Avenue, Hamden, CT 06518. or the E-mailed to purchasing@Hamden.com on or before July 21, 2016. All responses will be made via addendum and sent to all vendors at least three days prior to the scheduled bid due date.

INFORMATION FOR BIDDERS

PROJECT OVERVIEW

Base Bid shall be for the construction of a cast in place concrete foundation system to support a 65' x 125' fabric/membrane type salt storage building and shall also include the site preparation and the formation of a laydown area for the superstructure.

A separate contract has been issued for a 65' x 125' fabric/membrane type salt storage structure. Contractor will supply all materials, labor & equipment required for construction.

The Contractor will provide a prepared site, including all excavation, compaction and backfill. The proposed foundation structure will provide for an (8) Ft. tall exposed wall capable of supporting the loading of salt, sand or other related construction materials stored in the facility.

The Contractor shall also bid for Add Alternates 1 & 2 the town may elect to complete these tasks using town forces if estimated price is more than appropriated.

Contractor will be required to obtain a building permit for this structure. The Town will waive the permit fee.

Contractor will supply all labor & equipment required for the placement of concrete on prepared sub-grade. The Town will not be providing any ramps or other support that will be required to place the concrete into the forms that will extend 8'+/- above grade.

SPECIAL CONDITIONS

SPECIAL CONDITIONS
TOWN OF HAMDEN
CAST IN PLACE CONCRETE
SALT SHED FOUNDATION

GENERAL

Except where the terms of this contract and these plans and specifications may alter them, the construction specifications in the Connecticut Department of Transportation, 2004 edition of standard specifications, known as Form 816 as supplemented shall apply and govern in the preparation, construction and installation of all appropriate requirements, details and materials. Further all work shall be performed in accordance with the 2003 International Building Code portion of the 2005 Connecticut Building Code, including the 2013 Amendments.

STIPULATIONS:

- A. The Contractor will bid the Base Bid and Alternates for all work necessary for a complete job. Measurement for payments will be as completed on the project.
- B. The completion date in the contract is set as sixty days (60) from the date of "Notice to Proceed".
- C. Contractor shall furnish all material, equipment, and labor to complete all phases of work.
- D. Mobilization, demobilization, field engineering, testing, permits, as-built, field office, storage trailer, necessary conveniences and security, etc. are items associated with the General Conditions of this contract and are not to be considered a bid item. **NO SEPARATE PAYMENT FOR THIS WORK.**
- E. The Contractor will be required to coordinate all work with the Town of Hamden Public works Department and others authorized by the Town.
- F. All areas used for access and/or storage will be repaired or replaced in kind at completion of the project.
- G. The Contractor is responsible for all layout. Contractor shall establish line and grade to be verified and approved by the Engineer prior to the start of construction.

DEFECTIVE MATERIALS

No defective or damaged material shall be used in the work. Materials that have been rejected shall be at once set aside and promptly removed from the work area.

SECURITY

The Contractor shall be required to secure the area during off-hours. The Contractor will protect all vehicles and/or equipment and materials stored on site from vandalism and damage.

SEQUENCE OF WORK

The Contractor shall be responsible for full coordination of the work. The work sequence shall be developed in such a manner as to maintain access to at all times.

USE OF PREMISES

The Contractor shall confine his equipment, storage of materials, and construction operations by ordinances or permits, or as may be directed by the Town of Hamden, and shall not unreasonably encumber the site or public rights-of-way with his materials and construction equipment.

The maximum allowable level of noise at the nearest occupied building shall be ninety (90) dBA.

The Contractor shall comply with all reasonable instructions of the Engineer and the ordinances and codes of the Town of Hamden regarding noise, signs, traffic, fires, explosives, danger signals and barricades.

PERMITTED CONSTRUCTION AND DEMOLITION WORK HOURS

ALLOWABLE WORKING HOURS:

Monday – Saturday 7 am - 7 pm

Sundays & Holidays*No Work Permitted

* New Year's Day, Martin Luther King Jr. Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving and Christmas.

TEMPORARY UTILITIES:

Arrange with utility company to provide service required for power and lighting. Pay all costs for service and power used. No separate payment shall be made for Temporary Electricity and Lighting.

SHOP DRAWINGS

- A. All required shop drawings, machinery details, layout drawings, etc., shall be submitted to the Engineer in triplicate for his approval sufficiently in advance of requirements to afford ample time for checking, including time for correcting, resubmitting and rechecking, if necessary. The Contractor may proceed, at his own risk, with manufacture or installation of any equipment or work covered by said shop drawings, etc., until they are approved and no claim, by the Contractor, for extension of the Contract Time or increase in Contract Price will be granted by reason of his assumption of this risk.
- B. Any drawings submitted without the Contractor's stamp of approval will not be considered and will be returned to him for proper resubmission. If any drawings show variations from the requirements of the Contract because of standard shop practice or other reason, the Contractor shall make specific mention of such variation in his letter of transmittal in order that, if acceptable suitable action may be taken for proper adjustment of contract price and/or time otherwise the Contractor will not be relieved of the responsibility to execute the work in accordance with the Contract even though the drawings have been approved.
- C. If a shop drawing is in accordance with the Contract or involves only a minor adjustment in the interest of the Town, not involving a change in contract price or time, the Engineer may approve the drawing. The approval shall be general, shall not relieve the Contractor from his responsibility for adherence to the Contract or for any error in the drawing and shall contain in substance the following:
- The modification shown on the attached drawing is approved in the interest of the Town to effect an improvement for the project and is ordered with the understanding that it does not involve any change in the Contract Price or time; that it is subject generally to all Contract Stipulations and covenants; and that it is without prejudice to any and all rights of the Town under the Contract and surety bond or bonds."
- D. The Contractor shall furnish as many copies of approved shop drawings as are necessary for proper coordination of the work, and he shall maintain a complete set of approved shop drawings at the site at all times.

PAYMENT TO CONTRACTOR

The Contractor shall prepare his requisition for partial payment as of the (20th) day of the month or as agreed upon by the Town and submit it, with the required number of copies, to the Engineer for his approval. The amount of the payment due the Contractor shall be determined by the total value of the work completed to date, and deducting:

1. Five percent (5%) of the total amount, to be retained until final payment unless otherwise reduced at the Town's discretion.
2. The amount of all previous payments. The total value of work completed to date shall be based on the estimated quantities of work completed and on the unit prices or schedule of values.

FINAL INSPECTION

When the improvements embraced in this contract are substantially completed, the Contractor shall notify the Engineer in writing that the work will be ready for final inspection on a definite date, which shall be stated in the notice. The notice will be given at least ten (10) days prior to the date stated for final inspection, and bear the signed concurrence of the representative of the Town having charge of inspection. If the Engineer determines the status of the Improvements is as represented, the Engineer will make the arrangements necessary to have final inspection commenced on the date stated in the notice, or as soon as practicable. The inspection party may include representatives of each department of the Town having charge of improvements of like character.

GRANULAR FILL

Granular fill shall conform to the requirements of Article M.02.01 of CTDOT Standard Specifications. After completion of excavation, and prior to placing of base material, the sub-base shall be compacted by at least two (2) passes of a motor driven vibratory compactor; should the sub-base appear soft and yielding, this material shall be removed to firm ground with a maximum depth of twenty-five (25) inches below finished grade as ordered by the Engineer. The sub-grade shall then be re-compacted as herein before specified.

Material used shall be "Granular fill". It shall be placed meeting Town specifications in two separate lifts of 4" and compacted thoroughly by suitable machinery. Work under this item shall include removal and disposal of existing or unsuitable material, installation under footing of a granular fill base.

Reclaimed processed aggregate base will not be accepted.

GENERAL BID SPECIFICATIONS PART A & B

TOWN OF HAMDEN

GENERAL BID SPECIFICATIONS -- PART A

Bids shall be made on the bid forms furnished by the Town, without alteration. Bids shall be submitted in a sealed envelope, stating on the outside of the envelope the words "BID DOCUMENTS", the Town's bid number, the title of the Project, the title of the bid package for which a bid is being submitted, and the time and date of the bid opening. All bidders shall provide two copies of their bid, unless otherwise stated.

Bids received after the bid opening deadline shall be rejected. All spaces on the bid form must be filled in with figures and words or the Town, in its sole discretion, may reject the bid as non-responsive. No faxed or emailed bids are allowed.

BID SECURITY: Each bid shall be accompanied by a certified check or bid bond for five percent (5%) of the total bid. The Bid Security will be returned by the Town upon signing of the contract with the successful bidder. Checks or bonds must be made to the order and for the benefit of the "Town of Hamden". Security may be held by the Town of Hamden for a period not to exceed 90 days from the date of the opening of the bids for the purpose of reviewing the bids. Bids shall not be combined, unless otherwise permitted in the Invitation to Bid or Instructions to Bidders. A separate bid surety shall be presented for each bid.

LIQUIDATED DAMAGES: The successful bidder, upon his/her/its failure or refusal to sign the contract within five (5) business days of receipt of the contract from the Town, shall forfeit to the Town as liquidated damages for such failure or refusal an amount equal to the security deposited with his/her bid.

The Town may make such investigations and conduct such scope reviews as deemed necessary by the Town in order for the Town to determine the ability of the bidder to perform the work and the bidder shall promptly, upon the Town's request, furnish to the Town all such data for this purpose. The Town expressly reserves the right to reject a bid if, in the Town's sole discretion, the Town determines that a bid is non-responsive, a bidder is not responsible, a bidder is not qualified to perform the work or the Town otherwise determines that the award of a contract to the bidder is not in the best interest of the Town. Conditional bids will not be accepted.

SUBCONTRACTORS: The bidder is specifically advised that any person, firm or other party to whom bidder intends to award a subcontract or purchase order must be acceptable to the Town and that approval of the proposed subcontract award cannot be sought from the Town unless and until the successful bidder submits all information and evidence to the Town regarding the qualifications, experience and responsibility of the proposed subcontractor. Although the bidder is not required to attach such information to its bid, the bidder is hereby advised of this requirement so that it may plan accordingly and prevent delays.

MODIFICATION: Any bidder may modify his/her/its bid prior to the scheduled deadline for receipt of bids. See paragraph one above. The bidder wishing to modify its bid shall submit such modified bid in accordance with paragraph one above, shall unequivocally indicate that its prior bid is superseded by the modified bid and shall submit its modified bid in an envelope clearly marked "**MODIFIED BID**".

ERRORS: The Town, in its sole discretion, reserves the right to waive typographical or technical defects in the bid, as well as its right to correct an award erroneously made as a result of a clerical error on the part of the Town of Hamden.

Revised October 1, 2015

PERMITS/LICENSES: All applicable permits and licenses shall be obtained at the sole cost of bidders. No permits or permit fees shall be waived by the Town unless otherwise stated in the Town's Invitation to Bid or Instructions to Bidders.

OBLIGATIONS OF BIDDER: Each bidder shall, prior to submitting a bid, familiarize itself with the conditions under which the work will be performed and conduct its own due diligence. Bidders shall be presumed to have read and to be thoroughly familiar with the specifications and all bid documents. The failure of any bidder to request, receive or examine any information or the failure of the bidder to familiarize itself with the conditions relating to the performance and timing of the work shall in no way relieve any bidder from any obligation in respect to the bid and shall not subject the Town to any liability whatsoever.

Furthermore, the bidder is responsible for being aware of and conforming in all respects to all existing Federal, State of Connecticut, and Town of Hamden Statutes, Ordinances, Regulations, laws and other legal applicable legal requirements, regardless of whether any such applicable requirements are specifically identified in the bid documents.

WITHDRAWAL OF BIDS: Bids may be withdrawn prior to the time fixed for opening by submitting written notification of withdrawal to the Town prior to the bid opening deadline.

Negligence or mistake on the part of the bidder in preparing the bid confers no right of withdrawal or modification of the bid after such bid has been opened.

"OR EQUAL" CLAUSE: Whenever a material, article or piece of equipment is identified in the bid document by reference to manufacturers' or vendors' names, trade names, catalog numbers, etc., it is intended to establish a standard, unless otherwise stated; any material, article, or equipment of other manufacturers and vendors which will perform adequately the duties imposed by the general design may be considered equally acceptable if, in the opinion of the Town, the material, article, or equipment so proposed is of equal substance and function. Any substitutions must be approved in writing by the Purchasing Agent or his designee, who shall have sole discretion to determine the acceptability of the proposed substitute.

PATENTS: The contractor shall indemnify, defend and hold harmless the Town and its officers, agents, and employees from and against liability and costs of any nature or kind, including cost and expenses for, or on account of, any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the contract, including its use by the Town unless otherwise specifically stipulated in the contract or bid documents.

NON-COLLUSIVE BID STATEMENT: All bidders shall be required to sign the non-collusive statement attached.

FUNDING: The municipal non-appropriation clause may be applicable.

Applicable if checked

PERFORMANCE AND **PAYMENT BONDS:** To ensure the delivery of goods and services in conformity with the specifications provided and payment of all subcontractors and suppliers, bidders shall provide payment and performance bonds for any project (1) which is governed by Connecticut's Little Miller Act, C.G.S. §49-41 or (2) for which the Town requires the provision of payment and performance bonds. Successful bidders shall provide the Town with payment and performance bonds, at the bidder's expense, each for the full amount of the contract awarded.

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The Town shall be the Obligee under each bond and the bonds shall be issued by a company authorized to conduct surety business in the State, listed on the U.S. Department of the Treasury's List of Approved Sureties and subject to approval by the Town.

- INSURANCE:** The contractor will provide adequate proof of insurance to the Town for the types of insurance and limits indicated below, providing for all of its operations performed in compliance with this contract.

The successful bidder shall obtain and pay for the insurance coverage described below with the indicated minimum limits. Bidders agree to furnish Certificates of Insurance to the Town and/or its Board of Education, certifying coverage to be in effect for the term of this contract and that the Town and/or Board of Education will be given sixty (60) days prior written notice of cancellation or non-renewal.

These requirements if checked also apply to any subcontractor or common carrier used by the Bidder.

- I. **WORKERS COMPENSATION**

Connecticut	Statutory Limits
Applicable Federal	Statutory Limits
Employer's Liability	\$100,000 per Accident
	\$100,000 Disease per Employee
	\$500,000 Policy Limit

- II. **COMMERCIAL GENERAL LIABILITY**

Each Occurrence	\$1,000,000
Damage to Rented Premises	\$ 50,000
Medical Expense	\$ 5,000
Personal Injury/Advertising	\$ 1,000,000
General Aggregate	\$ 3,000,000
Products & Completed Operations Aggregate	\$ 1,000,000

Coverage to include Premise-Operations, Contractors Protective Liability, Products & Completed Operations, Explosion, Collapse & Underground, Contractual Liability, & Broad Form Property Damage.

- III. **BUSINESS AUTOMOBILE LIABILITY** (including owned, hired & non-owned vehicles)

Liability (Combined Single Limit)	\$1,000,000
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(If hazardous material or potential pollutants are transported, MCS90 – Accidental Pollution coverage is required)

- IV. **UMBRELLA/EXCESS LIABILITY** (If Required)

Liability Limit – Each Occurrence over primary	\$3,000,000
Self-Insured retention	\$10,000

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V. POLLUTION LIABILITY (If Required)
Bodily Injury and Property Damage \$1,000,000 Each Occurrence
\$1,000,000 Aggregate

VI. PROFESSIONAL LIABILITY (If Required)
\$3,000,000 Each Occurrence
\$3,000,000 Aggregate

VII. The Town of Hamden and/or Hamden Board of Education to be named as an additional insured on all insurance policies, except Workers Compensation.

VIII. The bidder shall indemnify, defend and hold the Town of Hamden and/or Hamden Board of Education harmless for and against any and all injuries to persons and/or property resulting out of performance of this contract and resulting from the bidder's negligence.

ITEM VII AND VIII MUST APPEAR ON THE FACE OF THE INSURANCE CERTIFICATE IN THE SECTION ENTITLED "DESCRIPTION OF OPERATION"

Occupational Safety and Health Administration Requirements; Safety Compliance:

According to Connecticut General Statutes, Section 31-53b (a) each contract entered into on or after July 1, 2007 , for the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public building project by the state or any of its agents, or by a political subdivision of the state or any of its agents, where the total cost of all work to be performed by all contractors and subcontractors in connection with the contract is at least one hundred thousand dollars (\$100,000.00) shall contain a provision requiring that, not later than thirty days after the date such contract is awarded, each contractor furnish proof to the Labor Commissioner that all employees performing manual labor on or in such public building , pursuant to such contract, have completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration or, in the case of telecommunications employees, have completed at least ten hours of training in accordance with 29 CFR 1910.268. The contractor shall familiarize itself with all aspects of state law and any applicable regulations pertaining to these requirements in order to ensure full compliance. Moreover, contractor shall be solely responsible for full and timely compliance with all federal, state and local safety standards, rules and regulations.

INDEMNITY/HOLD HARMLESS: The contractor's insurance policies will be endorsed to provide for the Town of Hamden to be named as an additional insured. The contractor will indemnify and save harmless the Town of Hamden from all suits and actions related to injuries to and/or damage to the property of others as a result of the activities of the contractor, its servants and agencies acting for the contractor.

CERTIFICATE OF INSURANCE: The contractor, prior to the start of any work under this contract, shall provide the Town's Purchasing Office with a certificate of insurance to conform to the following:

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- a. Form(s) acceptable to the Town of Hamden.
- b. Insurance provided by insurance companies authorized to write coverage in the State of Connecticut.
- c. Policy dates must cover the term of this contract.
- d. Certificate will provide for at least 30 days' notice to the Town of Hamden prior to cancellation.
- e. All additional insured certificates are to list the Town of Hamden.

Under no circumstances shall the contractor begin work until (1) the contract for same shall have been signed by all parties, (2) the required bonds have been furnished by contractor and approved by the Town, (3) the required certificates of insurance have been filed with and approved by the Town's Purchasing Office and (4) the Contractor has been duly instructed in writing by the Town to proceed with the work. If the contractor commences the work before the provisions referred to in this paragraph are fulfilled, the Town, in its sole option, may cancel or terminate the contract without penalty or liability chargeable to the Town.

LICENSURE: At the time of the bid submissions, bidders shall possess the necessary license(s) to perform the work that is the subject of this invitation to bid.

NON-RESIDENT CONTRACTORS: Out of state contractors must post a bond with the Connecticut Department of Revenue Services. The non-resident contractor must receive a Connecticut tax registration number by completing and submitting form REG-1. Non-resident contractors are directed to familiarize themselves and achieve full compliance with applicable requirements, including Form AU-766.

Non-Discrimination and Affirmative Action: The successful bidder, in performing under this contract, shall not discriminate against any worker, employee or applicant, or any member of the public, because of race, creed, color, age, marital status, sexual orientation, national origin, ancestry, sex, mental retardation or physical disability, including but not limited to blindness, unless it is shown by the contractor that such disability prevents performance of the work involved in any manner prohibited by the laws of the United States or the State of Connecticut, nor otherwise commit an unfair employment practice. The successful bidder further agrees that this article, (and any additional provisions required by law), will be incorporated by such contractor in all contracts entered into in connection with this contract. The following principles and requirements of Equal Opportunity and Affirmative Action, as incorporated herein, will be incorporated into "Equal Opportunity - Non-Discrimination Clause" to be included in all bid documents, purchase orders, leases and contracts. The principles of Affirmative Action are addressed in the 13th, 14th and 15th Amendments of the United States Constitution, Civil Rights Act of 1964, Equal Pay Act of 1963, Title VI and VII of the 1964 United States Civil Rights Act, Presidential Executive Orders 11246, 11375, 11478 (nondiscrimination under federal contracts), Act 1, Section 1 and 20 of the Connecticut Constitution, Governor Grasso's Executive Order Number 11, Governor O'Neill's Executive Order Number 9, the Connecticut Fair Employment Practices Law (Sec. 46a-60-69) of the Connecticut General Statutes, Connecticut Code of Fair Practices (46a-70-81), Deprivation of Civil Rights (46a-58 (a)(d)), Public Accommodations Law (46a-63-64), Discrimination against Criminal Offenders (46a-80), definition of blind (46a-51(1)), definition of Physically Disabled (46a-51 (15)), definition of Mentally Retarded (46a-51-13), cooperation with the Commission on Human Rights and Opportunities (46a-77), Sexual Harassment (46a-60 (a)-8), Connecticut Credit Discrimination Law (360436 through 439), Title 1 of the State and the Local Fiscal Assistance Act 1 1972. Every contract to which the State is party must contain the nondiscrimination and affirmative action provisions provided in the Connecticut General Statutes Section 4a-60a. The successful

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bidder also agrees to comply with all provisions of the Town's Charter and Code of Ordinances –“Town of Hamden, Chapter 110, Business Transactions with Town”. The contractor shall cooperate fully with the Connecticut Commission on Human Rights and Opportunities (“the Commission”) and shall submit periodic reports of employment and subcontracting practices to the Commission in such a form, in such a manner, and at such time as may be prescribed by the Commission.

Set Asides: If this Project is funded in whole or in part by State of Connecticut funds, Public Act 15-5 (§§58-71 and 88) requires that, effective with all contracts executed after October 1, 2015, all solicitations for municipal public works contracts funded in whole or in part with State funds state in the notice of solicitation that the contract must comply with the set asides mandated by Public Act 15-5. The set aside requirements include a requirement that 25% of the total value of contracts in excess of \$50,000.00 be set aside for exclusive bidding for “small contractors,” as defined by Section 58 (a) (1), and 25% of such amount (that is, 6.25% of the total value), be set aside for “minority business enterprises,” as defined by Section 58(a) (4). For contracts in excess of \$50,000.00, bidders must have obtained Commission approval of their Affirmative Action Plan prior to contract execution. **BIDDERS ARE EXPRESSLY DIRECTED TO REVIEW PUBLIC ACT 15-5, SECTIONS 58-71 AND 88, TO FAMILIARIZE THEMSELVES WITH THE REQUIREMENTS OF SUCH LAWS. BIDDERS SHALL BE DIRECTLY AND SOLELY RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF P.A. 15-5, SECTIONS 58 THROUGH 71 AND 88. THE TOWN ALSO DIRECT BIDDERS' ATTENTION TO THE SECTIONS 63 AND 64 (NON-DISCRIMINATION REQUIREMENTS) AND 66-68 (AFFIRMATIVE ACTION REQUIREMENTS).**

Regardless of whether P.A. 15-5 is applicable to this Project, the contractor shall provide reasonable technical assistance and training to minority business enterprises to whom work is subcontracted to promote the participation of such concerns, to make a good faith effort to award a reasonable proportion of all subcontractors to such enterprises, and undertake such other reasonable activities or efforts as the Commission may prescribe to ensure the participation of minority business enterprises as contractors and subcontractors. The contractor shall include a provision in all subcontracts with minority business enterprises requiring the minority business enterprise to provide the Commission with such information on its structure and operations as the Commission finds necessary to make an informed determination as to whether the minority business enterprise is owned and operated by members of a minority group.

The contractor shall maintain full and accurate data, such as contract monitoring reports, for a period of three (3) years from the date of substantial completion of the project or for such longer period as is required by the law then in effect with regard to records retention. The contractor shall not discharge, discipline, or otherwise discriminate against any person who has filed a complaint, testified, or assisted in any proceeding with the Commission.

The contractor shall make available for inspection and copying any supporting data requested by the Commission and make available for interview any agent, servant, or employee having knowledge of any matter concerning the investigation of a discriminatory practice complaint of any matter relating to a contract compliance review.

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

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AWARD TO OTHER THAN THE APPARENT LOW BIDDER: The Town of Hamden reserves the right to award the work to a bidder other than the one which submitted the lowest price if it deems such action to be in the best interest of the Town of Hamden.

WAGE RATES: Workers employed in the various occupations on this named project shall be required to receive the minimum rates established by the State of Connecticut Labor Department Division of Regulations of Wages.

PRICES: Prices quoted for merchandise, supplies, or equipment shall be the net prices delivered into the Town of Hamden.

Town of Hamden reserves the right to award separate items to separate bidders. Bidders may indicate exceptions to this.

Bidders must include Federal ID number or Social Security number to be considered for bid approval.

DAVIS-BACON ACT - PREVAILING RATES OF WAGES

If this Project is subject to the Connecticut Prevailing Wage law, C.G.S. §31-53 *et seq.*, the Town of Hamden shall require the contractor to make payment of prevailing rates of wages in accordance with the wage section of the Davis-Bacon Act, Town of Hamden, Hamden Code, S 97.35 and State Statute 31-53, Part III. State Contracts, and shall institute such investigations and periodic monitoring procedures as deemed necessary to determine compliance with labor standard provisions and the Federal requirements of the Act as amended.

AS PER THE TOWN OF HAMDEN AFFIRMATIVE ACTION RESOLUTION:

It is in the best interest of the Town to encourage minority and/or female business enterprise. Where two substantially similar Hamden bids are submitted, preference may be given to the minority and/or female contractor.

RESERVED RIGHTS OF TOWN:

The Town of Hamden reserves the right to accept or reject any or all bids or proposals; to waive any technicality in a bid or proposal or part thereof submitted, and to accept the bid deemed to be in the best interest of the Town of Hamden. Further, the Town reserves the right to split bids and quotations among two or more bidders. The Town reserves the right to reject any bid submitted by a joint venture if the Town determines that any entity to the joint venture fails to satisfy the Town's requirements (i.e., bonding, insurance, qualifications, responsibility).

PREQUALIFICATION REQUIREMENT: The Connecticut Department of Administrative Services' Contractor Prequalification Program (C.G.S §4a-100) requires all contractors to prequalify before they can bid on a contract or perform work pursuant to a contract for the construction, reconstruction, alteration, remodeling, repair or demolition of any public building or any other public work by the state or a municipality, estimated to cost more than \$500,000 and which is funded in whole or in part with state funds, If this requirement is applicable to the project that is the subject of this invitation to bid, bidders shall provide their bid update statement with their bid.

TIME OF COMPLETION AND LIQUIDATED DAMAGES

Bidders understand and acknowledge that timely completion of the Project is essential. Failure of the Contractor to achieve substantial completion of the Project within the calendar days stated herein will result in the Owner and the public incurring damages, additional costs and inconveniences that would be impossible or extremely difficult to accurately quantify at the time. Therefore, the bidder and the Town agree that, if the Contractor fails to satisfactorily complete the Project hereunder within the time specified or within any extension of time that may have been allowed, there shall be deducted from any monies due or that may become due the Bidder,

the sum of _____ (\$ _____) for each and every calendar day, including Saturdays, Sundays and legal holidays, that the Project remains incomplete. This sum shall not be imposed as a penalty, but as liquidated damages due Owner from Contractor by reason of the damages incurred, inconvenience and additional costs and expenses to the public together with other problems suffered as a result of any such delay thereby occasioned.

DISCREPANCY IN BID FORM:

In the event of any discrepancy between the amount written in numerical figures and the amount stated in written words, the amount written in words will be controlling.

The Town of Hamden hereby notifies all bidders that the Town's contract with the successful bidder shall contain the following provision:

Payment to Vendor shall be withheld by the Town when any real or personal property taxes, sewer assessment fees, sewer use charges, fines, interest, penalties, police or fire extra duty, police vehicle use fees, or lien fees imposed, assessed or otherwise levied by the Town of Hamden and due from/payable by Vendor are delinquent.

For purposes of this Contract, a tax, fee, charge, or fine shall be deemed delinquent if it remains unpaid, in whole or in part, for a period of thirty (30) days following the date upon which payment of such tax, fee, charge, or fine was due, together with any accrued interest and penalties.

The Town expressly reserves the right, in its sole discretion, to set off against its account payable to Vendor and apply any sums due to Vendor by Town pursuant to this Contract to any delinquent real or personal property taxes, sewer assessment fees, sewer use charges, fines, interest, penalties, or lien fees imposed by the Town of Hamden and due from/payable by Vendor.

**TOWN OF HAMDEN
LEGISLATIVE COUNCIL**

PRESENTED BY: _____

ORDINANCE AMENDING CONSTRUCTION CONTRACTS ORDINANCE

WHEREAS, the Town of Hamden adopted a local prevailing wage ordinance requiring contractors working on town public works projects to pay laborers and mechanics wages based upon the wages established by the State of Connecticut Department of Labor to be prevailing for the corresponding classes or laborers and mechanics on projects of a similar character to the contract work in town; and

WHEREAS, the threshold for local public works projects covered by the prevailing wage ordinance has not increased since the adoption of the ordinance; and

WHEREAS, the Town wishes to amend its ordinance so that the Town's threshold for prevailing wages is 90% of that set by the Connecticut General Statutes.

NOW THEREFORE BE IT ORDAINED that Section 97.35 (A) of the Hamden Code of Ordinances is hereby amended and restated as set forth below:

CONSTRUCTION CONTRACTS

97.35: WAGES TO BE STATED IN CONTRACT.

(A) The advertised specification for every public works project by the Town of Hamden that is 90% or more of the amount set forth by the Connecticut General Statutes, as may be amended, for new construction and/or that is 90% or more of the amount set forth by the Connecticut General Statutes, as may be amended, for remodeling, refinishing, refurbishing, rehabilitation, alteration or repair work, and which requires or involves the employment of mechanics, laborers or workmen employed upon the work contracted to be done, shall contain a provision stating the minimum wages to be paid various classes of laborers, mechanics and workman shall be based upon the wages established by the State through its Department of Labor to be prevailing for the corresponding classes of mechanics, laborers or workmen employed on projects of a character similar to the contract work in the town.

(B) Every contract based upon these specifications shall contain a stipulation that the contractor or his subcontractor shall pay all mechanics, laborers or workmen employed directly upon the site of the work, unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account, the full amount accrued at time of payment, computed at wage rates not less than those stated in the advertised specifications, regardless of any contractual relationship which may be alleged to exist between the contractor or subcontractor and such

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laborers, mechanics and workmen, and that the scale of wages to be paid shall be posted by the contractor in a prominent and easily accessible place at the site of the work.

(C) Every contract based upon these specifications shall further stipulate that there may be withheld from the contractor so much of accrued payments as may be considered necessary by the Town to pay to laborers, mechanics and workmen employed by the contractor or any subcontractor on the work difference between the rates of wages required by the contract to be paid laborers, mechanics or workmen on the work and the rates of wages received by such laborers, mechanics or workmen and not refunded to the contractor, subcontractor or other agents.

(D) Every contract based upon these specifications shall contain the further provision that in the event it is found by the Town that any laborer, mechanic or workmen employed by the contractor or any subcontractor directly on the site of the work covered by the contract has been or is being paid a rate of wages less than the rate of wages required by the contract or be paid as aforesaid the Town may, by written notice to the contractor, terminate the contract, terminate the contractor's right to proceed with the work or such part of the work as to which there has been a failure to pay said required wages and to prosecute the work to completion by contract or otherwise, and the contractor and his sureties shall be liable to the town for any excess cost occasioned the town thereby.

MISCELLANEOUS REQUIREMENTS:

Questions/Requests for Information: All Questions shall be submitted in writing only and e-mailed to purchasing@hamden.com at least seven (7) days prior to the bid opening date. Bidders shall not attempt or engage in any ex parte or verbal communications with Town personnel prior to the bid opening deadline.

All Applicable Codes to Be Met: All construction shall meet all applicable Building and Fire Codes, as well as ADA requirements.

Pre-Bid Meeting(s): Failure to attend a mandatory pre-bid meeting may be deemed, by the Town, grounds for rejection of your bid.

Deliveries: All deliveries are inside deliveries.

Provision of Bid Packets, Submission of Bids: Bid packets will be mailed upon request.

Bid packets will not be faxed.

Bid proposals must be mailed back or delivered to:

Hamden Government Center
Finance Department
2750 Dixwell Avenue
Hamden, CT 06518.

Please include one original and three copies of your bid unless otherwise specified.

ALL ENVELOPES MUST BE MARKED PROPERLY WITH BID #, BID DATE, AND BID TITLE ONLY.

Ownership of Documents – All qualification statements, proposals and bids submitted by bidders are to be the sole property of the Town and subject to the provisions of the Connecticut General Statutes (re: Freedom of Information).

Ownership of Subsequent Products – Any work product, whether acceptable or unacceptable, developed under a contract awarded as a result of this invitation to bid is to be the sole property of the Town unless stated otherwise in the invitation to bid or contract.

Timing and Sequence – Timing and sequence of events resulting from this invitation to bid will ultimately be determined by the Town.

No Oral Agreements – The Town, its agencies and employees, shall not be responsible for any alleged oral agreement or arrangement made by a bidder with any agency or employee of the Town or District.

Rejection for Default or Misrepresentation – The Town reserves the right to reject the bid of any bidder that is in default of any prior contract or for misrepresentation.

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Assigning, Transferring of Agreement – Bidders are prohibited from assigning, transferring, conveying, subletting or otherwise disposing of this agreement, their rights, title or interest therein or their power to execute such agreement by any other person, company, or corporation without the prior consent and approval in writing by the Town.

Cost of Preparing Qualification/Proposal Statements – The Town shall not be responsible for any expenses incurred by any bidder in preparing and submitting a bid.

Thank you.

Philip Goodwin
Purchasing Agent

GENERAL BID SPECIFICATIONS - PART B

1. **Nondiscrimination under Title VI of the Civil Rights Act of 1964.** Contractor shall comply with the requirements of Title VI of the Civil Rights Acts of 1964 (PL 88-352), 42 U.S.C. Sec. 2000d et. Seq. and the Fair Housing Act (42 U.S.C. 3601-20) and Executive Order 11063 and the HUD regulations with respect thereto including the regulations under 24 CFR Part I. In the sale, lease, or other transfer of land acquired, cleared or improved with assistance provided under the Agreement, the CONTRACTOR shall cause or require a covenant running with the land to be inserted in the deed or lease or other instrument a restriction prohibiting discrimination with respect to race, color, creed, sex, or national origin, in the sale, lease or rental, or in the use or occupancy of such land or any improvements erected or to be erected thereon and providing that the CONTRACTOR and the United States are beneficiaries of and entitled to enforce such covenant. The CONTRACTOR in undertaking its obligation in carrying out the program assisted hereunder, agrees to take such measures as are necessary to enforce such covenant and will not itself so discriminate.
2. **Fair Housing Opportunities Under Title VIII of the Civil Rights Act of 1968 and Fair Housing Act (42 U.S.C. 3601-20).** Contractor shall comply with the requirements of Title VIII of the Fair Housing Act as amended (PL 90-284). The CONTRACTOR shall provide for fair housing opportunities where possible. The CONTRACTOR is prohibited from discriminating in the sale or rental of housing, the financing of housing, or the provision of brokerage services, including in any way making unavailable or denying a dwelling to any person, because of race, color, religion, sex or national origin. Title VIII further requires programs and activities relating to housing and community development to be administered to affirmatively further fair housing.
3. **Prohibition Against Payments of Bonus or Commission.** The funds paid to Contractor shall not be used in the payment of any bonus or commission for the purpose of obtaining HUD approval of the application for such assistance, or HUD approval of applications for additional assistance, or any other approval or concurrence of HUD required under this AGREEMENT, Title I of the Housing and Community Development Act of 1974, as amended, or HUD regulations with respect thereto; it being understood, however, that reasonable fees or bona fide technical, consultant, managerial or other such services, are not hereby prohibited if otherwise eligible as program costs.
4. **"Section 3" Compliance in the Provision of Training Employment and Business Opportunities.** Every application, recipient, contracting party, contractor, and subcontractor shall incorporate, or cause to be incorporated, in all contracts, the following clause (referred to as a Section 3 clause):
 - a) The work to be performed under this contract is on a project assisted under a program providing direct Federal financial assistance from the Department of Housing and Urban Development and 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 requires that to the greatest extent feasible opportunities for training and employment be given lower income residents of the project area and contracts for work in connection with the project area and contracts for work in connection with the project be awarded to business concerns which are located in or owned in substantial part by persons residing in the area of the project.
 - b) The parties to this contract will comply with the provisions of said Section 3 and the regulations issued pursuant thereto by the Secretary of Housing and Urban Development set forth in 24 CFR Part 135, and all applicable rules and orders of the Department issued thereunder prior to the execution of this Contract. The parties to this contract certify and agree that they are under no contractual or other disability, which would prevent them from complying with these requirements.

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c) The CONTRACTOR will send to each labor organization or representative of workers with which he has a collective bargaining agreement or other contract or understanding, if any, a notice advising the said labor organization or workers' representative of his commitments under this Section 3 clause and shall post copies of the notice in conspicuous places available to employees and applicants for employment or training.

d) The CONTRACTOR will include this Section 3 clause in every subcontract for work in connection with the project and will, at the direction of the applicant for or recipient of Federal financial assistance, take appropriate action pursuant to the subcontract upon a finding that the subcontractor is in violation of regulations issued by the Secretary of Housing and Urban Development, 24 CFR Part 135. The CONTRACTOR will not subcontract with any subcontractor unless the subcontractor has been found in violation of regulations under 24 CFR Part 135 and will not let any subcontract unless the subcontractor has first provided it with a preliminary statement of ability to comply with the requirements of these regulations.

e) Compliance with the provisions of Section 3, the regulations set forth in 24 CFR Part 135, and all applicable rules and orders of the Department issued thereunder prior to the execution of the Contract, shall be a condition of the Federal financial assistance provided to the project, binding upon the applicant or recipient for such assistance, its successors, and assigns. Failure to fulfill these requirements shall subject the applicant or recipient, its contractors and subcontractors, its successors, and assigns to those sanctions specified by the grant or loan agreement or contract through which Federal assistance is provided, and to such sanctions as are specified by 24 CFR Part 135.

5. **Prevailing Salaries.** The CONTRACTOR shall be solely responsible for the determination of staff classifications and employ staff in relation to its personnel practices and salary ranges, including fringe benefits, in accordance with the Agreement.
6. **Anti-Kickback Rules.** Salaries of architects, draftsmen, technical engineers, technicians, laborers and mechanics performing work under this Agreement shall be paid unconditionally, and not less often than once a week, without deductions as are mandatory by law or permitted by the applicable regulations issued by the Secretary of Labor pursuant to the Copeland "Anti-Kickback Act" (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR, Part 3). The CONTRACTOR shall comply with all applicable regulations of said "Anti-Kickback Act" and shall insert appropriate provisions in all subcontracts relative to the work under this Agreement; and CONTRACTOR shall take steps to insure compliance by subcontractors with such regulations at all times. CONTRACTOR shall be responsible for the obtaining and submission of the affidavits of subcontractors required thereunder, except that the Secretary of Labor may specifically provide for variations of, or exemptions from, the requirements thereof.
7. **Non-Discrimination in Employment.** 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, creed, color, sex or national origin. The CONTRACTOR shall take affirmative action to insure that applicants are employed and that employees are treated during employment without regard to their race, creed, color, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, transfer, recruiting or recruitment advertising, layoff, termination, rates of pay or other forms of compensation, and selection for training including apprenticeship. The CONTRACTOR agrees to post in conspicuous places available to employees and applicants for employment notices to be provided, setting forth the provisions of this Non-Discrimination in Employment Clause.

b) The CONTRACTOR shall, in all solicitations or advertisements for employees placed by or in behalf of the CONTRACTOR; state that all qualified applicants will receive consideration for employment without regard to race, creed, color, sex, or national origin.

c) The CONTRACTOR shall comply with all provisions of Executive Order 11246 of September 24, 1965, entitled "Equal Employment Opportunity", as amended by Executive Order 11375 and Executive Order 12086, as supplemented in Department of Labor Regulations (41 (CFR, Part 60), and all of the rules, regulations and relevant orders of the President's Committee of Equal Employment Opportunity in effect as of the date of this Agreement; and the CONTRACTOR shall furnish all information and reports required herein, and shall on demand permit access to its books, records, and accounts, in its possession or control, by TOWN and the said Committee for purposes of investigation to ascertain compliance with such rules, regulations and orders.

d) The CONTRACTOR will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the Contract Compliance Officer advising the said labor union or workers' representative of the CONTRACTOR'S commitment under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

e) In the event the CONTRACTOR'S noncompliance with the non-discrimination sections of the contract or with any of such rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the CONTRACTOR may be declared ineligible for further Government contracts or federally assisted construction contract procedures authorized in Executive Order 11246 of September 4, 1965, or by rule, regulations, or order of the Secretary of Labor, or as otherwise provided by law.

f) The Contractor will include the portion of the sentence immediately preceding paragraph (a) and the provisions of paragraph (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 25, 1965, as amended by Executive Order 11375 and 12086, so that such provisions will be binding upon each subcontractor or vendor. The CONTRACTOR will take such action with respect to any subcontractor or purchase order as the Department may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Department, the contractor may request the United States to enter into such litigation to protect the interest of the United States.

g) The CONTRACTOR further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 or September 24, 1965, as amended by Executive Orders 11375 and 12086, with a subcontractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the executive order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon CONTRACTOR and subcontractors by the Department of the Secretary of Labor pursuant to Part II, subpart D of the Executive Order.

h) No person in the United States shall on the ground of race, color, national origin, or sex be excluded from participation in, be denied the benefits of, or be subjected to the discrimination under any program or activity funded in whole or in part with funds made available under this title. Any prohibition against discrimination on the basis of age under the Age Discrimination Act of 1975, as amended, or with respect to an otherwise qualified handicapped individual as provided in Section 504 of the Rehabilitation Act of 1973, as amended, shall also apply to any such program or activity. Remedies described in Section 109 of the Housing and Community Development Act of 1974, as amended, as the regulations issued pursuant thereto, (24 CFR Section 570.601) shall apply, if failure to comply with this paragraph has been determined.

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8. **Employment of Certain Persons Prohibited.** No person under the age of sixteen years and no person who at the time is serving sentence in a penal or correctional institution shall be employed on the work covered by this Contract.
9. **Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970 and Federal Implementing Regulations.** Contractor and Owners shall to the greatest extent practicable under state law comply with Sections 301 and 302 of Title III, (Uniform Real Property Acquisition Policy) of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and will comply with Sections 303 and 304 of Title III and HUD implementing instructions in 24 CFR Part 42 and 570.602 (b), comply with Title II (Uniform Relocation Assistance) of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and HUD implementing regulations at 24 CFR Part 42 and 570.602 (a).
10. **Political Activity Hatch Act and Section 109 of HCD Act.** CONTRACTOR shall comply with the provisions of the Hatch Act and Section 109 of the Housing and Community Development Act of 1974, as amended, and the regulations pursuant thereto (24 CFR 570.601). Under no circumstances shall the CONTRACTOR and/or other recipients, subcontractors, and sub recipients use TOWN funds or persons employed in administering TOWN programs for the purposes of conducting any political activity.
11. **Executive Orders 11063, 12259, and Title VIII.** CONTRACTOR will comply with Executive Order 11063 as amended by Executive Order 12259 and the implementing regulations in 24 CFR Part 107 and Title VIII of the Civil Rights Act of 1968 (Pub. L.90-284) as amended.
12. **Historic Preservation.** CONTRACTOR will comply with the National Historic Preservation Act of 1966 (PL 89-665), Preservation of Historic and Archaeological Data Act of 1974 (PL 93-291), Procedures for Protection of Historic and Cultural Properties, Advisory Council on Historic Preservation (36 CFR 800), and the HUD regulations with respect thereto.
13. CONTRACTOR will comply with HUD Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794 et. seq.) provides:
- No otherwise qualified individual with handicaps . . . shall, solely by reason of his or her handicap be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financing assistance.
14. **No Conflict of Interest:** Bidder certifies, by submitting a bid, that no owner, employee or family member (defined for purposes of this invitation to bid as a spouse, parent, sibling or child) of an owner or employee of bidder is a current or former employee of the Town or its Board of Education.
- Bidder further certifies that no owner or employee of bidder has any interest, direct or indirect, which is incompatible with the proper discharge of the proposed duties in the public interest or that would tend to impair Bidder's independent judgment or action in the performance of the proposed duties.
- Bidder certifies that it does not have any past, present or currently planned interests which are an actual or potential organizational conflict of interest with respect to performing the work for Town under this invitation to bid.
- Bidder hereby covenants and agrees that no employee, elected official or appointed official of the Town or its Board of Education has any interest in this Agreement or will directly or indirectly benefit therefrom.

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15. Compliance with Town Regulations

Bidder shall cause all persons performing work pursuant to the contract between bidder and the Town to comply with all Town and Board of Education requirements, including instructions pertaining to conduct and to building access and related requirements issued by the Town and District, respectively. All personnel shall wear readily visible identification in a form that is satisfactory to the Town. The Town may promulgate and modify from time to time rules and regulations relating to conduct as the Town, in its sole discretion, may determine, and the contractor shall cause all persons performing work to comply with any such requirements.

16. Confidential Information

Bidder shall cause all persons under bidder's control who are providing services or materials under or through bidder's contract with the Town to preserve and protect all information of the Town and Hamden School District to which they may have access during the performance of work as confidential. Bidder expressly acknowledges that if the facilities that are the subject of the Project are school facilities or public buildings, the security and safety of the occupants, users and general public are of paramount importance and bidder shall observe and enforce appropriate security protocol to ensure the safety of users and occupants.

COMPLETE AND RETURN

BID #: 2816
BID TITLE Salt Shed Foundation

BID FORM

TO: Purchasing Agent
Hamden Government Center
2750 Dixwell Avenue
Hamden, CT 06518

I have received the bid documents entitled _____
and dated _____.

I have received Addenda dated as follows:

I have considered and included the provisions of the bid documents noted above in my bid. I have examined the bid documents and I submit the following BID:

In submitting this bid, I agree:

1. To hold my bid open until 60 days after the date on which bids are due.
2. To enter into and execute a contract provided by the Town, without alteration by me, if awarded on the basis of this bid, according to the contract form provided by the Town of Hamden.
3. To accomplish the work in accord with the Bid Specifications and Contract Documents and to the extent that there is a conflict between the provisions of any bid documents, the order of precedence shall require me to provide the item or service that is of the greater value or benefit to the Town of Hamden.
4. To begin the work in strict accordance with the project schedule or the Notice to Proceed issued by the Town and to complete the work within _____ calendar days following Owner's date of Notice to Proceed.
5. The undersigned submits a bid bond in the sum of _____ dollars (\$ _____) 5% of Base Bid, which sum is agreed shall become the sole and exclusive property of the Owner as liquidated damages to the Owner if the undersigned fails to execute a contract in conformity with the Bid Form and to furnish surety bonds and insurance policies in accordance with the General Conditions after due notification has been given.
6. I acknowledge that the Town of Hamden reserves the right to accept or reject any or all bids, alternates, options, or proposals; to waive any technical defect in a bid or part thereof submitted, and to accept the bid deemed by the Town to be in the best interest of the Town of Hamden.

Name:
Title:

Dated

Contractor Tax ID#

Contractor License #

COMPLETE AND RETURN

BID #: 2816
BID TITLE: Salt Shed Foundation

NON-COLLUSIVE BID STATEMENT

The undersigned bidder, having fully informed itself regarding the accuracy of the statements herein, certifies that:

- (1) The bid has been arrived at by the bidder independently and has been submitted without collusion with, and without any agreement, understanding, or planned common course of action with, any other vendor or bidder of materials, supplies, equipment, or services described in the invitation to bid, designed to limit independent bidding or completion, and
- (2) The contents of the bid have not been communicated by the bidder or its employees or agents to any person not any employee or agent of the bidder or its surety on any bonds furnished with the bid and will not be communicated to any such person prior to the official opening of the bid.

The undersigned bidder further certifies that this statement is executed for the purposes of inducing the Town of Hamden to consider the bid and make an award in accordance therewith.

Legal Name of Bidder

Business Address

Signature and Title of Person
Authorized to Sign

Printed Name

Date

COMPLETE AND RETURN

BID # 2816

You are required to furnish the following information to the Town of Hamden:

Name and address of Company _____
(Print or type)

Name and Title of Agent of Company _____
(Print or type)

Signature: _____ Date: _____

Telephone: _____ Email: _____

Fax: _____ Federal I.D. Number: _____

“REINFORCED CONCRETE SALT SHED FOUNDATION”

BID No. _____

1) BASE BID: – Reinforced Cast in Place Foundation:

Provide all labor, materials and equipment required to construct a reinforced concrete salt shed foundation as described in the Specifications and Plans. Including site preparation, excavation, compaction, backfilling and establishment of a laydown area for delivery of the frame supported fabric structure and all site restoration.

AMOUNT _____ \$ _____
Written Amount Dollar Amount

*** Note: Town may elect to complete one or more of the ALTERNATES if the estimated price is more than appropriated**

2) * ADD ALTERNATE - FURNISH & INSTALL (2") -ASTM 3 CRUSHED STONE AS BALLAST ALONG THE LENGTH OF OUTSIDE PERIMETER.

210 CY - (2") Crushed Stone Complete at \$ _____ / CY for the Total Price of \$ _____

3) * ADD ALTERNATE - FINE GRADE INTERIOR, FURNISH & INSTALL (8") OF 1"- PROCESSED AGGREGATE & 2 – 1.5" LAYERS OF CLASS II BITUMINOUS CONCRETE PAVEMENT.

AMOUNT _____ \$ _____
Written Amount Dollar Amount

TOTAL BID AMOUNT:

The entire project for the construction a reinforced concrete salt shed foundation and alternates.

Total Bid Amount of

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\$ _____ \$ _____
Written Amount Dollar Amount

ADDITIONAL UNIT PRICE:

Remove unsuitable soils & refill with ¾" crushed stone in areas and to the depth as directed by the Engineer.

100 CY - (¾") Crushed Stone Complete at \$ _____ / CY for the Total Price of \$ _____

ADDENDUM:

The Undersigned acknowledges receipt of the following addenda to the Contract Documents, listed by number and date:

Number _____ Dated: _____

Number _____ Dated: _____

Number _____ Dated: _____

The undersigned, as bidder, declares that no person, or persons, other than those named herein, are interested in this Proposal; that this Proposal is made without collusion with any person, firm or corporation; that no person or persons acting in any official capacity for the Town of Hamden is directly or indirectly interested therein or in any portion of the profit thereof and that he proposes and agrees, if this Proposal is accepted, to execute the Form of Contract with the Town of Hamden.

Date: _____

Name of Firm: _____

Address: _____

Signature: _____

Printed Name and
Title of Agent submitting bid: _____

Telephone Number: _____

Fax Number: _____

E-mail: _____

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TECHNICAL SPECIFICATIONS

SECTION 01050
FIELD ENGINEERING

PART 1 GENERAL

1.01 SUMMARY

A. Related Sections:

1. 01700 - Contract Closeout.

1.02 SUBMITTALS

- A. Name and address of a Connecticut registered land surveyor to the Engineer.
- B. On request of Engineer, submit documentation to verify accuracy of field survey work.
- C. Written certification signed by Connecticut registered land surveyor verifying elevations and locations of improvements are in conformance or non-conformance with Construction Documents.

1.03 QUALITY ASSURANCE

- A. Qualifications of Surveyor: Connecticut registered land surveyor, acceptable to the Town.

PART 2 NOT USED

PART 3 EXECUTION

3.01 PROJECT SURVEY REQUIREMENTS

- A. Establish a minimum of 2 permanent bench marks on the site referenced to data established by survey control points.
 1. Record locations, with horizontal and vertical data, on Project Record Documents.
- B. Establish lines and levels. Locate and lay out by instrumentation or by similar means for the following:
 1. Site Improvements:
 - a. Stake for grading and fill.
 - b. Utility slopes and invert elevations.
 2. Foundation, column locations, floor levels.
- C. Verify layouts by same methods periodically.

3.02 SURVEY REFERENCE POINTS

- A. Existing horizontal and vertical control points for the Project are designated on Drawings.
- B. Notify the Engineer, in writing, of discrepancies between actual measurements and those in Construction Documents.
 - 1. Do not proceed with the Work until written instructions involving the discrepancies have been received from Engineer.
 - 2. Contractor shall be responsible for any loss or damage when proceeding with the Work before approval from the Engineer.
- C. Locate and protect control points before starting site work, and preserve permanent reference points during construction.
 - 1. Do not change or relocate control points without prior written notice to the Engineer.
 - 2. Report to the Engineer when reference point is lost or destroyed, or requires relocation because of accepted changes in grades or locations.
 - 3. Require surveyor to replace lost or destroyed control points and establish replacements based on original survey control.

3.03 FIELD QUALITY CONTROL

- A. Records:
 - 1. Maintain a complete, accurate log of control and survey work as the Work progresses.
 - 2. On completion of foundation walls and major site improvements, prepare a certified survey showing dimensions, locations, angles, and elevations of the Work.

END OF SECTION

SECTION 01340
SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes: shop drawings, manufacturer's catalog cuts, product data, samples.

B. Related Sections:

1. 01700 - Contract Closeout.

1.02 DATES FOR SUBMISSION AND REVIEW

A. Designate the dates for submission to Engineer and review completion dates needed for shop drawings, product data, and samples to maintain the project schedule.

1.03 SHOP DRAWINGS/MANUFACTURER'S CATALOG CUTS

A. Shop Drawings: Submit 2 prints and 1 reproducible sepia with the image on the back, for each required shop drawing.

1. Identify each shop drawing with the following information placed on each drawing:

a. Bid Number & PO Number

b. Name of project

c. Town's project number.

d. Name of company submitting the shop drawing.

e. Date of drawing.

2. Provide a blank space 6 inches wide by 4 inches high in the lower right corner of each shop drawing page for the Engineer's shop drawing stamp.

B. Manufacturer's Catalog Cuts: Submit 8 copies of each catalog cut or 8 edited catalogs.

C. The Shop Drawing/Product Data Submittal form shall be attached to each required shop drawing, manufacturer's catalog cut, or other product data.

D. Submittal of Samples, Color Charts, Color Chips, or Color Samples for Selection and Coordination:

3.02 SURVEY REFERENCE POINTS

- A. Existing horizontal and vertical control points for the Project are designated on Drawings.
- B. Notify the Engineer, in writing, of discrepancies between actual measurements and those in Construction Documents.
 - 1. Do not proceed with the Work until written instructions involving the discrepancies have been received from Engineer.
 - 2. Contractor shall be responsible for any loss or damage when proceeding with the Work before approval from the Engineer.
- C. Locate and protect control points before starting site work, and preserve permanent reference points during construction.
 - 1. Do not change or relocate control points without prior written notice to the Engineer.
 - 2. Report to the Engineer when reference point is lost or destroyed, or requires relocation because of accepted changes in grades or locations.
 - 3. Require surveyor to replace lost or destroyed control points and establish replacements based on original survey control.

3.03 FIELD QUALITY CONTROL

- A. Records:
 - 1. Maintain a complete, accurate log of control and survey work as the Work progresses.
 - 2. On completion of foundation walls and major site improvements, prepare a certified survey showing dimensions, locations, angles, and elevations of the Work.

END OF SECTION

SECTION 01340
SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes: shop drawings, manufacturer's catalog cuts, product data, samples.

B. Related Sections:

1. 01700 - Contract Closeout.

1.02 DATES FOR SUBMISSION AND REVIEW

A. Designate the dates for submission to Engineer and review completion dates needed for shop drawings, product data, and samples to maintain the project schedule.

1.03 SHOP DRAWINGS/MANUFACTURER'S CATALOG CUTS

A. Shop Drawings: Submit 2 prints and 1 reproducible sepia with the image on the back, for each required shop drawing.

1. Identify each shop drawing with the following information placed on each drawing:

a. Bid Number & PO Number

b. Name of project

c. Town's project number.

d. Name of company submitting the shop drawing.

e. Date of drawing.

2. Provide a blank space 6 inches wide by 4 inches high in the lower right corner of each shop drawing page for the Engineer's shop drawing stamp.

B. Manufacturer's Catalog Cuts: Submit 8 copies of each catalog cut or 8 edited catalogs.

C. The Shop Drawing/Product Data Submittal form shall be attached to each required shop drawing, manufacturer's catalog cut, or other product data.

D. Submittal of Samples, Color Charts, Color Chips, or Color Samples for Selection and Coordination:

1. Submit 3 copies of all material color charts, color chips, or color samples within 60 days after start of construction to allow for selection, color coordination, and final acceptance by the Engineer. Material color charts, color chips, or color samples shall be manufacturer's full color range and of standard sizes unless specified otherwise.
2. Where architectural precast or poured-in-place architectural concrete is required, submit at least 4 architectural concrete finish color and texture samples.
3. Where exposed unpainted concrete masonry units are specified, submit at least 2 sets of masonry samples in manufacturer's full color range.

E. Prints, samples, and color charts shall be at the expense of Contractor.

F. Submit all color selection materials for complete coordination of color scheme. No individual color selections will be approved before receipt of all the colors.

1.04 SUBMITTAL IDENTIFICATION

- A. Submit only 1 item or system per letter of transmittal properly identified to include the appropriate specification section and section paragraphs.
- B. When shop drawings, edited catalog cuts of components, product data, diagrams, or charts are submitted with more than 1 type of specified product, identify the particular item, including options, intended for use in the Work.
- C. Resubmittals shall be identified with original shop drawing number and followed with a dash (-) and a letter A, B, etc. corresponding to the resubmittal sequence.

1.05 SUBMITTAL COMPLETENESS

- A. Submit catalog sheets, product data, shop drawings, material samples, color chips, color charts, test data, and warranties at the same time for each item.
 1. Submit shop drawings with appropriate data and with the Drawing identification mark numbers as shown, specified, or scheduled.
 2. Shop drawings without identification mark numbers or with incomplete performance information will not be reviewed until submission is complete.

1.06 PREPARATION

- A. Clearly mark each submittal to identify each appropriate product or model.
- B. Show performance characteristics and capacities.
- C. Show dimensions and clearances required.
- D. Show wiring or piping diagrams and controls.

1.07 IDENTIFICATION

- A. Identify details by reference to sheets and details, schedules as shown on Drawings.
- B. Manufacturer's standards, schematic drawings, and diagrams:
 - 1. Modify drawings and diagrams to delete information not applicable to the Work.
 - 2. Supplement standard information to provide information specifically applicable to the Work.

1.08 SAMPLES

- A. Submit samples of sufficient size and quantity to clearly illustrate:
 - 1. Functional characteristics of product, integrally related parts, and attachment devices.
 - 2. Full range of color, texture, and pattern.

1.09 CONTRACTOR RESPONSIBILITIES

- A. Review shop drawings, catalog cuts, product data, and samples before submission. Determine and verify:
 - 1. Field measurements.
 - 2. Field construction criteria.
 - 3. Catalog numbers and similar data.
 - 4. Conformance with Construction Documents.
- B. Coordinate each submittal with requirements of the Work and of Construction Documents.
- C. Notify the Engineer, in writing at time of submission, of any deviations in submittals from requirements of Construction Documents.

- D. Shop drawings shall be stamped, approved, and signed by the Contractor before submittal to Engineer, otherwise they will be sent back to the Contractor without being processed by the Engineer.
- E. Do not ship apparatus or equipment from stock or fabricate until shop drawings have been reviewed and approved by Engineer.
- F. Always maintain and have available for reference a field copy of accepted shop drawings at the job site.

PART 2 NOT USED

PART 3 NOT USED

END OF SECTION

SECTION 02200 EARTHWORK

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes: Earthwork for buildings, utilities and other grassed or landscaped areas as indicated on Drawings and specified in this section.

B. Related Sections:

1. 02270 – Erosion Control

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. C136-96a Test Method for Sieve Analysis of Fine and Coarse Aggregates.

2. D422-63 (90) Test Method for Particle-Size Analysis of Soils.

3. D698-91 Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort.

1.03 DEFINITIONS

A. "Satisfactory Fill Materials" include materials classified in ASTM D2487 as GW, GP, SW and SP properly worked by Contractor to obtain optimum moisture and compaction.

1. For Buildings:

a. Within 2 feet of the surface of indicated grade, limit rock size to 2 inches.

b. Below 2 feet of the surface of indicated grade limit rock size to 6 inches.

B. "Unsatisfactory Materials" include materials other than "Satisfactory Fill Materials". Materials of any classification determined by testing laboratory as too wet or too soft for providing a stable foundation for structure, paving, and walks will be classified as "unsatisfactory".

C. Degree of Compaction: Required compaction is expressed as a percentage of maximum density obtained by test procedures of ASTM D1557.

D. Building Area: The area bounded by lines not less than 4 feet beyond the outside line of the building perimeter footings.

1. Increase the 4-foot dimension by 1 foot for each foot of excavation depth required exceeding 4 feet.

1.04 SUBMITTALS

A. Submit the following before starting work:

1. Compaction Machinery Specifications.
2. Compaction Tests.
3. Soil Classification Tests using ASTM classification for subgrade materials and USDA classifications for topsoil materials.
4. Stabilized Subgrade Composition and Density.
5. Testing Laboratory (by the Town).

1.05 SITE CONDITIONS

A. Determine location and nature of work, character of equipment, and facilities needed for performance of work, general, and local conditions prevailing at site, and other matters affecting work under this contract.

B. Subsurface data, including soil borings, ground water elevations, or conditions, if shown on the drawings or attached to these specifications, are presented only as information available indicating conditions found and limited to exact locations and shall not be interpreted as an indication of conditions that may actually develop during construction.

1. Make deductions of subsurface conditions that may affect methods or cost of construction and agree that no claim for damages or other compensation shall be made, except as are provided for in the agreement, should conditions be found during construction different from those as calculated or anticipated by the Contractor.

C. Where existing grades, utility lines, or substructures are shown on drawings, the Town of Hamden assume no responsibility for correctness of existing conditions indicated.

1. Contractor shall locate indicated existing utility lines or substructures that may be affected by this Project, and shall be responsible for any damage or injury they may sustain as a result from working on or near these existing utilities or substructures not specified to be removed or demolished.

D. Bench Marks and Monuments:

1. Maintain existing bench marks, monuments, and other reference points, and if disturbed or destroyed, replace as directed by Engineer.

1.06 JOB CONDITIONS

A. Condition of Premises: Accept site as found and excavate, fill, compact, and backfill site as indicated on drawings and specified in this section.

B. Protection:

1. Adjacent Structures and Property:

- a. Take precautions to guard against movement, settlement, injury, or loss to existing structures or to equipment and furnishings housed therein arising directly or indirectly in connection with this contract.
- b. Provide and place bracing or shoring as necessary or proper support.
- c. Be responsible for the safety and support of such structures and facilities and be liable for any movement or settlement, damage, or injury caused by or resulting there from.
 - 1) If, at any time, the safety of any adjacent structures or facilities appears to be in doubt, cease operations and take immediate precautions to support such structures and facilities and notify the Engineer at once.
 - 2) Resume operations only after permission has been granted by Engineer.

2. Adjacent Sidewalks and Streets:

- a. Take precautions to guard against movement, settlement, or collapse of any sidewalks, curbs, or street passages on adjoining sites and be liable for any such movement, settlement, or collapse.
 - 1) Repair such damage promptly when so ordered at no cost to the Town of Hamden.
 - 2) Install necessary shoring, including sheet piling as may be required, to protect banks, adjacent paving, structures, and utilities during excavations.
 - 3) Be responsible for any damage to existing structures, equipment, and furnishings due directly or indirectly to construction operations. Except where removal is needed by site grading or location of new buildings, use every possible precaution to prevent injuries to landscaping, drives, curbs, and walks on or next to site of the work and replace, at no expense to the Town of Hamden, any of the above destroyed.

3. Existing Landscaping, Drives, Curbs, and Walks: Except where removal is required by site grading or location of new buildings, take every possible precaution to prevent injuries or loss to individual trees, groups of trees, and other existing landscaping, drives, curbs and walks on or next to the site of the work and replace any such damaged or destroyed at no cost to the Town of Hamden.

PART 2 PRODUCTS

2.01 MATERIAL

A. Pervious structural backfill shall be in total and complete conformance with the requirements of the "Connecticut Department of Transportation Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816, current edition, Division III, Materials Section M.01 and Section M.02."

PART 3 EXECUTION

3.01 INSPECTION

A. Do not proceed with the work of this section until conditions detrimental to the proper and timely completion of the work have been corrected in an acceptable manner.

3.02 GENERAL

A. Public Safety: Accomplish work in a manner providing for the safety of the public and workers and the protection of property.

B. Construction: Do not close, obstruct, or store material or equipment in streets, sidewalks, alleys, or passageways without a permit according to local ordinances, regulations, codes, and the Town's approval.

C. Interference: Conduct operations with minimum interference with roads and other facilities.

D. Removal:

1. Unless otherwise noted or specified to be relocated or stored, materials removed become property of Contractor and shall be removed completely away from site.

2. Do not store or allow debris to accumulate on site.

3. If Contractor fails to remove excess debris promptly, the Town of Hamden reserves the right to remove the debris at Contractor's expense.

E. Temporary Structures: Remove temporary structures when no longer required.

F. Repair:

1. Clean up, repair, or replace, at no cost to the Town, property damage arising in connection with this Contract.

2. Patch and repair work shall match existing and be performed in a neat and professional manner by workers skilled in the trade involved.

2. This applies to damage to the newly graded areas within the building area limits and damage to adjacent properties by eroded materials.

G. Erosion Repair:

1. Take every precaution and temporary measure to prevent damage from erosion of freshly graded areas.
 - a. Repair and reestablish grades to required elevations and slopes where settlement or washing occurs before acceptance of work at no cost to the Town.
 - b. This applies to damage to the newly graded areas within the building area limits and damage to adjacent properties by eroded materials

3.03 LOCATIONS AND ELEVATIONS

A. Be responsible for surveys, measurements, and layouts required for proper execution of the work.

1. Lay out lines and grades from existing survey control system and as shown on drawings.

B. Locate by stake and mark locations and elevations of following:

1. Elevations of existing earth cut and fill.
2. Final grades for landscape contours.
3. Other items as required to execute work as specified.

3.04 CLEARING AND GRUBBING

A. Within limits of areas designated for building area, grading and site construction work, remove trees, brush, stumps, wood debris, and other deleterious materials not required to remain as part of finished work.

B. Remove grass, plants, vegetation, and organic material from same area.

C. Burning of materials is not allowed on the site.

D. Remove accumulated material daily or as necessary to prevent fire hazard condition.

3.05 STRIPPING

A. Strip turf, organic material, surface litter, rubble, and overburden for entire depth of root system of grass or other vegetation within areas indicated on Site Plan.

B. Stockpile topsoil on site where directed.

- C. For building area, remove muck or organic material above the limestone layer. Clean pot-holes, larger than 6 inches in any horizontal direction, in rock filled with muck or organic material.

3.06 EXCAVATION

- A. Begin excavation after stripping, clearing, and grubbing has been completed.
- B. Excavate to grades required to accommodate the proposed construction.
- C. Dewater as specified.
- D. Excavations for structures shall conform to dimensions and elevations indicated for the building.
 - 1. Extend excavations a sufficient distance from walls and footings to allow for placing and removal of forms and installation of services, except where the concrete for walls and footing is authorized to be deposited directly against excavation surfaces.
 - 2. Excavation below general machine excavation for footings and foundations shall be hand worked.
 - 3. Bottoms of footings shall be on level planes.
- E. Excavate in such a manner that quick and efficient drainage of storm water will occur.
- F. Remove "unsatisfactory materials" encountered from the building area.
- G. Classify excavated materials and stockpile separately suitable soils for use as backfill materials. If sufficient quantities of excavated materials meeting requirements for backfill are not available on site, provide materials meeting these requirements.
- H. Stockpile excavated material suitable for use as fill and backfill where directed by the Engineer.

3.07 FILLING, BACKFILLING, AND COMPACTION

- A. Compaction:
 - 1. Compact existing earth surfaces (exclude rock) after excavation, backfilling, and compaction of said areas to levels required with "Suitable Backfill Materials".
 - a. Compact with equipment suited for soil compaction.
 - b. Moisten or aerate material, as necessary, to provide moisture content to facilitate obtaining specified compaction with equipment being used.
 - c. Compact each layer to not less than percentage of maximum density specified below, determined according to ASTM D1557, Method D.
 - d. Insure compaction of previously prepared fill areas has been maintained before placing new layers.

Location Percent

- 1) Under structures and building 95% slabs, except footings, each layer.
- 2) Under footings, top 1 foot in 95% cut, each layer of fill.
- 3) Under pavements and sidewalk 95% areas, top 12 inches, each layer.
- 4) Under pavements and sidewalk 90% areas, below 12 inches, each layer.
- 5) Under landscaped areas, each 80-85% layer including fields.

B. Filling and Backfilling:

1. Materials: "Satisfactory Fill Materials" shall be used in fills and backfills.
2. Place "Satisfactory Fill Material" in horizontal layers not exceeding 12 inches in loose depth.
 - a. Compact as specified in this section.
 - b. Do not place materials on muddy surfaces.

C. Reconditioning of Subgrade:

1. Where approved compacted subgrades are disturbed by the Contractor's subsequent operations or adverse weather, scarify and compact the subgrade as specified to required density before further construction occurs.
2. Use power driven hand tampers for recompaction over underground utilities

D. Backfilling:

1. Do not begin backfilling until:
 - a. Construction below finished grade has been accepted.
 - b. Underground utilities systems have been inspected, tested, and accepted.
 - c. Forms have been removed.
 - d. Excavation cleaned of trash and debris.
2. Bring backfill to indicated finished grades.
3. Backfill materials and compaction shall be as specified.
4. Do not place backfill in wet areas.

5. Do not operate heavy equipment for spreading and compacting backfill closer to foundation or retaining walls than a distance equal to height of backfill above top of footing.
6. Compact the area remaining by power-driven hand tampers suitable for material being compacted.
7. Place backfill carefully around pipes to avoid damage to the pipes.

E. Protection: Settlement or washing occurring in backfilled areas before acceptance of work shall be repaired and grades reestablished to required elevation and slope.

3.08 DISPOSAL OF EXCESS EXCAVATED MATERIALS

A. Excess "Satisfactory Fill Materials" and "Unsatisfactory Materials" shall become the property of the Contractor.

1. Remove from site.

3.09 LASER GRADING

A. Provide gradients and elevations as shown in Construction Documents with current industry standard laser grading procedures using laser automated graders and laser automated dozers to ensure specified tolerances.

3.010 FILL AND GRADING FOR GRASSED AREAS

A. Landscaped Grassed Areas:

1. Clean, satisfactory fill, free from rock and debris and of such quality to not interfere with future installation of grass.

B. Other Grassed Areas:

1. Rough grade: At least 4 inches below finish topsoil grade in preparation for topping consisting of at least 4 inches of compacted 80-20 top soil mix.
2. Grass: As specified in Sections 02900.
3. Gradient: According to grading plan.

3.011 DEWATERING

A. Dewater excavations for inspection and for construction. Concrete or fill shall not be placed in water and concrete less than 8 hours of age shall not be subjected to ground water pressure.

1. Keep excavations free of water while backfilling or construction takes place.

2. Dispose of water resulting from dewatering operations according to city, county, state, and federal regulations.
3. Conduct operations to insure storm water runoff sediment is not discharged to the adjacent lakes, waterways, sewers, streets, and adjacent properties.

3.012 TESTING

A. The Town of Hamden will provide services of a Testing Laboratory to perform specified tests, inspections, instrumentation and inspection of work.

1. Notify, through Engineer, the Town of Hamden contracted Testing Laboratory to perform specified tests at the Town's expense.

B. Tests of Materials:

1. Soil Classification:

- a. One test from each type of material encountered or proposed to be used.

2. Laboratory Tests for Moisture-Content and Density According to ASTM D1557:

- a. One test for each material encountered or proposed to be used.

3. Field Tests for Moisture-Content and Density:

- a. According to ASTM D1556 or ASTM D2922, one test per layer of fill per 10,000 square feet of area, plus one test per 10,000 square feet of subgrade in cut.

C. Fill and topsoil mixture may be inspected at any stage of operation to determine compaction characteristics, densities and freedom from organic and plastic materials.

D. Notification:

1. Give sufficient notification of placing of orders for fill and topsoil with supplier to allow full inspection including testing for compaction characteristics at source of supply.
2. Obtain approval from the Engineer before placing topsoil mixture at project site, without exception.

END OF SECTION

SECTION 03300
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:

1. Footings.
2. Foundation walls.

1.2 ACTION SUBMITTALS

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

B. Design Mixtures: For each concrete mixture, as prepared by a qualified Concrete Testing Agency. Submit alternate design mixtures when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.

C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.

D. Anchor Rod Shop Drawings: Detail placement drawings meeting requirements of Salt Storage Shed manufacturer.

E. Construction Joint Layout: As indicated on the Drawings.

1.3 INFORMATIONAL SUBMITTALS

A. Qualification Data: For testing agency.

B. Material Certificates: For each of the following, signed by manufacturers:

1. Cementitious materials.
2. Admixtures.
3. Steel reinforcement and accessories.
4. Wall treatments.
5. Bonding agents.
6. Adhesive.
7. Repair materials.

C. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:

1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.

1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: The Town at its own discretion may hire an independent testing agency for testing.

B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

C. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.

1. Meet the requirements of Form 816 Article 1.20-1.06.01.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage. Avoid damaging coatings on steel reinforcement.

PART 2 – PRODUCTS

2.1 FORM-FACING MATERIALS

A. Forms for Exposed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

1. Plywood, metal, metal-framed plywood faced, or other approved panel materials.
2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1.

B. Forms for Unexposed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

C. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.

D. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces. Comply with local regulations controlling use of volatile organic compounds (VOCs).

E. Form Ties: Factory-fabricated, adjustable length, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

1. Provide units that will leave no corrodible metal closer than 1-1/2 inches to the plane of exposed concrete surface.

2. Provide ties that, when removed, will leave holes no larger than 1 inch in diameter in concrete surface.

2.2 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

B. Epoxy-Coated Reinforcing Bars: ASTM A 775/A 775M, epoxy coated, with less than 2 percent damaged coating in each 12-inch bar length.

C. Epoxy-Coated Wire: ASTM A 884/A 884M, Class A, Type 1 coated, as-drawn, plain-steel wire, with less than 2 percent damaged coating in each 12-inch wire length.

2.3 REINFORCEMENT ACCESSORIES

A. Epoxy Repair Coating: Liquid, two-part, epoxy repair coating; compatible with epoxy coating on reinforcement and complying with ASTM A 775/A 775M.

B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:

1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.

2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric polymer-coated wire bar supports.

2.4 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:

1. Portland Cement: ASTM C 150, Type I or II, gray.

a. Do not use air entraining cement.

b. Allowed supplement includes the following:

A. Fly Ash: ASTM C 618, Class F or C. (See "CONCRETE MIXTURES, GENERAL" for percentage limits.)

B. Normal-Weight Aggregates: ASTM C 33, Class 3S coarse aggregate or better, graded. Provide aggregates from a single source with documented service record data of at least 10 years' satisfactory service in similar applications and service conditions using similar aggregates and cementitious materials.

1. For exposed exterior surfaces, do not use fine or coarse aggregates that contain substances that cause spalling

2. Provide documentation that aggregates are non-reactive with alkalines in accordance with ASTM C 289 and C 227.

3. Local aggregates not complying with ASTM C 33 that have been shown to produce concrete of adequate strength and durability by special tests or actual service may be used when acceptable to the Engineer

C. Water: ASTM C 94/C 94M and potable.

2.5 ADMIXTURES

A. Air-Entraining Admixture: ASTM C 260.

B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.

2. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.

3. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.

C. Non-Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, non-set-accelerating, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete.

2.6 INTERIOR WALL SURFACE TREATMENT

A. Penetrating Sealer: Minimum 30 percent solid solution.

1. Apply at a rate of not less than 125 square feet/gallon.

2. Available Products include, but are not limited to the following:

a. MasterProtect H440 HZ (formerly Hydrozo Clear 40 VOC), and MasterProtect H400 (formerly Hydrozo Enviroseal 40) by BASF.

b. Protectosil Chem-Trete BSM 400 by Evonik Industries.

c. Masterseal SL40 by Master Builders.

d. Penetrating Sealer 40 - by Sonneborn Building Products.

2.7 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.

B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap polyethylene sheet.

C. Water: Potable.

2.8 RELATED MATERIALS

A. Barrier Sheet: Polyethylene sheet, ASTM D 4397, not less than 10 mils thick.

B. Bonding Agent: ASTM C 1059/C 1059M, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

C. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:

1. Types I and II, non-load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.9 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:

1. Fly Ash: 15 percent.

C. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

D. Admixtures: Use admixtures according to manufacturer's written instructions and only when approved by the Engineer.

1. Use water-reducing, high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.

2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

3. Use water-reducing admixture in pumped concrete, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.

4. Use corrosion-inhibiting admixture in concrete mixtures as follows:

a. Salt Shed Stems and Footing: Use calcium nitrate.

1) Dosage: 4 gallons per cubic yard.

2.10 CONCRETE MIXTURES FOR BUILDING ELEMENTS

A. Footings and Foundation Walls: Proportion normal-weight concrete mixture as follows:

1. Minimum Compressive Strength: **5000 psi** at 28 days.

2. Maximum Water-Cementitious Materials Ratio: 0.45.

3. Slump Limit: Not less than 1-inch and not more than 3-inches before adding high-range water-reducing admixture or plasticizing admixture.

4. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 1- inch nominal maximum aggregate size.

2.11 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.12 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.

1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Limit concrete surface irregularities, designated by ACI 347 as abrupt or gradual, as follows:

1. Class A, 1/8 inch for concrete surfaces exposed to view.

2. Class B, 1/4 inch for other concrete surfaces.

D. Construct forms tight enough to prevent loss of concrete mortar.

E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.

1. Install keyways, reglets, recesses, and the like, for easy removal.

2. Do not use rust-stained steel form-facing material.

F. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

G. Chamfer exterior corners and edges of permanently exposed concrete.

H. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

I. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

J. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

K. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."

3.3 REMOVING AND REUSING FORMS

A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations and curing and protection operations need to be maintained.

1. Leave formwork for structural elements that support weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.

B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Engineer.

3.4 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

3.5 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Engineer.
 - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated.
 - 2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
 - 3. Space vertical joints in walls as indicated.
 - 4. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

3.6 SHEET BARRIER

- A. Place, protect, and repair sheet barrier according to ASTM E 1643 and manufacturer's written instructions.
 - 1. Install at locations indicated on Drawings.

3.7 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Engineer.

C. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.

2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.

3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity.

At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

D. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.

2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

E. Hot-Weather Placement: Comply with ACI 301 and as follows:

1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.

2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

3.8 FINISHING FORMED SURFACES

A. Forms for Unexposed Finished Concrete: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

B. Forms for Exposed Finished Concrete: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

C. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.9 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

3.10 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.

B. Formed Surfaces: Cure formed concrete surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.

C. Unformed Surfaces: Begin curing immediately after finishing concrete.

D. Cure concrete according to ACI 308.1, by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

a. Water.

b. Continuous water-fog spray.

c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3.11 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Engineer. Remove and replace concrete that cannot be repaired and patched to Engineer's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part Portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/4 inch in any dimension to solid concrete. Limit cut depth to 1 inch. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.

2. Repair defects on surfaces exposed to view by blending white Portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.

3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Engineer.

D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.

2. After concrete has cured at least 14 days, correct high areas by grinding.

3. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

4. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Engineer's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Engineer's approval.

3.12 INTERIOR WALL SURFACE TREATMENT

A. Apply coating of penetrating sealer in accordance with manufacturer's written instructions.

1. Apply at vertical concrete wall surfaces facing the interior of the Salt Storage Shed, from top of footing to top of wall, and to top of concrete walls.

3.13 FIELD QUALITY CONTROL

A. Testing and Inspecting: The Owner will engage a qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

1. Materials and installed work may require testing and retesting at any time during progress of work. Retesting of rejected materials for installed work shall be done at the Contractor's expense.

B. Inspections:

1. Steel reinforcement placement.

2. Concrete placement, including conveying and depositing.

3. Curing procedures and maintenance of curing temperature.

C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.

a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.

3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.

4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C 31/C 31M.
 - a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
6. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
 - a. Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.
 - b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
7. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
8. Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
9. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as sole basis for approval or rejection of concrete.
10. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Engineer. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Engineer.
11. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
12. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

END OF SECTION

SECTION 05015
BITUMINOUS CONCRETE PAVEMENT

1.1 SUMMARY

Bituminous concrete pavement shall be constructed in the locations and to the dimensions and details shown on the Contract Drawings or as directed by the Engineer.

1.2 MATERIAL

Processed Aggregate base to be used in the construction shall be as indicated on the plans or as ordered by the Engineer and shall conform to the Standard Town of Hamden Details and Specifications or the Connecticut Department of Transportation Specification Form 816, 2004, wherever applicable.

Bituminous concrete to be used in the construction shall Class II or as indicated on the plans or as ordered by the Engineer and shall conform to the Standard Town of Hamden Details and Specifications or the Connecticut Department of Transportation Specification Form 816, 2004, wherever applicable.

1.3 CONSTRUCTION METHODS

Excavation, including removal of any existing surface shall be made to the required depth below finished grade, as shown on the plans, or as directed by the Engineer. All soft and yielding material shall be removed and replaced with suitable material to a depth corresponding to the typical detailed cross-section.

Where bituminous concrete is to be spread by hand, forms shall be used. Forms shall be of metal or of wood, straight, free from warp and of sufficient strength to resist springing from the impact of the roller. All forms shall be of a depth equal to the depth of the cross-section and shall be securely staked, braced and held firmly to the required line and grade. All forms shall be cleaned and oiled for each use.

The processed aggregate base shall be placed and thoroughly compacted with a roller weighing not less than 1000 pounds.

The bituminous concrete shall be placed by mechanical device or may be spread by hand and thoroughly compacted with multiple passes of a roller weighing not less than 2000 pounds.

The sides of the pavement shall be backfilled with suitable material thoroughly compacted and finished flush with the top of the surface.

The Contractor shall provide adequate pitch away from the existing surface and shall smoothly match the new surface. Special care shall be taken by the Contractor to construct the surface in a manner that will not promote flooding of water from other areas.

DR. CLARENCE WELTI, P.E., P.C.

GEOTECHNICAL ENGINEERING

227 Williams Street · P.O. Box 397
Glastonbury, CT 06033-0397

(860) 633-4623 / FAX (860) 657-2514

July 14, 2015

Mr. Robert H. Brinton, P. E.
Town Engineer
Hamden Government Center
2750 Dixwell Avenue
Hamden, CT 06518

**Re: Geotechnical Study for Proposed Salt Shed at Hamden Public Works Yard
1125 Shepard Avenue, Hamden, CT**

Dear Mr. Brinton:

1.0 Herewith are data from the test borings taken at the above referenced site. Four test borings were drilled at the proposed building footprint to a maximum depth of 21.5 feet. The boring locations are shown on the attached plan. *The borings were drilled by Clarence Welti Associates, Inc. and sampling was conducted by this firm solely to obtain indications of subsurface conditions as part of a geotechnical exploration program. No services were performed by Dr. Clarence Welti, P.E., P.C. to evaluate subsurface environmental conditions.*

2.0 The **Subject Project** will include the construction of a Salt Storage Shed with a footprint of 8,450 sf. It is presumed that the floor, which could be bituminous concrete, will be close to existing grades. Possible loading on the base footprint with salt or sand could presumably be in excess of 1,500 psf. There is an existing circular salt storage structure within the proposed building footprint, which will be removed.

2.1 Topographically the area of proposed building appears to be relatively level, the site having been previously graded.

3.0 Geologically the origin of the soils appears to be from glacial moraine deposits over bedrock at 13.5 to 20+ feet below grade.

3.1 The Soils Cross Section from the borings is generally as follows:

Bituminous Concrete to 3" to 10"

Locally FILL; fine to coarse SAND, some Gravel, trace to little Silt to as deep as 6 feet below grade, medium compact to dense

Locally Buried Subsoils (see boring B-4); SILT, trace Clay to 4 feet, medium compact

Fine to fine to coarse SAND, little to some Silt and Gravel to auger refusal on probable bedrock at 13.5 to 20+ feet below grade, medium compact to dense

Bedrock; Arkosic SANDSTONE

3.2 The Water Table was evident at 3 to 4 feet below grade at the completion of the borings.

4.0 The Criteria for Foundation Type and Loading are as follows:

1. The maximum total settlement shall not exceed 1" and the maximum differential settlement shall not exceed ½ the maximum settlement over a length of 50 feet.
2. The foundation type and structure must address seismic requirements of the building code.
3. The base of the shed must not settle differentially more than 1" in excess of the structure subsidence.

These criteria are generally applied to structures of similar character. If the owner, the architect, the engineers find the criteria as unacceptable, the writer shall be informed to permit additional geotechnical input.

4.1 Regarding item 2 (above), the IBC site soil profile classification is "C. The mapped MCE spectral acceleration values for Hamden, CT are $S_s = 0.243$ for short periods and $S_1 = 0.062$ for a 1 second periods. The sliding factor for concrete footings cast on crushed stone over the soil will be **0.6**.

5.0 The Foundation Type could be spread footings. Footings could be on the natural inorganic soils or on a controlled fill placed after the removal of any existing fill and subsoils. Based on the proximity of the water table, there should be a minimum 6" layer of crushed 3/8" stone beneath the footings and as an initial layer beneath controlled fills where atop a wet sub grade. The stone should be compacted with at least 4 passes of a vibratory compactor with a static weight of at least 1000 pounds.

5.1 The Allowable Bearing Pressure on the crushed stone over the natural soil or on the controlled fill can be 2.0 Ton/sf. The allowable bearing pressure can be increased by 1/3 for seismic or wind loading when using allowable stress design. At retaining walls the maximum pressure on the toe can be 50% higher than the average pressures, cited above.

5.2 Regarding **lateral loading** on retaining walls which are a part of the building, this should be with at rest pressures. The at rest pressure coefficient (to be multiplied by unit weight of backfill) is 0.45. Retaining walls which are separate from the building can be designed, based on active earth pressure

using an active pressure coefficient of 0.28.

5.3 The Frost Protection Depth in accordance with the Building Code is 3.5 feet below finish grades, in areas which are exposed to weather.

5.4 The Foundation Design Parameters are as follows:

Design Parameters	Values
Allowable Bearing Pressure on crushed stone layer atop the natural sand or on controlled fill	2.0 Tons/sf
Backfill Unit Weight (Section 6.0)	125 pcf
Angle of Internal Friction (Backfill) ϕ	34°
At Rest Coefficient	0.45
Active Coefficient (level backfill)	0.28
Ultimate Sliding Coefficient Concrete on Crushed Stone or Gravel Fill	0.60
IBC Site Soil Profile Classification	“C”
Mapped MCE Spectral Acceleration for short periods	0.243
Mapped MCE Spectral Acceleration for 1 second periods	0.062
Frost Protection Depth	3.5 feet

6.0 Regarding Controlled Fill, Backfill of Excavations for Footings and Walls, and Fill beneath the Salt Storage Floor the material shall conform to the following gradation:

Percent Passing	Sieve Size
100	3.5"
50 - 100	3/4"
25 - 75	No.4

The fraction, passing the No.4 sieve shall have less than 15%, passing the No. 200 sieve.

All controlled fill and backfill must be compacted to at least 95% of modified optimum density

in accordance with ASTM D-1557.

Some on site excavation may conform to the above gradation.

7.0 Regarding **Earthwork**, the on site soils will be defined as OSHA Type C, which will require sloping of unshored excavations exceeding 5 feet in height to slopes less than 34° from the horizontal (1½H : 1V).

7.1 Regarding the impact on the soils beneath the site from superimposed areal loading , the Stiffness Modulus (equivalent to Young's Modulus)) is at least 500 Tons/sf. With a 1 Ton/sf of the areal loading, the potential consolidation of 20 feet of soil would be about ½".

8.0 Regarding bituminous concrete section within the facility and ramps to the facility, for loaded trucks this should be as follow:

5" of bituminous concrete in two lifts; over 8" of Processed Stone Base (CT DOT 816; Section M.05.01)

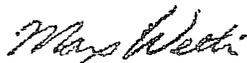
9.0 This report has been prepared for specific application to the subject project in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made. In the event that any changes in the nature, design and location of structures are planned, the conclusions and recommendations contained in this report should not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing.

The general recommendations submitted in this report are based in part upon data obtained from referenced explorations. The extent of variations between explorations may not become evident until construction.

Dr. Clarence Welti, P.E., P.C., should perform a general review of the final design and specifications in order that geotechnical design recommendations contained in the final Geotechnical Report may be properly interpreted and implemented as they were intended.

If you have any questions please call me.

Very truly yours,



Max Welti, P.E.

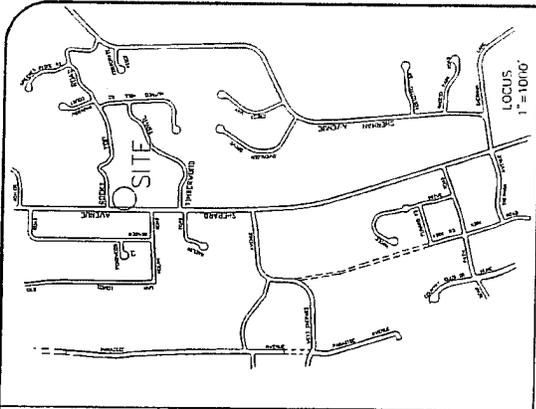


Clarence Welti Ph.D., P. E.
President, Dr. Clarence Welti P.E.; P.C.

APPENDIX

Boring Location Plan

Boring Data



GENERAL NOTES:

1. ALL UTILITIES SHOWN ARE BASED ON RECORD DRAWINGS AND FIELD SURVEY. THE LOCATION OF UTILITIES SHOWN IS NOT GUARANTEED. THE USER SHALL VERIFY THE LOCATION OF UTILITIES PRIOR TO ANY CONSTRUCTION.
2. THE USER SHALL OBTAIN ALL NECESSARY PERMITS FROM THE APPLICABLE AGENCIES PRIOR TO ANY CONSTRUCTION.
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SURVEY NOTES:

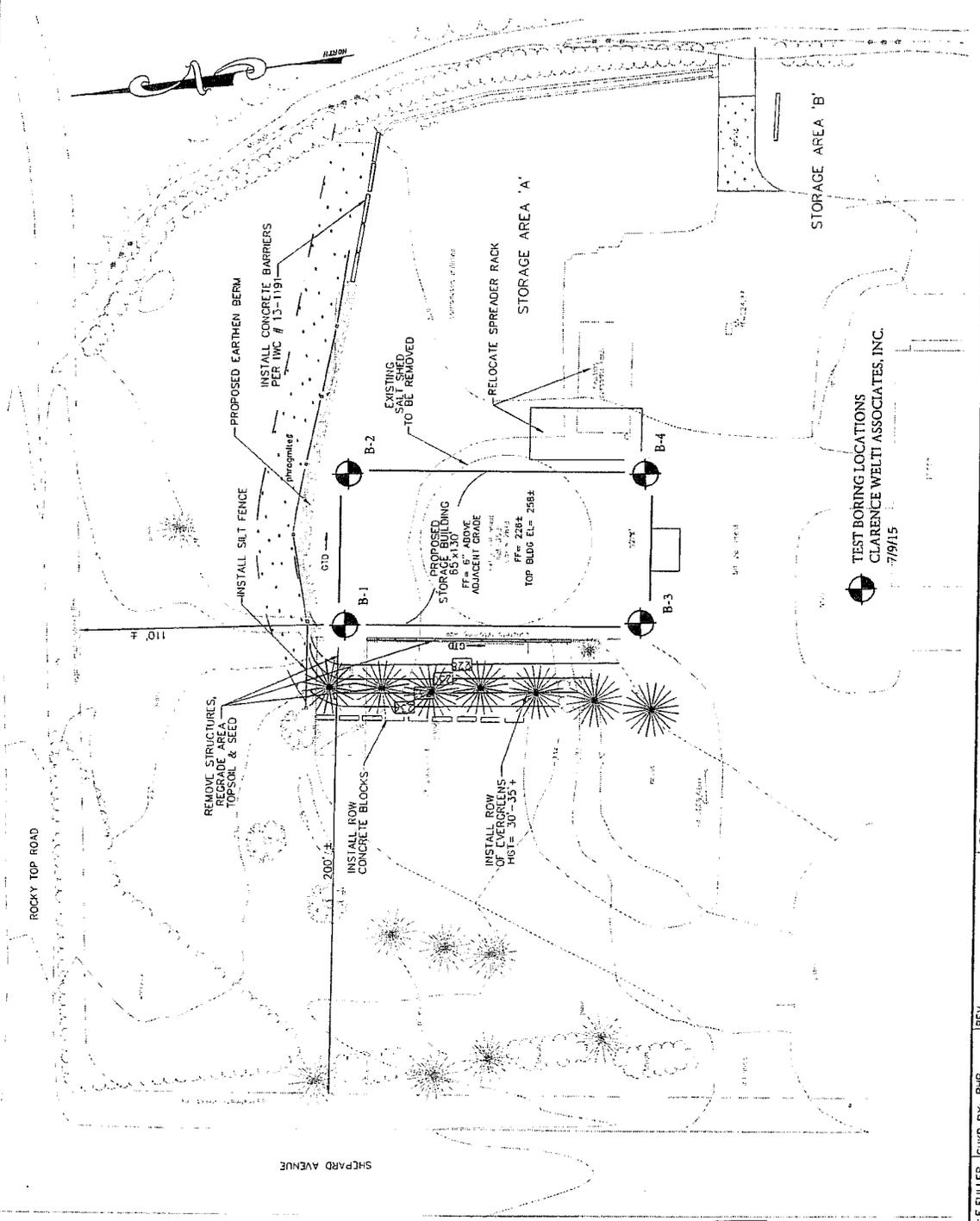
1. THIS SURVEY HAS BEEN PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE REGISTERED PROFESSIONAL SURVEYORS ACT AND THE REGULATIONS OF THE BOARD OF SURVEYING AND MAPPING OF THE STATE OF CONNECTICUT, AS ADOPTED BY THE BOARD OF SURVEYING AND MAPPING ON SEPTEMBER 15, 2009.
2. THE SURVEY WAS CONDUCTED ON 07/15/15.
3. THE TYPE OF PLAIN A COMPUTATION PLAIN METHOD WAS USED.
4. THE SURVEYING INSTRUMENTS USED WERE A TOTAL STATION AND A LEVEL.
5. THE SURVEYING INSTRUMENTS USED WERE A TOTAL STATION AND A LEVEL.
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10. THE SURVEYING INSTRUMENTS USED WERE A TOTAL STATION AND A LEVEL.

ZONE TABLE - ZONE B3

RIGHT YARD	REAR YARD	FRONT YARD	ACCESSORY BUILDING
15'	15'	15'	15'
20'	20'	20'	20'
25'	25'	25'	25'
30'	30'	30'	30'
35'	35'	35'	35'
40'	40'	40'	40'
45'	45'	45'	45'
50'	50'	50'	50'
55'	55'	55'	55'
60'	60'	60'	60'
65'	65'	65'	65'
70'	70'	70'	70'
75'	75'	75'	75'
80'	80'	80'	80'
85'	85'	85'	85'
90'	90'	90'	90'
95'	95'	95'	95'
100'	100'	100'	100'

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT TO THE BEST OF MY KNOWLEDGE.

CLORI F. FULLER, JR., P.E. 12329 DATE



TOWN OF HAMDEN
ENGINEERING DEPARTMENT
 2750 DIXWELL AVE
 HAMDEN, CONNECTICUT 06516
 (203) 287-7040 FAX (203) 287-7045

SITE PLAN
PROPOSED SALT STORAGE BUILDING
PUBLIC WORKS HEADQUARTERS & GARAGE
 1125 SHEPARD AVENUE
 HAMDEN, CONNECTICUT

TEST BORING LOCATIONS
 CLARENCE WELTI ASSOCIATES, INC.
 7/9/15

OWNER/APPLICANT: Town of Hamden

DATE

REV 3/15/2015
 DATE: 3/15/2015
 JOB #: 15015
 PROJ.: PUBLIC WORKS GARAGE
 DWG NO.: SP-1

REV 3/15/2015
 DATE: 3/15/2015
 JOB #: 15015
 PROJ.: PUBLIC WORKS GARAGE
 DWG NO.: SP-1

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033				CLIENT TOWN OF HAMDEN			PROJECT NAME PROPOSED SALT STORAGE SHED		
							LOCATION 1125 SHEPARD AVE., HAMDEN, CT.		
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV		HOLE NO. B-1	
TYPE	HSA		SS		LINE & STA.	GROUND WATER OBSERVATIONS		START DATE 7/9/15	
SIZE I.D.	3.75"		1.375"		N. COORDINATE	AT 4.0 FT AFTER 0 HOURS			
HAMMER WT.			140 lbs		E. COORDINATE	AT FT AFTER HOURS		FINISH DATE 7/9/15	
HAMMER FALL			30"						
DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.			
	NO.	BLOWS/6"	DEPTH						
0	1	21-15-24-21	0.00'-2.00'		ASPHALT	0.25			
					RED/BR. FINE-CRS. SAND, SOME GRAVEL, LITTLE SILT				
	2	21-18-19-25	2.00'-4.00'						
5									
	3	10-12-13-12	5.00'-7.00'		RED/BR. FINE-CRS. SAND, SOME SILT & GRAVEL	4.5			
					RED/BR. FINE-CRS. SAND, SOME SILT, LITTLE GRAVEL	8.0			
10	4	2-1-8	10.00'-11.50'						
15	5	8-3-3	15.00'-16.50'						
					POSSIBLE WEATHERED ROCK	17.5			
					AUGER REFUSAL @ 18.5'	18.5			
20									
25									
30									
35									
LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%						DRILLER: J. BREWER INSPECTOR:			
						SHEET 1 OF 1 HOLE NO. B-1			

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033			CLIENT			PROJECT NAME PROPOSED SALT STORAGE SHED		
			TOWN OF HAMDEN			LOCATION 1125 SHEPARD AVE., HAMDEN, CT.		
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV.		HOLE NO. B-2
TYPE	HSA		SS		LINE & STA.	GROUND WATER OBSERVATIONS		START DATE 7/9/15
SIZE I.D.	3.75"		1.375"		N. COORDINATE	AT 4.3 FT AFTER 0 HOURS		FINISH DATE 7/9/15
HAMMER WT.			140 lbs		E. COORDINATE	AT FT AFTER HOURS		
HAMMER FALL			30"					

DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.
	NO.	BLOWS/6"	DEPTH			
0					ASPHALT	
	1	20-21-25-28	1.00'-3.00'		RED/BR. FINE-CRS. SAND, SOME GRAVEL, LITTLE SILT, FEW COBBLES	0.80
	2	22-60	3.00'-3.75'			
5					BOTTOM OF BORING @ 4.5' (AUGER REFUSAL)	4.5
10						
15						
20						
25						
30						
35						

LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%		DRILLER: J. BREWER INSPECTOR:	
SHEET 1 OF 1		HOLE NO. B-2	

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT TOWN OF HAMDEN	PROJECT NAME PROPOSED SALT STORAGE SHED LOCATION 1125 SHEPARD AVE., HAMDEN, CT.
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	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV.	HOLE NO.	B-2A
TYPE	HSA		SS		LINE & STA.	GROUND WATER OBSERVATIONS		START DATE
SIZE I.D.	3.75"		1.375"		N. COORDINATE	AT 4.3 FT. AFTER	0 HOURS	7/9/15
HAMMER WT.			140 lbs		E. COORDINATE	AT	FT AFTER	HOURS
HAMMER FALL			30"					FINISH DATE
								7/9/15

DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.
	NO.	BLOWS/6"	DEPTH			
0					RED/BR. FINE-CRS. SAND, SOME GRAVEL, LITTLE SILT, FEW COBBLES	
5	1	14-15-18-17	5.00'-7.00'		RED/BR. FINE-CRS. SAND, SOME SILT, LITTLE GRAVEL	6.5
10	2	8-10-9	10.00'-11.50'		RED/BR. FINE SAND, LITTLE SILT	13.0
15	3	3-3-5	15.00'-16.50'			
20	4	11-9-12	20.00'-21.50'		RED/BR. FINE-CRS. SAND, SOME SILT, LITTLE GRAVEL	20.0
					BOTTOM OF BORING @ 21.5'	21.5
					NOTE: THIS BORING WAS DRILLED 6 FEET NORTH OF BORING B-2	
25						
30						
35						

LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%	DRILLER: J. BREWER INSPECTOR: SHEET 1 OF 1 HOLE NO. B-2A
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CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT TOWN OF HAMDEN	PROJECT NAME PROPOSED SALT STORAGE SHED LOCATION 1125 SHEPARD AVE., HAMDEN, CT.
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	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV	HOLE NO.	B-3
TYPE	HSA		SS		LINE & STA.	GROUND WATER OBSERVATIONS		START DATE
SIZE I.D.	3.75"		1.375"		N. COORDINATE	AT 3.0 FT AFTER	0 HOURS	7/9/15
HAMMER WT.			140 lbs		E. COORDINATE	AT FT. AFTER	HOURS	FINISH DATE
HAMMER FALL			30"					7/9/15

DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.
	NO.	BLOWS/6"	DEPTH			
0					ASPHALT	0.5
	1	6-4-3-6	1.00'-3.00'		RED/BR. FINE-CRS. SAND, SOME GRAVEL, LITTLE SILT - FILL	
	2	14-16-18-24	3.00'-5.00'			
5						
	3	10-12-12-9	5.00'-7.00'		RED/BR. FINE-CRS. SAND, SOME GRAVEL, LITTLE SILT, FEW COBBLES & BOULDERS	5.0
10						
	4	24-30-60	10.00'-11.08'			
15					AUGER REFUSAL @ 13.5'	13.5
20						
25						
30						
35						

LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%	DRILLER: J. BREWER INSPECTOR: <hr/> SHEET 1 OF 1 HOLE NO. B-3
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