



TOWN OF TRUMBULL, CONNECTICUT

REQUEST FOR PROPOSAL, CONDITIONS, SPECIFICATIONS, AND DRAWINGS

BID-RFP# 6356

LONG HILL GREEN PERMEABLE PAVER PATIO AND PARKING

PROPOSAL SUBMITTAL DUE: July 30, 2019 @ 2 pm

PREPARED FOR THE TOWN OF TRUMBULL BY:



Stantec Consulting Services, Inc.
55 Church Street
Suite 601
New Haven, CT 06510
203.495.1645
www.stantec.com

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Note: This Table of Contents has been prepared for the convenience of those using this contract with the sole express purpose of locating quickly the information contained herein; and no claims shall arise due to omissions, additions, deletions, etc., as this Table of Contents shall not be considered part of the contract.

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Notice to Proposers

**TOWN OF TRUMBULL TOWN
ENGINEERING
REQUEST FOR PROPOSALS
LONG HILL GREEN PERMEABLE PAVER PATIO AND PARKING**

BID-RFP # 6356 DUE: July 30, 2019 at 2:00PM

Sealed proposals for the **LONG HILL GREEN PERMEABLE PAVER PATIO AND PARKING** will be received at the office of the Purchasing Agent, 5866 Main Street, Trumbull, Connecticut, on or before the date indicated above, at which time all proposals received will be opened and read aloud.

Proposal documents are available from the Purchasing Department website www.trumbull-ct.gov and may be obtained (at a cost to you) from Digiprint, 909 Main Street. Stratford, CT 06615. The consulting engineer for this project is: Stantec, 55 Church Street, New Haven, CT 203.495.1645.

Proposers shall comply with State mandated Guidelines if and shall comply with Equal Opportunity Employment Practices, and Safety and Health Regulations.

This contract is subject to state set-aside (CHRO) and contract compliance requirements.

Bid Security is required in the amount of ten percent (10%) of the base proposal and shall be in the form of a Certified Check or Bid Bond. A Performance and Payment Bond in the full amount (100%) of the contract is required and shall be included in the Base Proposal. No oral, telephone or telegraphic responses shall be considered. A proposer may not withdraw a proposal within ninety (90) days of the proposal opening.

The Town of Trumbull reserves the right to waive and/or reject any and all proposals or any part thereof, waive the information in the proposal process, and reject any unqualified proposals, or accept any proposal or part thereof, deemed to be in the best interest of the Town of Trumbull.

Kevin Bova
Purchasing Agent

SECTION 1

GENERAL REQUIREMENTS FOR BIDDING AND INSTRUCTIONS TO PROPOSERS

**TOWN OF TRUMBULL TOWN
ENGINEERING
REQUEST FOR PROPOSALS
LONG HILL GREEN PERMEABLE PAVER PATIO AND PARKING**

BID-RFP # 6356 DUE: July 30, 2019 at 2:00PM

GENERAL INSTRUCTIONS

The Town of Trumbull, (hereinafter referred to as Town or Owner), through the office of the Purchasing Agent, will accept sealed proposals for the **LONG HILL GREEN PERMEABLE PAVER PATIO AND PARKING** in the Town of Trumbull in accordance with the specifications and requirements detailed in this request. All qualified and interested parties (hereinafter referred to as proposer, bidder, contractor or supplier) are invited to submit proposals under the terms and conditions set forth as follows:

This RFP is not a contract offer, and no contract exists until a written contract is signed by the Town and the successful proposer. It's the sole responsibility of the contractor/ vendor to check the Towns website for any addendum.

1. PREPARATION FOR PROPOSALS

Bids shall be submitted by using the enclosed BID PROPOSAL FORM that accompanies this request. Submit one (1) ORIGINAL and Two (2) EXACT COPY. Bidders should submit bids in a clear, concise and legible manner to permit proper evaluation of responsive bids.

An original and Two (2) exact copies of each Proposal shall be submitted in a sealed envelope, and addressed to: Purchasing Agent, Town of Trumbull, in a sealed envelope and plainly marked on the outside as "**LONG HILL GREEN PERMEABLE PAVER PATIO AND PARKING**" The envelope shall bear on the outside the name of the proposer and address. No oral, telephone or telegraphic responses will be considered. Proposals received after the advertised time and date due shall not be opened or considered. The Town reserves the right to communicate with any or all of the proposers to clarify the provisions of Proposals. The Town further reserves the right to request additional information from any proposer at any time after proposals are opened

2. PROPOSAL SUBMISSION

a) Proposals are to be completed (unless directed otherwise in the specifications), printed, signed by an authorized agent, and sealed in an envelope (including all official literature, brochures, etc., which support this request) and addressed as follows:

BID 6356 LONG HILL GREEN PERMEABLE PAVER PATIO AND PARKING

Trumbull Town Hall – Attn: Kevin Bova, Purchasing Agent

5866 Main Street, Trumbull CT 06611

DUE: July 30, 2019 at 2 pm sharp

- b) All Proposals must be made on the enclosed Proposal form. All blank spaces for Proposal prices must be filled in, in ink or typewritten, and the proposal form must be fully completed and executed when submitted. Please be advised that the person signing the formal proposal must be authorized by your organization to contractually bind your firm with regard to prices and related contractual obligations for the subject project
- c) The party signing the formal proposal must be authorized by your organization to contractually bind your firm with regard to prices and related contractual obligations for the contractual period requested.
- d) The Town reserves the right to correct, after proposer verification, any mistake in a proposal that is a clerical error, such as a price extension or decimal point error.

3. PROPOSAL RESPONSE TIME

Responses to this request shall be received at the office of the Purchasing Agent, Town Hall prior to the advertised hour (noted above) of opening, at which time all proposals (total proposal amount only) shall be publicly opened and read aloud. A proposer may withdraw a proposal at any time prior to the above scheduled date and time. Any proposal received after the above scheduled date and time shall not be considered or opened. No proposer may withdraw a proposal within ninety (90) days after the actual proposal opening.

4. TOWN OPTIONS - Omitted

5. TAX EXEMPT

The Town of Trumbull is exempt from the payment of taxes imposed by the Federal Government and/or State of Connecticut. Such taxes must not be included in the proposal price. The Town of Trumbull Tax Exempt number is 05-010 31-000.

6. SPECIFICATIONS

- a) If quoted materials and/or equipment do not meet or better the attached specifications on ALL points, the proposer must note ALL exceptions as separate attachments to their formal response; otherwise, it will be presumed that the proposal is in accordance with all specifications requested herein. Each Bidder will be held responsible to have studied the Specifications, visit the site (if necessary), regarding the proposed work, satisfied itself regarding all existing conditions and measurements, and to have included in the proposal an amount sufficient to cover all work.
- b) Should any Bidder find discrepancies in the Specifications, or be in doubt as to the exact meaning, notify the Town at once. The Town may then at their option, issue Addenda clarifying same. The Town shall not be responsible for oral instructions or misinterpretations of Specifications.
- c) The Town reserves the right to issue Addenda at any time prior to the Bid Opening. All such Addenda become, upon issuance part of the Specification. Each Bidder shall cover such Addenda in the proposal and shall acknowledge receipt of same on the blank provided therefore. It is the bidders' responsibility to access the Town's website or contact the Town for any addenda that may be issued in conjunction with this bid.
- d) The Town reserves the right to require any or all Bidders to submit statements as to previous experience in performing comparable work; and as to financial and technical organizations and resources available for this work. The mere opening and reading aloud of a bid shall not constitute or imply the Town's acceptance of the suitability of a Bidder or the bid, nor shall possession of Drawings or Specifications constitute an invitation to bid. The competency and responsibility of Bidders as well as the number of working days required for completion will be considered in making an award.

7. INQUIRIES & ADDENDUMS

- a) All technical inquiries regarding this request shall be answered up to the close of business on July 23, 2019 after which time no additional questions will be accepted to

William Maurer– Trumbull Town Engineer (203-452-5056) wmaurer@trumbull-ct.gov
and a copy to Kent Gannon at Stantec, Inc., kent.gannon@stantec.com.

All other questions may be directed to Kevin J. Bova Purchasing Agent (203.452.5042) kbova@trumbull-ct.gov.

Answers to questions the Town deems to be in the interest of all proposers will be made available in writing, email or by Fax as appropriate to all proposers or posted as an addendum on the Town web site.

- b) To communicate with any or all the proposers to clarify the provisions of this request; the Town further reserves the right to request additional information from any proposer at any time after proposals are opened.
- c) **It is the sole responsibility of a proposer to verify any addendums that may have been issued relating to this request prior to submission of a proposal. Any notice of addendum shall be published on the Town website (www.trumbull-ct.gov) in the Purchasing Department Section (Bid Notices). Failure to submit a response that does not address any changes or addendums may result in a disqualification of a proposal submission.**

8. ASSIGNMENT OF RIGHTS, TITLES, AND INTERESTS

Any assignment or subcontracting by a proposer, bidder, supplier, or contractor for work to be performed, or goods and/or services to be provided, in whole or in part, and any other interest in conjunction with a Town procurement shall not be permitted without the express written consent of the Town of Trumbull.

9. HOLD HARMLESS CLAUSE

The Contractor agrees to indemnify, hold harmless and defend the Town from and against any and all liability for loss, damage or expense which the Town may suffer or for which the Town may be held liable by reason of injury, including death, to any person or damage to any property arising out of or in any manner connected with the operations to be performed under this request, whether or not due in whole or in part of any act, omission or negligence of the Owner or any of his representatives or employees.

10. WORK REGULATIONS, STANDARDS AND FEDERAL AND STATE PREVAILING WAGE

- a) All work activities performed in association with this request must be performed and completed for the Town in accordance with current Federal State and Local regulations. All services performed shall also conform to the latest OSHA standards and/or regulations.
- b) Applicable laws and regulations relating to **State of Connecticut Prevailing Wages**, employment practices, nondiscrimination, safety and health regulations shall be adhered to by the contractor. The contractor shall be responsible for "Certified Statements of Compliance" regarding Prevailing Wages. Contractor shall also collect and submit four (4) Certified "Statements of Compliance" from any sub-contractors. Prevailing Wage rates are either included in the initial bid documents or will be issued as an addendum (Once the State issues the Prevailing Wage summary to the Town).
- c) **If the low qualified low bidder is chosen and is not over 100,000.00 then prevailing wages will NOT apply.**

11. INSURANCE

The successful proposer shall provide the Town Purchasing Agent with a Certificate of Insurance before work commences. The Town shall be named as an additional insured with an Insurance Company licensed to write such insurance in Connecticut, against the following risks and in not less than those listed in the table below:

Workers' Compensation – With Respect to all operations the Contractor performs and all those performed for it by subcontractors, The Contractor shall carry, and require each subcontractor to carry, Worker's Compensation insurance as required by the laws of the State of Connecticut.

Employer's liability insurance shall be provided in amounts no less than \$100,000 per accident for bodily injury by accident; \$100,000 policy limit by disease and \$100,000 per employee for bodily injury by disease.

Commercial General Liability	Minimum Single Occurrence Amount	Minimum Annual Aggregate Amount
Bodily Injury Liability	\$2,000,000	\$5,000,000
Property Damage Liability	\$1,000,000	\$5,000,000
Personal Injury Liability	\$1,000,000	\$5,000,000
Comprehensive Auto Liability (Including coverage of owned, non-owned & rented vehicles)	Minimum Single Occurrence Amount	Minimum Annual Aggregate Amount
Bodily injury to or death of all persons	\$2,000,000	No aggregate limitation
Injury to or destruction of property	\$2,000,000	No aggregate limitation

The insurance policy must contain the additional provision wherein the company agrees that Thirty (30) days prior to termination, expiration, cancellation or reduction of the insurance afforded by this policy with respect to the contract involved, written notice will be served by registered mail to the Purchasing Agent, Town of Trumbull.

Additionally, the successful proposer (Contractor) shall provide adequate statutory Workmen's Compensation Insurance for all labor employed on this project, and comprehensive General Public Liability Insurance (Coverage "B")

The successful proposer (Contractor) and each Subcontractor agree that their insurance carriers waive subrogation against the Town, its agents or employees with respect to any loss covered by the Contractor's and each Subcontractor's insurance.

12. CONFLICT OF INTEREST

Public officials shall be prohibited from receiving any town work procured through a public Bid or bid waived process so as to avoid any appearance of impropriety or conflict of interest;
And; Public officials cannot circumvent the intent of this ordinance by receiving town work Through a bid waiver, as proscribed by the Trumbull Town Charter.

13. PROPOSAL, PERFORMANCE AND PAYMENT BONDS

- a) A Bond payable to the Owner must accompany each Proposal for ten (10%) percent of the total amount of the Proposal. As soon as the Proposal prices have been compared, the Owner will return the bonds of all except the three lowest responsible Proposals. When the Agreement is executed, the bonds of the two remaining unsuccessful Proposers will be returned. The

- Proposal Bond of the successful Proposer will be retained until the Payment Bond and Performance Bond have been executed and approved, after which it will be returned. A certified check may be used in lieu of a Proposal (Bid) Bond.
- b) A Performance Bond and a Payment Bond, each in the amount of 100 percent (100%) of the Contract Price, with a corporate surety approved by the Owner, will be required for the faithful performance of the contract. Attorneys-in-fact who sign the Bid Bonds or Payment Bonds and Performance Bonds must file with each bond, a certified and effective dated copy of their power of attorney.
 - c) The party to whom the contract is awarded will be required to execute the Agreement and obtain the Performance Bond and Payment Bond within ten (10) calendar days from the date when Notice of Award is delivered to the Proposer. The Notice of Award shall be accompanied by the necessary Agreement and Bond forms. In case of failure of the Proposer to execute the Agreement, the Owner may, at his option, consider the Proposer in default, in which case the Bid Bond accompanying the proposal shall become the property of the Owner.
 - d) The Owner, upon receipt of acceptable Performance Bond, Payment Bond and Agreement signed by the Contractor, shall sign the Agreement and return to the Contractor an executed duplicate of the Agreement within a reasonable period of time. The returned executed Agreement by the Owner to the Contractor shall be accompanied with a Notice to Proceed.
 - e) The Contractor shall secure a maintenance bond with a company which shall have been approved by the Attorney of the Town of Trumbull, guaranteeing his work in all phases of construction for a period of two (2) years from the date of acceptance by the Town which shall also cover all damages due to trench settlement.
 - f) The face value of the maintenance bond shall be as follows: 5% of the base bid of contracts over \$50,000.

14. WORK SCHEDULE

The Town anticipates Work shall begin on or about August 27, 2019 and be completed in by October 15, 2019 and in accordance with the requirements of the "Notice to the Contractor -Contract Time and Liquidated Damages".

15. LOWEST RESPONSIBLE PROPOSAL

- a) The Town shall determine the "lowest responsible qualified proposer" on the basis of the Proposer submitting the lowest "Total Proposal", responsiveness of his Technical Proposal; and demonstrating a history of the ability and integrity necessary to perform the required work; and certifying that it shall perform the work in accordance with the specifications.
- b) Proposals will be compared on the basis of the "Total Proposal" of the items listed in the Proposal and on basis of the Proposer's experience and competence.
- c) If the Lowest Total Proposal exceeds the amount of funds available for the project, the Town reserves the right to increase or decrease any class, item or part of the work. After determining the "lowest responsible qualified proposer", the Town will issue a Notice of Award to the successful Proposer.
- d) The Proposer designated by the Town as the "lowest responsible qualified proposer" to whom the contract is awarded shall execute the Contact and submit the following documents:
 - i. Performance Bond
 - ii. Labor, Payment and Materials Bond
 - iii. Copy of valid license issued by the State of Connecticut, Department of Consumer Protection.
- e) In the event that the lowest responsible qualified proposer fails to execute the Contact and/or fails to provide the required documents within the time period prescribed, the Town, at its option, may consider the lowest responsible qualified proposer to be in default, in which case the Bid Guarantee shall become the property of the Town.

16. LIQUIDATED DAMAGES

Each work assignment must be completed within 49 consecutive calendar days, excluding winter shutdown, after town issuing Letter to proceed. Contractor further agrees to pay as liquidated damages, the sum of (\$1,100) one thousand one hundred dollars for each consecutive calendar day thereafter from letter to Proceed

17. DELIVERY TIME IS OF THE ESSENCE - Omitted

18. STATEMENT OF QUALIFICATIONS AND REFERENCES

Bidders shall complete and submit the "Statement of Qualifications" section of this request along with the References form. The Town and Engineering Department may make such investigations as necessary and it deems appropriate to determine the qualifications of the proposer to perform the work required. If the Town is not satisfied that the proposer is properly qualified, the Town along with Engineering Department reserves the right to reject the proposal of said proposer.

19. MISCELLANEOUS

- a) All Contractors must develop a complete and thorough schedule which demonstrates that the Contractor will be able to complete the project in a timely fashion. Such schedule shall be provided prior to Award of Contract.
- b) Selected proposer agrees to warranty all work completed for this requirement.

- c) The Town may make such investigations as necessary and it deems appropriate to determine the qualifications of the proposer to perform the work required. Each proposer shall submit a Statement of Bidder Qualifications. If the Town is not satisfied that the proposer is properly qualified, the Town reserves the right to reject the proposal of said proposer.
- d) All material testing and material certification shall be in accordance with State requirements.
- e) All closeout documents must be in accordance with State requirements.

20. UNIT PRICE

- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.
- B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity" (which Owner or its representative has set forth in the Bid Form) for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The estimated quantities of items are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to the Contractor will be based on actual quantities.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
- D. Unit prices for identical item numbers that are in more than one bid schedule shall be equal. Discrepancies will be resolved in favor of the lowest unit price.

21. COMMISSION ON HUMAN RIGHTS & OPPORTUNITIES REQUIREMENTS- STATE SET-ASIDE

The contractor who is selected to perform this State project must comply with CONN. GEN. STAT. §§ 4a-60, 4a-60a, 4a-60g, and 46a-68b through 46a-68f, inclusive, as amended by June 2015 Special Session Public Act 15-5.

State law requires a minimum of twenty-five (25%) percent of the state-funded portion of the contract for award to subcontractors holding current certification from the Connecticut Department of Administrative Services ("DAS") under the provisions of CONN. GEN. STAT. § 4a-60g. (25% of the work with DAS certified Small and Minority owned businesses and 25% of that work with DAS certified Minority, Women and/or Disabled owned businesses.) The contractor must demonstrate good faith effort to meet the 25% set-aside goals.

For municipal public works contracts and quasi-public agency projects, the contractor must file a written or electronic non-discrimination certification with the Commission on Human Rights and Opportunities. Forms can be found at:

<http://www.ct.gov/chro/cwp/view.asp?a=2525&Q=315900&chroPNavCtr=1>

Forms and Reports For Construction Contractors

- [Checklist for Contractors on Municipal Public Works Contracts](#)
- [Affirmative Action Plan Format](#)
- [Set Aside Plan Format](#)
- [Sample AA/EOE Policy Statement](#)
- [Instructions for Filing Forms](#)
- [Minority Workforce Utilization Report \(CHRO CC257 AND CC 257a\)](#)
- [Cumulative Minority Workforce Utilization Report \(CHRO CC257b\)](#)
- [Small Contractor and MBE Status Report \(CC258a\)](#)
- [Monthly Materials Consumption Report \(CHRO CC259\)](#)
- [Map of CT Metropolitan Statistical Areas](#)
- [Links to maps for download in various formats](#)

22. AWARD AND AUTHORITY

The Purchasing agent from Town Hall on will issue notification of award in writing along with Standard contract and a Purchase order. **THE TOWN RESERVES THE RIGHT TO ELIMINATE ANY OR ALL ALTERNATE ITEMS. LOW BIDDER WILL THEN BE BASED ON THE PROPOSAL OF REMAINING BASE BID AND / OR EITHER ALTERNATE.**

ALL Original Invoices, submittals waiver of liens and certified payroll TO BE SENT TO:

ENGINEERING DEPARTMENT

ATT: William Maurer–
5866 MAIN STREET
TRUMBULL CT 06611

**TOWN OF TRUMBULL TOWN
ENGINEERING
REQUEST FOR PROPOSALS
LONG HILL GREEN PERMEABLE PAVER PATIO AND**

PARKINGBID-RFP # 6356 DUE: July 30, 2019 at 2:00PM

STATEMENT OF QUALIFICATIONS (To be submitted with proposal)

Submitted by:

Name of Organization _____

Name of Individual _____

Title _____ Address _____

Telephone _____

Submitted to:

Name _____

Address _____

Telephone _____

Project Name and Description (if applicable)

Contractor's General Business Information

Check If:

Corporation Partnership Joint Venture Sole Proprietorship

If Corporation:

a. Date and State of Incorporation

b. List of Executive Officers

Name Title

If Partnership:

a. Date and State of Organization

b. Names of Current General Partners

c. Type of Partnership

General Publicly Traded

Limited Other (describe): _____

If Joint Venture:

a. Date and State of Organization

b. Name, Address and Form of Organization of Joint Venture Partners: (Indicate managing partner by an asterisk*)

If Sole Proprietorship:

a. Date and State of Organization

b. Name
and Address of Owner or Owners

1. On Schedule A, attached, list major engineered construction projects completed by this organization in the past five (5) years. (If a joint venture list each participant's projects separately).
 2. On Schedule B, attached, list current projects under construction by this organization. (If joint venture, list each participant's projects separately).
 3. Name of surety company and name, address, and phone number of agent.
-
-

4. Is your organization a member of a controlled group of corporations as defined in I.R.C. Sec. 1563?

Yes _____ No _____

If yes, show names and addresses of affiliated companies.

5. Furnish on Schedule C, attached, details of the construction experience of the principal individuals of your organization directly involved in construction operations.
6. Has your organization ever failed to complete any construction contract awarded to it?

Yes _____ No _____

If yes, describe circumstances on attachment.

7. Has any Corporate officer, partner, joint venture participant or proprietor ever failed to complete a construction contract awarded to him or her in their own name or when acting as a principal of another organization?

Yes No

If yes, describe circumstances on attachment.

8. In the last five years, has your organization ever failed to substantially complete a project in a timely manner?

Yes No

If yes, describe circumstances on attachment.

I hereby certify that the information submitted herewith, including any attachment is true to the best of my knowledge and belief.

Name of Organization: _____

By: _____

Title: _____

Dated: _____

**TOWN OF TRUMBULL TOWN
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LONG HILL GREEN PERMEABLE PAVER PATIO AND PARKING**

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Schedule A: Prior Experience (Copy Additional Pages as Needed)

Schedule B: Current Experience (Copy Additional Pages as Needed)

Schedule C: Personnel (Copy Additional Pages as Needed)

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REFERENCES

(To be submitted with proposal – attach additional pages as necessary)

List references for similar services provided for at least Four (4) clients in the past five (5) years (attach any other client references if desired). **PLEASE NOTE IT IS THE TOWN'S INTENT TO COMMUNICATE WITH THE REFERENCES LISTED HEREIN.**

CLIENT 1:

Organization Name: _____
Contact Name: _____ Phone: _____
Service Dates: _____
Project(s): _____

CLIENT 2:

Organization Name: _____
Contact Name: _____ Phone: _____
Service Dates: _____
Project(s): _____

CLIENT 3:

Organization Name: _____
Contact Name: _____ Phone: _____
Service Dates: _____
Project(s): _____

CLIENT 4:

Organization Name: _____
Contact Name: _____ Phone: _____
Service Dates: _____
Project(s): _____

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PROPOSED SUBCONTRACTORS

If none, write "None" _____.

*Description of Work _____
Proposed Subcontractor Name _____
Address _____

*Description of Work _____
Proposed Subcontractor Name _____
Address _____

*Description of Work _____
Proposed Subcontractor Name _____
Address _____

*Description of Work _____
Proposed Subcontractor Name _____
Address _____

*Insert description of work and subcontractors' names as may be required.

This is to certify that the names of the above-mentioned subcontractors are submitted with full knowledge and consent of the respective parties.

The Proposer warrants that none of the proposed subcontractors have any conflict of interest as respects this contract.

Proposer _____
(Fill in Name)

By _____
(Signature and Title)

SECTION 2

PROPOSAL

**TOWN OF TRUMBULL TOWN
ENGINEERING
REQUEST FOR PROPOSALS
LONG HILL GREEN PERMEABLE PAVER PATIO AND PARKING**

BID-RFP # 6356 DUE: July 30, 2019 at 2:00PM

PROPOSAL

Proposal of _____ (hereinafter called "Proposer, Bidder"), organized and existing under the laws of the State of Connecticut, doing business as to the Engineering Department, Town of Trumbull, Connecticut (hereinafter called the "Owner").

In compliance with your Advertisement for Proposals, Proposer hereby proposes for the "**LONG HILL GREEN PERMEABLE PAVER PATIO AND PARKING**" project in the Town of Trumbull, Connecticut together with all related incidental and appurtenant work as described in the specifications or outlined and/or shown on the exhibits. The work is to be done in strict accordance with the Specifications, Drawings and all Contract Documents, within the time set forth therein, and at the prices stated on the Proposal Schedule.

By submission of this Proposal, each Proposer certifies, that this Proposal has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this Proposal with any other Proposer or with any competitor.

Proposer hereby agrees to commence work under this contract on or before a date to be specified in the "Notice to Proceed", and to fully complete the Project within forty-nine (**49**) consecutive calendar days, excluding winter shutdown, thereafter.

Proposer further agrees to pay as liquidated damages, the sum of **(\$1,100.00)** one thousand one hundred dollars for each consecutive calendar day thereafter till completion of the full contract as provided in the General Conditions. Proposer further agrees that he will provide and sustain the required Bonds and Insurance Policies as required.

Proposer understands that the Owner reserves the right to reject any or all proposals and to waive any informality in the bidding.

Proposer agrees that this proposal shall be good and may not be withdrawn for a period of one hundred (120) calendar days after the scheduled closing time for receiving proposals.

Upon receipt of written notice of the acceptance of this proposal, proposer shall execute the formal contract attached within five (5) days and deliver a Surety Bond or Bonds as required in the General Conditions. The Bid Security attached in the sum of _____ Dollars (\$_____) is to become the property of the Owner in the event the contract and bond are not executed within the time above set forth, as liquidated damages for the delay and additional expense to the Owner caused thereby.

Company Name

By (Signature)

Address - City-Town-Zip

Print Name

Email

Title

Date

Telephone/Fax

PROPOSAL – LONG HILL GREEN PERMEABLE PAVER PATIO AND PARKING (continued)

The undersigned hereby declares that in regard to all conditions affecting the work to be done and the labor and materials required, this proposal is based on his investigations and findings, and the Town of Trumbull and the Engineers and their officers, agents and employees shall not in any manner be held responsible for the accuracy of, or be bound by any estimates, borings, water or underground conditions relative to the proposed work, indicated in this or in the other contract documents; that no warranty or representation has been made by the Town of Trumbull or the Engineers or their officers, agents and employees as to subsurface soil or rock conditions, ground water, or other underground and similar conditions; nor has any representation or warranty been so made that the estimated quantities to be used for comparison of proposals will even approximate the actual quantities or materials and work which the Contractor may be required to furnish or perform.

BID FORM - Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

Acknowledgement of Addenda

Proposer hereby acknowledges receipt of all Addenda through and including:

Addendum No. _____, dated _____

Company _____

Authorized Signature _____

Print Name _____

LONG HILL GREEN PERMEABLE PAVER PATIO AND PARKING – Base Bid Pay Items

Item Number	Item Name and Unit Bid Prices Written in Figures	Units	Estimated Quantity	Total Amount of Item (in figures)
001	Mobilization and Project Closeout, per LS, the price of: (\$)	LS	1	\$ _____
002	Site Demolition and Removals, per LS, the price of: (\$)	LS	1	\$ _____
003	Erosion and Sedimentation Control, per LS, the price of: (\$)	LS	1	\$ _____
004	Landscape Planting, per LS, the price of: (\$)	LS	1	\$ _____
005	Earth Excavation, per CY, the price of: (\$)	CY	120	\$ _____
006	Permeable Paver, per SF, the price of: (\$)	SF	2200	\$ _____
007	Asphalt Driveway (Complete), per SY, the price of: (\$)	SY	52	\$ _____
008	Concrete Sidewalk, per SF, the price of: (\$)	SF	520	\$ _____
009	Concrete Curb, per LF, the price of: (\$)	LF	330	\$ _____
010	Granite Curb - Flush, per LF, the price of: (\$)	LF	70	\$ _____
011	Catch Basin, per EA, the price of: (\$)	EA	1	\$ _____

012	12" HDPE, per LF, the price of: (\$ _____)	LF	30	\$ _____
013	Street Sign, per EA, the price of: (\$ _____)	EA	1	\$ _____
014	Detectable Warning Strip, per EA, the price of: (\$ _____)	EA	1	\$ _____
015	Crushed Stone Aggregate Base (AASHTO #57 & AASHTO #2), per CY, the price of: (\$ _____)	CY	116	\$ _____
016	Seeded Lawn (Includes Topsoil and Bridged Soil): (\$ _____)	SY	212	\$ _____

TOTAL AMOUNT OF BASE BID – (A)

(\$ _____)
(In figures)

LONG HILL GREEN PERMEABLE PAVER PATIO AND PARKING – Alternate Bid Pay Items				
Item Number	Item Name and Unit Bid Prices Written in Figures	Units	Estimated Quantity	Total Amount of Item (in figures)
001A	Steel Planter, per EA, the price of: (\$ _____)	EA	5	\$ _____
002A	3" PVC Conduit, per LF, the price of: (\$ _____)	LF	60	\$ _____
003A	Light Pole Footing, per EA, the price of: (\$ _____)	EA	4	\$ _____

TOTAL AMOUNT OF ALTERNATE BID – (B)

(\$ _____)
(In figures)

TOTAL AMOUNT OF BID (A+B) – Base Bid and Alternate Bid

(\$ _____)
(In figures)

THE QUANTITIES IN THIS BID FORM ARE FOR PURPOSES OF ILLUSTRATION ONLY. THE FINAL QUANITIES WILL BE DETERMINED BY THE ACTUAL WORK COMPLETED.

PROPOSAL (continued)

Respectfully submitted,

Company Name

By (Signature)

Address

Print Name

Address

Title

(SEAL-if proposal is by a corporation)

Note: Insert Proposer's name. If a corporation, give the State of Incorporation using the phrase, "A corporation organized under the laws of

_____, composed of officers as follows:

President

Secretary

Vice President

Treasurer

If a partnership, give names of partners, using also the phrase, "co-partners trading and doing business under the firm name and style of _____, composed of partners as follows:

EMAIL

END OF GENERAL BID

**TOWN OF TRUMBULL TOWN
ENGINEERING
REQUEST FOR PROPOSALS
LONG HILL GREEN PERMEABLE PAVER PATIO AND PARKING**

BID-RFP # 6356 DUE: July 30, 2019 at 2:00PM

NON-COLLUSION AFFIDAVIT OF PRIME BIDDER

State of _____)

) SS:

County of _____)

_____, being first duly sworn,

1. He is _____ of
the bidder that has submitted the attached bid.

2. He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such bid.

3. Such price is genuine and is not a collusive or sham bid.

4. Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firms or person to submit a collusive or sham Bid in connection with the Contract for which the Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communications or conference with any other Bidder, firm or person to fix the proceeds or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage, against the Town of Trumbull, (Owner) or any person interested in the proposed Contract; and

5. The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest including this affiant.

Signed _____

Title

Subscribed and sworn to before me this _____ day of _____, 20

Title

My Commission Expires

SECTION 3

CONTRACT AND BONDS

BID BOND to be submitted with RFP proposal

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

BIDDER (Name and Address):

SURETY (Name, and Address of Principal Place of Business):

OWNER (Name and Address):

BID

Bid Due Date:

Description (Project Name— Include Location):

BOND

Bond Number:

Date:

Penal sum \$

(Words)

(Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER

SURETY

(Seal)

(Seal)

Bidder's Name and Corporate Seal

Surety's Name and Corporate Seal

By:

By:

Signature

Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest:

Attest:

Signature

Signature

Title

Title

Note: Addresses are to be used for giving any required notice.

Provide execution by any additional parties, such as joint venturers, if necessary.

EJCDC® C-430, Bid Bond (Penal Sum Form). Published 2013.
Prepared by the Engineers Joint Contract Documents Committee.
Page 1 of 2



PENAL SUM FORM

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
 - 3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2 All Bids are rejected by Owner, or
 - 3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

EJCDC® C-430, Bid Bond (Penal Sum Form). Published 2013.
Prepared by the Engineers Joint Contract Documents Committee.
Page 2 of 2

PERFORMANCE BOND Sample if awarded

CONTRACTOR (*name and address*):

SURETY (*name and address of principal place of business*):

OWNER (*name and address*):

CONSTRUCTION CONTRACT

Effective Date of the Agreement: Amount:

Description (*name and location*):

BOND

Bond Number:

Date (*not earlier than the Effective Date of the Agreement of the Construction Contract*):

Amount:

Modifications to this Bond Form: None See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

(seal)
Contractor's Name and Corporate Seal

By: _____
Signature

Print Name

Title

Attest: _____
Signature

Title

SURETY

(seal)
Surety's Name and Corporate Seal

By: _____
Signature (*attach power of attorney*)

Print Name

Title

Attest: _____
Signature

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:

3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance

and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.
7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
 - 7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
 - 7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
 - 7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators,

14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims

EJCDC® C-610, Performance Bond

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successors, and assigns.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

16. Modifications to this Bond are as follows:

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PAYMENT BOND Sample if awarded

CONTRACTOR (*name and address*):

SURETY (*name and address of principal place of business*):

OWNER (*name and address*):

CONSTRUCTION CONTRACT

Effective Date of the Agreement: Amount:

Description (*name and location*):

BOND

Bond Number:

Date (*not earlier than the Effective Date of the Agreement of the Construction Contract*):

Amount:

Modifications to this Bond Form: None See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal

(seal)

Surety's Name and Corporate Seal

(seal)

By: _____
Signature

By: _____
Signature (*attach power of attorney*)

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

EJCDC® C-615, Payment Bond

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and American Society of Civil Engineers. All rights reserved. 1 of 3

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
 - 5.1 Claimants who do not have a direct contract with the Contractor,
 - 5.1.1 have furnished a written notice of nonpayment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2 Pay or arrange for payment of any undisputed amounts.
 - 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Con-

struction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related sub-contracts, purchase orders, and other obligations.

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12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16. Definitions

16.1 Claim: A written statement by the Claimant including at a minimum:

1. The name of the Claimant;
2. The name of the person for whom the labor was done, or materials or equipment Furnished;
3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
4. A brief description of the labor, materials, or equipment furnished;
5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
7. The total amount of previous payments received by the Claimant; and
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2 Claimant: An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond

shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

- 16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
 - 16.4 **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
 - 16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

Will need to execute if awarded

TOWN OF TRUMBULL

INDEPENDENT CONTRACTOR CONTRACT DOCUMENTS

WHEREAS, _____ ("Hereinafter "Contractor") wishes to provide certain services to the Town of Trumbull (Hereinafter 'Town') as described in Bid # _____ dated , Notice to Bidders, General Instructions to Bidders, General and Special Conditions, Bid Proposal Form, Contractor's Response to Bid and this Agreement (Hereinafter collectively said documents are referred to as "Contract Documents") which said Contract Documents are incorporated into and made a part of this Contract Documents.

WHEREAS, the Town wishes _____ to provide said services pursuant to the Contract Documents;

NOWTHERFORE, for good and valuable consideration receipt of which is hereby acknowledged, the Parties agreed to the following addendum:

1. This Contract Documents is for services to be performed as described in the Contract Documents.

- a. The Contractor shall commence and complete the work as set forth in the RFP and such work shall meet all specifications, requirements, scope of work, terms and conditions contained in the RFP Documents and set the unit pricing within said RFP Documents.
 - b. The Contractor shall furnish all material, supplies, tools, equipment, labor and other services necessary for the construction and completion of the project as described in the Contract Documents. Contractor agrees to abide by all provisions, requirements, standards and specifications included in the RFP whether actual or by reference.
 - c. The Contractor shall perform all of the work described in the RFP Documents and the Contractor's sole measurement of payment for said work shall be the sum of the total quantities of the units completed and accepted by the Town multiplied by the corresponding unit price as set forth in the RFP Documents for each respective unit.
 - d. The Owner will pay the Contractor in the manner and at such time as set forth in the RFP Documents.
 - e. All invoices submitted to the Town will be against a Purchase Order given to _____ by the Town.
- f. Contractor acknowledges that the project set forth in the Construction Documents are a Federally and/or State funded project, therefore all aspects of the work, including but not necessarily limited to formats for billing, submittals, testing, change orders, DBE and prevailing wages shall be in accordance with any and all Federal and/or State requirements.

2. Representations and Warranties. Contractor hereby represents and warrants the following to the Town:

- (a) Contractor's performance of any and all services pursuant to the Contract Documents shall be in compliance with all applicable federal, state and local laws, statutes, ordinances, orders, rules and/or regulations.

(b) Contractor is authorized and empowered to enter into the Contract Documents, and that the terms and provisions of the Contract Documents are binding upon it and do not conflict with any other Contract Documents, regulation, law or order to which it is a party or by which it is bound.

(c) Contractor's execution and delivery of the Contract Documents and compliance by Contractor with all of the provisions of the Contract Documents: (i) are within Contractor's authority and powers, (ii) will not conflict with or result in any breach of or constitute a default under any resolution, contract, articles of organization or other instrument to which Contractor is a party or by which it may be bound or any license, judgment, decree, law, statute, order, rule or regulation of any court or governmental agency having jurisdiction over Contractor or any of its activities or properties, and (iii) have been duly authorized by all necessary action on the part of Contractor, so that upon execution by all Parties thereto, the Contract Documents will constitute a valid and binding contract of Contractor enforceable upon Contractor in accordance with its respective terms herein.

(d) To the best of Contractor's information and belief, there are no actions, suits, proceedings, inquiries or investigations pending or threatened against or affecting Contractor in any court or before any governmental authority or tribunal which might materially and adversely affect Contractor's ability to perform its obligations under the Contract Documents.

(e) Contractor shall provide the services as set forth in Exhibit A (i) in a good, professional and workmanlike manner, (ii) so that deadlines agreed between the Town and the Contractor are strictly adhered to, (iii) so that at all times the Contractor shall be qualified and professionally competent to carry out said services and (iv) so that at all times the Contractor possess all licenses and/or certifications required to perform said services.

(f) Contractor and its subcontractors, officers, employees, agents or representatives are duly qualified, capable, and experienced to perform the services set forth herein.

(g) Contractor (i) is not in receivership or contemplating same, (ii) has not filed for bankruptcy, and (iii) is not currently delinquent with respect to payment of property taxes in any state.

(h) Contractor further warrants to the truth and accuracy of all representations in this Contract Documents.

3. Compliance and Reliance. In connection with Contractor's representations, warranties and covenants set forth hereinabove; the Town reserves the right to perform reasonable periodic monitoring (including on-site monitoring) of Contractor's compliance with the terms of the Contract Documents and the adequacy and timeliness of Contractor's performance hereunder. Contractor expressly acknowledges that the Town has relied on Contractor's representations, warranties and covenants concerning its subcontractors, officers, employees, agents or representatives who will be performing the services per the Contract Documents, including, without limitation, their experience and qualifications, and that if any other person is to replace any such subcontractor, officer, employee, agent or representative, such person shall have equivalent qualifications and experience. Contractor agrees to and shall provide the Town with such information regarding the qualifications of its subcontractors and staff, including professionals and others, as is reasonably required by the Town to verify that present and subsequent activities and services are being rendered by competent and trained personnel.

4. Conditions

(a) Contractor shall comply with all federal, state and local laws, statutes, regulations, ordinances, regulations and rules in connection with the services set forth within the Contract Documents.

(b) Contractor's satisfactory compliance with all conditions as set forth in this subsection and throughout the Contract Documents shall be determined in the sole and absolute discretion of the Department Head for whom services are provided, or the First Selectman if applicable. Contractor's acknowledges that satisfactory compliance as set forth in this subsection shall in no way limit, or act as a waiver on behalf of the Town, of Contractor's requirement to provide the work in a good, professional and workmanlike manner.

(c) Contractor shall cause all its employees, agents, representatives and subcontractors to abide by all conditions set forth herein and rules and regulations prescribed by the Town governing all of the Contractor's operations.

5. Insurance. The Contractor, at its sole cost and expense, shall obtain and maintain continuously at all times its occupies and uses the premises pursuant to this Addendum insurance naming the Town as an additional insured with a carrier licensed to do business in the State of Connecticut and meeting the minimum coverage limits and other requirements set forth in the Contract Documents.

6. Indemnity and Hold Harmless.

(a) Contractor shall indemnify, defend, save and hold harmless the Town, including but not limited to, its elected officials and officers, employees, representatives and agents (collectively, the "Municipal Indemnified Parties") from and against all liabilities, actions, damages, claims, demands, judgments, losses, costs, expenses, suits or actions and reasonable attorneys' and consultants' fees, and will defend the Municipal Indemnified Parties in any suit, including appeals, for personal injury to, or death of, any person or persons, or loss or damage to property arising out of (i) Contractor's performance or non-performance of its obligations under the Contract Documents, (ii) the breach of any obligation of Contractor contained in the Contract Documents or (iii) any misrepresentation or breach of warranty by Contractor contained in the Contract Documents. Notwithstanding anything herein to the contrary, Contractor shall not, however, be required to reimburse or indemnify any Municipal Indemnified Party for loss or claim arising out of the willful misconduct, recklessness, or negligence of such Municipal Indemnified Party, and the Municipal Indemnified Party whose willful misconduct, recklessness, or negligence is adjudged by a court of competent jurisdiction to have caused such loss or claim will reimburse the Contractor (without duplication) for the costs of defending any suit as required above.

(b) A Municipal Indemnified Party shall promptly notify Contractor of the assertion of any claim against it for which it may be entitled to be indemnified hereunder, shall give Contractor the opportunity to defend such claim with legal counsel reasonably acceptable to such Municipal Indemnified Party, and Contractor shall not settle such claim without the approval of the Municipal Indemnified Party, which approval shall not be unreasonably withheld. In addition to such legal counsel retained by Contractor, a Municipal Indemnified Party shall have the right to employ separate counsel in response to the assertion of any claim against it for which it may be entitled to indemnification hereunder, but the fees and expenses of such counsel shall be paid by the Municipal Indemnified Party.

(c) In claims against any Municipal Indemnified Party by an employee of Contractor, a subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Section shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for Contractor or a subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

(d) The foregoing indemnification provisions are for the protection of the Municipal Indemnified Parties only and shall not establish, of themselves, any liability to third parties. The provisions of this Section shall survive the expiration or earlier termination of the Contract Documents.

7. Independent Contractor. Nothing contained in the Contract Documents is intended to create or establish, or shall be construed as creating or establishing the relationship of employer/employee or as constituting Contractor as the agent or representative of the Town for any purpose, or in any manner whatsoever. Contractor shall act hereunder as an independent contractor. Contractor shall be responsible for his own federal and state income, social security and unemployment taxes and shall not be eligible to participate in any retirement, medical, health, disability or other plan or arrangement sponsored by the Town. Contractor shall remain liable for all work or actions performed by its subcontractors, employees, and agents in the provision of activities and services to be performed pursuant to the Contract documents. and the Town shall not be liable for the payment of any wages, materials or other expenses of any subcontractor, employee and/or agent of Contractor. Contractor agrees and hereby shall indemnify, defend, save and hold harmless the Town from any such claims; provided, however, that no portions of the Contract Documents activities and/or services may be subcontracted to an entity that is not a subsidiary or affiliate of Contractor in the first instance unless: (1) the Town shall give prior written approval to such subcontract in writing, which approval shall not be unreasonably withheld; (2) any document incorporated into any such subcontract shall be approved as to form and legality by the Town; (3) all of the terms, covenants, conditions and provisions of the Contract Documents shall have been incorporated in such subcontract, and the subcontractor shall have agreed in writing to assume, perform and be bound by all of the terms, covenants, conditions and provisions of the Contract Documents, including, without limitation, the representations as to its expertise set forth in the Contract Documents. In the event of Contractor default, the Town, at its option, shall be granted an assignment of the duties and obligations of the subcontractors to perform the Contract Documents activities and services.

8. Default. Any of the following occurrences shall be deemed a default by the Contractor pursuant to the Contract Documents: (i) failure of the Contractor to perform or meet any of its duties or obligations pursuant to the Contract Documents; and/or (ii) failure of Contractor observe any of the covenants, conditions, representations or contracts required on the part of the Contractor pursuant to the Contract Documents; and/or (iii) if Contractor makes general assignment of the Contract Documents for the benefit of creditors, files a petition in bankruptcy, is adjudicated insolvent or bankrupt, petitions or applies to any tribunal for any custodian, receiver or trustee for it or any substantial part of its property, commences any proceeding relating to it under any bankruptcy, reorganization, arrangement, readjustment of debt, dissolution or liquidation law or statute of any jurisdiction whether now or hereafter in effect, or if there shall have been filed any such proceeding, in which an order for relief is entered or which remains undismissed for a period of one hundred twenty (120) calendar days or more or if by any act indicates its consent to, approval of or acquiescence in any such petition, applica-

tion or proceeding or order for relief or the appointment of any custodian, receiver of or any trustee for it or any substantial part of its property or suffers any such custodianship, receivership or trusteeship to continue undismissed for a period of one hundred twenty (120) calendar days or more.

9. Force Majeure. If either Party shall be unable to carry out any part of its obligations under the Contract Documents due to causes beyond its control ("Force Majeure"), including but not limited to an act of God, strikes, lockouts or other industrial disturbances, acts of public enemies, orders or restraints of any kind of the government of the United States or any state or any of their departments, agencies, or officials, or any other civil governmental, transportation delays, military or judicial authority, war, blockage, insurrection, riot, sudden action of the elements, fire, explosion, flood, earthquake, storms, drought, landslide, or explosion or nuclear emergency, the Contract Documents shall be voidable at the option of the party unable to carry out any part of its obligations under the Contract Documents due to such causes.

10. Termination. This Contract Documents shall terminate upon the occurrence of any of the following events: (i) upon mutual written consent of both the Contractor and the Town, (ii) upon the Town's unilateral determination that the Contractor failed to properly perform under the terms of the Contract Documents, which such failure shall be determined at the sole and absolute discretion of the Town, (iii) upon Town's unilateral determination that it is dissatisfied with the Contractor's character, reputation or performance, which determination shall be made at the sole and absolute discretion of the Town. Termination of the Contract Documents or termination of services shall not affect the provisions under Sections 6, 11, 12 and 13, which shall survive any termination.

11. Confidentiality. The Contractor acknowledges and agrees that all information provided to Contractor by the Town constitutes confidential information ("Confidential Information"), and that the Contractor shall not use, copy or disclose any such Confidential information, unless such use, copying or disclosure is necessary to accomplish Contractor's duties hereunder. This provision shall survive termination pursuant to Paragraph 10 and/or the duration of the Contract Documents.

12. Choice of Law. This Contract Documents shall be interpreted pursuant to laws of the State of Connecticut.

13. Entire Contract Documents. The Contract Documents represents the entire integrated Contract Documents between the Parties, and supersedes all prior negotiations, representations or agreements, either written or oral, between the Parties. The Contract Documents shall be amended only by written instrument signed by all parties hereto with the formality necessary as prescribed by the Town. If any provision of the Contract Documents is held to be invalid under applicable law, the remaining provisions shall remain in full force and effect. The Contract Documents shall be binding upon the Contractor and its respective heirs, administrators, successors and/or assigns.

Dated this _____ day of _____, 20____

Town of Trumbull

By:

It's:

By:

Its:

SECTION 4

STATE REQUIRED CONTRACT PROVISIONS

Construction Contracts - Required Contract Provisions
(State Funded Only Contracts)

Index

1. Title VI of the Civil Rights Act of 1964 / Nondiscrimination Requirements
2. Contractor Work Force Utilization / Specific Equal Employment Opportunity
3. Contract Wage Rates
4. Americans with Disabilities Act of 1990, as Amended
5. Connecticut Statutory Labor Requirements
 - a. Construction, Alteration or Repair of Public Works Projects; Wage Rates
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 - d. Awarding of Contracts to Occupational Safety and Health Law Violators Prohibited
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17. Campaign Contribution Restriction

18. Tangible Personal Property
19. Bid Rigging and/or Fraud – Notice to Contractor
20. Consulting Agreement Affidavit

Index of Exhibits

- EXHIBIT A – Title VI Contractor Assurances (page 13)
EXHIBIT B – Contractor Work Force Utilization / Equal Employment Opportunity (page 14)
EXHIBIT C – Health Insurance Portability and Accountability Act of 1996 (HIPAA) (page 17)
EXHIBIT D - Campaign Contribution Restriction (page 25)
EXHIBIT E - State Wage Rates (Attached at the end)

1. Title VI of the Civil Rights Act of 1964 / Nondiscrimination Requirements

The Contractor shall comply with Title VI of the Civil Rights Act of 1964 as amended (42 U.S.C. 2000 et seq.), all requirements imposed by the regulations of the United States Department of Transportation (49 CFR Part 21) issued in implementation thereof, and the Title VI Contractor Assurances attached hereto at Exhibit A, all of which are hereby made a part of this Contract.

2. Contractor Work Force Utilization / Equal Employment Opportunity

- (a) The Contractor shall comply with the Contractor Work Force Utilization / Equal Employment Opportunity requirements attached at Exhibit B and hereby made part of this Contract, whenever a contractor or subcontractor at any tier performs construction work in excess of \$10,000. These goals shall be included in each contract and subcontract. Goal achievement is calculated for each trade using the hours worked under each trade.
- (b) Companies with contracts, agreements or purchase orders valued at \$10,000 or more will develop and implement an Affirmative Action Plan utilizing the ConnDOT Affirmative Action Plan Guideline. This Plan shall be designed to further the provision of equal employment opportunity to all persons without regard to their race, color, religion, sex or national origin, and to promote the full realization of equal employment opportunity through a positive continuation program. Plans shall be updated as required by ConnDOT.

3. Contract Wage Rates

The Contractor shall comply with:

The State wage rate requirements indicated in Exhibit E hereof are hereby made part of this Contract.

Prevailing Wages for Work on State Highways; Annual Adjustments. With respect to contracts for work on state highways and bridges on state highways, the Contractor shall comply with the provisions of Section 31-54 and 31-55a of the Connecticut General Statutes, as revised.

As required by section 1.05.12 (Payrolls) of the State of Connecticut, Department of Transportation's Standard Specification for Roads, Bridges and Incidental Construction (FORM 816), as may be revised, every Contractor or subcontractor performing project work on a federal aid project is required to post the relevant prevailing wage rates as determined by the United States Secretary of Labor. The wage rate determinations shall be posted in prominent and easily accessible places at the work site.

4. Americans with Disabilities Act of 1990, as Amended

This provision applies to those Contractors who are or will be responsible for compliance with the terms of the Americans with Disabilities Act of 1990, as amended (42 U.S.C. 12101 et seq.), (Act), during the term of the Contract. The Contractor represents that it is familiar with the terms of this Act and that it is in compliance with the Act. Failure of the Contractor to satisfy this standard as the same applies to performance under this Contract, either now or during the term of the Contract as it may be amended, will render the Contract voidable at the option of the State upon notice to the contractor. The Contractor warrants that it will hold the State harmless and indemnify the State from any liability which may be imposed upon the State as a result of any failure of the Contractor to be in compliance with this Act, as the same applies to performance under this Contract.

5. Connecticut Statutory Labor Requirements

(a) **Construction, Alteration or Repair of Public Works Projects; Wage Rates.** The Contractor shall comply with Section 31-53 of the Connecticut General Statutes, as revised. The wages paid on an hourly basis to any person performing the work of any mechanic, laborer or worker on the work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such person to any employee welfare fund, as defined in subsection (i) of section 31-53 of the Connecticut General Statutes, shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the town in which such public works project is being constructed. Any contractor who is not obligated by agreement to make payment or contribution on behalf of such persons to any such employee welfare fund shall pay to each mechanic, laborer or worker as part of such person's wages the amount of payment or contribution for such person's classification on each pay day.

(b) **Debarment List. Limitation on Awarding Contracts.** The Contractor shall comply with Section 31-53a of the Connecticut General Statutes, as revised.

(c) **Construction Safety and Health Course.** The Contractor shall comply with section 31-53b of the Connecticut General Statutes, as revised. The contractor shall furnish proof to the Labor Commissioner with the weekly certified payroll form for the first week each employee begins work on such project that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53 of the Connecticut General Statutes, as revised, on such public works project, pursuant to such contract, has 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, has completed a new miner training program approved by the Federal Mine Safety and Health Administration in accordance with 30 CFR 48 or, in the case of telecommunications employees, has completed at least ten hours of training in accordance with 29 CFR 1910.268.

Any employee required to complete a construction safety and health course as required that has not completed the course, shall have a maximum of fourteen (14) days to complete the course. If the employee has not been brought into compliance, they shall be removed from the project until such time as they have completed the required training.

Any costs associated with this notice shall be included in the general cost of the contract. In addition, there shall be no time granted to the contractor for compliance with this notice. The contractor's compliance with this notice and any associated regulations shall not be grounds for claims as outlined in Section 1.11 – “Claims”.

(d) **Awarding of Contracts to Occupational Safety and Health Law Violators Prohibited.** The Contract is subject to Section 31-57b of the Connecticut General Statutes, as revised.

(e) **Residents Preference in Work on Other Public Facilities. NOT APPLICABLE TO FEDERAL AID CONTRACTS.** Pursuant to Section 31-52a of the Connecticut General Statutes, as revised, in the employment of mechanics, laborers or workmen to perform the work specified herein, preference shall be given to residents of the state who are, and continuously for at least six months prior to the date hereof have been, residents of this state, and if no such person is available, then to residents of other states

6. Tax Liability - Contractor's Exempt Purchase Certificate (CERT – 141)

The Contractor shall comply with Chapter 219 of the Connecticut General Statutes pertaining to tangible personal property or services rendered that is/are subject to sales tax. The Contractor is responsible for determining its tax liability. If the Contractor purchases materials or supplies pursuant to the Connecticut Department of Revenue Services' "Contractor's Exempt Purchase Certificate (CERT-141)," as may be revised, the Contractor acknowledges and agrees that title to such materials and supplies installed or placed in the project will vest in the State simultaneously with passage of title from the retailers or vendors thereof, and the Contractor will have no property rights in the materials and supplies purchased.

Forms and instructions are available anytime by:

Internet: Visit the DRS website at www.ct.gov/DRS to download and print Connecticut tax forms; or Telephone: Call 1-800-382-9463 (Connecticut calls outside the Greater Hartford calling area only) and select Option 2 or call 860-297-4753 (from anywhere).

7. Executive Orders

This contract is subject to the provisions of Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, all of which are incorporated into and are made a part of the contract as if they had been fully set forth in it. The contract may also be subject to Executive Order No. 14 of Governor M. Jodi Rell, promulgated April 17, 2006, concerning procurement of cleaning products and services and to Executive Order No. 49 of Governor Dannel P. Malloy, promulgated May 22, 2015, mandating disclosure of certain gifts to public employees and contributions to certain candidates for office. If Executive Order No. 14 and/or Executive Order No. 49 are applicable, they are deemed to be incorporated into and are made a part of the contract as if they had been fully set forth in it. At the Contractor's request, the Department shall provide a copy of these orders to the Contractor.

8. Non Discrimination Requirement (pursuant to section 4a-60 and 4a-60a of the Connecticut General Statutes, as revised): References to “minority business enterprises” in this Section are not applicable to Federal-aid projects/contracts. Federal-aid projects/contracts are instead subject to the Federal Disadvantaged Business Enterprise Program.

(a) For purposes of this Section, the following terms are defined as follows:

- i. "Commission" means the Commission on Human Rights and Opportunities;
- ii. "Contract" and "contract" include any extension or modification of the Contract or contract;
- iii. "Contractor" and "contractor" include any successors or assigns of the Contractor or contractor;
- iv. "gender identity or expression" means a person's gender-related identity, appearance or behavior, whether or not that gender-related identity, appearance or behavior is different from that traditionally associated with the person's physiology or assigned sex at birth, which gender-related identity can be shown by providing evidence including, but not limited to, medical history, care or treatment of the gender-related identity, consistent and uniform assertion of the gender-related identity or any other evidence that the gender-related identity is sincerely held, part of a person's core identity or not being asserted for an improper purpose.

- v. "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations;
- vi. "good faith efforts" shall include, but not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements;
- vii. "marital status" means being single, married as recognized by the State of Connecticut, widowed, separated or divorced;
- viii. "mental disability" means one or more mental disorders, as defined in the most recent edition of the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders", or a record of or regarding a person as having one or more such disorders;
- ix. "minority business enterprise" means any small contractor or supplier of materials fifty-one percent or more of the capital stock, if any, or assets of which is owned by a person or persons: (1) who are active in the daily affairs of the enterprise, (2) who have the power to direct the management and policies of the enterprise, and (3) who are members of a minority, as such term is defined in subsection (a) of Connecticut General Statutes § 32-9n; and
- x. "public works contract" means any agreement between any individual, firm or corporation and the State or any political subdivision of the State other than a municipality for construction, rehabilitation, conversion, extension, demolition or repair of a public building, highway or other changes or improvements in real property, or which is financed in whole or in part by the State, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees.

For purposes of this Section, the terms "Contract" and "contract" do not include a contract where each contractor is (1) a political subdivision of the State, including, but not limited to, a municipality, (2) a quasi-public agency, as defined in Conn. Gen. Stat. Section 1-120, (3) any other state, including but not limited to any federally recognized Indian tribal governments, as defined in Conn. Gen. Stat. Section 1-267, (4) the federal government, (5) a foreign government, or (6) an agency of a subdivision, agency, state or government described in the immediately preceding enumerated items (1), (2), (3), (4) or (5).

- (b) (1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the State of Connecticut; and the Contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, intellectual disability, mental disability 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; (2) the Contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the Commission; (3) the Contractor agrees to provide each labor union or representative of workers with which the Contractor has a collective bargaining Agreement or other contract or understanding and each vendor with which the Contractor has a contract or

understanding, a notice to be provided by the Commission, advising the labor union or workers' representative of the Contractor's commitments under this section and to post copies of the notice in conspicuous places available to employees and applicants for employment; (4) the Contractor agrees to comply with each provision of this Section and Connecticut General Statutes §§ 46a- 68e and 46a-68f and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes §§ 46a-56, 46a-68e and 46a-68f; and (5) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor as relate to the provisions of this Section and Connecticut General Statutes § 46a-56. If the contract is a public works contract, the Contractor agrees and warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works projects.

- (c) Determination of the Contractor's good faith efforts shall include, but shall not be limited to, the following factors: The Contractor's employment and subcontracting policies, patterns and practices; affirmative advertising, recruitment and training; technical assistance activities and such other reasonable activities or efforts as the Commission may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.
- (d) The Contractor shall develop and maintain adequate documentation, in a manner prescribed by the Commission, of its good faith efforts.
- (e) The Contractor shall include the provisions of subsection (b) of this Section in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with Connecticut General Statutes §46a-56; provided if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission, the Contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.
- (f) The Contractor agrees to comply with the regulations referred to in this Section as they exist on the date of this Contract and as they may be adopted or amended from time to time during the term of this Contract and any amendments thereto.
- (g) (1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or the State of Connecticut, and that employees are treated when employed without regard to their sexual orientation; (2) the Contractor agrees to provide each labor union or representative of workers with which such Contractor has a collective bargaining Agreement or other contract or understanding and each vendor with which such Contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the Contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment; (3) the Contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes § 46a-56;

and (4) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor which relate to the provisions of this Section and Connecticut General Statutes § 46a-56.

- (h) The Contractor shall include the provisions of the foregoing paragraph in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with Connecticut General Statutes § 46a-56; provided, if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission, the Contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.”

The Nondiscrimination Certifications can be found at the Office of Policy and Management website.

<http://www.ct.gov/opp/cwp/view.asp?a=2982&Q=390928>

9. Whistleblower Provision

The following clause is applicable if the Contract has a value of Five Million Dollars (\$5,000,000) or more.

Whistleblowing. This Contract may be subject to the provisions of Section 4-61dd of the Connecticut General Statutes. In accordance with this statute, if an officer, employee or appointing authority of the Contractor takes or threatens to take any personnel action against any employee of the Contractor in retaliation for such employee's disclosure of information to any employee of the contracting state or quasi-public agency or the Auditors of Public Accounts or the Attorney General under the provisions of subsection (a) of such statute, the Contractor shall be liable for a civil penalty of not more than five thousand dollars for each offense, up to a maximum of twenty per cent of the value of this Contract. Each violation shall be a separate and distinct offense and in the case of a continuing violation, each calendar day's continuance of the violation shall be deemed to be a separate and distinct offense. The State may request that the Attorney General bring a civil action in the Superior Court for the Judicial District of Hartford to seek imposition and recovery of such civil penalty. In accordance with subsection (f) of such statute, each large state contractor, as defined in the statute, shall post a notice of the provisions of the statute relating to large state contractors in a conspicuous place which is readily available for viewing by the employees of the Contractor.

10. Connecticut Freedom of Information Act

- (a) **Disclosure of Records.** This Contract may be subject to the provisions of section 1-218 of the Connecticut General Statutes. In accordance with this statute, each contract in excess of two million five hundred thousand dollars between a public agency and a person for the performance of a governmental function shall (a) provide that the public agency is entitled to receive a copy of records and files related to the performance of the governmental function, and (b) indicate that such records and files are subject to FOIA and may be disclosed by the public agency pursuant to FOIA. No request to inspect or copy such records or files shall be valid unless the request is made to the public agency in accordance with FOIA. Any complaint by a person who is denied the right to inspect or copy such records or files shall be brought to the Freedom of Information Commission in accordance with the provisions of sections 1-205 and 1-206 of the Connecticut General Statutes.

(b) **Confidential Information.** The State will afford due regard to the Contractor's request for the protection of proprietary or confidential information which the State receives from the Contractor. However, all materials associated with the Contract are subject to the terms of the FOIA and all corresponding rules, regulations and interpretations. In making such a request, the Contractor may not merely state generally that the materials are proprietary or confidential in nature and not, therefore, subject to release to third parties. Those particular sentences, paragraphs, pages or sections that the Contractor believes are exempt from disclosure under the FOIA must be specifically identified as such. Convincing explanation and rationale sufficient to justify each exemption consistent with the FOIA must accompany the request. The rationale and explanation must be stated in terms of the prospective harm to the competitive position of the Contractor that would result if the identified material were to be released and the reasons why the materials are legally exempt from release pursuant to the FOIA. To the extent that any other provision or part of the Contract conflicts or is in any way inconsistent with this section, this section controls and shall apply and the conflicting provision or part shall not be given effect. If the Contractor indicates that certain documentation is submitted in confidence, by specifically and clearly marking the documentation as "CONFIDENTIAL," DOT will first review the Contractor's claim for consistency with the FOIA (that is, review that the documentation is actually a trade secret or commercial or financial information and not required by statute), and if determined to be consistent, will endeavor to keep such information confidential to the extent permitted by law. See, *e.g.*, Conn. Gen. Stat. §1-210(b)(5)(A-B). The State, however, has no obligation to initiate, prosecute or defend any legal proceeding or to seek a protective order or other similar relief to prevent disclosure of any information that is sought pursuant to a FOIA request. Should the State withhold such documentation from a Freedom of Information requester and a complaint be brought to the Freedom of Information Commission, the Contractor shall have the burden of cooperating with DOT in defense of that action and in terms of establishing the availability of any FOIA exemption in any proceeding where it is an issue. In no event shall the State have any liability for the disclosure of any documents or information in its possession which the State believes are required to be disclosed pursuant to the FOIA or other law.

11. Service of Process

The Contractor, if not a resident of the State of Connecticut, or, in the case of a partnership, the partners, if not residents, hereby appoints the Secretary of State of the State of Connecticut, and his successors in office, as agent for service of process for any action arising out of or as a result of this Contract; such appointment to be in effect throughout the life of this Contract and six (6) years thereafter.

12. Substitution of Securities for Retainages on State Contracts and Subcontracts

This Contract is subject to the provisions of Section 3-112a of the General Statutes of the State of Connecticut, as revised.

13. Health Insurance Portability and Accountability Act of 1996 (HIPAA)

The Contractor shall comply, if applicable, with the Health Insurance Portability and Accountability Act of 1996 and, pursuant thereto, the provisions attached at Exhibit C, and hereby made part of this Contract.

14. Forum and Choice of Law

Forum and Choice of Law. The parties deem the Contract to have been made in the City of Hartford, State of Connecticut. Both parties agree that it is fair and reasonable for the validity and construction of the Contract to be, and it shall be, governed by the laws and court decisions of the State of Connecticut, without giving effect to its principles of conflicts of laws. To the extent that any immunities provided by Federal law or the laws of the State of Connecticut do not bar an action against the State, and to the extent that these courts are courts of competent jurisdiction, for the purpose of venue, the complaint shall be made returnable to the Judicial District of Hartford only or shall be brought in the United States District Court for the District of Connecticut only, and shall not be transferred to any other court, provided, however, that nothing here constitutes a waiver or compromise of the sovereign immunity of the State of Connecticut. The Contractor waives any objection which it may now have or will have to the laying of venue of any Claims in any forum and further irrevocably submits to such jurisdiction in any suit, action or proceeding.

15. Summary of State Ethics Laws

Pursuant to the requirements of section 1-101qq of the Connecticut General Statutes, the summary of State ethics laws developed by the State Ethics Commission pursuant to section 1-81b of the Connecticut General Statutes is incorporated by reference into and made a part of the Contract as if the summary had been fully set forth in the Contract.

16. Audit and Inspection of Plants, Places of Business and Records

- (a) The State and its agents, including, but not limited to, the Connecticut Auditors of Public Accounts, Attorney General and State's Attorney and their respective agents, may, at reasonable hours, inspect and examine all of the parts of the Contractor's and Contractor Parties' plants and places of business which, in any way, are related to, or involved in, the performance of this Contract. For the purposes of this Section, "Contractor Parties" means the Contractor's members, directors, officers, shareholders, partners, managers, principal officers, representatives, agents, servants, consultants, employees or any one of them or any other person or entity with whom the Contractor is in privity of oral or written contract and the Contractor intends for such other person or entity to Perform under the Contract in any capacity.
- (b) The Contractor shall maintain, and shall require each of the Contractor Parties to maintain, accurate and complete Records. The Contractor shall make all of its and the Contractor Parties' Records available at all reasonable hours for audit and inspection by the State and its agents.
- (c) The State shall make all requests for any audit or inspection in writing and shall provide the Contractor with at least twenty-four (24) hours' notice prior to the requested audit and inspection date. If the State suspects fraud or other abuse, or in the event of an emergency, the State is not obligated to provide any prior notice.
- (d) The Contractor shall keep and preserve or cause to be kept and preserved all of its and Contractor Parties' Records until three (3) years after the latter of (i) final payment under this Agreement, or (ii) the expiration or earlier termination of this Agreement, as the same may be modified for any reason. The State may request an audit or inspection at any time during this period. If any Claim or audit is started before the expiration of this period, the Contractor shall retain or cause to be retained all Records until all Claims or audit findings have been resolved.
- (e) The Contractor shall cooperate fully with the State and its agents in connection with an audit or inspection. Following any audit or inspection, the State may conduct and the Contractor shall cooperate with an exit conference.
- (f) The Contractor shall incorporate this entire Section verbatim into any contract or other agreement that it enters into with any Contractor Party.

17. Campaign Contribution Restriction

For all State contracts, defined in Conn. Gen. Stat. §9-612(f)(1) as having a value in a calendar year of \$50,000 or more, or a combination or series of such agreements or contracts having a value of \$100,000 or more, the authorized signatory to this contract expressly acknowledges receipt of the State Elections Enforcement Commission's notice advising state contractors of state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the notice, as set forth in "Notice to Executive Branch State Contractors and Prospective State Contractors of Campaign Contribution and Solicitation Limitations," a copy of which is attached hereto and hereby made a part of this contract, attached as Exhibit D.

18. Tangible Personal Property

- (a) The Contractor on its behalf and on behalf of its Affiliates, as defined below, shall comply with the provisions of Conn. Gen. Stat. §12-411b, as follows:
 - (1) For the term of the Contract, the Contractor and its Affiliates shall collect and remit to the State of Connecticut, Department of Revenue Services, any Connecticut use tax due under the provisions of Chapter 219 of the Connecticut General Statutes for items of tangible personal property sold by the Contractor or by any of its Affiliates in the same manner as if the Contractor and such Affiliates were engaged in the business of selling tangible personal property for use in Connecticut and had sufficient nexus under the provisions of Chapter 219 to be required to collect Connecticut use tax;
 - (2) A customer's payment of a use tax to the Contractor or its Affiliates relieves the customer of liability for the use tax;
 - (3) The Contractor and its Affiliates shall remit all use taxes they collect from customers on or before the due date specified in the Contract, which may not be later than the last day of the month next succeeding the end of a calendar quarter or other tax collection period during which the tax was collected;
 - (4) The Contractor and its Affiliates are not liable for use tax billed by them but not paid to them by a customer; and
 - (5) Any Contractor or Affiliate who fails to remit use taxes collected on behalf of its customers by the due date specified in the Contract shall be subject to the interest and penalties provided for persons required to collect sales tax under chapter 219 of the general statutes.
- (b) For purposes of this section of the Contract, the word "Affiliate" means any person, as defined in section 12-1 of the general statutes, that controls, is controlled by, or is under common control with another person. A person controls another person if the person owns, directly or indirectly, more than ten per cent of the voting securities of the other person. The word "voting security" means a security that confers upon the holder the right to vote for the election of members of the board of directors or similar governing body of the business, or that is convertible into, or entitles the holder to receive, upon its exercise, a security that confers such a right to vote. "Voting security" includes a general partnership interest.
- (c) The Contractor represents and warrants that each of its Affiliates has vested in the Contractor plenary authority to so bind the Affiliates in any agreement with the State of Connecticut. The Contractor on its own behalf and on behalf of its Affiliates shall also provide, no later than 30 days after receiving a request by the State's contracting authority, such information as the State may require to ensure, in the State's sole determination, compliance with the provisions of Chapter 219 of the Connecticut General Statutes, including, but not limited to, §12-411b.

19. Bid Rigging and/or Fraud – Notice to Contractor

The Connecticut Department of Transportation is cooperating with the U.S. Department of Transportation and the Justice Department in their investigation into highway construction contract bid rigging and/or fraud.

A toll-free “HOT LINE” telephone number 800-424-9071 has been established to receive information from contractors, subcontractors, manufacturers, suppliers or anyone with knowledge of bid rigging and/or fraud, either past or current. The “HOT LINE” telephone number will be available during normal working hours (8:00 am – 5:00 pm EST). Information will be treated confidentially and anonymity respected.

20. Consulting Agreement Affidavit

The Contractor shall comply with Connecticut General Statutes Section 4a-81(a) and 4a-81(b), as revised. Pursuant to Public Act 11-229, after the initial submission of the form, if there is a change in the information contained in the form, a contractor shall submit the updated form, as applicable, either (i) not later than thirty (30) days after the effective date of such change or (ii) prior to execution of any new contract, whichever is earlier.

The Affidavit/Form may be submitted in written format or electronic format through the Department of Administrative Services (DAS) website.

EXHIBIT A

TITLE VI CONTRACTOR ASSURANCES

During the performance of this Contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "Contractor") agrees as follows:

1. Compliance with Regulations: The Contractor shall comply with the regulations relative to nondiscrimination in federally assisted programs of the United States Department of Transportation (hereinafter, "USDOT"), Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the "Regulations"), which are herein incorporated by reference and made a part of this contract.

2. Nondiscrimination: The Contractor, with regard to the work performed by it during the Contract, shall not discriminate on the grounds of race, color, national origin, sex, age, or disability in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Contractor shall not participate either directly or indirectly in the discrimination prohibited by Subsection 5 of the Regulations, including employment practices when the Contract covers a program set forth in Appendix B of the Regulations.

3. Solicitations for Subcontracts, Including Procurements of Materials and Equipment:

In all solicitations either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the Contractor of the Contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, national origin, sex, age, or disability.

4. Information and Reports: The Contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Connecticut Department of Transportation (ConnDOT) or the Funding Agency (FHWA, FTA and FAA) to be pertinent to ascertain compliance with such Regulations, orders, and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to ConnDOT or the Funding Agency, as appropriate, and shall set forth what efforts it has made to obtain the information.

5. Sanctions for Noncompliance: In the event of the Contractor's noncompliance with the nondiscrimination provisions of this Contract, the ConnDOT shall impose such sanctions as it or the Funding Agency may determine to be appropriate, including, but not limited to:

- A. Withholding contract payments until the Contractor is in-compliance; and/or
- B. Cancellation, termination, or suspension of the Contract, in whole or in part.

6. Incorporation of Provisions: The Contractor shall include the provisions of paragraphs 1 through 5 in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto. The Contractor shall take such action with respect to any subcontract or procurement as the ConnDOT or the Funding Agency may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the Contractor may request the ConnDOT to enter into such litigation to protect the interests of the Funding Agency, and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States

EXHIBIT B**CONTRACTOR WORKFORCE UTILIZATION / EQUAL EMPLOYMENT OPPORTUNITY****1. Project Workforce Utilization Goals:**

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or Federally assisted or funded) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for the geographical area where the work is actually performed.

Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications which contain the applicable goals for minority and female participation.

The goals for minority and female utilization are expressed in percentage terms for the contractor's aggregate work-force in each trade on all construction work in the covered area, are referenced in the Appendix A below.

STATE FUNDED PROJECTS (only)
APPENDIX A
(Labor Market Goals)

LABOR MARKET AREA GOAL **Minority**
Female

Bridgeport 6.9%			14%
Ansonia	Beacon Falls	Bridgeport	Derby
Easton	Fairfield	Milford	Monroe
Oxford	Seymour	Shelton	Stratford
Trumbull			
Danbury 6.9%			4%
Bethel	Bridgewater	Brookfield	Danbury
Kent	New Fairfield	New Milford	Newtown
Redding	Ridgefield	Roxbury	Sherman
Washington			
Danielson 6.9%			2%
Brooklyn	Eastford	Hampton	Killingly
Pomfret	Putnam	Scotland	Sterling
Thompson	Voluntown	Union	Woodstock
Hartford 6.9%			15%

Andover	Ashford	Avon	Barkhamsted
Belin	Bloomfield	Bolton	Bristol
Burlington	Canton	Chaplin	Colchester
Columbia	Coventry	Cromwell	Durham East
East Granby	East Haddam	East Hampton	Hartford
East Windsor	Ellington	Enfield	Farmington
Glastonbury	Granby	Haddam	Hartford
Harwinton	Hebron	Lebanon	Manchester
Mansfield	Marlborough	Middlefield	Middletown
Newington	Plainville	Plymouth	Portland South
Rocky Hill	Simsbury	Somers	Windsor
Southington	Stafford	Suffield	Tolland
Vernon	West Hartford	Wethersfield	Willington
Winchester	Windham	Windsor	Windsor Locks

Lower River	2%
6.9%	

Chester	Deep River	Essex	Old Lyme
Westbrook			

New Haven	14%
6.9%	

Bethany	Branford	Cheshire	Clinton
East Haven	Guilford	Hamden	Killingworth
Madison	Meriden	New Haven	North Branford
North Haven	Orange	Wallingford	West Haven
Woodbridge			

New London	8%
6.9%	

Bozrah	Canterbury	East Lyme	Franklin
Griswold	Groton New	Ledyard	Lisbon
Montville	London Old	North Stonington	Norwich
Old Lyme	Saybrook	Plainfield	Preston
Salem	Sprague	Stonington	Waterford
Hopkinton	RI – Westerly Rhode Island		

Stamford	17%
6.9%	

Darien	Greenwich	New Canaan	Norwalk
Stamford	Weston	Westport	Wilton

Torrington	2%
6.9%	

Canaan	Colebrook	Cornwall	Goshen
Hartland	Kent	Litchfield	Morris
Norfolk	North Canaan	Salisbury	Sharon
Torrington	Warren		

Waterbury 6.9%			10%
Bethlehem	Middlebury	Naugatuck	Prospect
Southbury	Thomaston	Waterbury	Watertown
Wolcott	Woodbury		

EXHIBIT C

Health Insurance Portability and Accountability Act of 1996 (“HIPAA”).

- (a) If the Contactor is a Business Associate under the requirements of the Health Insurance Portability and Accountability Act of 1996 (“HIPAA”), the Contractor must comply with all terms and conditions of this Section of the Contract. If the Contractor is not a Business Associate under HIPAA, this Section of the Contract does not apply to the Contractor for this Contract.
 - (b) The Contractor is required to safeguard the use, publication and disclosure of information on all applicants for, and all clients who receive, services under the Contract in accordance with all applicable federal and state law regarding confidentiality, which includes but is not limited to HIPAA, more specifically with the Privacy and Security Rules at 45 C.F.R. Part 160 and Part 164, subparts A, C, and E; and
 - (c) The State of Connecticut Agency named on page 1 of this Contract (hereinafter the “Department”) is a “covered entity” as that term is defined in 45 C.F.R. § 160.103; and
 - (d) The Contractor, on behalf of the Department, performs functions that involve the use or disclosure of “individually identifiable health information,” as that term is defined in 45 C.F.R. § 160.103; and
 - (e) The Contractor is a “business associate” of the Department, as that term is defined in 45 C.F.R. § 160.103; and
 - (f) The Contractor and the Department agree to the following in order to secure compliance with the HIPAA, the requirements of Subtitle D of the Health Information Technology for Economic and Clinical Health Act (hereinafter the HITECH Act), (Pub. L. 111-5, sections 13400 to 13423), and more specifically with the Privacy and Security Rules at 45 C.F.R. Part 160 and Part 164, subparts A, C, and E.
- (g) Definitions
- (1) “Breach shall have the same meaning as the term is defined in section 13400 of the HITECH Act (42 U.S.C. §17921(1))
 - (2) “Business Associate” shall mean the Contractor.
 - (3) “Covered Entity” shall mean the Department of the State of Connecticut named on page 1 of this Contract.
 - (4) “Designated Record Set” shall have the same meaning as the term “designated record set” in 45 C.F.R. § 164.501.
 - (5) “Electronic Health Record” shall have the same meaning as the term is defined in section 13400 of the HITECH Act (42 U.S.C. §17921(5))

- (6) “Individual” shall have the same meaning as the term “individual” in 45 C.F.R. § 160.103 and shall include a person who qualifies as a personal representative as defined in 45 C.F.R. § 164.502(g).
- (7) “Privacy Rule” shall mean the Standards for Privacy of Individually Identifiable Health Information at 45 C.F.R. part 160 and parts 164, subparts A and E.
- (8) “Protected Health Information” or “PHI” shall have the same meaning as the term “protected health information” in 45 C.F.R. § 160.103, limited to information created or received by the Business Associate from or on behalf of the Covered Entity.
- (9) “Required by Law” shall have the same meaning as the term “required by law” in 45 C.F.R. § 164.103.
- (10) “Secretary” shall mean the Secretary of the Department of Health and Human Services or his designee.
- (11) “More stringent” shall have the same meaning as the term “more stringent” in 45 C.F.R. § 160.202.
- (12) “This Section of the Contract” refers to the HIPAA Provisions stated herein, in their entirety.
- (13) “Security Incident” shall have the same meaning as the term “security incident” in 45 C.F.R. § 164.304.
- (14) “Security Rule” shall mean the Security Standards for the Protection of Electronic Protected Health Information at 45 C.F.R. part 160 and parts 164, subpart A and C.
- (15) “Unsecured protected health information” shall have the same meaning as the term as defined in section 13402(h)(1)(A) of HITECH Act. (42 U.S.C. §17932(h)(1)(A)).

(h) Obligations and Activities of Business Associates.

- (1) Business Associate agrees not to use or disclose PHI other than as permitted or required by this Section of the Contract or as Required by Law.
- (2) Business Associate agrees to use appropriate safeguards to prevent use or disclosure of PHI other than as provided for in this Section of the Contract.
- (3) Business Associate agrees to use administrative, physical and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of electronic protected health information that it creates, receives, maintains, or transmits on behalf of the Covered Entity.
- (4) Business Associate agrees to mitigate, to the extent practicable, any harmful effect that is known to the Business Associate of a use or disclosure of PHI by Business Associate in violation of this Section of the Contract.

- (5) Business Associate agrees to report to Covered Entity any use or disclosure of PHI not provided for by this Section of the Contract or any security incident of which it becomes aware.
- (6) Business Associate agrees to insure that any agent, including a subcontractor, to whom it provides PHI received from, or created or received by Business Associate, on behalf of the Covered Entity, agrees to the same restrictions and conditions that apply through this Section of the Contract to Business Associate with respect to such information.
- (7) Business Associate agrees to provide access, at the request of the Covered Entity, and in the time and manner agreed to by the parties, to PHI in a Designated Record Set, to Covered Entity or, as directed by Covered Entity, to an Individual in order to meet the requirements under 45 C.F.R. § 164.524.
- (8) Business Associate agrees to make any amendments to PHI in a Designated Record Set that the Covered Entity directs or agrees to pursuant to 45 C.F.R. § 164.526 at the request of the Covered Entity, and in the time and manner agreed to by the parties.
- (9) Business Associate agrees to make internal practices, books, and records, including policies and procedures and PHI, relating to the use and disclosure of PHI received from, or created or received by, Business Associate on behalf of Covered Entity, available to Covered Entity or to the Secretary in a time and manner agreed to by the parties or designated by the Secretary, for purposes of the Secretary determining Covered Entity's compliance with the Privacy Rule.
- (10) Business Associate agrees to document such disclosures of PHI and information related to such disclosures as would be required for Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder.
- (11) Business Associate agrees to provide to Covered Entity, in a time and manner agreed to by the parties, information collected in accordance with clause h. (10) of this Section of the Contract, to permit Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder. Business Associate agrees at the Covered Entity's direction to provide an accounting of disclosures of PHI directly to an individual in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder.
- (12) Business Associate agrees to comply with any state or federal law that is more stringent than the Privacy Rule.
- (13) Business Associate agrees to comply with the requirements of the HITECH Act relating to privacy and security that are applicable to the Covered Entity and with the requirements of 45 C.F.R. sections 164.504(e), 164.308, 164.310, 164.312, and 164.316.

- (14) In the event that an individual requests that the Business Associate (a) restrict disclosures of PHI; (b) provide an accounting of disclosures of the individual's PHI; or (c) provide a copy of the individual's PHI in an electronic health record, the Business Associate agrees to notify the covered entity, in writing, within two business days of the request.
- (15) Business Associate agrees that it shall not, directly or indirectly, receive any remuneration in exchange for PHI of an individual without (1) the written approval of the covered entity, unless receipt of remuneration in exchange for PHI is expressly authorized by this Contract and (2) the valid authorization of the individual, except for the purposes provided under section 13405(d)(2) of the HITECH Act,(42 U.S.C. § 17935(d)(2)) and in any accompanying regulations

(16) Obligations in the Event of a Breach

- A. The Business Associate agrees that, following the discovery of a breach of unsecured protected health information, it shall notify the Covered Entity of such breach in accordance with the requirements of section 13402 of HITECH (42 U.S.C. 17932(b) and the provisions of this Section of the Contract.
- B. Such notification shall be provided by the Business Associate to the Covered Entity without unreasonable delay, and in no case later than 30 days after the breach is discovered by the Business Associate, except as otherwise instructed in writing by a law enforcement official pursuant to section 13402 (g) of HITECH (42 U.S.C. 17932(g)). A breach is considered discovered as of the first day on which it is, or reasonably should have been, known to the Business Associate. The notification shall include the identification and last known address, phone number and email address of each individual (or the next of kin of the individual if the individual is deceased) whose unsecured protected health information has been, or is reasonably believed by the Business Associate to have been, accessed, acquired, or disclosed during such breach.
- C. The Business Associate agrees to include in the notification to the Covered Entity at least the following information:
 1. A brief description of what happened, including the date of the breach and the date of the discovery of the breach, if known.
 2. A description of the types of unsecured protected health information that were involved in the breach (such as full name, Social Security number, date of birth, home address, account number, or disability code).
 3. The steps the Business Associate recommends that individuals take to protect themselves from potential harm resulting from the breach.
 4. A detailed description of what the Business Associate is doing to investigate the breach, to mitigate losses, and to protect against any further breaches.
 5. Whether a law enforcement official has advised either verbally or in writing the Business Associate that he or she has determined that notification or notice to

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individuals or the posting required under section 13402 of the HITECH Act would impede a criminal investigation or cause damage to national security and; if so, include contact information for said official.

- D. Business Associate agrees to provide appropriate staffing and have established procedures to ensure that individuals informed by the Covered Entity of a breach by the Business Associate have the opportunity to ask questions and contact the Business Associate for additional information regarding the breach. Such procedures shall include a toll-free telephone number, an e-mail address, a posting on its Web site and a postal address. Business Associate agrees to include in the notification of a breach by the Business Associate to the Covered Entity, a written description of the procedures that have been established to meet these requirements. Costs of such contact procedures will be borne by the Contractor.
- E. Business Associate agrees that, in the event of a breach, it has the burden to demonstrate that it has complied with all notifications requirements set forth above, including evidence demonstrating the necessity of a delay in notification to the Covered Entity.

(i) Permitted Uses and Disclosure by Business Associate.

- (1) General Use and Disclosure Provisions Except as otherwise limited in this Section of the Contract, Business Associate may use or disclose PHI to perform functions, activities, or services for, or on behalf of, Covered Entity as specified in this Contract, provided that such use or disclosure would not violate the Privacy Rule if done by Covered Entity or the minimum necessary policies and procedures of the Covered Entity.

(2) Specific Use and Disclosure Provisions

(A) Except as otherwise limited in this Section of the Contract, Business Associate may use PHI for the proper management and administration of Business Associate or to carry out the legal responsibilities of Business Associate.

(B) Except as otherwise limited in this Section of the Contract, Business Associate may disclose PHI for the proper management and administration of Business Associate, provided that disclosures are Required by Law, or Business Associate obtains reasonable assurances from the person to whom the information is disclosed that it will remain confidential and used or further disclosed only as Required by Law or for the purpose for which it was disclosed to the person, and the person notifies Business Associate of any instances of which it is aware in which the confidentiality of the information has been breached.

(C) Except as otherwise limited in this Section of the Contract, Business Associate may use PHI to provide Data Aggregation services to Covered Entity as permitted by 45 C.F.R. § 164.504(e)(2)(i)(B).

(j) Obligations of Covered Entity.

- (1) Covered Entity shall notify Business Associate of any limitations in its notice of privacy practices of Covered Entity, in accordance with 45 C.F.R. § 164.520, or to the extent that such limitation may affect Business Associate's use or disclosure of PHI.
 - (2) Covered Entity shall notify Business Associate of any changes in, or revocation of, permission by Individual to use or disclose PHI, to the extent that such changes may affect Business Associate's use or disclosure of PHI.
 - (3) Covered Entity shall notify Business Associate of any restriction to the use or disclosure of PHI that Covered Entity has agreed to in accordance with 45 C.F.R. § 164.522, to the extent that such restriction may affect Business Associate's use or disclosure of PHI.
- (k) Permissible Requests by Covered Entity. Covered Entity shall not request Business Associate to use or disclose PHI in any manner that would not be permissible under the Privacy Rule if done by the Covered Entity, except that Business Associate may use and disclose PHI for data aggregation, and management and administrative activities of Business Associate, as permitted under this Section of the Contract.
- (l) Term and Termination.
- (1) Term. The Term of this Section of the Contract shall be effective as of the date the Contract is effective and shall terminate when the information collected in accordance with clause h. (10) of this Section of the Contract is provided to the Covered Entity and all of the PHI provided by Covered Entity to Business Associate, or created or received by Business Associate on behalf of Covered Entity, is destroyed or returned to Covered Entity, or, if it is infeasible to return or destroy PHI, protections are extended to such information, in accordance with the termination provisions in this Section.
 - (2) Termination for Cause Upon Covered Entity's knowledge of a material breach by Business Associate, Covered Entity shall either:
 - (A) Provide an opportunity for Business Associate to cure the breach or end the violation and terminate the Contract if Business Associate does not cure the breach or end the violation within the time specified by the Covered Entity; or
 - (B) Immediately terminate the Contract if Business Associate has breached a material term of this Section of the Contract and cure is not possible; or
 - (C) If neither termination nor cure is feasible, Covered Entity shall report the violation to the Secretary.
- (3) Effect of Termination
- (A) Except as provided in (l)(2) of this Section of the Contract, upon termination of this Contract, for any reason, Business Associate shall return or destroy all PHI received from Covered Entity, or created or received by Business Associate on behalf of Covered Entity. Business Associate shall also provide the information collected in accordance with clause h. (10) of this Section of the Contract to the Covered Entity

within ten business days of the notice of termination. This provision shall apply to PHI that is in the possession of subcontractors or agents of Business Associate. Business Associate shall retain no copies of the PHI.

(B) In the event that Business Associate determines that returning or destroying the PHI is infeasible, Business Associate shall provide to Covered Entity notification of the conditions that make return or destruction infeasible. Upon documentation by Business Associate that return or destruction of PHI is infeasible, Business Associate shall extend the protections of this Section of the Contract to such PHI and limit further uses and disclosures of PHI to those purposes that make return or destruction infeasible, for as long as Business Associate maintains such PHI. Infeasibility of the return or destruction of PHI includes, but is not limited to, requirements under state or federal law that the Business Associate maintains or preserves the PHI or copies thereof.

(m) Miscellaneous Provisions.

- (1) Regulatory References. A reference in this Section of the Contract to a section in the Privacy Rule means the section as in effect or as amended.
- (2) Amendment. The Parties agree to take such action as is necessary to amend this Section of the Contract from time to time as is necessary for Covered Entity to comply with requirements of the Privacy Rule and the Health Insurance Portability and Accountability Act of 1996, Pub. L. No. 104-191.
- (3) Survival. The respective rights and obligations of Business Associate shall survive the termination of this Contract.
- (4) Effect on Contract. Except as specifically required to implement the purposes of this Section of the Contract, all other terms of the Contract shall remain in force and effect.
- (5) Construction. This Section of the Contract shall be construed as broadly as necessary to implement and comply with the Privacy Standard. Any ambiguity in this Section of the Contract shall be resolved in favor of a meaning that complies, and is consistent with, the Privacy Standard.
- (6) Disclaimer. Covered Entity makes no warranty or representation that compliance with this Section of the Contract will be adequate or satisfactory for Business Associate's own purposes. Covered Entity shall not be liable to Business Associate for any claim, civil or criminal penalty, loss or damage related to or arising from the unauthorized use or disclosure of PHI by Business Associate or any of its officers, directors, employees, contractors or agents, or any third party to whom Business Associate has disclosed PHI contrary to the provisions of this Contract or applicable law. Business Associate is solely responsible for all decisions made, and actions taken, by Business Associate regarding the safeguarding, use and disclosure of PHI within its possession, custody or control.
- (7) Indemnification. The Business Associate shall indemnify and hold the Covered Entity harmless from and against any and all claims, liabilities, judgments, fines, assessments, penalties, awards and any statutory damages that may be imposed or assessed pursuant to HIPAA, as amended or the

August 2015

HITECH Act, including, without limitation, attorney's fees, expert witness fees, costs of investigation, litigation or dispute resolution, and costs awarded thereunder, relating to or arising out of any violation by the Business Associate and its agents, including subcontractors, of any obligation of Business Associate and its agents, including subcontractors, under this section of the contract, under HIPAA, the HITECH Act, the Privacy Rule and the Security Rule.

Notice to Executive Branch State Contractors and Prospective State Contractors of Campaign Contribution and Solicitation Limitations

This notice is provided under the authority of Connecticut General Statutes §9-612(g)(2), as amended by P.A. 10-1, and is for the purpose of informing state contractors and prospective state contractors of the following law (italicized words are defined on the reverse side of this page).

CAMPAIGN CONTRIBUTION AND SOLICITATION LIMITATIONS

No *state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor*, with regard to a *state contract or state contract solicitation* with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee (which includes town committees).

In addition, no holder or principal of a holder of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of State senator or State representative, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

On and after January 1, 2011, no state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor, with regard to a state contract or state contract solicitation with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall **knowingly solicit** contributions from the state contractor's or prospective state contractor's employees or from a *subcontractor or principals of the subcontractor* on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

DUTY TO INFORM

State contractors and prospective state contractors are required to inform their principals of the above prohibitions, as applicable, and the possible penalties and other consequences of any violation thereof.

PENALTIES FOR VIOLATIONS

Contributions or solicitations of contributions made in violation of the above prohibitions may result in the following civil and criminal penalties:

Civil penalties—Up to \$2,000 or twice the amount of the prohibited contribution, whichever is greater, against a principal or a contractor. Any state contractor or prospective state contractor which fails to make reasonable efforts to comply with the provisions requiring notice to its principals of these prohibitions and the possible consequences of their violations may also be subject to civil penalties of up to \$2,000 or twice the amount of the prohibited contributions made by their principals.

Criminal penalties—Any knowing and willful violation of the prohibition is a Class D felony, which may subject the violator to imprisonment of not more than 5 years, or not more than \$5,000 in fines, or both.

CONTRACT CONSEQUENCES

In the case of a state contractor, contributions made or solicited in violation of the above prohibitions may result in the contract being voided.

In the case of a prospective state contractor, contributions made or solicited in violation of the above prohibitions shall result in the contract described in the state contract solicitation not being awarded to the prospective state contractor, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

The State shall not award any other state contract to anyone found in violation of the above prohibitions for a period of one year after the election for which such contribution is made or solicited, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

Additional information may be found on the website of the State Elections Enforcement Commission, www.ct.gov/seec. Click on the link to "Lobbyist/Contractor Limitations."

DEFINITIONS

“State contractor” means a person, business entity or nonprofit organization that enters into a state contract. Such person, business entity or nonprofit organization shall be deemed to be a state contractor until December thirty-first of the year in which such contract terminates. “State contractor” does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

“Prospective state contractor” means a person, business entity or nonprofit organization that (i) submits a response to a state contract solicitation by the state, a state agency or a quasi-public agency, or a proposal in response to a request for proposals by the state, a state agency or a quasi-public agency, until the contract has been entered into, or (ii) holds a valid prequalification certificate issued by the Commissioner of Administrative Services under section 4a-100. “Prospective state contractor” does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

“Principal of a state contractor or prospective state contractor” means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a state contractor or prospective state contractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a state contractor or prospective state contractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a state contractor or prospective state contractor, which is not a business entity, or if a state contractor or prospective state contractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any state contractor or prospective state contractor who has *managerial or discretionary responsibilities with respect to a state contract*, (v) the spouse or a *dependent child* who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the state contractor or prospective state contractor.

“State contract” means an agreement or contract with the state or any state agency or any quasi-public agency, let through a procurement process or otherwise, having a value of fifty thousand dollars or more, or a combination or series of such agreements or contracts having a value of one hundred thousand dollars or more in a calendar year, for (i) the rendition of services, (ii) the furnishing of any goods, material, supplies, equipment or any items of any kind, (iii) the construction, alteration or repair of any public building or public work, (iv) the acquisition, sale or lease of any land or building, (v) a licensing arrangement, or (vi) a grant, loan or loan guarantee. “State contract” does not include any agreement or contract with the state, any state agency or any quasi-public agency that is exclusively federally funded, an education loan, a loan to an individual for other than commercial purposes or any agreement or contract between the state or any state agency and the United States Department of the Navy or the United States Department of Defense.

“State contract solicitation” means a request by a state agency or quasi-public agency, in whatever form issued, including, but not limited to, an invitation to bid, request for proposals, request for information or request for quotes, inviting bids, quotes or other types of submittals, through a competitive procurement process or another process authorized by law waiving competitive procurement.

“Managerial or discretionary responsibilities with respect to a state contract” means having direct, extensive and substantive responsibilities with respect to the negotiation of the state contract and not peripheral, clerical or ministerial responsibilities.

“Dependent child” means a child residing in an individual's household who may legally be claimed as a dependent on the federal income tax of such individual.

“Solicit” means (A) requesting that a contribution be made, (B) participating in any fund-raising activities for a candidate committee, exploratory committee, political committee or party committee, including, but not limited to, forwarding tickets to potential contributors, receiving contributions for transmission to any such committee or bundling contributions, (C) serving as chairperson, treasurer or deputy treasurer of any such committee, or (D) establishing a political committee for the sole purpose of soliciting or receiving contributions for any committee. Solicit does not include: (i) making a contribution that is otherwise permitted by Chapter 155 of the Connecticut General Statutes; (ii) informing any person of a position taken by a candidate for public office or a public official, (iii) notifying the person of any activities of, or contact information for, any candidate for public office; or (iv) serving as a member in any party committee or as an officer of such committee that is not otherwise prohibited in this section.

“Subcontractor” means any person, business entity or nonprofit organization that contracts to perform part or all of the obligations of a state contractor's state contract. Such person, business entity or nonprofit organization shall be deemed to be a subcontractor until December thirty first of the year in which the subcontract terminates. “Subcontractor” does not include (i) a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or (ii) an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

“Principal of a subcontractor” means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a subcontractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a subcontractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a subcontractor, which is not a business entity, or if a subcontractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any subcontractor who has managerial or discretionary responsibilities with respect to a subcontract with a state contractor, (v) the spouse or a *dependent child* who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the subcontractor.

August 2015

EXHIBIT E

(state wages will be inserted here)

Project: Long Hill Green Permeable Paver Patio And Parking

**Minimum Rates and Classifications
for Heavy/Highway Construction**

**Connecticut Department of Labor
Wage and Workplace Standards Division**

ID#: H 26303

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number:

Project Town: Trumbull

FAP Number:

State Number:

Project: Long Hill Green Permeable Paver Patio And Parking

CLASSIFICATION	Hourly Rate	Benefits
1) Boilermaker	33.79	34% + 8.96
1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons	34.72	32.15
2) Carpenters, Piledrivermen	33.53	25.66
2a) Diver Tenders	33.53	25.66

As of:

Friday, June 28, 2019

Project: Long Hill Green Permeable Paver Patio And Parking

3) Divers	41.99	25.66
03a) Millwrights	34.04	26.09
4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	49.75	21.05
4a) Painters: Brush and Roller	33.62	21.05
4b) Painters: Spray Only	36.62	21.05
4c) Painters: Steel Only	35.62	21.05
4d) Painters: Blast and Spray	36.62	21.05

As of:

Friday, June 28, 2019

Project: Long Hill Green Permeable Paver Patio And Parking

4e) Painters: Tanks, Tower and Swing 35.62 21.05

5) Electrician (Trade License required: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V- 39.62 27.25+3% of 1,2,7,8,9) gross wage

6) Ironworkers: Ornamental, Reinforcing, Structural, and Precast Concrete Erection 36.67 35.77 + a

7) Plumbers (Trade License required: (P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2) and 43.62 32.06
Pipefitters (Including HVAC Work) (Trade License required: S-
1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4 G-1, G-2, G-8, G-9)

----LABORERS---- -

8) Group 1: Laborer (Unskilled), Common or General, acetylene burner, 30.75 20.84
concrete specialist

9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen 31.00 20.84

As of:

Friday, June 28, 2019

Project: Long Hill Green Permeable Paver Patio And Parking

10) Group 3: Pipelayers	31.25	20.84
11) Group 4: Jackhammer/Pavement breaker (handheld); mason tenders (cement/concrete), catch basin builders, asphalt rakers, air track operators, block paver, curb setter and forklift operators	31.25	20.84
12) Group 5: Toxic waste removal (non-mechanical systems)	32.75	20.84
13) Group 6: Blasters	32.50	20.84
Group 7: Asbestos/lead removal, non-mechanical systems (does not include leaded joint pipe)	31.75	20.84
Group 8: Traffic control signalmen	18.00	20.84
Group 9: Hydraulic Drills	29.30	18.90

As of:

Friday, June 28, 2019

Project: Long Hill Green Permeable Paver Patio And Parking

---LABORERS (TUNNEL CONSTRUCTION, FREE AIR). Shield Drive and Liner Plate Tunnels in Free Air.----

13a) Miners, Motormen, Mucking Machine Operators, Nozzle Men, Grout Men, Shaft & Tunnel Steel & Rodmen, Shield & Erector, Arm Operator, Cable Tenders 32.98 20.84 + a

13b) Brakemen, Trackmen 32.01 20.84 + a

---CLEANING, CONCRETE AND CAULKING TUNNEL----

14) Concrete Workers, Form Movers, and Strippers 32.01 20.84 + a

15) Form Erectors 32.34 20.84 + a

---ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:----

As of:

Friday, June 28, 2019

Project: Long Hill Green Permeable Paver Patio And Parking

16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	32.01	20.84 + a
17) Laborers Topside, Cage Tenders, Bellman	31.90	20.84 + a
18) Miners	32.98	20.84 + a

----TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR:

18a) Blaster	39.47	20.84 + a
19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	39.27	20.84 + a
20) Change House Attendants, Powder Watchmen, Top on Iron Bolts	37.29	20.84 + a

As of:

Friday, June 28, 2019

Project: Long Hill Green Permeable Paver Patio And Parking

21) Mucking Machine Operator 40.06 20.84 + a

----TRUCK DRIVERS----(*see note below)

Two axle trucks 29.51 24.52 + a

Three axle trucks; two axle ready mix 29.62 24.52 + a

Three axle ready mix 29.67 24.52 + a

Four axle trucks, heavy duty trailer (up to 40 tons) 29.72 24.52 + a

Four axle ready-mix 29.77 24.52 + a

As of:

Friday, June 28, 2019

Project: Long Hill Green Permeable Paver Patio And Parking

Heavy duty trailer (40 tons and over)	29.98	24.52 + a
Specialized earth moving equipment other than conventional type on-the road trucks and semi-trailer (including Euclids)	29.77	24.52 + a
----POWER EQUIPMENT OPERATORS----		
Group 1: Crane handling or erecting structural steel or stone, hoisting engineer (2 drums or over), front end loader (7 cubic yards or over), Work Boat 26 ft. & Over, Tunnel Boring Machines. (Trade License Required)	40.97	24.80 + a
Group 2: Cranes (100 ton rate capacity and over); Excavator over 2 cubic yards; Piledriver (\$3.00 premium when operator controls hammer); Bauer Drill/Caisson. (Trade License Required)	40.64	24.80 + a
Group 3: Excavator/Backhoe under 2 cubic yards; Cranes (under 100 ton rated capacity), Gradall; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar); Grader Operator; Bulldozer Fine Grade (slopes, shaping, laser or GPS, etc.). (Trade License Required)	39.88	24.80 + a
Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper)	39.48	24.80 + a

As of:

Friday, June 28, 2019

Project: Long Hill Green Permeable Paver Patio And Parking

Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Spreader; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell)	38.87	24.80 + a
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.	38.87	24.80 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	38.55	24.80 + a
Group 7: Asphalt Roller; Concrete Saws and Cutters (ride on types); Vermeer Concrete Cutter; Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and Under Mandrel).	38.20	24.80 + a
Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine.	37.79	24.80 + a
Group 9: Front End Loader (under 3 cubic yards), Skid Steer Loader regardless of attachments (Bobcat or Similar); Fork Lift, Power Chipper; Landscape Equipment (including hydroseeder).	37.34	24.80 + a
Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc.	35.24	24.80 + a

As of:

Friday, June 28, 2019

Project: Long Hill Green Permeable Paver Patio And Parking

Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer),
Robot Demolition Equipment. 35.24 24.80 + a

Group 12: Wellpoint Operator. 35.18 24.80 + a

Group 13: Compressor Battery Operator. 34.58 24.80 + a

Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough
Terrain). 33.41 24.80 + a

Group 15: Generator Operator; Compressor Operator; Pump Operator;
Welding Machine Operator; Heater Operator. 32.99 24.80 + a

Group 16: Maintenance Engineer/Oiler 32.32 24.80 + a

Group 17: Portable asphalt plant operator; portable crusher plant operator;
portable concrete plant operator. 36.76 24.80 + a

As of:

Friday, June 28, 2019

Project: Long Hill Green Permeable Paver Patio And Parking

Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper;
(minimum for any job requiring CDL license). 34.26 24.80 + a

**NOTE: SEE BELOW

----LINE CONSTRUCTION----(Railroad Construction and Maintenance)----

20) Lineman, Cable Splicer, Technician 48.19 6.5% + 22.00

21) Heavy Equipment Operator 42.26 6.5% + 19.88

22) Equipment Operator, Tractor Trailer Driver, Material Men 40.96 6.5% + 19.21

23) Driver Groundmen 26.50 6.5% + 9.00

As of:

Friday, June 28, 2019

Project: Long Hill Green Permeable Paver Patio And Parking

23a) Truck Driver 40.96 6.5% + 17.76

----LINE CONSTRUCTION----

24) Driver Groundmen 30.92 6.5% + 9.70

25) Groundmen 22.67 6.5% + 6.20

26) Heavy Equipment Operators 37.10 6.5% + 10.70

27) Linemen, Cable Splicers, Dynamite Men 41.22 6.5% + 12.20

28) Material Men, Tractor Trailer Drivers, Equipment Operators 35.04 6.5% + 10.45

As of:

Friday, June 28, 2019

Project: Long Hill Green Permeable Paver Patio And Parking

- 1) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters. **See Laborers Group 5 and 7**

As of:

Friday, June 28, 2019

Project: Long Hill Green Permeable Paver Patio And Parking

Welders: Rate for craft to which welding is incidental.

**Note: Hazardous waste removal work receives additional \$1.25 per hour for truck drivers.*

***Note: Hazardous waste premium \$3.00 per hour over classified rate*

ALL Cranes: When crane operator is operating equipment that requires a fully licensed crane operator to operate he receives an extra \$4.00 premium in addition to the hourly wage rate and benefit contributions:

- 1) Crane handling or erecting structural steel or stone; hoisting engineer (2 drums or over)***
- 2) Cranes (100 ton rate capacity and over) Bauer Drill/Caisson***
- 3) Cranes (under 100 ton rated capacity)***

Crane with 150 ft. boom (including jib) - \$1.50 extra
Crane with 200 ft. boom (including jib) - \$2.50 extra
Crane with 250 ft. boom (including jib) - \$5.00 extra
Crane with 300 ft. boom (including jib) - \$7.00 extra
Crane with 400 ft. boom (including jib) - \$10.00 extra

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyperson instructing and supervising the work of each apprentice in a specific trade.

~~Connecticut General Statute Section 31-55a: Annual Adjustments to wage rates by contractors doing state work ~~

The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.

Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.

It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.

The annual adjustments will be posted on the Department of Labor's Web page: www.ct.gov/dol.

The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.

All subsequent annual adjustments will be posted on our Web Site for contractor access.

Contracting Agencies are under no obligation pursuant to State labor law to pay any increase due to the annual adjustment provision.

As of:

Friday, June 28, 2019

Project: Long Hill Green Permeable Paver Patio And Parking

Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

~~Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR 5.5 (a) (1) (ii)).

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

As of:

Friday, June 28, 2019

SECTION 5

TOWN OF TRUMBULL GENERAL SPECIFICATIONS

TOWN OF TRUMBULL, CONNECTICUT
GENERAL SPECIFICATIONS
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TOWN OF TRUMBULL, CONNECTICUT

GENERAL SPECIFICATIONS

1. BIDS:

Bids, as stated in the "Bid Sheet", will be compared on the basis of the sum of the quantities multiplied by respective unit prices, added to lump-sum prices.

In the event that there is a discrepancy in the bid sheet between the lump-sum or unit prices written in words and figures, the prices written in words shall govern.

The Town agrees to examine and consider each bid submitted in consideration of the Bidder's Agreements, as hereinabove set forth in the Bid Sheet.

NOTE: Any/all reference to "he/him" shall be taken to mean "his/her/its".

2. OBLIGATION OF BIDDERS:

At the time of opening of bids, each bidder shall be presumed to have inspected the sites, and to have read and made himself thoroughly familiar with the Plans and Contract Documents including all addenda. The failure or omission of any bidder to receive or examine any form, instrument or document shall in no way relieve any bidder from any obligation in respect to his bid.

Each bidder must fully inform himself of the construction and labor conditions relating to the work which is now or will be performed. Failure to do so will not relieve the successful bidder of his obligation to furnish all labor and materials necessary to carry out the provisions of the contract documents and to complete the contemplated work. Inasmuch as possible, the contractor must, in carrying out his work, employ such methods or means as will not cause any interruptions or interference with the work of any other contractor.

The successful bidder must furnish a field and office organization chart and equipment list to be used on the job to demonstrate that he has the capability to perform the work prescribed for this project and shall furnish the Town all other information and data requested on the form provided for this purpose; such submission to be made prior to construction startup.

The Contractor shall supply a foreman full time on the job. Such foreman must be satisfactory to the Town of Trumbull. Failure to comply shall be cause for breach of contract.

The Contractor's normal sequence of operation in performing the work under the terms of this contract shall be varied at the direction of the Town of Trumbull, so that priorities can be given in critical areas such as schedule, right-of-way, clearance and other Town commitments, either present or future.

The Contractor shall file an appeal to the Public Works Director if the sequence of operation in performing the work is varied by the Town in a manner that is unacceptable to him.

The Contractor shall have no claim against the Town for damages or extra compensation on account of delays in execution of the work or delays in making the construction site available to the Contractor.

3. CONTRACT DOCUMENTS:

Whenever the term "Contract Documents" is used herein, it shall include the Agreement, Information to Bidders, General Specifications, Bid Documents, Technical Specifications, Special Notes, Addenda, and Project Plans, including all modifications thereof incorporated in the documents before their execution.

4. DIRECTOR OF PUBLIC WORKS:

The Director Public Works, of the Town of Trumbull, Connecticut, under whose authority all public works are performed. Hereinafter when the word "Engineer" is used, it is hereby interpreted to include the authority of the Director of Public Works, as well as the Town Engineer.

5. TOWN ENGINEER:

The Town Engineer will represent the Town of Trumbull, Connecticut, and shall have complete charge of all work involved. Hereinafter where the word "Engineer" appears it shall mean the Town Engineer or his duly authorized representatives performing their usual duties, i.e. clerk of the works, etc.

6. CONTRACTOR:

Party of the second part to the contract, acting directly or through his agent or employees.

7. SUB-CONTRACTOR:

Any individual, firm, partnership or corporation to whom the Contractor sub-lets or assigns any part or parts of this project covered by this contract.

8. NOTICE:

The term "notice" as used herein shall mean and include written notices.

Written notice shall be deemed to have been served, when deposited in a United States Mail Box to or at last known business address of the person, firm or corporation for whom intended, or to his or their or its duly authorized agent, representative or office,

or enclosed in a postage prepaid wrapper or envelope addressed to such person or firm or corporation at his or their or its last known business address.

9. TIME IS OF THE ESSENCE:

Time is of the essence for this contract and as execution of the work may inconvenience property owners, vehicular traffic, pedestrians and adversely affect business in the area, it is essential that the work be pressed vigorously to completion. Also the cost of Town administration and supervision of construction, will be increased as the time occupied in the work is lengthened, and the deprivation to the residents of the Town of the needed improvement on herein contract may cause damages to the Town.

In the event the Contractor fails to perform the work in a timely manner due to the Contractor's poor planning, financial status, errors in construction or any other reason directly attributed to the Contractor's circumstances, the Town may institute default proceedings against the Contractor to recover damages and losses. Any payments due the Contractor may be withheld pending final determinations, and the bonding company for the performance of the work on this contract may be notified of impending actions that may be warranted.

If any delay is imposed on the Contractor by specific orders of the Engineer, ie; to stop the work (for reasons other than failure on the part of the Contractor to comply with the requirements of the Contract Documents), material or labor strikes, acts of God, etc., such delay will entitle the Contractor to an equivalent extension of time.

When extra or additional work is ordered by the Engineer, the Contractor will be allowed an extension of time expressed in days as determined by the Town Engineer. The Contractor shall submit a written request for an extension of time, along with reasons for the request. A written response will be transmitted to the Contractor with a determination by the Town as to whether or not an extension of time will be granted.

10. COMMENCEMENT OF WORK:

The Contractor shall commence work on the day specified in the order by the Engineer, as the date of such commencement; and shall fully complete the work within the number of consecutive calendar days from said date as hereinafter specified as the period for completion of his contract, unless such period shall be extended as hereinafter provided by the Town.

11. BLANK FORM FOR BID:

All bids must be written or typed upon the blank form for "Bid Sheet," and must state the proposed price of each item of the work, both in words and in figures, and must be signed by the bidder with his business address.

BIDDERS SHALL NOT REMOVE AND SUBMIT THE BID PAGES SEPARATE FROM THE VOLUME OF CONTRACT DOCUMENTS, BUT SHALL SUBMIT THEIR BIDS BOUND WITH THE COMPLETE VOLUME OF ATTACHED DOCUMENTS, INCLUDING ALL PAGES CORRECTLY ASSEMBLED.

The undersigned understands that information relative to subsurface and other conditions, natural phenomena, existing pipes and other structures (surface and/or subsurface) has been furnished only for his information and convenience without any warranty of guarantee, express or implied, that the subsurface and/or other structures

(surface and/or subsurface) actually encountered will be the same as these shown on the drawings or in any of the other contract documents and he agrees that he shall not use or be entitled to use any such information made available to him through the contract documents or otherwise or obtained by him in his own examination of the site, as a basis of or ground for any claim against the Town, arising from or by reason of any variance which may exist between the aforesaid information made available to or acquired by him and the subsurface and/or other conditions, natural phenomena, existing pipes and other structures (surface and/or subsurface) actually encountered during the construction work, and he has made due allowance therefore in this bid.

12. WORKING HOURS AND HOLIDAYS:

The Contractor shall perform no work during the Town of Trumbull's employees' holidays nor before or after the Town's normal working hours, without specific approval of the Director.

The normal working hours of the Town are Monday through Friday, 7:00 a.m. to 4:00 p.m.

THE OFFICIAL TOWN OF TRUMBULL HOLIDAYS ARE:

New Year's Day
Martin Luther King Day
Presidents' Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day Following Thanksgiving Day
Christmas Day
Day After Christmas Day

13. PERFORMANCE & GUARANTEE MAINTENANCE BOND:

The Contractor shall secure a maintenance bond with a company which shall have been approved by the Attorney of the Town of Trumbull, guaranteeing his work in all phases of construction for a period of two (2) years from the date of acceptance by the Town which shall also cover all damages due to trench settlement.

The face value of the maintenance bond shall be as follows: 20% of the base bid of contracts up to and including \$50,000.00 and in no way less than \$5,000.00.

Contracts in amount above \$50,000.00, the face value of the maintenance bond shall be on the basis of 10% of the base bid submitted. He shall leave the work in perfect order at completion, and neither the final certificate of payment nor any other provision of the contract shall relieve the Contractor of the responsibility for negligence, for faulty materials or workmanship within the extent and period as herein provided. Upon written notice he shall remedy all defects due thereto and pay all expenses for any damage to other work resulting there from.

14. ADDITIONAL OR SUBSTITUTE BOND:

If at any time the Town becomes dissatisfied with the performance bond as issued by the present surety or sureties, or if for any other reason such bond shall cease to be adequate surety to the Town, the Contractor shall within five (5) days after notice from the Town to do so, substitute an acceptable bond in such form and sum and signed by such other sureties as may be satisfactory to the Town.

The premium on such bonds shall be paid by the Contractor. No further payment shall be deemed due nor shall be made until new sureties shall have qualified.

15. POWER OF ATTORNEY:

Attorneys-in-fact who sign contract bonds must file with each bond a certified copy of their power of attorney to sign said bond.

16. QUALIFICATIONS FOR EMPLOYMENT:

No person under the age of sixteen (16) years and no person currently serving sentences in a penal or Correctional institution shall be employed to perform any work on the project under this contract.

No person whose age or physical condition is such as to make his employment dangerous to his health or safety or to the health and safety of others shall be employed to perform any work on the project under this contract.

Provided that this sentence shall not operate against the employment of physically handicapped persons otherwise employed where such persons may be safely assigned to work, which they can ably perform.

There shall be no discrimination because of race, creed, color or political affiliation in employment of persons for work on the project under this contract.

17. PAYMENT OF EMPLOYEES:

The Contractor and each of his subcontractors shall pay each of his employees engaged in the work on the project under this contract in full (less deductions made mandatory by law) in a timely and routine manner.

18. DELETE

19. ACCIDENT PREVENTION:

Precaution shall be exercised at all times for the protection of all persons (including employees) and property.

The safety provisions of applicable laws, building and construction codes shall be observed.

Reference is hereby made to Occupational Safety and Health Administration standards as described in OSHA 2206, 1983 or latest edition or revision thereof

Machinery, equipment and all hazards shall be guarded or eliminated in accordance with the safety provisions of the manual of "Accident Prevention in Construction", published by the Associated General Contractors of America, to the extent that such provisions are not in contravention of applicable laws.

20. INSPECTION:

The Engineer or his authorized representative shall be permitted to inspect the work, materials, payrolls, and records of personnel, invoices of material and other relevant data and records of this contract.

21. PAYMENTS:

The Town's terms of payment are Net 30 Days after approval of invoice. No invoice will be paid until acceptance of goods ordered. By the fifth (5th) day of each month application for payment must be submitted by the Contractor to the Town's designated field representative, for verification and approval of quantities and costs incurred during said pay period. Only upon approval by designated representative will payment be forwarded for processing.

The Town shall retain five per centum (5%) of each estimate until final completion and acceptance of all work covered by this contract.

22. GENERAL SPECIFICATIONS "(OR EQUAL CLASSES)":

Whenever in this contract or specifications, a particular brand or make of material, device or equipment is shown or specified, such brand, make of material, device or equipment should be regarded merely as a standard unless otherwise specified.

If three or more brands, makes of material, devices or equipment are shown or specified, each should be regarded as the equal of the others.

When in the opinion of the Engineer, or his authorized agent, any other brand, make of material, device or equipment is recognized as equal to that specified, considering quality, workmanship and economy of operation, and suitable for the purpose intended, it will be accepted.

In the opinion of the Engineer and the Town's duly authorized agents, all material and workmanship shall in every respect be in accordance with what is in conformity with approved modern practice.

Whenever the plans, drawings, specifications, other contract documents, or the quality of the work, admit of doubt as to what is permissible, the interpretation will be made by the Engineer, as to which is in accordance with approved modern practice, in order to meet the particular requirements of the contract.

In all cases, new material shall be used unless this provision is waived with a special written notice by the Engineer.

23. INSPECTION AND TESTS:

All material and workmanship (if not otherwise designated) shall be subject to inspection, examination and tests, by the Engineer, or his duly authorized representatives, at any and at all times during the manufacture and/or construction, and at any and all places where such manufacture or construction is carried on.

Without additional charge, the Contractor shall furnish promptly all reasonable facilities, labor and material necessary to make tests so required, safe and convenient.

Special full size and performance tests shall be conducted as described in the specifications.

If at any time before final acceptance of the entire work, the Engineer considers necessary or advisable any examination of any portion of the work already completed, by removing or tearing out the same, the Contractor shall upon request, furnish promptly all necessary facilities, labor and materials.

If such work is found to be defective in any material respect, due to material or faulty construction by the Contractor, or any subcontractor, or if any work shall be covered over without approval of the engineer (whether or not the same shall be defective) the Contractor shall be liable for the expense of such examination and of satisfactory reconstruction.

If, however, such approval and consent shall have been given and if such work is found to meet the requirements of this contract, the Contractor shall be recompensed for the extent of such examination and reconstruction in the manner herein provided for the payment of the cost of "EXTRA WORK."

24. COSTS AND TESTS:

The selection of Bureau Laboratories, and/or agencies for the inspection and tests of supplies, materials or equipment shall be subject to the direction of the Engineer.

If inspection, tests, analysis of the materials or equipment, should disclose that said material or equipment requires rejection, then the cost of said inspection, test analysis shall be borne by the Contractor and said cost shall be deducted from the Contractor's current estimate by the Engineer. If supplies, material or equipment shall be found acceptable, the cost of said inspection, tests or analysis shall be borne by the Town.

25. PROTECTION OF WORK AND PROPERTY:

The Contractor shall at all times safely guard the Town's property from injury or loss, in connection with this contract. He shall at all times safely guard and protect his own work and that of adjacent property from damage. The Contractor shall replace and make good any such damage, loss or injury. All passageways, guard fences, lights and other facilities required for protection by local conditions must be provided and maintained.

26. POWER OF CONTRACTOR TO ACT IN AN EMERGENCY:

In case of an emergency, which threatens loss or injury of property and/or safety of life, the Contractor shall be allowed to act without previous instructions from the Engineer, as he sees fit. He shall notify the Engineer immediately thereafter of any compensation claimed by the Contractor due to such extra work, and shall submit same to the Engineer for approval. When the Contractor has not taken action, but has notified the Engineer of an emergency threatening injury to persons or damage to the work, or any adjoining property, the Contractor shall act as instructed or authorized by the Engineer to prevent such threatened injury or damage.

27. CERTIFICATE OF COMPLETION:

Upon completion of all work whatsoever required, the Engineer shall file a written certificate with the Director of Finance and the Contractor, for the entire amount of work performed and compensation earned by the Contractor, including extra work and compensation thereof.

28. FINAL PAYMENT:

Within thirty days of filing a certificate of completion, the Town shall pay to the Contractor the amount therein stated, less all prior payments and advances whatsoever to or for the account of the Contractor. All prior estimates and payments, including those relating to extra work, shall be subject to correction by this present payment, which throughout this contract is called the FINAL PAYMENT.

29. ACCEPTANCE OF FINAL PAYMENT CONSTITUTES RELEASE:

The acceptance by the Contractor of the final payment, shall be and shall operate as a release to the Town of all claims and of all liability to the contract or for all things done or furnished in connection with this work, and for every act and neglect of the Town and others relating to or arising out of this work, accepting the Contractor's claim for interest upon the final payment, if the payment is improperly delayed. No payment, however, final or otherwise, shall release the Contractor or his sureties from any obligation under this contract or of the performance bond.

30. SUB-SURFACE STRUCTURES:

All sub-surface structures and public utility lines have been located as far as possible, as indicated on the plans and information obtained from the respective utilities. The Town does not assume the responsibility for the accuracy of this information.

31. SUB-SURFACE CONDITIONS:

Bidders are notified that it is obligatory for them to obtain all the information they require as to the existing physical conditions relative to the work and in particular to sub-surface conditions---NOR SHALL THE TOWN BE HELD LIABLE FOR ANY ADDITIONAL COST TO THE CONSTRUCTION WHICH MAY RESULT DUE TO THESE CONDITIONS, and each bidder in bidding must rely exclusively upon his own investigation and that he makes this bid with the full knowledge of the kind, quality and quantity of work required.

The undersigned understands that information relative to subsurface and other conditions, natural phenomena, existing pipes and other structures (surface and/or subsurface) has been furnished only for his information and convenience without any warranty of guarantee, express or implied, that the subsurface and/or other structures (surface and/or subsurface) actually encountered will be the same as these shown on the drawings or in any of the other contract documents and he agrees that he shall not use or be entitled to use any such information made available to him through the contract documents or otherwise or obtained by him in his own examination of the site, as a basis of or ground for any claim against the Town, arising from or by reason of any variance which may exist between the aforesaid information made available to or acquired by him and the subsurface and/or other conditions, natural phenomena, existing pipes and other structures (surface and/or subsurface) actually encountered during the construction work, and he has made due allowance therefore in this bid.

32. CONTRACTOR'S TITLE TO MATERIALS:

No materials or supplies for the work shall be purchased by the Contractor or subcontractor, subject to any chattel mortgage or under any conditional sale or other agreement for which interest is retained by the seller.

33. SUPERINTENDENCE BY CONTRACTOR:

The Contractor shall employ a project Super-intendant who shall be present full time at the site of the work and who shall have full authority to act for the Contractor. The Contractor shall employ a project foreman who shall be in attendance at the work site during working hours.

It is understood that such representative shall be acceptable to the Town and shall be one whose experience and length of service in this particular kind of work warrants his ability to perform the duties entailed to the satisfaction of the Engineer, and who can continue in that capacity for the particular job involved unless he ceases to be on the Contractor's payroll.

The Engineer reserves the right of investigation to satisfy the Town that the appointed superintendent is properly qualified to carry out the obligations entailed to perform the work herein contemplated in the plans and specifications and directions.

34. REPRESENTATIONS OF CONTRACTORS:

The Contractor represents and warrants:

- a). That he is financially solvent and that he is experienced in and competent to perform the type of work, or to furnish plant and equipment materials and supplies.
- b). That he is familiar with all Federal, State and Municipal laws, ordinances and regulations, which in any way may affect the work of those employed therein.
- c). That he has carefully examined the plans and specifications and the site of the work, and that from his own investigation he has satisfied himself about the nature and location of the work, character, quality and quantity of the surface and sub-surface materials likely to be encountered, as well as the character of equipment and other facilities needed for the performance of the work, the general local conditions and all other conditions which may in any way affect the work.

35. PATENT RIGHT:

As part of his obligation hereunder and without any additional compensation, the Contractor will pay for all patent fees or royalties required in respect to the work or any part thereof, and will fully indemnify the Town for any loss on account of infringement of any patent rights.

36. PERMITS AND REGULATIONS:

The Contractor shall procure and pay for all permits and licenses necessary for the execution of his work. Town permit fees will be waived.

The Contractor shall comply with all laws, ordinances, rules and regulations relating to the performance of the work.

37. CORRECTION OF WORK:

All work, all material, whether incorporated in the work or not, all processes of manufacture and all methods of construction, shall be at all time and places subject to the inspection of the Engineer, who shall be the final judge of the quality and suitability of the work, materials, processes of manufacture and methods of construction for the purpose for which they are used.

Should they fail to meet the approval of the Engineer they shall be forthwith reconstructed, made good, replaced and corrected, as the case may be, by the Contractor, at his own expense.

Rejected material shall immediately be removed from the site.

Acceptance of material and workmanship by the Inspectors shall not relieve the Contractor from his obligation to supply other materials and workmanship when so ordered by the Engineer.

If, in the opinion of the Engineer, it is undesirable to replace any defective or damaged material, or to reconstruct or correct any portion of the work injured or not performed in accordance with the contract, the compensation to be paid to the Contractor hereunder, shall be reduced by such amount which the Engineer deems equitable.

The Contractor expressly warrants that his work shall be free from any defects in material or workmanship, and agrees to correct any such defects which may appear within the maintenance period, following final completion of work.

Neither acceptance of the completed work, nor payment thereof, shall operate to release the Contractor or his sureties from any obligation under or upon this contract or the performance bond.

38. STATEMENT SHOWING AMOUNT DUE FOR WAGES, MATERIAL AND SUPPLIES:

With each application for payment under this contract, the Contractor and every subcontractor shall deliver to the Town a written verified statement in a form satisfactory to the Town, showing in detail the amounts then due and unpaid by such Contractor or subcontractor, to all laborers for daily or weekly wages, men employed by him under the contract for performance of work at the site thereof, or to other persons for material and equipment delivered at the site of the work.

The term "laborers" as used herein, shall include workmen and mechanics.

39. TOWN RIGHT TO WITHHOLD PAYMENTS:

The Town may withhold from the Contractor as much of any approved payment due him, as the Town deems necessary.

1st. To assure the payment of just claims due and unpaid of any person supplying labor or materials for the work.

2nd. To protect the Town from loss due to defective work not remedied.

or

3rd. To protect the Town from loss due to injury to persons or damage to work or property of other Contractors, subcontractors, or others caused by the act or neglect of the Contractor or any of his subcontractors.

The Town shall have the right, as agent for the Contractor, to apply any such amounts so withheld in such manner as the Town may deem proper, to satisfy such claims or to secure such protection.

Distribution of such money shall be considered as payments for the amount of the Contractor.

40. TOWN RIGHT TO STOP WORK OR TERMINATE CONTRACT:

If the Contractor shall be adjudged bankrupt, an assignment shall be made for the benefit of creditors. A receiver or liquidator shall be appointed for the Contractor and for any of his property. The Contractor shall be dismissed within twenty (20) days after such appointment. The proceedings in connection therewith shall not be stayed within the said twenty (20) days. If the Contractor shall refuse or fail after notice or warning from the

Engineer, to supply enough properly skilled workmen or proper materials, or if the Contractor shall fail to prosecute the work or any part thereof with such diligence as will insure its completion within the period herein specified (or duly authorized extension thereof) or shall fail to complete the work within said period, or if the Contractor shall fail to make prompt payment to persons supplying labor or materials for the work, or if the Contractor shall fail or refuse to regard laws, ordinances or the instructions of the Engineer or otherwise be guilty of a substantial violation of any provision of this contract, then in any such event, the Town without prejudice to any other right or remedy, may give seven (7) days notice to the Contractor, to terminate the employment of the Contractor. The Contractor shall lose the right to proceed either for the entire work or (at the option of the Town) for any portion thereof on which delays shall have occurred. The Town may as it deems expedient take possession of the work and complete it by contract or otherwise.

In such cases, the Contractor shall not be entitled to receive any further payment until the work is finished.

If the unpaid balance of the compensation to be paid the Contractor hereunder, shall exceed the expense of so completing the work (including compensation for additional managerial administrative and inspection services and any damages for delay), such excess shall be paid to the Contractor.

If such expense shall exceed such unpaid balance, the Contractor and his sureties shall be liable to the Town for such excess.

If the right of the Contractor to proceed with the work is so terminated, the Town may take possession of and utilize in completing the work, such materials, appliances, supplies, plant and equipment as may be on the site of the work, and necessary therefore.

If the work shall be stopped by order of the Court or any other public authority, for a period of three (3) months, without act or fault of the Contractor or any of his agents, servants, employees, or subcontractors, the Contractor may upon ten (10) days' notice to the Town of Trumbull, discontinue his performance of the work and/or terminate the contract.

TERMINATION:

- A. TERMINATION FOR CAUSE, If through any case, the Contractor shall fail to fulfill in a timely manner, its obligations under this Agreement, or if the contractor shall violate any of the covenants, agreements, or stipulations of this Agreement, the Town shall thereupon have the right to terminate this Agreement for cause by giving written notice to the Contractor of such termination and specifying the effective date thereof, at least five (5) days before the effective date of such termination. In the event, all finished or unfinished reports, documents, data, studies, surveys, drawings, maps, models, photographs, and reports or other material prepared by the contractor shall be entitled to receive just and equitable compensation for any satisfactory work completed on such documents and other materials to the effective date of termination.

The term "cause" includes, without limitation the following;

- 1) If the Contractor furnished any statement, representation, warranty or certification in connection with this Agreement, which is materially false, deceptive, incorrect, or incomplete.
- 2) If the Contractor fails to perform to the Town's satisfaction any material requirement of the Agreement, or is in violation of any specific provision thereof.
- 3) If the Town reasonably determines satisfactory performance of the Agreement is substantially endangered or can reasonably anticipate such an occurrence or default.

Notwithstanding the above, the Contractor shall not be relieved of liability to the Town for any damages sustained by the Town by virtue of any breach of the Agreement by the Contractor, and the Town may withhold any payment to the Contractor for the purpose of setoff until such time as the exact amount of damages due the Town from the Contractor is determined.

- B. TERMINATION FOR CONVENIENCE: The Town may terminate this Agreement at any time the Town determines that the purposes of the distribution of monies under the agreement would no longer be served by completion of the Work/Project. The Town shall effect such termination by giving written notice of termination to the Contractor and specifying the effective date thereof, at least twenty (20) days before the effective date of such termination. In the event, all finished or unfinished documents and other materials as described in Subsection A shall, at the option of the Town, become its property. If the Agreement is terminated by the Town as provided herein, the Contractor shall be paid an amount which bears the same ratio to the total compensation as the services actually and satisfactorily performed to the effective date of termination bear to the total services of the Contractor pursuant to the terms of this Agreement, less payments of compensation previously made, and subject to the Town's right of set off for any damages pursuant to the terms of the Agreement.

41. USES OF PREMISES AND REMOVAL OF DEBRIS:

The Contractor undertakes at his own expense:

- a). To take every precaution against injuries to persons or damage to property.
- b). To store his apparatus, materials, supplies and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work.
- c). To place upon the work area or any part thereof, only such loads as are consistent with the safety of that portion of the work.
- d). To frequently clean up all refuse, rubbish, scrap material and debris caused by his operations, so that the site of the work shall at all times present a neat, orderly and workmanlike appearance. Failure to comply with this article within 24 hours of notification

may result in the Owner having the work performed by outside sources at the Contractor's expense. These expenses will be deducted from the regular monthly periodic estimate.

e). To remove before final payment all surplus materials, false work, temporary structures, (including foundations thereof), plant of any description and debris of every nature resulting from his operation, and to put the site in a neat and orderly condition.

f). To effect all cutting, fitting or patching of his work required to make the same conform to the plans and specifications, and with the consent of the Engineer, to cut or otherwise alter the work of any other Contractor.

42. ALL WORK SUBJECT TO CONTROL OF THE ENGINEER:

In the performance of the work, the Contractor shall abide by all orders, directions and requirements of the Engineer and shall perform all duties to the satisfaction of the Engineer, and at such time and places, by such methods and in such manner and sequence as the Engineer may require.

The Engineer shall determine the amount, quantity, acceptability and fitness of all parts of the work, shall interpret the plans, specifications, contract and any extra work orders, and shall decide all other questions in connection with the work.

The Contractor shall employ no plant, equipment, materials, methods or men to which the Engineer objects, and shall remove no plant materials, equipment or other facilities from the site of the work, without the Engineer's permission. Upon request, the Engineer shall confirm in writing any oral order, direction requirement or determination.

43. TOWN ENGINEER, CONTROL NOT LIMITED:

The enumeration herein or elsewhere in the contract of particular instances in which the opinion, judgment, discretion or determination of the Engineer, shall control or in which work shall be performed to his or their satisfaction as subject to his or their approval or inspection, shall not imply that only matters similar to those enumerated shall be governed and performed, but without exception all the work shall be governed and so performed.

44. PROVISIONS REQUIRED BY LAW DEEMED INSERTED:

Each and every provision of law and clause required by law to be inserted in this contract, shall be deemed to be inserted herein, and the contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not correctly inserted, then upon the application of either party, the contract shall forthwith be physically amended to make such insertion.

45. SUBLETTING, SUCCESSOR AND ASSIGNS:

The Contractor shall not sublet any part of the work under this contract, nor assign any moneys due him hereunder without first obtaining the written consent of the Town.

46. DEFINITIONS:

Wherever the words defined in this section or pronouns used in their stead occur in the specifications, they shall have the meanings herein given.

AS DIRECTED, AS REQUIRED, ETC.

Wherever in the specifications, or on the drawings the words "As Directed", "As Ordered", "As Requested", "As Required", "As Permitted", or words of like import are used, it shall be understood that the Direction, Order, Request, Requirement, or Permission of the Engineer is intended. Similarly, the words "Approved", "Accepted", "Satisfactory", and words of like import shall mean Approved by, Acceptable to, or Satisfactory to the Engineer.

ELEVATION

The figures given on the drawings or in the other contract documents after the word "Elevation" or abbreviation of it shall mean the Distance in Feet Above the Datum Adopted by the Engineer.

NOTE: Unless otherwise stated elsewhere in the contract documents and/or on the contract drawings, vertical elevation datum for this project is based upon NEW City Datum, NGVD (ele. 0.00 = mean water).

ROCK

The word "Rock" wherever used as the name of any excavated material or material to be excavated, shall mean only boulders or solid ledge rock which, in the opinion of the Engineer, requires, for its removal, drilling and blasting, wedging, sledging, barring or breaking up with a power operated tool. No soft or disintegrated rock which can be removed with a hand pick or power-operated excavator or shovel, no loose, shaken or previously blasted rock or broken stone in rock fillings or elsewhere, and no rock exterior to the maximum limits of measurement allowed, which may fall into the excavation, will be measured or allowed as "Rocks".

EARTH

The word "Earth", wherever used as the name of an excavated material or material to be excavated, shall mean all kinds of material other than rock as above defined.

47. ABBREVIATIONS:

Where any of the following abbreviations are used in the Specifications, they shall have the meaning set forth opposite each.

AASHO American Association of State Highway
 Officials

ACI	American Concrete Institute
AISC	American Institute of Steel Construction
ASA	American Standard Association
ASCE	American Society of Civil Engineers
ASTM	American Society For Testing and Materials
NEC	National Electrical Code, Latest Edition

48. HANDLING AND DISTRIBUTION:

The Contractor shall handle, haul and distribute all materials and all surplus materials on the different portions of the work, as necessary or required; shall provide suitable and adequate storage room for materials and equipment during the progress of the work, and shall be responsible for the protection, loss of, or damage to materials and equipment furnished by him, until the final completion and acceptance of the work.

Storage and Demurrage charges by Transportation Companies and Vendors shall be borne by the Contractor.

49. MATERIALS:

Samples - Inspection - Approval, unless otherwise expressly provided on the Drawings or in any of the other contract documents, only new material and equipment shall be incorporated in the work. All materials and equipment furnished by the Contractor to be incorporated in the work shall be subject to the inspection and approval of the Engineer. No material shall be processed or fabricated for the work or delivered to the work site without prior approval of the Engineer.

As soon as possible after execution of the Agreement, the Contractor shall submit to the Engineer the names and addresses of the manufacturers and suppliers of all materials and equipment he proposes to incorporate into the work. When shop and working drawings are required as specified below, the Contractor shall submit prior to the submission of such drawings, data in sufficient detail to enable the Engineer to determine whether the manufacturer and/or supplier have the ability to furnish a product meeting the specifications. As requested, the Contractor shall also submit data relating to the materials and equipment he proposes to incorporate into the work in sufficient detail to enable the Engineer to identify and evaluate the particular product and to determine whether it confirms to the Contract Requirements. Such data shall be submitted in a manner similar to that specified for submission of shop and working drawings.

Facilities and labor for the storage, handling and inspection of all materials and equipment shall be furnished by the Contractor. Defective materials and equipment shall be removed immediately from the site of the work.

If the Engineer so requires, either prior to or after commencement of the work, the Contractor shall submit additional samples of materials for such special tests as the Engineer deems necessary to demonstrate that they conform to the specifications. Such samples, including concrete test cylinders, shall be furnished, taken, stored, placed and shipped by the approved molds for making concrete test cylinders. Except as otherwise expressly specified, with technical specifications, the Town shall make arrangements and pay for the tests.

All samples shall be packed so as to reach their destination in good condition, and shall be labeled to indicate the material represented. The name of the building or work and location for which the material is intended and the name of the contractor submitting the sample. To ensure consideration of samples, the Contractor shall notify the Engineer by

letter that the samples have been shipped and shall properly describe the samples in the letter. The letter of notification shall be sent separate from and should not be enclosed with the samples.

The Contractor shall submit data and samples, or place his orders, sufficiently early to permit consideration, inspection, testing and approval before the materials and equipment are needed for incorporation in the work. The consequence of his failure to do so shall be the Contractor's sole responsibility.

When required, the Contractor shall furnish to the Engineer triplicate sworn copies of manufacturer's shop or mill tests (or reports from independent test laboratories) relative to materials, equipment, performance rating and concrete data.

50. WATCHMAN:

If it becomes necessary to supply watchmen during non-regular working hours, they shall be employed until (in the opinion of the Engineer) their services are no longer required. The Contractor shall employ and pay a satisfactory, sober, able-bodied watchman who shall be in attendance upon the work at all times, (regardless of the hour) whenever work by the regular employees stops.

51. MAINTENANCE OF TRAFFIC:

The Contractor shall conduct his operations in such a manner so that he does not impose unnecessary hardship upon the residents along the route of the work.

Streets may be closed to traffic only upon written order of the Traffic Engineer. Traffic shall be maintained within the project area except where it is found impracticable, or seriously interferes with the Contractor's operations. If permanent repairs are not completed immediately, the pavement surface along the line of work shall be maintained in a condition comparable to the adjacent road surface.

People living or having business within the barricaded zone shall be permitted to use the highway for auto traffic if possible.

The Contractor shall protect all phases of the work from damage due to traffic, etc., and provide necessary watchmen, signalmen and (if so ordered by the Engineer) police officers.

No direct payment for maintenance of traffic will be made, but shall be considered as included in the base bid submitted.

52. DRIVEWAYS AND PROPERTY ENTRANCES:

Excavated materials and equipment shall be placed in such position as not to unnecessarily impede travel on the streets, or access to driveways. A sufficiently clear space for pedestrian travel shall be maintained on the sidewalks, and all property entrances and driveways shall be kept clear, where possible.

Where necessary, bridges shall be constructed and maintained for residents. Before closing any driveway or entrance, the Contractor shall give the owner or resident of the property involved, due notice of such temporary closing. When this is not practicable and an emergency arises, the Contractor shall, on the order of the Engineer, provide a satisfactory place to house temporarily, any motor vehicle, which may be prevented from being housed at night.

No direct payment will be allowed for this work or condition, but shall be considered as included in the base bid submitted.

53. DUST:

The Contractor shall at all times during the execution of this contract, control the nuisance of flying dust, by water sprinkling or by application of Calcium Cholride, or a method satisfactory to the Engineer.

54. PRESERVATION OF TREES:

Trees and shrubs on the site of the work shall be protected during the entire period of the contract, and if injured by the Contractor or his employees, shall be replaced, unless it is covered by the bid items, at his expense before the completion of the contract.

55. INSPECTION OF WORK AWAY FROM THE SITE:

If work to be done away from the construction site is to be inspected on behalf of the Town during its fabrication, manufacture, or testing, or before shipment, the Contractor shall give notice to the Engineer of the place and time where such fabrication, manufacture, testing or shipping is to be done. Such notice shall be in writing and delivered to the Engineer in ample time so that the necessary arrangements for the inspection can be made.

56. CONTRACTOR'S SHOP AND WORKING DRAWINGS:

The Contractor shall submit for approval (in reproducible form unless otherwise specified) shop and working drawings of concrete reinforcement, structural details, piping layout, wiring, materials fabricated for the contract and materials and equipment for which such drawings are specifically requested.

Such drawings shall show the principal dimensions, weight, structural and operating features, space required, clearances, type and/or brand of finish or shop coat, grease fittings, etc., depending on the subject of the drawing, when it is customary to do so.

When the dimensions are of particular importance, or when so specified, the drawings shall be certified by the manufacturer or fabricator as correct for the contract.

When so specified or if considered by the Engineer to be acceptable, manufacturer's specifications, catalog data, descriptive matter, illustrations, etc., may be submitted for approval in place of shop and working drawings. In such case, requirements shall be as specified for shop and working drawings, insofar as applicable, except that the submission shall be in quadruplicate.

The Contractor shall be responsible for the prompt and timely submittal of all shop and working drawings so that there shall be no delay to the work due to the absence of such drawings.

No material or equipment shall be purchased or fabricated for the contract until the required shop and working drawings have been submitted as herein above provided and approved as conforming to the contract requirements. All such materials and equipment and the work involved in their installation or incorporated into the work shall then be as shown in and represented by said drawings.

Until the necessary approval has been given, the Contractor shall not proceed with any portion of the work such as the construction of foundations, the design or details of which are dependent upon the design or details of work, materials, equipment or other features for which approval is required.

All shop and working drawings shall be submitted to the Engineer by and/or through the Contractor, who shall be responsible for obtaining shop and working drawings from his subcontractors and returning approved drawings to them. Unless otherwise approved, all shop and working drawings shall be prepared on standard size, 24 inch by 36 inch sheets, except those which are made by changing existing standard shop or working drawings. All drawings shall be clearly marked with the names of the Town, Contractor, and building, equipment or structure to which the drawing applies, and shall be accompanied by a letter of transmittal giving a list of the drawing number and the names mentioned above.

Only drawings which have been checked and corrected by the fabricator should be submitted to the Contractor by his subcontractors and vendors. Prior to submitting drawings to the Engineer, the Contractor shall check thoroughly all such drawings to satisfy himself that the subject matter thereof conforms to the drawings and specifications in all respects. All drawings which are correct shall be marked with the date, checker's name and indication of the Contractor's approval, and then shall be submitted to the Engineer. Other drawings shall be returned for correction.

The approval of shop and working drawings, etc., will be general only and shall not relieve or in any respect diminish the responsibility of the Contractor for details of design, dimensions, etc., necessary for proper fitting and construction of the work as required in the contract and for achieving the result and performance specified hereunder.

Should the Contractor submit for approval, equipment that requires modifications to the structures, piping, layout, etc., detailed on the drawings, he shall also submit for approval, details of the proposed modifications. If such equipment and modifications are approved, the Contractor, at no additional cost to the Town, shall do all work necessary to make such modifications.

The marked-up reproducible of the shop and working drawings or one mark-up copy of catalog cuts will be returned to the Contractor. The Contractor shall furnish additional copies of such drawings or catalog cuts when so requested.

57. OCCUPYING PRIVATE LAND:

The Contractor shall not (except after written consent from the proper parties) enter or occupy with men, tools, materials, or equipment, any land outside the right-of-way or property of the Town. A copy of the written consent shall be given to the Engineer.

58. INTERFERENCE WITH AND PROTECTION OF STREETS:

The Contractor shall not close or obstruct any portion of a street, road or private way without obtaining permits therefore from the proper authorities. If any street, road or private way shall be rendered unsafe by the Contractor's operations, he shall make such repairs or provide such temporary ways or guards as shall be acceptable to the Engineer and to the proper authorities.

Streets, roads, private ways and walks not closed shall be maintained passable and safe by the Contractor, who shall assume and have full responsibility for the adequacy and safety of provisions made therefore.

The Contractor shall, at least 24 hours in advance, notify the Police and Fire Departments in writing, with a copy to the Engineer, if the closure of a street or road is necessary. He shall cooperate with the Police Department in the establishment of alternate routes and shall provide adequate detour signs, plainly marked and well-lighted, in order to minimize confusion.

59. STORAGE OF MATERIALS AND EQUIPMENT:

All excavated materials, construction equipment and materials and equipment to be incorporated in the work shall be placed so as not to injure any part of the work or existing facilities and so that free access can be had at all times to all parts of the work and to all Public Utility installations in the vicinity of the work. Materials and equipment shall be kept neatly piled and compactly stored in such locations as will cause a minimum of inconvenience to public travel and adjoining owners, tenants and occupants.

60. INSUFFICIENCY OF SAFETY PRECAUTIONS:

If at any time, in the sole judgment of the Engineer, the work is not properly lighted, barricaded, or in any other respect safe in regard to public travel, persons on or about the work, or public or private property, the Engineer shall have the right to order such safeguards to be erected and such precautions to be taken as he deems advisable and the Contractor shall comply promptly with such orders. If, under such circumstances, the Contractor does not or cannot immediately put the work and the safeguards into proper and approved condition, or if the Contractor or his representative is not upon the site so that he can be notified immediately of the insufficiency of safety precautions, the Engineer may put the work into such a condition that it shall be, in his opinion, in all respects safe. The Contractor shall pay all costs and expenses incurred by the Engineer or Town in so doing. Such action of the Engineer, or his failure to take such action, shall in no way relieve or diminish the responsibility of the Contractor for any and all costs, expenses, losses, liability, claims, suits, proceedings, judgments, awards or damages resulting from, by reason of or in connection with any failure to take safety precautions or the insufficiency of the safety precautions taken by him or by the Engineer acting under

authority of this article or for failure to comply with the provisions of any State or Federal Occupational Safety and Health Laws, Rules or Regulations.

61. SANITARY REGULATIONS:

When deemed necessary by the Engineer, the suitable Contractor shall provide sanitary facilities for the use of those employed on the work. Such facilities shall be made available when the first employees arrive on the site of the work, shall be properly secluded from public observation and shall be constructed and maintained during the progress of the work in suitable numbers and at such points and in such manner as may be required or approved.

The Contractor shall maintain the sanitary facilities in a satisfactory and sanitary condition at all times and shall enforce their use. He shall rigorously prohibit the committing of nuisances on the site of the work, on the lands of the Town, or on adjacent property.

The Town and the Engineer shall have the right to inspect such facilities at all times to determine whether or not they are being properly and adequately maintained.

62. DELETE

63. DIMENSIONS OF EXISTING STRUCTURES:

Where the dimensions and locations of existing structures are of importance in the installation or connection of any part of the work, the Contractor shall verify such dimensions and locations in the field before the fabrication of any material or equipment which is dependent on the correctness of such information.

64. WORK TO CONFORM:

During its progress, and on its completion, the work shall conform truly to the lines, levels and grades indicated on the drawings or given by the Engineer and shall be built in a thoroughly substantial and workmanlike manner, in strict accordance with the drawings, specifications and other contract documents and the directions given from time to time by the Engineer.

65. COMPUTATION OF QUANTITIES:

For estimating quantities in which the computation of areas by Geometric methods would be comparatively laborious, it is agreed that the Planimeter shall be considered an instrument adapted to the measurement of such areas. It is further agreed that the computation of the Volume Prismoids shall be by the method of average end areas.

66. PLANNING AND PROGRESS SCHEDULES:

Before starting the work and from time to time during its progress, as the Engineer may request, the Contractor shall submit to the Engineer a written description of the methods he plans to use in doing the work and the various steps he intends to take.

Within two (2) days after the date of starting work, the Contractor shall prepare and submit to the Engineer a written schedule fixing the respective dates for the start and completion of various parts of the work. The Contractor shall update the schedule on a monthly basis and submit each schedule to the Engineer for review, approval and change where necessary during the progress of the work.

67. PRECAUTIONS DURING ADVERSE WEATHER:

During adverse weather and against the possibility thereof, the Contractor shall take all necessary precautions so that the work may be properly done and satisfactory in all respects. When required, protection shall be provided by the use of plastic sheets, tarpaulins, wood and building-paper shelters or other approved means.

The Engineer may suspend construction operations at any time when, if in his sole judgment, the conditions are unsuitable or the proper precautions are not being taken, whatever the weather may be.

68. AS-BUILT DRAWINGS:

The Contractor shall be responsible for maintaining a set of as-built drawings during the course of the work for examination by the Engineer.

69. SCOPE OF WORK:

The intent of the contract is to complete the work or improvements in full compliance with the plans, specifications, technical specifications, special notes, etc.

A. Quantities

The unit bid prices shall be applied to the applicable quantities actually used and accepted in the performance of this project. Quantities have been established using the best information available for accuracy. In some instances, however, quantities may have been provided for some items in order to establish a unit price in the eventuality that the item of work may occur during the construction of the project.

Should the actual quantities constructed vary from those estimated, whether higher or lower, the Contractor is made aware that the applicable item will be paid for based upon his unit bid price bid for that item. Exceptions to this article are noted below in section C, Change in Project Scope.

B. Cost Plus Items:

If the Town orders the performance of any work not covered by the drawings or specifications, and for which no unit price or lump sum basis can be agreed upon, then such extra work shall be done on a Cost-Plus percentage basis of payment as follows:

1.1 Direct Labor And Foreman Costs - For all labor including equipment operators, and foremen in direct charge of the specific operation, the Contractor shall receive the rate of

wage actually paid as shown by his certified payroll, which shall be at least the current local minimum prevailing wage rate, per hour, per position, in accordance with the current State of Connecticut, Labor Department Minimum Rates & Classifications for Heavy Construction. Compensation shall be for each hour that said labor and foreman are actually engaged in such work, including such overtime as provided by existing laws and regulations. In addition the contractor shall receive for each hour worked, the actual costs paid to, or in behalf of workmen, by reason of allowances, health and welfare benefits, pension fund benefits or other benefits, when such amounts are required by collective bargaining agreement or other employment contract generally applicable to the classes of labor employed on the work. All personnel above the grade of foreman are excluded from receiving compensation under this section.

An amount equal to 20 percent of the total sums as specified above (1.0) will also be paid the contractor.

1.2 Other Labor Costs - The Contractor shall also be allowed to add to such direct labor and foremen costs, the following items:

Social Security Tax at the percentage legally required; Unemployment Ins., at the percentage legally required; Workmen's Compensation insurance at policy percentage rate; Property/liability damage insurance premiums;

An amount equal to 6 percent of the total sums as specified above (1.1) will also be paid the contractor.

1.3 Materials - For all materials used, the Contractor shall receive the actual cost of such materials, including freight and delivery charges, as shown by original receipted bills to which shall be added a sum equal to fifteen (15) percent.

1.4 Equipment Rental - For machinery, trucks, or equipment, exclusive of operator's hire, and except small tools and equipment for which no rental is allowed, which it may be deemed necessary to use, the Town will allow the Contractor the cost of renting such machinery, trucks, or equipment, which shall include fuel and lubricants, as are actually used in the performance of the work, but to which no percentage shall be added. Equipment rental costs will be based upon the "Rental Rate Blue Book" including Rate Adjustment Tables and amendments as published by Dataquest, Inc., San Jose, California or a lower rate if so submitted by the Contractor, and must be approved by the Town prior to any work being performed.

1.5 Sub-Contracts - Cost-Plus work may be performed by a subcontractor only when (a) the Contractor has obtained approval of the subcontractor by the Town and (b) the work has been performed by the subcontractor in strict compliance with the terms of the contract. In such event, the Contractor shall receive the cost of any such sub-contract to which shall be added a sum equal to ten (10) percent.

1.6 Superintendence - The foregoing payments shall be received by the Contractor as payment in full for all work done on a Cost Plus basis, and shall be accepted to cover all general superintendence, use of small tools and equipment for which no rental is allowed, job and general overhead, bonding, expenses, and anticipated profit.

2.0 The cost of the work done each day shall be submitted to the Engineer in a satisfactory form, on the succeeding day and shall be approved by him or adjusted accordingly.

3.0 Monthly payments of all charges for extra work, whether priced on the Cost Plus basis or an agreed-upon basis, shall upon completion, and approval, be requested with the subsequent monthly progress billing.

C. Change of Project Scope

In the event that the overall scope of the project is increased or decreased by 25% or more, either party to the contract may request a revised contract consideration to the stipulated bid unit prices that may be affected by the change. After agreement is reached by the Town and contractor on revised unit prices, a change order will be issued reflecting these changes. The re-negotiated unit prices will be based on the original contract unit prices with additions or subtractions indicated so as to justify the new unit price to the satisfaction of the Town. The revised unit prices will be applied only to that portion of the project in which the scope has been changed, in accordance with this article, and shall not be applied to any of the quantities of the original bid. An example of such a change may be the addition to or deletion of the originally stated project areas.

70. FIELD OFFICE:

See Special Provision 0969060A for Construction Field Office. The Town of Trumbull will provide location for field office.

71. COORDINATION OF PLANS/SPECIFICATIONS:

Any requirement on the plans or in these Specifications, Special Notes/Provisions shall be equally binding on the Contractor.

In case of conflict, the plans shall take precedence over the Specifications. Special Notes/Provisions shall take precedence over plans and Specifications.

72. NO PAYMENT:

Unless otherwise provided for by a specific Contract Item, no separate payment shall be made for any of the requirements as described in the above General Specifications, but shall be deemed included in the total bid price for all the work in this Contract.

73. NOISE:

The Contractor will be required to limit noise operations pursuant to Town of Trumbull Charter Chapter 164 -1 to and including Chapter 164 -13

SECTION 6

TECHNICAL SPECIFICATION

**TECHNICAL SPECIFICATIONS
FOR**

**LONG HILL GREEN
PERMEABLE PAVER
PATIO AND PARKING**

TRUMBULL, CT

**ISSUED FOR
BID**

Prepared by
Stantec Consulting Services, Inc.



**LONG HILL GREEN PERMEABLE PAVER
PATIO AND PARKING
TRUMBULL, CONNECTICUT**

**LONG HILL GREEN
CONSTRUCTION SPECIFICATIONS
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SECTION 020100 - SITE PREPARATION

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. The general provisions of the Contract including General and Supplementary Conditions, and General Requirements apply to the work specified in this Section.

1.2 SECTION INCLUDES

- A. Work Included: Providing all Site Preparation as shown on the Drawings, and as specified, including, but not necessarily limited to the following:

1. Review of existing conditions and subsurface data.
2. Maintain existing fencing and provide and install new construction fence as necessary in locations as directed by the Owner and Engineer.
3. Provide and install tree protection fence.
4. Provide and install project signs as directed by the Owner and Engineer.
5. Provide West Nile Virus protection measures as directed by the Owner and Engineer.

1.3 EXISTING CONDITIONS - It shall be the obligation of each bidder to satisfy himself by examination of the site that the existing conditions, elevation grades, and improvements shown are accurate. No claim for extra compensation for inaccuracies of existing conditions will be allowed.

1.4 ADDITIONAL INFORMATION - Upon award of contract, the Contractor may make their own subsurface and site investigations to substantiate existing subsurface soil conditions.

1.5 JOB CONDITIONS

- A. Contact Call Before You Dig services for Connecticut (1.800.922.4455) to locate underground utilities prior to commencing site preparation operations.
- B. No areas under construction shall be left accessible to pedestrians at any time. The Contractor shall take all necessary steps, as requested or approved by the Owner/Engineer, to secure the site. When making water, storm drainage, or any other utility connections, the Contractor is responsible for securing work areas which occur outside of the proposed construction fence line for the entire time construction is taking place.
- C. For construction access to the site, the Contractor shall use entrances shown on the Drawings for access and egress to the site. All damage to pavement and grounds to remain caused by vehicular access to the site shall be repaired at the Contractor's expense to the satisfaction of the Engineer and the Owner.
- D. The Contractor is responsible for protecting all survey monuments, benchmarks and property boundary pins within the contract limits shown. The Contractor shall locate, maintain, raise, lower, or remove and replace to suit the new field conditions or if damaged by Contractor's operations. State of Connecticut requirements and specifications for monument location and installation must be followed.
- E. Peripheral areas outside of the staging areas shown on the Drawings shall not be disturbed or used for storing or stockpiling materials without prior approval of the Owner and Engineer.

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- F. Stockpiles shall be maintained in accordance with State of Connecticut DEP best management practices.

PART 2 PRODUCTS

2.1 CONSTRUCTION FENCE

- A. Chain-Link Fencing: Minimum two (2) inch, 0.148 inch thick, galvanized steel, chain-link fabric fencing; minimum eight (8) feet high with galvanized steel pipe posts; minimum 2-3/8 inch OD line posts and 2-7/8 inch OD corner and pull posts, with 1-5/8 inch OD top rails.

2.2 PROJECT SIGNS

- A. Provide one Project Identification Sign where and as directed by the Owner or Engineer. Signs shall be 4'x8', constructed out of 3/4" ACX plywood, exterior grade, five (5) plies - front side to be Medium Density Overlay (M.D.O.), reverse side to be 'C' or approved equal.
1. Text and graphics shall be provided/approved by Owner and reviewed by Engineer. Comply with Owners/Engineers direction for text content, style of lettering, graphics and design layout.
 2. Finish: Paint sign panel and applied graphics with exterior-grade alkyd gloss enamel over exterior primer. Colors to be selected by Owner and Engineer.
 3. Engage an experienced sign painter to apply graphics for Project Identification signs.
- B. Posts: pressure-treated 4"x4" posts or galvanized steel posts, minimum 4'-0" depth burial or other sign attachments as approved by Owner and Engineer. Signs shall be rigidly braced and supported.
- C. Prepare temporary signs to provide directional information to construction personnel and visitors. Sign material and sizes to be approved by Owner.
1. Finish: Paint sign panel and applied graphics with exterior-grade alkyd gloss enamel over exterior primer. Colors to be selected by Owner and Engineer.
 2. Engage an experienced sign painter to apply graphics for temporary directional and informational signs. Comply with Owners/Engineers direction for text content, style of lettering and design layout.
 3. Posts: pressure-treated 4"x4" posts or galvanized steel posts, minimum 4'0" depth burial or other sign attachments as approved by Owner and Engineer.

PART 3 - EXECUTION

3.1 PUBLIC SAFETY

- A. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and public of possible hazard. Where appropriate and needed, provide lighting, including flashing red or amber lights.

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3.2 PROJECT SIGNS

- A. Install Project Identification Signs as directed by the Owner and the Engineer. Install signs as indicated to inform public and persons seeking entrance to Project. Do not permit installation of unauthorized signs.
- B. Install temporary directional/information signs as directed by Owner and Engineer.
- C. Maintain signs throughout construction; remove at completion of Work.

3.3 DISPOSAL

- A. All waste material shall be disposed of legally off site.
- B. No Burning or burying on-site will be allowed.

3.4 WEST NILE VIRUS PROTECTION MEASURES: Care shall be taken to prevent the ponding or pooling of standing water-on the ground, in buckets, on top of barrels, in tarps, etc. at all times within the contract limit line and areas designated for construction outside the contract limit line for the duration of the construction contract. Areas of pooled or ponded water shall be immediately drained.

END OF SECTION 020100

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SECTION 024113 - SITE DEMOLITION AND REMOVALS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Division 1 General Requirements and Specific Requirements, apply to this Section.

1.2 SUMMARY

- A. The work of this Section includes the following:
 - 1. Site demolition and removals as indicated on the Drawings.

1.3 RELATED SECTIONS

- A. Section 02 01 00 - Site Preparation
- B. Section 31 25 00 - Erosion and Sediment Controls

1.4 PROJECT CONDITIONS

- A. Traffic: Conduct site-clearing operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from authorities having jurisdiction.
- B. Protection of Existing Improvements: Provide protections necessary to prevent damage to existing improvements indicated to remain in place.
 - 1. Protect site improvements on adjoining properties and on Owner's property to remain.
 - 2. Restore damaged improvements to their original condition, as acceptable to property owners.
- C. Review and verify all limits of items to be removed with the Owner and Landscape Architect prior to commencing clearing and grubbing operations.
- D. Inspection: Verify existing condition of all plant material scheduled for clearing and grubbing removal. Do not proceed with any work that will result with unsafe conditions causing a continuing or permanent hazard. Ascertain that all work scheduled for clearing and grubbing can be safely accomplished in a proper time period.
- E. Benchmarks: Protect all survey monuments, benchmarks, and property boundary pins. Replace if destroyed by Contractor's operations at no cost to the Owner. Contractor to provide temporary offsets to benchmarks during clearing & grubbing and construction and provide new monuments as part of this construction.
- F. Permits/Fees: Coordinate with appropriate utility companies and pay any disconnect fees and permits as necessary.
- G. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated or directed.
- H. Provide 48 hours' notice prior to conducting any site clearing and grubbing operation.
- I. Contact Call Before You Dig Services (1-800-922-4455) prior to commencing any demolition operations.

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1.5 EXISTING SERVICES

- A. General: Indicated locations are approximate. Contractor is responsible for determining exact locations before commencing Work.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.1 DEMOLITION

- A. Demolish site features shown on the plans.
- B. Take care not to damage any features that are to remain. Repair existing features to remain that are damaged by demolition operations.
- C. All demolished features will become the property of the Contractor except as noted.

3.2 DISPOSAL

- A. All waste material shall be disposed of legally off site.
- B. Suitable excess earth materials, as determined by the Engineer, will remain on site in a location directed by the Engineer.
- C. No burning or burying of materials on-site will be allowed.

END OF SECTION 024113

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SECTION 033001 - PORTLAND CEMENT CONCRETE (SITE)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. "Form 817" shall mean the State of Connecticut, Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction, Form 817 or its latest edition and any supplemental specifications.

1.2 SUMMARY

- A. This Section includes specifications for cast-in-place concrete site walls and foundations.

1.3 RELATED SECTIONS

- A. Section 31 23 16 - Earthwork
- B. Section 33 40 00 - Storm Drainage

1.4 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, expansive hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume.

1.5 SUBMITTALS

- A. Product Data: For each type of manufactured material and product indicated.
- B. Design Mixes: For concrete pavement mix.
- C. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials. Contractor shall pay for all testing of concrete materials.
- D. Material Certificates: Signed by manufacturers certifying that each of the following materials complies with requirements:
 1. Cementitious materials and aggregates.
 2. Steel reinforcement and reinforcement accessories.
 3. Admixtures.
 4. Curing compounds.
 5. Applied finish materials (i.e., traffic paint).
 6. Joint fillers.

1.6 QUALITY ASSURANCE

- A. Materials and methods of construction shall comply with the following standards:
 1. American Society for Testing and Materials (ASTM)

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2. American Concrete Institute (ACI)
3. State of Connecticut DOT Standard Specifications (Form 817)
- B. Installer Qualifications: An experienced installer who has completed concrete work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- C. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
 1. Manufacturer must be certified according to the National Ready Mix Concrete Association's Plant Certification Program.
- D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant and each aggregate from one source. Do not change source of brands of cement, aggregate materials, or batching plant during course of work.
- E. ACI Publications: Comply with all ACI requirements unless modified by the requirements of the Contract Documents.

PART 2 PRODUCTS

2.1 FORMS

- A. Conform to Article 8.11.03-3 and 9.21.03-3 of Form 817, latest revision.
- B. 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.

2.2 REINFORCING MATERIALS

- A. Reinforcing Bars and Tie Bars: ASTM A 615, Grade 60, deformed.
- B. Plain, Cold-Drawn Steel Wire: ASTM A 82.
- C. Steel Welded Wire Fabric: ASTM A 185.
- D. Joint Dowel Bars: Plain steel bars, ASTM A 615, Grade 60. Cut bars true to length with ends square and free of burrs.
- E. Supports for Reinforcement: Chairs, spacers, dowel bar supports and other devices for spacing, supporting, and fastening reinforcing bars, welded wire fabric, and dowels in place. Use wire bar-type supports complying with CRSI specifications.
 1. Use supports with sand plates or horizontal runners where base material will not support chair leg.
- F. Bending: All reinforcement shall be bent cold. Only competent mechanics shall be employed for cutting and bending, and proper appliances shall be provided for such work. The reinforcement shall be bent to the shapes shown on the plans. Bends for stirrups and ties shall be made around a pin having a diameter not less than two times the minimum thickness of the bar. Bends for other bars shall be made around a pin having a diameter not less than six times the minimum thickness of the bar, except that for bar larger than one inch the pin shall not be less than eight times the

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minimum thickness of the bar. Reinforcement shall be formed to the dimensions indicated on the plans before it is embedded in the concrete.

- G. Splices: All Splicing shall be as specified in American Concrete Institute (ACI) Building Code.
- H. Placing and Fastening: Placing and Fastening shall be as specified in ACI Standards. Before any concrete is placed, all mortar shall be cleaned from the reinforcement. No concrete shall be poured until the Engineer has inspected the placing of the reinforcing metal and permission to place concrete is granted. All concrete placed in violation of this provision shall be rejected and removed.

2.3 CONCRETE MATERIALS

- A. General: Use the same brand and type of cementitious material from the same manufacturer throughout the Project.
- B. Concrete: Conform to the requirements of Form 817, Article M.03.01, Class "A" "C" or "F" and ASTM C-94. Batch mixing at project site not acceptable.
- C. Compressive strength: Min. 3,000 psi at 28 days unless otherwise noted on the Plans.
- D. Entrained air: 4 to 6%.
- E. Reactive aggregates and calcium chloride are not allowed.
- F. Water: Potable.

2.4 ADMIXTURES

- A. General: Admixtures certified by manufacturer to contain not more than 0.1 percent water-soluble chloride ions by mass of cement and to be compatible with other admixtures.
- B. Air-Entraining Admixture: ASTM C 260.
- C. Water-Reducing Admixture: ASTM C 494, Type A.
- D. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.

2.5 CURING MATERIALS

- A. Conform to Article 4.01.03, Item F7 "Curing", Form 817.

2.6 CONCRETE MIXING

- A. Ready-Mixed Concrete: Comply with requirements and with ASTM C 94 and ASTM C 1116.
 - 1. When air temperature is between 85 deg F (30 deg C) and 90 deg F (32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

2.7 CONCRETE MIX

- A. Prepare design mixes for each type and strength of normal-weight concrete by either laboratory trial batch or field experience methods as specified in ACI 301. For the trial batch method, use a qualified independent testing agency for preparing and reporting proposed mix designs.
- B. Proportion mixes to provide normal-weight concrete with the following properties:
 - 1. Compressive Strength (28-Day): Min. 3000 psi or as shown on Plans.

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2. Slump Limit at Point of Placement: 2 to 4 inches.
3. Air Entrainment of Between 4-6%. Air entrainment agent shall conform to ASTM C260.
- C. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, project conditions, weather, test results, or other circumstances warrant.

2.8 EXPANSIONS JOINTS

- A. Premolded joint filler: ASTM D-994, premolded, resilient, non-extruding, joint filler, as distributed by A. H. Harris, New Britain, CT or approved equal.
 1. Expansion joint filler shall be preformed bituminous cellular type conforming to the requirements of ASHTO M213.
 2. Thickness: as indicated on the drawings.
 3. Depth: to match concrete section
- B. Joint Sealer (for non-colored concrete): Two component polyurethane elastomeric type complying with FS-TT-S-00227, self-leveling, designed for foot traffic, as manufactured by Sika, Pecora, or approved equal.
 1. Color to match finished/cured concrete. Final color to be approved by Engineer.
 2. Provide backer rod and primer per manufacturer recommendation.

2.9 RELATED MATERIALS

- A. Epoxy Adhesive: ASTM C 881, two-component material suitable for dry or damp surfaces. Provide material type, grade, and class to suit requirements.
- B. Products: Subject to compliance with requirements, provide one of the following:
 1. Epoxy Adhesive:
 - a. Burke Epoxy M.V.; The Burke Co.
 - b. Resi-Bond (J-58); Dayton Superior.
 - c. Euco Epoxy System #452 or #620; Euclid Chemical Co.
 - d. Concrese Standard Liquid; Master Builders, Inc.
 - e. Rezi-Weld 1000; W.R. Meadows, Inc.
 - f. Sikadur 32 Hi-Mod; Sika Corp.
 - g. R-600 Series; Symons Corp.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Proof-roll prepared subbase surface to check for unstable areas and verify need for additional compaction. Proceed with pavement only after nonconforming conditions have been corrected and subgrade is ready to receive pavement in conformance with Section 02300, Earthwork.

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- B. Remove loose material from compacted subbase surface immediately before placing concrete.

3.2 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form release agent to ensure separation from concrete without damage.

3.3 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating reinforcement and with recommendations in CRSI's "Placing Reinforcing Bars" for placing and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
- C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.
- D. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.
- E. Install fabricated bar mats in lengths as long as practicable. Handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities, or replace units as required before placement. Set mats for a minimum 2-inch (50-mm) overlap to adjacent mats.

3.4 JOINTS

- A. General: Construct construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.
 1. When joining existing pavement, place transverse joints to align with previously placed joints, unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than one-half hour, unless pavement terminates at isolation joints.
 1. Provide preformed galvanized steel or plastic keyway-section forms or bulkhead forms with keys, unless otherwise indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.
 2. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of pavement strips, unless otherwise indicated.

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3. Provide tie bars at sides of pavement strips where indicated.
 4. Use a bonding agent or epoxy bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.
1. Locate expansion joints at intervals of 50 feet (15.25 m), unless otherwise indicated.
 2. Extend joint fillers full width and depth of joint.
 3. Terminate joint filler less than 1/2 inch (12 mm) or more than 1 inch (25 mm) below finished surface if joint sealant is indicated.
 4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
 5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
 6. Protect top edge of joint filler during concrete placement with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
- D. Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt-coat one-half of dowel length to prevent concrete bonding to one side of joint.
- E. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows:
1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with groover tool to the following radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces.
 - a. Radius: 1/4 inch (6 mm).
 - b. Radius: 3/8 inch (10 mm).
 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3-mm-) wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.
- F. Edging: Tool edges of pavement, gutters, curbs, and joints in concrete after initial floating with an edging tool to the following radius. Repeat tooling of edges after applying surface finishes. Eliminate tool marks on concrete surfaces.
1. Radius: 1/4 inch (6 mm).
 2. Radius: 3/8 inch (10 mm).

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3.5 CONCRETE PLACEMENT

- A. Inspection: Before placing concrete, inspect and complete formwork installation, reinforcement steel, and items to be embedded or cast in. Notify other trades to permit installation of their work.
- B. Remove snow, ice, or frost from subbase surface and reinforcement before placing concrete. Do not place concrete on frozen surfaces.
- C. Moisten subbase to provide a uniform dampened condition at the time concrete is placed. Do not place concrete around manholes or other structures until they are at the required finish elevation and alignment.
- D. Comply with requirements and with recommendations in ACI 304R for measuring, mixing, transporting, and placing concrete.
- E. Do not add water to concrete during delivery, at project site, or during placement.
- F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- G. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures to consolidate concrete according to recommendations in ACI 309R.
 - 1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.
- H. Place concrete in two operations; strike off initial pour for entire width of placement and to the required depth below finish surface. Lay welded wire fabric or fabricated bar mats immediately in final position. Place top layer of concrete, strike off, and screed.
 - 1. Remove and replace portions of bottom layer of concrete that have been placed more than 15 minutes without being covered by top layer, or use bonding agent if approved by Engineer.
- I. Screeed pavement surfaces with a straightedge and strike off. Commence initial floating using bull floats or darbies to form an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations.
- J. Slip-Form Pavers: When automatic machine placement is used for pavement, submit revised mix design and laboratory test results that meet or exceed requirements. Produce pavement to required thickness, lines, grades, finish, and jointing as required for formed pavement.
 - 1. Compact subbase and prepare subgrade of sufficient width to prevent displacement of paver machine during operations.

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- K. When adjoining pavement lanes are placed in separate pours, do not operate equipment on concrete until pavement has attained 85 percent of its 28-day compressive strength.
- L. 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 air temperature has fallen to or is expected to fall below 40 deg F (4.4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F (10 deg C) and not more than 80 deg F (27 deg C) at point of placement.
 - 2. Do not use frozen materials or materials containing ice or snow.
 - 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs.
- M. Hot-Weather Placement: Place concrete according to recommendations in ACI 305R and as follows when hot-weather conditions exist:
 - 1. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 deg F (32 deg C). 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. Cover reinforcement steel with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
 - 3. Fog-spray forms, reinforcement steel, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.6 CONCRETE FINISHING

- A. General: Wetting of concrete surfaces during screeding, initial floating, or finishing operations is prohibited.
- B. Finishing: Finish shall be light sand-blast.

3.7 CONCRETE PROTECTION 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 follow recommendations in ACI 305R for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching $0.2 \text{ lb/sq. ft.} \times \text{h}$ ($1 \text{ kg/sq. m} \times \text{h}$) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

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- C. Begin curing after finishing concrete, but not before free water has disappeared from concrete surface.
- D. Curing Methods: Conform to Form 814A-1995, Article 4.01.

3.8 PAVEMENT TOLERANCES

- A. Comply with tolerances of ACI 117 and as follows:
 1. Elevation: 1/4 inch (6 mm).
 2. Thickness: Plus 3/8 inch (9 mm), minus 1/4 inch (6 mm).
 3. Surface: Gap below 10-foot- (3-m-) long, unleveled straightedge not to exceed 1/4 inch (6 mm).
 4. Lateral Alignment and Spacing of Tie Bars and Dowels: 1 inch (25 mm).
 5. Vertical Alignment of Tie Bars and Dowels: 1/4 inch (6 mm).
 6. Alignment of Tie-Bar End Relative to Line Perpendicular to Pavement Edge: 1/2 inch (13 mm).
 7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Pavement Edge: Length of dowel 1/4 inch per 12 inches (6 mm per 300 mm).
 8. Joint Spacing: 3 inches (75 mm).
 9. Contraction Joint Depth: Plus 1/4 inch (6 mm), no minus.
 10. Joint Width: Plus 1/8 inch (3 mm), no minus.

3.9 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified independent testing and inspection agency to sample materials, perform tests, and submit test reports during concrete placement according to requirements specified in this Article.
- B. Testing Agency: Owner will engage a qualified testing and inspection agency to sample materials, perform tests, and submit test reports during concrete placement. Sampling and testing for quality control may include those specified in this Article.
- C. Testing Services: Testing shall be performed according to the following requirements:
 1. Sampling Fresh Concrete: Representative samples of fresh concrete shall be obtained according to ASTM C 172, except modified for slump to comply with ASTM C 94.
 2. Slump: ASTM C 143; one test at point of placement for each compressive-strength test, but not less than one test for each day's pour of each type of concrete. Additional tests will be required when concrete consistency changes.
 3. Air Content: ASTM C 231, pressure method; one test for each compressive-strength test, but not less than one test for each day's pour of each type of air-entrained concrete.
 4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F (4.4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each set of compressive-strength specimens.
 5. Compression Test Specimens: ASTM C 31/C 31M; one set of four standard cylinders for each compressive-strength test, unless otherwise indicated. Cylinders shall be molded and stored for

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laboratory-cured test specimens unless field-cured test specimens are required.

6. Compressive-Strength Tests: ASTM C 39; one set for each day's pour of each concrete class exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 50 cu. yd. (38 cu. m). One specimen shall be tested at 7 days and two specimens at 28 days; one specimen shall be retained in reserve for later testing if required.
 7. When frequency of testing will provide fewer than five compressive-strength tests for a given class of concrete, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
 8. When total quantity of a given class of concrete is less than 50 cu. yd. (38 cu. m), Engineer may waive compressive-strength testing if adequate evidence of satisfactory strength is provided.
 9. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, current operations shall be evaluated and corrective procedures shall be provided for protecting and curing in-place concrete.
 10. Strength level of concrete will be considered satisfactory if averages of sets of three consecutive compressive-strength test results equal or exceed specified compressive strength and no individual compressive-strength test result falls below specified compressive strength by more than 500 psi (3.4 MPa).
- D. Test results shall be reported in writing to, concrete manufacturer, and Contractor within 24 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing agency, concrete type and class, location of concrete batch in pavement, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
- E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as the sole basis for approval or rejection.
- F. Additional Tests: Testing agency shall make additional tests of the concrete when test results indicate slump, air entrainment, concrete strengths, or other requirements have not been met, as directed by Engineer. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed.

3.10 REPAIRS AND PROTECTION

- A. Remove and replace concrete pavement that is broken, damaged, or defective, or does not meet requirements in this Section.
- B. Drill test cores where directed by Engineer when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with portland cement concrete bonded to pavement with epoxy adhesive.
- C. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.

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- D. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 033001

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SECTION 312213 - FORMATION OF SUBGRADE

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. The General Provisions of the Contract, including General and Supplementary Conditions, and Division One General Requirements apply to the work specified in this section.
- B. Form 816 shall mean the State of Connecticut, Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction, Form 816-2004 or its latest edition and any supplemental specifications.

1.2 SUMMARY

- A. Work Included: Preparation of subgrade beneath all curbs and synthetic grass field installation and as shown on the Drawings, or as ordered by the Engineer, and as specified herein. The work of formation of subgrade shall be performed at the plane coincident with the bottom most base or subbase material as shown on the Drawings.

1.3 RELATED WORK

- A. Section 31 23 16 - Earthwork
- B. Section 31 23 33 - Trenching

1.4 QUALITY ASSURANCE

- A. Testing: Compaction tests may be required by the Owner and will be paid for by the Owner. No specific testing schedule has been established at this time. If tests indicate that density requirements have not been achieved, the Contractor shall continue compacting. All re-testing in these areas shall be paid for by the Contractor.
- B. Density and Compaction Testing: The Contractor is responsible to schedule compaction tests as required by the Contract Documents and as directed by the Engineer and to allow adequate time for the proper execution of said tests.

1.5 PROJECT CONDITIONS

- A. West Nile Virus Precautions: To stem the spread of West Nile Virus, the Contractor shall closely monitor the work of this section to prevent water from collecting and/or ponding within or adjacent to the work for any length of time, thereby reducing the opportunities for mosquitoes to breed.
- B. Dust Prevention: Use means necessary to prevent dust becoming a nuisance to the public, to neighbors, and to other work being performed on or near the site in conformance with Form 816, Article 9.42.01 - 9.42.03 or Form 816, Article 9.43.01 - 9.43.03.

PART 2 PRODUCTS

2.1 EQUIPMENT

- A. As selected by the Contractor.

PART 3 EXECUTION

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3.1 CONSTRUCTION METHODS

- A. Comply with Form 816, Article 2.09.03.

END OF SECTION 312213

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SECTION 312316 - EARTHWORK

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. The General Provisions of the Contract, including General and Supplementary Conditions, and Division One General Requirements apply to the work specified in this section.
- B. Form 817 shall mean the State of Connecticut, Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction, Form 817 or its latest edition and any supplemental specifications.

1.2 SUMMARY

- A. This Section includes the following: All excavating, not included under other sections, required for grading, trenching, paving, curbs, construction and reconstruction of structures, such as foundation structures, new underground fuel storage equipment or any other subsurface structures. The Contractor shall place, compact and dispose of excess excavated materials in accordance with the plans, specifications and directions of the Engineer.
 1. Unclassified Excavation shall include the removal of existing pavements, curbs, earth, boulders, buried timber, broken concrete pieces, existing foundations (e.g. concrete block), brick and other materials of any nature that may be encountered.
 2. The Contractor shall construct and place fill and backfill material in accordance with this specification.
 3. The Contractor shall saw cut existing pavements and/or saw cut existing curbs in accordance with the plans, specifications and direction of the Engineer.

1.3 DEFINITIONS

- A. “Suitable Material” or “Acceptable Material”
 1. ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, and SM; free of rock or gravel larger than 6 inches in any dimension, debris, waste, frozen material, vegetation and other deleterious material.
 2. Any mineral (inorganic) soil, blasted or broken rock and similar materials of natural or man made origin, including mixtures thereof, are considered acceptable materials.
- B. “Unacceptable Material” - ASTM D 2487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH and PT.

1.4 QUALITY ASSURANCE

- A. Material Standards: As defined in Form 817 inclusive of all supplements.
- B. Testing: Compaction tests may be required by the Owner and will be paid for by the Owner. No specific testing schedule has been established at this time. If tests indicate that density requirements have not been achieved, the Contractor shall continue compacting. All re-testing in unsatisfactory areas shall be paid for by the Contractor.

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- C. Density and Compaction Testing: The Contractor is responsible to schedule compaction tests as required by the Owner and to allow adequate time for the proper execution of said tests.

1.5 PROTECTION

- A. Dust Control: Use all means necessary to control dust on and near the construction areas caused by the Contractor's performance of the work in conformance with Form 817.

1.6 PROJECT CONDITIONS

- A. West Nile Virus Precautions: To stem the spread of West Nile Virus, the Contractor shall closely monitor the work of this section to prevent water from collecting and/or ponding within or adjacent to the work for any length of time, thereby reducing the opportunities for mosquitoes to breed.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Backfill, Fill and Embankment Materials: Any acceptable material.
- B. Subbase and Base Material: Conform to Form 817, Section M.02.02 - Subbase.
- C. Processed Aggregate (Stone) Base: Conform to Form 817, Section M.05.01.
- D. Bedding Material: Sand or sandy soil, all of which passes a 3/8" sieve, and not more than ten percent (10%) passes a No. 200 sieve.
- E. Tank Backfill and Bedding & Pipe Bedding: All backfill material for underground tanks and for piping shall conform to ASTM C-33 paragraph 9.1 for quality and soundness. This material shall consist of washed pea gravel ranging from 1/8-inch to 3/4-inch in diameter, or washed stone crushings between 1/8-inch and 1/2-inch in diameter or a material which has been approved by the tank or pipe manufacturer. Not more than 3 percent of the aggregate shall pass a No. 8 sieve.
- F. Gravel Backfill: Well graded gravel conforming to Form 817, M.02.01 except, M.02.06 Grading C, not Grading A, shall be provided. Use bank run gravel backfill for all excavations where indicated on the plans or wherever specified

2.2 BORROW SOIL FILL

- A. Conform to Section 31 23 23.

2.3 WARNING TAPE

- A. Detectable Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, minimum 6 inches (150 mm) wide and 4 mils (0.1 mm) thick, continuously inscribed with a description of utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches (750 mm) deep; colored as follows:
1. Red: Electric.
 2. Yellow: Gas, oil, steam, and dangerous materials.
 3. Orange: Telephone and other communications.
 4. Blue: Water systems.

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5. Green: Sewer systems.

PART 3 EXECUTION

3.1 GENERAL

- A. The entire area of work shall be brought to the required lines and grades by excavation and filling. Excavated materials, acceptable in the opinion of the Engineer, shall be used in making embankments and filling the low areas of the work, and at such places as the Engineer may direct.
- B. Excavate to the limits shown on the Drawings to subgrade level. Compact subgrade level before placing fill, base or subbase materials.
- C. Construct base course to required depths and elevations below all concrete pads, foundations and bituminous concrete.
- D. Construct bedding course below all drainage and utility structures.
- E. Place suitable/ acceptable material below all lawn and landscaped areas. No rocks larger than 2 inches in any dimension shall be placed within 4 inches of the finished grade.

3.2 COMPACTION REQUIREMENTS

- A. Compact soil to not less than the following percentages of maximum dry density according to ASTM 1557:
 1. Under foundations, concrete pads, and pavements, compact the top 12 inches below subgrade and each layer of backfill or fill material at 95 percent maximum dry density.
 2. Under lawn or unpaved areas: see Section 02920 - Topsoil.

3.3 EXCAVATION

- A. Protect Structures, utilities, sidewalks, pavements and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations. Any damage to existing structures or utilities that occurs as a result of the Contractor's operations shall be corrected by the Contractor at no additional cost to the Project.
- B. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.
- C. Provide erosion and control measures to prevent erosion or displacement of soils and discharge of soil-bearing water run-off or airborne dust to adjacent properties and watercourses, in accordance with the Sediment and Erosion Control Plan, details and as directed by the Engineer.

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- D. Subgrade: All soft, boggy, clayey or other objectionable material below the proposed subgrade elevation shall be removed, and the area refilled with acceptable material.
- E. Boulders: The Contractor shall remove all boulders, stone or pieces of concrete, lumber, iron or other material that project above subgrade. Any stone larger than two (2) cubic feet in volume shall not be placed within two (2) feet of the finished surface.
- F. Excavating for Foundations: All excavations shall be cut accurately to required lines and dimensions for work on drawings and shall be large enough to provide adequate clearance for the proper execution of the work.
- G. Bottoms of Excavations: Level the bottoms of all excavations, to receive footings or other work supported on soil, accurately, to the lines and levels shown on the plans or as directed by the Engineer.

Where excavation for a foundation has been carried below the indicated level by error, fill the space between the incorrect and required depth with concrete at no additional cost to the Owner.

- H. Storage and Placement: All those excavated materials which in the opinion of the Engineer are suitable for backfill shall be stored or placed within the limits of the Contract, where directed by the Engineer.
- I. Surplus: All surplus materials and materials not suitable for backfill shall be placed within the site as directed by the Engineer. No additional payment will be made for this, but the cost thereof shall be deemed included in the price bid.
- J. Shoring: Wherever necessary to maintain the banks of excavation in a safe and stable condition, the Contractor shall furnish and install temporary sheet piling or planks, braces and shores of good sound timber of adequate strength, and shall remove such piling or shoring as the foundation work progresses.

Sheeting and bracing of a type approved by the Engineer, shall be installed when the Contractor's employees are required to enter into excavations which exceed four (4) feet in depth.

The foregoing shall include the construction and removal of sheeting and bracing, the excavation and maintenance of temporary ditches, and the furnishing and operation of pumps or other appliances needed to properly drain the work. No direct compensation will be made for this work, but payment therefore shall be deemed included in the price bid.

- K. Inspection: When the excavations have been carried to the required depth as shown on the drawings, the Contractor shall do no more work until after inspection by the Engineer, who shall order the foundation or other work to proceed, or further excavation, as the conditions indicate and no foundation or other work shall be done until the excavations have been approved by the Engineer.
- L. Bailing and Draining: The Contractor shall furnish all materials, appliances and labor required to keep the site of the work free from water, ice and snow during construction.

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- M. Utilities and Services: When any sewer, water, gas, electric or other utility service connections are encountered in the excavation operations, the service shall not be interrupted or disturbed by the Contractor unless called for on the plans and/or directed by the Engineer. It is the Contractor's responsibility to detect and protect existing utilities (to remain) from damage during construction. The Contractor shall locate buried utilities, to the best of his ability, using electronic probes, or other methods, prior to the start of excavation. The Contractor shall then proceed cautiously and perform hand excavation, as necessary, to protect the utility as directed by the Engineer, at no extra cost to the Owner. If a utility is inadvertently damaged, it is the Contractor's responsibility to restore that utility to operating condition, equal to that existing prior to damage. The Contractor shall remain at the site with the damaged utility until it has been restored and there is no danger to the public (i.e. exposed live electrical wires, etc.).

Should the Contractor need to cut off utilities or services during the performances of the work, he shall notify the City Department or Utility Company owning or controlling services, to cut off these services. It is the Contractor's responsibility to provide sufficient advance notice to the Utility Company so that work not be delayed. The cost of any such delay in work shall be solely borne by the Contractor.

Any services cut off or interrupted by the Contractor's operations shall be restored at the Contractor's expense.

3.4 FILL

- A. Remove all vegetation, topsoil, debris, wet and unsatisfactory soil materials, obstructions, and deleterious materials from the ground surface prior to placing fills. Unsuitable subgrade material as determined by the Engineer may be removed in accordance with Section 3.3 D of this Specification.
- B. Fill and Compacting shall be carried out as directed by the Engineer, and shall be constructed in successive horizontal layers not over 6 inches in depth. It shall be spread by a "Bulldozer", or other acceptable methods, and shall be thoroughly compacted by rolling with a self-propelling roller weighing not less than ten (10) tons and completed to the satisfaction of the Engineer. In places where the character of the material makes the use of this roller impracticable or where drains or other construction may be damaged a lighter one may be substituted, or the area shall be compacted by vibratory tamping, all with the approval, and to the satisfaction of the Engineer.
- C. All hollows and depressions which develop during the process of rolling and compacting shall be filled with acceptable material, and the subgrade shall again be compacted. This process of filling and compacting shall be repeated until no depressions develop.
- D. Plow, strip or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing surface.
- E. When subgrade or existing ground surface to receive fill has a density less than that required for fill, break up ground surface to depth required, pulverize, moisture-condition or aerate soil and recompact to required density.

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3.5 BACKFILL

- A. After inspection and approval of foundations and other work which is to be covered by backfill, the excavated voids shall be filled with clean excavated material, puddled and rammed solid every 6" of depth.
- B. After areas and trenches have been excavated and structures constructed therein, the spaces around and above them shall be carefully backfilled with acceptable material. Backfill shall be placed on both sides of structures to approximately the same elevation at the same time. All backfill shall be thoroughly tamped and rammed in place in layers not over six (6) inches in depth, using rammers of a weight acceptable to the Engineer. If directed by the Engineer, the backfill shall be thoroughly saturated with water as it is placed.
- C. Backfilling around manholes, catch basins and dry wells shall not take place until the mortar has hardened and the possibility of movement is slight. Backfilling shall take place uniformly around all sides of the structure.
- D. When sheeting is being withdrawn, all cavities left thereby shall be filled with acceptable material, tamped in place so as to fill all voids thoroughly. Backfill inside of sheeting shall be placed before sheeting is removed.

3.6 UTILITY TRENCHES

- A. See Section 31 23 33 - Trenching.

3.7 SAW CUTTING

- A. All saw cutting shall be carried out to the full depth of the pavement, curb or concrete walk to be cut. Saw cutting shall be done to accurate, neat and straight lines marked previous to commencement of work. Saw cutting shall be done with approved power saws specifically designed and manufactured for such a purpose. Compressor, backhoe or spade-cutting of the pavement will not be allowed.

END OF SECTION 312316

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SECTION 312333 - TRENCHING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. The General Provisions of the Contract, including General and Supplementary Conditions, and Division One General Requirements apply to the work specified in this section.
- B. Form 817 shall mean the State of Connecticut, Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction, Form 817-2016 or its latest edition and any supplemental specifications.

1.3 DESCRIPTION OF WORK

- A. Work Included: Trenching, sheeting and dewatering as specified herein, and as needed for installation of storm drainage and appurtenances associated with the Work.

1.4 RELATED SECTIONS

- A. Section 31 23 16 - Earthwork
- B. Section 33 40 00 - Storm Drainage

1.5 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work in this Section.
- B. Use equipment adequate in size, capacity, and numbers to accomplish the work of this Section in a timely manner.
- C. Comply with requirements and regulations of utility companies and governmental agencies having jurisdiction.
- D. Refer to Section 31 23 16 - Earthwork for compaction requirements.

1.6 PROJECT CONDITIONS

- A. Contact "Call Before You Dig" services for Connecticut (1.800.922.4455) to locate underground utilities prior to commencing site preparation operations a minimum of 2 days before beginning any work at the site.
- B. West Nile Virus Precautions: To stem the spread of West Nile Virus, the Contractor shall closely monitor the work of this section to prevent water from collecting and/or ponding within or adjacent to the work for any length of time, thereby reducing the opportunities for mosquitoes to breed.

PART 2 PRODUCTS

2.1 EQUIPMENT

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- A. As selected by the Contractor.

PART 3 EXECUTION

3.1 PROJECT CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed with the work of this section until unsatisfactory conditions are corrected.
- B. Finish Elevations and Lines:
 1. Locate and protect control points during progress of the Work.
 2. Preserve permanent reference points during progress of the Work.
 3. Do not change or relocate reference points or items of the Work without written approval from the Engineer.

3.2 EXECUTION

- A. Utilities:
 1. Unless shown to be removed, protect active utility lines shown on the Drawings or otherwise made known to the Contractor prior to excavating. If damaged, repair or replace at no additional cost to the Owner.
 2. If active utility lines are encountered, and are not shown on the Drawings or otherwise made known to the Contractor, promptly take necessary steps to assure that service is not interrupted. Inform Engineer of existing utility line before proceeding.
 3. If service is interrupted as a result of work under this Section, immediately restore service by repairing the damaged utility at no additional cost to the Owner.
 4. If existing utilities are found to interfere with the permanent facilities being constructed under this Section, immediately notify the Engineer for review and written direction before proceeding with modifications to the work. Do not proceed with permanent relocation of utilities until written direction is received from the Engineer.
- B. Protection of Persons and Property:
 1. Barricade open holes and depressions occurring as part of the Work, and post warning lights on property adjacent to or with public access to the work.
 2. Operate warning lights during hours from dusk to dawn each day and as otherwise required.
 3. Protect existing structures, utilities, sidewalks, pavements, fences and other facilities from damage caused by trenching, settlement, lateral movement, washout, and other hazards created by operations under this Section. All existing features affected and/or damaged by

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the work of this Section shall be brought back to their original conditions at no cost to the Owner.

C. Dewatering:

1. Remove all water, including rain water, encountered during trench and substructure work to an approved location by pumps, drains, and other approved methods.
2. Keep excavations and site construction free from water.

D. Dust Prevention:

1. Use means necessary to prevent dust becoming a nuisance to the public, to neighbors, and to other work being performed on or near the site in conformance with Standard Specifications.

E. Maintain access to the site at all times.

3.3 TRENCHING PROCEDURES

A. Trench Excavation:

1. Construction methods shall conform to Section 206 of Standard Specifications, where applicable.
2. Excavate trenches to uniform widths to provide a working clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit.
3. Clearance: 12 inches minimum each side of pipe or conduit.
4. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove stones and sharp objects to avoid point loading.
5. Place and compact bedding material on rock or other unyielding bearing surfaces and to fill unauthorized excavations. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

B. Rock in Trench Excavation:

1. Excavation of trench shall be as described in Standard Specifications Form 817, Section 2.05, "Trench Excavation".

C. Comply with pertinent provisions of Section 312316 - Earthwork.

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- D. Provide sheeting and shoring as necessary for protection of the Work and for the safety of personnel.
1. Prior to backfilling, remove all sheeting.
 2. Do not permit sheeting to remain in the trenches except when field conditions or the type of sheeting or methods or construction such as the use of concrete bedding are such as to make removal of sheeting impracticable. In such cases, portions of sheeting may be cut off and remain in the trench as approved by the Owner.
- E. Miscellaneous:
1. Short sections of a trench may be tunneled, subject to approval of the Engineer, if the conductor conduit and backfill can be installed and compacted properly into such tunnel.
 2. Where it becomes necessary to excavate beyond the limits of normal excavation lines in order to remove boulders or other interfering objects, backfill and compact the voids remaining after removal of the objects in accordance with Section 312316 at no additional cost to the Owner.
 - a. If a void is below the subgrade for the utility bedding, use suitable earth materials and compact to a relative density of no less than 95%.
 - b. If a void is in the side of the utility trench of open cut, use suitable earth or sand compacted or consolidated to a relative density of no less than 90%.
3. Excavating for appurtenances:
- a. Excavate for dry wells, hydrants and similar structures to a distance sufficient to leave at least 12" clear between outer surfaces and the embankment or shoring that may be used to hold and protect the banks.
 - b. Over depth excavation beyond such appurtenances that has not been directed will be considered unauthorized. Fill with sand, gravel, or lean concrete as approved by the Engineer, and at no additional cost to the Owner.
4. Trench to the minimum width necessary for proper installation of the utility, with sides as nearly vertical as possible. Accurately grade the bottom to provide uniform bearing for the utility.
5. Depressions:
- a. Dig bell holes and depressions for joints after the trench has been graded. Provide uniform bearing for the pipe on prepared bottom of the trench.
 - b. Except where rock is encountered, do not excavate below the depth indicated or specified.

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- c. Where rock is encountered, excavate rock to a minimum over depth of 4" below the trench depth indicated or specified.
- 6. Trenching in Contaminated Materials: Geotextile may be required to be installed where trenches for utilities penetrate into contaminated material at the site. Contractor shall review the project's Remedial Action Plan for additional information.
- F. Where utility trenching, piping and/or conduit traverses public property and/or is subject to governmental or utility company jurisdiction, provide depth, bedding, cover, and other requirements and/or regulations as set forth by authority having jurisdiction, but in no case shall the depth be less than that shown in the Contract Documents.
- G. Cover:
 - 1. Provide minimum trench depth indicated below to maintain a minimum cover over the top of the installed item below the finish grade or subgrade:
 - a. Storm drains: 18"
 - b. Sewer pipes: 36"
 - c. Raceways: 30"
 - d. Water pipes: 48"
 - e. Gas: 36"
 - 2. Where utilities are under a concrete structure slab or pavement, the minimum depth need only be sufficient to completely encase the conduit or pipe sleeve, provided it will not interfere with the structural integrity of the slab or pavement.
 - 3. Where the minimum cover is not provided, encase the pipes in concrete as indicated on the Drawings. Provide concrete with a minimum 28 day compressive strength of 3000 psi with entrained air 5 to 7 percent. Mechanically consolidate concrete.

3.4 BACKFILLING AND COMPACTION

- A. Excavations shall be backfilled and compacted in accordance with Section 312316.

END OF SECTION 312333

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SECTION 312500 - EROSION AND SEDIMENTATION CONTROLS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Division 1 General Requirements and Specific Requirements, apply to this Section.
- B. "Connecticut Guidelines for Soil Erosion and Sediment Control", Connecticut Council on Soil and Water Conservation, May 2002, inclusive of all supplements and/or its latest revision or edition.

1.2 SECTION INCLUDES

- A. Hay bales, filter fabric fence, sediment barriers and sedimentation structures
- B. Temporary mulch
- C. Temporary sediment basins as required by field conditions

1.3 QUALITY ASSURANCE

- A. All erosion and sediment control measures will be constructed in accordance with the standards and specifications of the "Connecticut Guidelines for Soil Erosion and Sediment Control".

1.4 PROJECT CONDITIONS

- A. Land disturbance will be kept to a minimum; re-stabilization will be scheduled as soon as possible. Temporary seeding or permanent hydro-seeding should take place immediately upon completion of grading. Permanent seeding will be scheduled during March 15 - June 15; August 15 - October 15.
- B. Erosion and sediment control measures will be installed prior to construction whenever possible and will be maintained in effective condition throughout the construction period.
- C. Hay bale filters will be installed at the base of all proposed slopes and on the downhill side of any area receiving new planting and as instructed by the Engineer.
- D. Additional control measures will be installed during the construction period as required by field conditions or as requested by the Engineer.
- E. Sediment removed from control structures will be disposed of on site in a manner approved by the Engineer.
- F. Mulch all new slopes 3% or greater. Use straw or hay (70-90 lbs. 1,000 sq. ft.), free of weeds or coarse matter. Chemical binder such as Petroset Terratack Hydro Mulch and Aerospray will be used as recommended by manufacturer to anchor mulch. Mulch must be inspected periodically, in particular, after rainstorms to check for rill erosion. Where erosion is severe, repair the eroded area and place additional mulch as required to control the erosion. Grasses shall not be considered established until a ground cover is achieved, which is mature enough to control soil erosion and to survive severe weather conditions.

PART 2 PRODUCTS

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2.1 MATERIALS

A. Hay bales:

1. Hay bales shall be made of hay with 40 lbs. minimum weight, and 120 lbs. maximum weight. The hay bales shall be sufficiently bound with either wire or nylon twine to resist breaking apart during their use, shipment or placement.
2. Stakes shall be wood, minimum two inches (2") by two inches (2") by three feet (3') long.

B. Filter fabric:

1. Synthetic filter fabric shall be a pervious sheet of propylene, nylon, polyester or ethylene filaments and shall be certified by the manufacturer or supplier as conforming to the following requirements:

Minimum Filtering Efficiency:	75%
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Minimum Tensile Strength at 20% Elongation	
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for Extra Strength:	50 lbs./lin. in.
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for Regular Strength:	30 lbs./lin. in.
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Minimum Flow Rate:	0.3 gal./min./sq.ft.
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- C. Temporary mulch: clean oat straw, wheat straw, timothy hay, a mixture of clover and timothy hay or other approved native or forage grasses; well-seasoned before bailing, free from mature seed-bearing stalks or roots of prohibited or noxious weeds.
- D. Crushed stone: crushed or broken stone conforming to the requirements of Section M.02.01-1 "Broken or Crushed Stone" of ConnDOT Form 816. Gradation shall conform to No. 8 (1/4" stone) per Section M.01.01.

PART 3 EXECUTION

3.1 PREPARATION

- A. Conduct construction operations in compliance with all terms of regulation agency requirements, including requirements noted on the Contract Drawings.
- B. Retain all sediments within the contract limits, and within designated disposal areas.
- C. Install erosion control measures prior to beginning site disturbance. Maintain erosion control measures throughout construction period, install additional measures if necessary to retain all sediment on site. Install any additional erosion control measures which may be required by local regulatory officials.

3.2 SEDIMENT BARRIERS

- A. Sediment barriers shall be limited to hay bales and silt fencing for sheet flow applications installed in accordance with Item 1.01.B.
- B. Hay Bales:

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1. Bales shall be placed in a single row, with ends of adjacent bales tightly abutting one another. Bales shall be oriented lengthwise on the contour for sheet flow applications, perpendicular to the contour for channel flow applications, and in a square or rectangular shape around depressed catch basin inlets.
2. Bales shall be installed so that bindings are oriented around the sides rather than along the tops and bottoms of the bales to prevent deterioration of the bindings.
3. The barrier shall be entrenched and backfilled. A trench shall be excavated the width of the bale and the length of the proposed barrier to a minimum depth of four inches (4"). After the bales are staked and chinked, the excavated soil shall be backfilled against the barrier. Backfill soil shall conform to the ground level on the downhill side and shall be built up to four inches (4") against the uphill side of the barrier.
4. For channel flow applications, the barrier shall be extended to such a length that the bottoms of the end bales are higher in elevation than the top of the lowest middle bale to assure that sediment laden runoff will flow either through or over the barrier but not around it.
5. The areas immediately around catch basins may be excavated slightly to increase ponding of runoff water around catch basins.
6. Each bale shall be securely anchored by at least two stakes driven through the bale. The first stake in each bale shall be driven toward the previously laid bale to force the bales together. Stakes shall be driven deep enough into the ground to securely anchor the bales.
7. The gaps between bales shall be chinked with straw to prevent water from escaping between bales.
8. In sloping areas where surface flow follows the bale line, perpendicular bale checks shall be installed at appropriate intervals (100 feet maximum).

C. Filter Fabric

1. Filter fabric shall be wrapped around all existing and proposed trench drain and catch basin and inlet grates to prevent sediment from entering the storm drainage system. The fabric shall be wrapped tightly around the outside of the grate structure and the grate placed securely back inside the receiving frame.
2. Where soil stockpiles are to be placed directly over trench drains or inlets, the fabric shall be wrapped a minimum of two (2) times around the grate structure.

3.3 TEMPORARY MULCH

- A. Place mulch uniformly in a continuous blanket at a rate of 2 1/2 tons per acre, or two 50 pound bales per 1,000 square feet of area. A mechanical blower may be used for mulch application. Do not spread/apply mulch by mechanical means or by hand on windy or gusty days.

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- B. Crimp straw into soil by mechanical means.
- C. On all slopes 4:1 or steeper, anchor mulch with liquid tackifier applied uniformly at a rate of 60 gallons per acre.
- D. Protect buildings, paving, planting and all non-seeded areas from liquid tackifier over-spray.

3.4 INSPECTION AND MAINTENANCE

- A. General
 - 1. Inspection shall be frequent, and shall be made after each storm event. Repair or replacement shall be made promptly as needed.
- B. Hay Bales
 - 1. Cleanout of accumulated sediment behind the bales is necessary if $\frac{1}{2}$ of the original height of the bales becomes filled with sediment.
 - 2. Hay bales shall be replaced after their expected useful life of 60 days.
 - 3. Bale barriers shall be removed when they have served their usefulness, but not before the upslope areas have been permanently stabilized and the completion of construction activities.
- C. Filter Fabric Fence
 - 1. Fabric placed around grates shall be replaced whenever the fabric becomes torn, stretched or otherwise damaged so that it can no longer perform its function.
- D. Sedimentation Basins
 - 1. Temporary sedimentation basins shall be cleaned-out once one-half of the basin volume becomes filled with sediment.

END OF SECTION 312500

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SECTION 321123.23 - CRUSHED STONE AGGREGATE BASE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The General Provisions of the Contract, including General and Supplementary Conditions, and Division One General Requirements apply to the work specified in this section.
- B. Form 817 shall mean the State of Connecticut, Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction, Form 817 or its latest edition and any supplemental specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide and install a crushed stone aggregate base on a prepared subgrade as shown on the Drawings or as ordered by the Engineer, and as specified herein.

1.3 RELATED WORK

- A. Section 312316 - Earthwork

1.4 QUALITY ASSURANCE

- A. Testing: Compaction tests may be required by the Owner and will be paid for by the Owner. No specific testing schedule has been established at this time. If tests indicate that density requirements have not been achieved, the Contractor shall continue compacting. All re-testing in unsatisfactory areas shall be paid for by the Contractor.
- B. Density and Compaction Testing: The Contractor is responsible to schedule compaction tests as required by the Owner and to allow adequate time for the proper execution of said tests.

1.5 SUBMITTALS

- A. Submit certified test reports and materials certificates, for products specified in this Section, indicating compliance of all proposed materials with specified requirements.

1.6 PROTECTION

- A. Dust Control: Use all means necessary to control dust on and near the construction areas caused by the Contractor's performance of the work in conformance with Standard Specifications.

PART 2 - PRODUCTS

2.1 CRUSHED STONE AGGREGATE

- A. Conform to Form 817.

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PART 3 - EXECUTION

3.1 SUBGRADE PREPARATION

- A. Prior to placing the bottom course of crushed stone aggregate base, the prepared subgrade shall be maintained true to line and grade, at all times for a minimum distance of 200 feet in advance of the work. No placement of the crushed stone aggregate is to commence until acceptance by the Engineer of the subgrade on which it is to be placed.
- B. The formation and protection of subgrade shall conform to the requirements of Section 312316.

3.2 COMPACTION REQUIREMENTS

- A. Compact subgrade soil to not less than the following percentages of maximum dry density according to ASTM 1557:
 1. Under foundations, concrete pads, and pavements, compact the top 12 inches below subgrade and each layer of backfill or fill material at 95 percent maximum dry density.
- B. Compact crushed stone aggregate base material with vibratory roller to minimum 95% modified AASHTO laboratory density (ASTM D-1557, Method C).

3.1 MATERIAL PLACEMENT/COMPACTION

- A. Install crushed stone aggregate base material at the locations as shown on the Drawings and in accordance with Form 816. Dimensions specified are after compaction.

END OF SECTION 321123.23

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SECTION 321123 - PROCESSED AGGREGATE BASE

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. The General Provisions of the Contract, including General and Supplementary Conditions, and Division One General Requirements apply to the work specified in this section.
- B. Form 817 shall mean the State of Connecticut, Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction, Form 817 or its latest edition and any supplemental specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide and install a processed stone aggregate base in two courses on a prepared subgrade as shown on the Drawings or as ordered by the Engineer, and as specified herein.

1.3 RELATED WORK

- A. Section 31 22 13 - Formation of Subgrade
- B. Section 31 23 16 – Earthwork
- C. Section 33 46 23.16 - Broken Stone

1.4 QUALITY ASSURANCE

- A. Material Standards: As defined in Form 817 inclusive of all supplements.
- B. Testing: Compaction tests may be required by the Owner and will be paid for by the Owner. No specific testing schedule has been established at this time. If tests indicate that density requirements have not been achieved, the Contractor shall continue compacting. All re-testing in unsatisfactory areas shall be paid for by the Contractor.
- C. Density and Compaction Testing: The Contractor is responsible to schedule compaction tests as required by the Owner and to allow adequate time for the proper execution of said tests.

1.5 SUBMITTALS

- A. Submit certified test reports and materials certificates, for products specified in this Section, indicating compliance of all proposed materials with specified requirements.

1.6 PROTECTION

- A. Dust Control: Use all means necessary to control dust on and near the construction areas caused by the Contractor's performance of the work in conformance with Form 817.

PART 2 PRODUCTS

2.1 PROCESSED STONE AGGREGATE

- A. Conform to Article M.05.01, Form 817.

PART 3 EXECUTION

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3.1 SUBGRADE PREPARATION

- A. Prior to placing the bottom course of processed stone aggregate base, the prepared subgrade shall be maintained true to line and grade, at all times for a minimum distance of 200 feet in advance of the work. No placement of the processed aggregate is to commence until acceptance by the Engineer of the subgrade on which it is to be placed.
- B. The formation and protection of subgrade shall conform to the requirements of Section 312213.

3.2 MATERIAL PLACEMENT/COMPACTION

- A. Install processed aggregate base material at the locations as shown on the Drawings and in accordance with Article 3.04.03 of Form 817. Dimensions specified are after compaction.
- B. Compact base material with vibratory roller to minimum 95% modified AASHTO laboratory density (ASTM D-1557, Method C).

END OF SECTION 321123

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SECTION 321216 - BITUMINOUS CONCRETE PAVEMENT AND MARKINGS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Division 1 General Requirements and Specific Requirements, apply to this Section.
- B. "Form 817" shall mean the State of Connecticut, Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction, Form 817 or its latest edition and any supplemental specifications.

1.2 SUMMARY

- A. This Section includes the materials, labor, excavation, installation and incidental costs for the installation of subbase material, base materials, bituminous concrete pavement and markings.
- B. Coordinate the work of this Section with Section 32 13 13 - Portland Cement Concrete Pavement and Curb.

1.3 RELATED SECTIONS

- A. Section 32 13 13 - Portland Cement Concrete Pavement and Curb

1.4 SUBMITTALS

- A. Material Certificates: Provide material certificates signed by the material producer and the Contractor, certifying that materials and products comply with specified requirements.

1.5 QUALITY ASSURANCE

- A. Material and Methods of Construction: Shall comply with the following standards:
 1. American Society for Testing and Materials (ASTM).
 2. American Association of State Highway and Transportation Officials (AASHTO).
 3. Asphalt Institute (AI).
 4. State of Connecticut DOT Standard Specifications, Form 817, inclusive of all supplements.
- B. Testing: Compaction tests may be required by the Owner and shall be paid for by the Contractor. No specific testing schedule has been established at this time. If tests indicate that density requirements have not been achieved, the Contractor shall continue compacting. All retesting in these areas shall be paid for by the Contractor.
- C. Density and Compaction Testing: The Contractor is responsible to schedule compaction tests if required by the Owner and to allow adequate time for the proper execution of said tests.
- D. Allowable Tolerances: Final surface of base materials within 3/8" from a required grade. Final pavement thicknesses shall conform to specified requirements as shown in the Drawings. Test for smoothness using a ten (10) foot long straightedge. Surface shall not vary more than 1/4" from straightedge when placed in any direction. In no case will water be allowed to stand or puddle on any finished pavement.

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- E. Permits/Approvals: The Contractor shall obtain approval of construction and secure all permits for all work.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Transporting shipments of bituminous concrete material shall be made in tight vehicles previously cleaned of all foreign material, and delivered to the site, so that it will not become contaminated in any way.

1.7 PROJECT CONDITIONS

A. Weather Limitations

1. Base material shall not be placed on frozen or saturated subbase material.
2. Bituminous concrete paving material shall not be placed on frozen or saturated base material.
3. Cold weather: Bituminous concrete paving materials shall be mixed and placed in accordance with minimum placement temperature as specified in Article 4.06.03, Item 8 - Placing of Mixture, Form 817.
4. Precipitation or Moisture: Placement of bituminous concrete paving materials shall not be scheduled when weather conditions of fog or rain prevail nor when the pavement surface shows signs of any moisture.
5. Precipitation Probability: Placement of bituminous concrete paving materials shall not be scheduled when the Precipitation Probability, obtained by the Contractor from the U.S. Weather Bureau Within three (3) hours prior to the start of such operations, equals or exceeds fifty (50) percent. The Contractor shall notify the Engineer of the exact time at which the above information was obtained.

- B. Grade Control: Establish and maintain the required lines and grades for each course during paving operations.
- C. Provide temporary barricades and warning lights as required for protection of project work and public safety.
- D. Protect adjacent work from damage, soiling and staining during paving operations.
- E. Inspection Costs: All costs associated with material certifications, plant inspection and laboratory tests shall be borne by the Contractor and shall be deemed included in the price bid for asphalt pavement.

PART 2 PRODUCTS

2.1 BITUMINOUS CONCRETE PAVEMENT

- A. Conform to the requirements of Article M.04.01, Form 817, Class 2.

2.2 TACK COAT

- A. Conform to the requirements of Article M.04.01, Item 1(d), Sub-item (4), Form 817. Tack Coat shall be Grade CSS-1H cationic emulsified asphalt, diluted with water at a 1:1 ratio.

2.3 PROCESSED STONE AGGREGATE

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- A. Conform to the requirements of Article M.05.01, Form 817.

2.4 PAINT

- A. Paint shall be hot-applied, fast drying type in accordance with Form 817, Section M.07.21.

PART 3 EXECUTION

3.1 INSPECTION

- A. Verify that all existing utility openings, valves, and other project installations are at their proper finished grade elevations, within areas to be paved. Provide temporary closures and protection over openings until completion of rolling operations. Remove closures at completion of the work. Set covers to grade, flush with the surface of the adjoining pavement.

3.2 SUBGRADE PREPARATION

- A. Prior to placing the bottom course of processed stone aggregate base, the prepared subgrade shall be maintained true to line and grade, at all times for a minimum distance of 200 feet in advance of the work. No placement of the processed aggregate is to commence until acceptance by the Engineer of the subgrade on which it is to be placed.
- B. The formation and protection of subgrade shall conform to the requirements of Article 2.09.01 and 2.09.03, Form 817.

3.3 BASE COURSE MATERIAL PLACEMENT/COMPACTION

- A. Install processed aggregate base material at the locations as shown on the Drawings and in accordance with Article 3.04.03, Conn DOT Form 817. Dimensions specified are after compaction.
- B. Compact base material with vibratory roller to minimum 95% modified AASHTO laboratory density (ASTM D-1557, Method C).
- C. Insure thorough and proper compaction around all yard drains, catch basins, structures, utility valves, and other improvements that project above base material.

3.4 BITUMINOUS CONCRETE PAVEMENT

A. General

1. Install the bituminous concrete pavement to the lines, grades, and details shown on the Drawings. Neatly and cleanly meet and match abutting pavements. Remove all soft or yielding material below grade and replace with suitable material.

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2. Thicknesses after compaction shall conform to the details on the Drawings. The pavement shall consist of the number of courses and thickness as detailed. Remove and replace areas showing deficiencies in required thickness with new material as directed by the Engineer.
3. Protect existing abutting pavement during paving operations. Replace any abutting pavement damaged during paving operations. Joint between bituminous pavement and existing portland cement concrete pavement shall be tightly compacted and pavement edge shall be of equal density to other areas of pavement.
4. Provide a cross-pitch of 1/4" per foot for proper drainage. Ensure that there are no "low" spots that may trap water and create a slipping hazard.

B. Forms

1. Provide wood edge forms of an approved type and a minimum length of ten (10) feet for tangents and curves, unless otherwise shown on the plans. Wood forms shall be of a depth equal to the depth of the pavement and shall be securely staked and braced to the required line and grade. Note: Hand tamp edges and bevel if wood forms are not used.
2. Install wood forms along all edges of pavement to produce a clean vertical edge. Secure strips to allow for proper compaction of bituminous concrete. Do not remove edge screed strips until pavement is thoroughly compacted. Raveled edges will not be accepted. Wood forms are to be removed after the bituminous pavement has completely set.
3. All forms shall be straight, free from bends and warps at all times, and shall be cleaned thoroughly and oiled before pavement is placed against them, this cleaning and oiling being repeated daily as the forms are moved ahead.
4. The forms shall rest firmly upon the thoroughly compacted sub-grade throughout their entire length, shall be joined neatly and tightly and staked securely to line and grade, three (3) bracing pins or stakes, each ten (10) foot length of side form, so that they will resist the pressure of the pavement and the impact of the roller without springing.

C. Placing

1. Bituminous concrete pavement shall be constructed and compacted in conformance with Conn DOT Form 817 requirements.
2. Coat the edge of all abutting pavement with tack coat before installing bituminous concrete pavements. Insure that the abutting pavement has a sound, clean, straight edge. Feathering of edges and transitions between new and existing pavements is not acceptable. Protect surfaces of abutting pavement from tack coat overspray.
3. Each mixture shall be furnished and laid by means of a mechanical spreader of approved design to a depth which after final compaction shall be equal to the specified depth. In areas where the use of a mechanical spreader is impractical, as determined by the Engineer, other means of spreading and compacting may be permitted. The use of hand rakes will not be permitted. The Contractor shall use lutes where necessary.

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4. After placing and compacting binder course, tack coat shall be applied prior to placement of the wearing (top) course.
5. Each mixture shall be laid only where the surface to be covered is free from loose or foreign material, dry, and only when weather conditions, in the opinion of the Engineer, are suitable.
6. The Contractor shall provide suitable means for keeping all small tools clean and free from bituminous accumulations.
7. Pavement may be laid by hand. Pavement shall be compacted by making multiple passes with a roller weighing not less than 2,000 pounds. After compaction, the thickness shall be that as specified on the drawings.

D. Compacting

1. Upon completion of the spreading of each mixture, the material shall be consolidated thoroughly and uniformly with self-propelled tandem rollers. The top course shall be free from roller marks.
2. Rollers used for compacting the top course shall be well balanced, self-propelled, tandem rollers, weighing between seven (7) and eight (8) tons. The roller shall have a compression under the rear wheel of between 200 and 300 pounds per linear inch of roll at a rate not exceeding 800 square yards per hour per roller. After compaction, the surface course shall have a density not less than 97% theoretical maximum density as determined by Appendix B of The Asphalt Institute Manual MS-2.
3. Locations inaccessible to the roller, the compression shall be effected with iron tampers weighing not less than twenty-five (25) pounds and having a bearing area not exceeding forty-eight (48) square inches, or other impact type equipment.
4. Perform breakdown, second and finish rolling until the bituminous concrete mixture has been compacted to the required surface density and smoothness. Continue rolling until all roller marks are eliminated. Provide a smooth compacted surface true to thickness and elevations required.
5. After final rolling, do not permit vehicular traffic on the pavement until it has cooled and hardened, and in no case sooner than 8 hours.

E. Joints for New Construction and Between Existing Pavement:

1. Carefully make joints between old and new pavements, and between successive day's work, to ensure a continuous bond between adjoining work. Construct joints to have the same texture, density, and smoothness as other sections of the asphalt concrete course.
2. Construction shall be as nearly continuous as is possible. The roller shall pass over the end of the laid mixture only when a practical necessity.
3. When the operation of laying is interrupted, the end of the laid material shall be left unrolled until such time as work is resumed, in order that there be no joints throughout the project.

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4. If it is necessary to roll the end of the laid mixture during construction, thus consolidating it, the joint so made shall be cut back before recommencing the operation of laying, in order to present a fresh, clean surface for contract with the newly placed material.
5. The edges of such joints shall be painted with liquid asphalt (RC-70 or MC-70) and the use of hot smoothing irons in finishing such joints, shall not be permitted.

F. Finished Surface

1. The surface of the top course of the pavement after compression shall be smooth and true to crown and grade, free from depressions, waves, bunches, overlapping seams and unevenness in surface. All new surfaces shall meet existing surfaces smoothly and evenly.
 2. After the compaction of the top course, the Contractor shall check the entire paved area for depressions, using a ten (10) foot wood or metal straightedge. Any depressions greater than three-sixteenths (3/16) of an inch shall be corrected by removing the top course of the affected areas, and replacing with new material to form a true and even surface.
- G. Defects: Where defects in composition, compression or finish appear in the completed work, such finished areas shall be removed to the full depth of the course and the defective material replaced with the required thickness of pavement at the expense of the contractor.
1. Patching: Remove and replace mixtures that become mixed with foreign materials and all defective areas. Cut out such areas and fill with fresh hot asphalt concrete. Compact by rolling to the required surface density and smoothness. Remove deficient areas for the full depth of the course. Cut sides perpendicular and parallel to the directions of traffic with edges vertical. Apply a tack coat before placing asphalt concrete mixture.

3.5 PAINTED PAVEMENT MARKINGS

- A. Existing painted pavement markings shall be removed by sandblasting or milling. Painting over existing markings will not be allowed.
- B. Pavement areas to be painted shall be dry and sufficiently cleaned of sand, dust and road debris so as to provide an acceptable bond between the paint and the pavement.
- C. Fast drying paint shall be applied at a temperature of 120 F to 150 F at the spray gun.
- D. All paint shall be performed in a neat and workmanlike manner, using approved mechanical equipment. Lines shall be sharp and clear with no feathered edging or fogging and precautions shall be taken to prevent tracking by tires of the striping equipment. Paint shall be applied as shown on the plans with no unsightly deviations.
- E. After application, the paint shall be protected from crossing vehicles for a time at least equivalent to the drying time of the paint.

3.6 PROTECTION/CLEAN-UP

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- A. Protect all work until acceptance of the project. Replace or repair pavement if damaged prior to acceptance.
- B. Clean up all debris from installation procedures, including but not limited to bituminous concrete and base material overflow into/onto areas indicated to be lawn or other surfaces. Remove from site all excess materials, debris and equipment. Contractor shall dispose of debris material legally.
- C. Repair damage resulting from paving operation to other areas of the work.

END OF SECTION 321216

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SECTION 321313 - PORTLAND CEMENT CONCRETE PAVEMENT AND CURBS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Division 1 General Requirements and Specific Requirements, apply to this Section.
- B. "Form 817" shall mean the State of Connecticut, Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction, Form 817 or its latest edition and any supplemental specifications.

1.2 SUMMARY

- A. This Section includes the materials, labor, installation and incidental costs for the installation of subbase material, base materials, and portland cement concrete as follows:
 - 1. Reinforced concrete pavement
 - 2. Concrete curb
 - 3. Concrete curb ramps
 - 4. Concrete sidewalk
- B. Coordinate the work of this Section with Section 32 12 16 - Bituminous Concrete Pavement and Markings.

1.3 RELATED SECTIONS

- A. Section 32 12 16 - Bituminous Concrete Pavement and Markings

1.4 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, expansive hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume.

1.5 SUBMITTALS

- A. Product Data: For each type of manufactured material and product indicated.
- B. Design Mixes: For each concrete pavement mix.
- C. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials. Contractor shall pay for all testing of concrete materials.
- D. Material Certificates: Signed by manufacturers certifying that each of the following materials complies with requirements:
 - 1. Cementitious materials and aggregates
 - 2. Steel reinforcement and reinforcement accessories
 - 3. Admixtures
 - 4. Curing compounds

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5. Applied finish materials (i.e., traffic paint)
6. Joint fillers

1.6 QUALITY ASSURANCE

- A. Materials and methods of construction shall comply with the following standards:
 1. American Society for Testing and Materials (ASTM)
 2. American Concrete Institute (ACI)
 3. State of Connecticut DOT Standard Specifications (Form 817)
- B. Installer Qualifications: An experienced installer who has completed pavement work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- C. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
 1. Manufacturer must be certified according to the National Ready Mix Concrete Association's Plant Certification Program.
- D. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 shall be paid by the contractor to conduct the testing indicated, as documented according to ASTM E 548.
- E. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant and each aggregate from one source. Do not change source of brands of cement, aggregate materials, or batching plant during course of work.
- F. ACI Publications: Comply with all ACI requirements unless modified by the requirements of the Contract Documents.
- G. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixes.

1.7 PROJECT CONDITIONS

- A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

PART 2 PRODUCTS

2.1 FORMS

- A. Forms shall conform to Article 8.11.03-3 and 9.21.03-3 of Form 817, latest revision.
- B. 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.

2.2 STEEL REINFORCEMENT

- A. Plain-Steel Welded Wire Fabric: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.
- B. Reinforcement Bars: ASTM A 615, Grade 60, deformed bars.

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- C. Plain Steel Wire: ASTM A 82, as drawn.
- D. Joint Dowel Bars: ASTM A 615, Grade 60, plain steel bars.
- E. Tie Bars: ASTM A 615, Grade 60, deformed.
- F. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcement bars, welded wire fabric, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete or fiber-reinforced concrete of greater compressive strength than concrete, and as follows:
 1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.

2.3 CONCRETE MATERIALS

- A. General: Use the same brand and type of cementitious material from the same manufacturer throughout the Project.
- B. Concrete: Conform to the requirements of Form 817, Article M.03.01, Class "C" and ASTM C-94. Batch mixing at project site not acceptable.
- C. Compressive strength: 3,000 psi at 28 days.
- D. Entrained air: 5 to 7%.
- E. Reactive aggregates and calcium chloride are not allowed.
- F. Water: Potable.

2.4 ADMIXTURES

- A. General: Admixtures certified by manufacturer to contain not more than 0.1 percent water-soluble chloride ions by mass of cement and to be compatible with other admixtures.
- B. Air-Entraining Admixture: ASTM C 260.
- C. Water-Reducing Admixture: ASTM C 494, Type A.
- D. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.

2.5 CURING MATERIALS

- A. Conform to Article 4.01.03, Item F7 "Curing", Form 817.

2.6 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.
- B. Premolded Joint Filler Strips: ASTM D-994, premolded, resilient non-extruding joint filler conforming to the requirements of AASHTO M213.
- C. Thickness and depth of expansion- and isolation-joint filler as indicated on the drawings.
- D. Pavement-Marking Paint: Latex, water-base emulsion; ready mixed; complying with FS TT-P-1952.
 1. Color: Blue for handicapped requirements, yellow for fire lanes, white elsewhere.

2.7 CONCRETE MIXING

- A. Ready-Mixed Concrete: Comply with requirements and with ASTM C 94 and ASTM C 1116.

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1. When air temperature is between 85 deg F (30 deg C) and 90 deg F (32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

PART 3 EXECUTION

3.1 SURFACE PREPARATION

- A. Proof-roll prepared subbase surface to check for unstable areas and verify need for additional compaction. Do not begin concrete work until such conditions have been corrected and are ready to receive concrete.
- B. Remove loose material from compacted subbase surface and excavations immediately before placing concrete.

3.2 FORMS

- A. Set, brace, and secure forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so that forms can remain in place at least 72 hours after concrete placement.
- B. Check completed formwork and screeds for grade and alignment to following tolerances:
 1. Top of Forms: Not more than 1/8 inch in 10 feet.
 2. Vertical Face on Longitudinal Axis: Not more than 1/4 inch in 10 feet.
- C. Clean forms after each use and coat with form release agent as required to ensure separation from concrete without damage.
- D. Form recess to receive brick facing masonry in exposed ramp wall as detailed in the Drawings.

3.3 PLACING REINFORCEMENT

- A. General: Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars" for placing and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
- C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.
- D. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

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3.4 JOINTS

- A. General: Construct contraction, construction, and isolation joints true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to the centerline, unless indicated otherwise.
 - 1. When joining existing paving, place transverse joints to align with previously placed joints, unless indicated otherwise.
- B. Contraction Joints: Provide weakened-plane contraction joints, sectioning concrete into areas as shown on Drawings. Construct contraction joints for a depth equal to at least 1/4 of the concrete thickness, as follows:
 - 1. Tooled Joints: Form contraction joints in fresh concrete by grooving and finishing each edge of joint with a radiused jointer tool.
 - 2. Inserts: Form contraction joints by inserting premolded plastic, hardboard, or fiberboard strips into fresh concrete until top surface of strip is flush with paving surface. Radius each joint edge with a jointer tool. Carefully remove strips or caps of two-piece assemblies after concrete has hardened. Clean groove of loose debris.
- C. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than ½ hour, unless paving terminates at isolation joints.
 - 1. Provide preformed galvanized steel or plastic keyway-section forms or bulkhead forms with keys, unless indicated otherwise. Embed keys at least 1-1/2 inches into concrete.
 - 2. Continue reinforcement across construction joints unless indicated otherwise. Do not continue reinforcement through sides of strip paving unless indicated.
 - 3. Provide tie bars at sides of paving strips where indicated.
 - 4. Use bonding agent on existing concrete surfaces that will be joined with fresh concrete.
- D. Isolation Joints: Form isolation joints of preformed joint filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.
 - 1. Locate expansion joints at intervals of 20 feet, unless indicated otherwise.
 - 2. Extend joint fillers full width and depth of joint, not less than ½ inch or more than 1 inch below finished surface where joint sealant is indicated. Place top of joint filler flush with finished concrete surface when no joint sealant is required.
 - 3. Furnish joint fillers in one-piece lengths for full width being placed wherever possible. Where more than one length is required, lace or clip joint filler sections together.

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4. Protect top edge of joint filler during concrete placement with a metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
- E. Installation of joint fillers and sealants shall conform applicable sections of Form 814A.
- F. Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt-coat one half of dowel length to prevent concrete bonding to one side of joint.

3.5 CONCRETE PLACEMENT

- A. Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast in. Notify other trades to permit installation of their work.
- B. Remove snow, ice, or frost from subbase surface and reinforcing before placing concrete. Do not place concrete on surfaces that are frozen.
- C. Moisten subbase to provide a uniform dampened condition at the time concrete is placed. Do not place concrete around manholes or other structures until they are at the required finish elevation and alignment.
- D. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
 1. When concrete placing is interrupted for more than ½ hour, place a construction joint.
- E. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- F. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures to consolidate concrete complying with ACI 309R.
 1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with care to prevent dislocating reinforcing, dowels, and joint devices.
- G. Screeed paved surfaces with a straightedge and strike off. Use bull floats or darbies to form a smooth surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces prior to beginning finishing operations.
- H. Place concrete in two operations; strike off initial pour for entire width of placement and to the required depth below finish surface. Lay welded wire fabric or fabricated bar mats immediately in final position. Place top layer of concrete, strike off, and screed.

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1. Remove and replace portions of bottom layer of concrete that have been placed more than 15 minutes without being covered by top layer or use bonding agent if acceptable to Engineer.
- I. Curbs and Gutters: Produce curbs and gutters to required cross section, lines, grades, finish, and jointing as specified for formed concrete.
- J. Cold-Weather Placement: Comply with provisions of ACI 306R 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 air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
 2. Do not use frozen materials or materials containing ice or snow.
 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise accepted in mix designs.
- K. Hot-Weather Placement: Place concrete complying with ACI 305R and as specified when hot weather conditions exist.
 1. Cool ingredients before mixing to maintain concrete temperature at time of placement to below 90 deg F. Mixing water may be chilled 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. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedding in concrete.
 3. Fog spray forms, reinforcing steel, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.6 CONCRETE FINISHING

- A. Float Finish: Begin floating when bleed water sheen has disappeared and the concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand-floating if area is small or inaccessible to power units. Finish surfaces to true planes within a tolerance of 1/4 inch in 10 feet as determined by a 10-foot-long straightedge placed anywhere on the surface in any direction. Cut down high spots and fill low spots. Refloat surface immediately to a uniform granular texture.
 1. Medium-to-Fine-Textured Broom Finish: Draw a soft bristle broom across concrete sidewalk surface perpendicular to line of traffic to provide a uniform fine line texture finish.

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- B. Final Tooling: Radius: 3/8 inch. Tool edges of paving, curbs, and joints formed in fresh concrete with a jointing tool to the following radius. Repeat tooling of edges and joints after applying surface finishes. Eliminate tool marks on concrete surfaces.

3.7 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with the recommendations of ACI 306R for cold weather protection and ACI 305R for hot weather protection during curing.
- B. Evaporation Control: In hot, dry, and windy weather, protect concrete from rapid moisture loss before and during finishing operations with an evaporation-control material. Apply according to manufacturer's instructions after screeding and bull floating, but before floating.
- C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- D. Curing Methods: Cure concrete by curing compound, as follows:
 1. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.

3.8 FIELD QUALITY CONTROL TESTING

- A. Employ a qualified independent testing and inspection agency to sample materials, perform tests, and submit test reports during concrete placement as follows:
- B. The Contractor will employ a qualified testing and inspection agency to sample materials, perform tests, and submit test reports during concrete placement. Sampling and testing for quality control may include the following:
 1. Sampling Fresh Concrete: ASTM C 172, except modified for slump to comply with ASTM C 94.
 - a. Slump: ASTM C 143; one test at point of placement for each compressive-strength test but no less than one test for each day's pour of each type of concrete. Additional tests will be required when concrete consistency changes.
 - b. Air Content: ASTM C 231, pressure method; one test for each compressive-strength test but no less than one test for each day's pour of each type of air-entrained concrete.
 - c. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F (4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each set of compressive-strength specimens.

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- d. Compression Test Specimens: ASTM C 31; one set of four standard cylinders for each compressive-strength test, unless directed otherwise. Mold and store cylinders for laboratory-cured test specimens except when field-cured test specimens are required.
 - e. Compressive-Strength Tests: ASTM C 39; one set for each day's pour of each concrete class exceeding 5 cu. yd. but less than 25 cu. yd., plus one set for each additional 50 cu. yd. Test one specimen at 7 days, test two specimens at 28 days, and retain one specimen in reserve for later testing if required.
- 2. When frequency of testing will provide fewer than five strength tests for a given class of concrete, conduct testing from at least five randomly selected batches or from each batch if fewer than five are used.
 - 3. When total quantity of a given class of concrete is less than 50 cu. yd., the Engineer may waive strength testing if adequate evidence of satisfactory strength is provided.
 - 4. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, evaluate current operations and provide corrective procedures for protecting and curing the in-place concrete.
 - 5. Strength level of concrete will be considered satisfactory if averages of sets of three consecutive strength test results equal or exceed specified compressive strength and no individual strength test result falls below specified compressive strength by more than 500 psi.
- C. Test results will be reported in writing to the Engineer, concrete manufacturer, and Contractor within 24 hours of testing. Reports of compressive strength tests shall contain the Project identification name and number, date of concrete placement, name of concrete testing agency, concrete type and class, location of concrete batch in paving, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-day and 28-day tests.

3.9 REPAIRS AND PROTECTION

- A. Remove and replace concrete paving that is broken, damaged, or defective, or does not meet the requirements of this Section.
- B. Drill test cores where directed by the Engineer when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with Portland cement concrete bonded to paving with epoxy adhesive.
- C. Protect concrete from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- D. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep concrete paving not more than 2 days prior to date scheduled for Substantial Completion inspections.

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3.10 PROTECTION/CLEAN-UP

- A. Protect work completed until acceptance of project. Replace or repair concrete if damaged prior to acceptance.
- B. As work proceeds, maintain premises free of unnecessary accumulation of tools, equipment, surplus materials and debris related to this work.

END OF SECTION 321313

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SECTION 32 14 13 - UNIT PAVERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Under this item, the Contractor shall furnish and install precast concrete unit pavers and 2" stone base setting bed in accordance with the Drawings, Specifications and at the direction of the Engineer
- B. Related Sections include the following:
 1. Section 31 22 13 - Formation of Subgrade
 2. Section 31 23 16 - Earthwork
 3. Section 32 11 23 - Processed Aggregate Base

1.3 SUBMITTALS

- A. Product Data: For concrete pavers.
- B. Samples for Initial Selection: Manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available for each type of unit paver indicated.
- C. Samples for Verification: Full-size units of each type of unit paver indicated; in sets for each color, texture, and pattern specified, showing the full range of variations expected in these characteristics.
- D. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of unit paver, joint material, and setting material from one source with resources to provide materials and products of consistent quality in appearance and physical properties.
- B. Installer Qualifications: An experienced installer who has completed unit paver installations similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

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- C. Mockups: Before installing unit pavers, build mockups for each form and pattern of unit pavers required to verify selections made under sample Submittals and to demonstrate aesthetic effects and qualities of materials and execution. Build mockups to comply with the following requirements, using materials indicated for the completed Work, including same base construction, special features for expansion joints, and contiguous work as indicated:
1. Build mockups in the location and of the size indicated or, if not indicated, as directed by Architect and Engineer.
 2. Notify Architect and Engineer seven days in advance of dates and times when mockups will be constructed.
 3. Demonstrate the proposed range of aesthetic effects and workmanship.
 4. Obtain Architect's and Engineer's approval of mockups before starting unit paver installation.
 5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 6. Demolish and remove mockups when directed.
 7. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect unit pavers and aggregate during storage and construction against soiling or contamination from earth and other materials.
1. Cover pavers with plastic or use other packaging materials that will prevent rust marks from steel strapping.
 2. Store materials on elevated platforms, under cover, and in a dry location.

1.6 PROJECT CONDITIONS

- A. Cold-Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Preferred Product: Permeable 4.5" x 9" as manufactured by Hanover Architectural Products, 5000 Hanover Road, Hanover, PA 17331 ph: Tel 800-637-0500, <https://www.hanoverpavers.com/> as distributed locally by Homer C. Godfrey Co., Bridgeport, CT.

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1. Color 1: Limestone Gray
 2. Color 2: Tan
 3. Color 3: Cream
 4. Color 4: Natural
 5. Color 5: Charcoal
 6. Size: 4 1/2" x 9" x 3"
 7. Finish: Tudor
- B. Or Approved Equal

2.2 UNIT PAVER STANDARDS

- A. Concrete Pavers: Solid, interlocking paving units, ASTM C 936-82, made from normal-weight aggregates in sizes and shapes indicated.
- B. Cementitious Material: Portland Cements shall conform to ASTM Specification C0150.
- C. Aggregates: Fine and course aggregates shall conform to ASTM Specification C-33 for Normal Weight Concrete Aggregate (no expanded shale or lightweight Aggregates) except that grading requirements shall not necessarily apply.
- D. Other Constituents: Color pigments, air-entraining agents, integral water repellants, finely ground silica, etc., shall be previously established as applicable, or shall be previously established as suitable for use in concrete.
- E. Physical Requirements:
 1. Compressive Strength - At the time of delivery to the work site, the average compressive strength shall not be less than 8,000 psi, with no individual unit strength less than 7,200 psi as per ASTM Specification C936-82. Testing procedures shall be in accordance with ASTM Specification C-140.
 2. Absorption – The maximum absorption of 5% or less at 50 cycles of freeze thaw testing per section ASTM C67.
 3. Resistance to Freezing and Thawing - The manufacturer shall satisfy the purchaser either by proven field performance or a laboratory freezing and thawing test that the paving units have adequate resistance to freezing and thawing. If a laboratory test is used when testing in accordance with Section 8 of Method C67, specimens shall have no breakage and not greater than 1.0% loss in dry weight of any individual unit when subjected to 50 cycles of freezing and thawing.

2.3 AGGREGATE SETTING BED MATERIALS

- A. Graded Aggregate for Joints: 1/4" washed, open-graded, permeable, stone (AASHTO #8)
- B. Graded Aggregate for fine setting bed: 1/4" washed, open-graded, permeable stone (AASHTO #8). Stone shall be crushed and angular.

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- C. Graded Aggregate for course setting bed: washed, open-graded, permeable stone, no fines (AASHTO #57). Stone shall be crushed and angular.
- D. Graded Aggregate for base: washed, open graded, permeable stone, no fines (AASHTO #2)
- E. Geotextile: Woven or nonwoven geotextile manufactured from polyester or polypropylene fibers, with a permeability rating 10 times greater than that of soil on which paving is founded and an apparent opening size small enough to prevent passage of fines from leveling course into graded aggregate of base course below.

PART 3 - EXECUTION

3.1 SITE INSPECTION

- A. Examine the substrate on which pavers will be laid and the conditions under which the work will be performed. Notify the owner or consultant of any unsatisfactory conditions. Proceed with installation only after unsatisfactory conditions have been corrected.
- B. All sub drainage or underground services within the pavement area must be completed with subgrade preparation and before the commencement of base construction.
- C. Examine curb installation and confirm with owner or owner's representative and Contractor that curb installation is complete. Notify the owner or owner's representative of any unsatisfactory conditions with curb installation. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION/VERIFICATION OF SUBGRADE

- A. The Sub-Contractor and Contractor shall ensure that the prepared subgrade is protected from damage from inundation by surface water and damage by other trades.
- B. No traffic shall be allowed to cross the prepared subgrade.
- C. Repair of any damage resulting shall be the responsibility of the Contractor and shall be repaired in a satisfactory manner.
- D. Proof-roll prepared subgrade surface to check for unstable areas and areas requiring additional compaction. Proceed with unit paver installation only after deficient subgrades have been corrected and are ready to receive subbase for unit pavers.

3.3 PAVER VISUAL INSPECTION

- A. All units shall be sound and free of defects that would interfere with the proper placing of the unit or impair the strength or performance of the construction. Minor cracks incidental to the usual methods of manufacture, or minor chipping resulting from customary methods of handling in shipment and delivery, shall not be deemed grounds for rejection.

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- B. Contractor shall not use unit pavers with chips, cracks, voids, discolorations, and other defects that might be visible or cause staining in finished work.

3.4 INSTALLATION, GENERAL

- A. Mix pavers from three pallets or cubes minimum, as they are placed, to produce uniform blend of colors and textures.
- B. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting and block splitting is not acceptable.
- C. Joint Pattern: Running Bond
- D. Tolerances: Do not exceed 1/16-inch (1.6-mm) unit-to-unit offset from flush (lippage) nor 1/8 inch in 24 inches (3 mm in 600 mm) and 1/4 inch in 10 feet (6 mm in 3 m) from level, or indicated slope, for finished surface of paving.

3.5 AGGREGATE SETTING-BED PAVER APPLICATIONS

- A. Compact soil subgrade uniformly to at least 95 percent of ASTM D 1557 laboratory density.
- B. Place geotextile over prepared subgrade, overlapping ends and edges at least 12 inches (300 mm).
- C. Place aggregate subbase/base in thickness or thicknesses as indicated. Compact by tamping with plate vibrator and screed to depth required to allow setting of pavers.
- D. Place aggregate subbase/base over compacted subgrade. Provide compacted thickness indicated. Compact subbase/base to 100 percent of ASTM D 1557 maximum laboratory density and screed to depth required to allow setting of pavers.
- E. Place geotextile over compacted base course, overlapping ends and edges at least 12 inches (300 mm).
- F. Place leveling course and screed to a thickness of 1 to 1-1/2 inches (25 to 38 mm), taking care that moisture content remains constant and density is loose and constant until pavers are set and compacted.
- G. Treat leveling base with soil sterilizer to inhibit growth of grass and weeds.
- H. Set pavers with a minimum joint width of 1/16 inch (1.6 mm) and a maximum of 1/8 inch (3 mm), being careful not to disturb leveling base. If pavers have spacer bars, place pavers hand tight against spacer bars. Use string lines to keep straight lines. Fill gaps between units that exceed 3/8 inch (10 mm) with pieces cut to fit from full-size unit pavers.
 1. When installation is performed with mechanical equipment, use only unit pavers with spacer bars on sides of each unit.
- I. Vibrate pavers into leveling course with a low-amplitude plate vibrator capable of a 3500- to 5000-lbf (16- to 22-kN) compaction force at 80 to 90 Hz. Perform at least three passes across paving with vibrator.

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Vibrate under the following conditions:

1. After edge pavers are installed and there is a completed surface or before surface is exposed to rain.
 2. Before ending each day's work, fully compact installed concrete pavers to within 36 inches (900 mm) of the laying face. Cover open layers with nonstaining plastic sheets overlapped 48 inches (1200 mm) on each side of the laying face to protect it from rain.
- J. Spread dry sand and fill joints immediately after vibrating pavers into leveling course. Vibrate pavers and add sand until joints are completely filled, then remove excess sand. Leave a slight surplus of sand on the surface for joint filling.
- K. Do not allow traffic on installed pavers until sand has been vibrated into joints.
- L. Repeat joint-filling process 30 days later.

3.7 REPAIR, CLEANING, AND PROTECTION

- A. Remove and replace unit pavers that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units as intended. Provide new units to match adjoining units and install in same manner as original units, with same joint treatment and with no evidence of replacement.
- B. Cleaning: wash and scrub clean.

END OF SECTION 32 14 13

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SECTION 32 33 00 - SITE FURNISHINGS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

- A. Provide all materials and equipment, and do all work necessary to furnish and install the site furnishings, as indicated on the Drawings and as specified.

1.3 RELATED WORK

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:

1. Section 03 30 01 – Portland Cement Concrete
2. Section 32 14 13 – Precast Unit Pavers

1.4 REFERENCES

- A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.

1.5 SUBMITTALS

- A. Complete shop drawings of each item specified shall be submitted.
- B. Where appropriate, and when approved by the Engineer, manufacturer's catalogue cuts may be substituted for shop drawings.
- C. Submit assembly instruction drawings showing layout(s), connections, bolting and anchoring details as per manufacturer's standards.
- D. A report of site furnishing parts consisting of recycled materials. Product specification data, providing test information for deflection and creep in accordance with ASTM D 648 and ASTM D 2990 for site furnishings which use plastic lumber as a component, shall be submitted. The data shall provide a comparison of deflection and creep measurements to other comparable materials.
- E. Warranty Information

PART 2 PRODUCTS

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2.1 MATERIALS

- A. Materials shall be the standard products of a manufacturer regularly engaged in the manufacture of such products. The materials provided shall be of a type with proven satisfactory usage for at least 2 years.
- B. Product Certificates: For regional materials, indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include distance to Project and cost for each regional material.

2.2 PLANTER

- A. Supplied by:
Planterworx 987 Essex St.
Brooklyn, NY 11208
Tel: 718-963-0564
(<https://www.planterworx.com>)

1. Model: Metroplitan Planters
2. Material: .125" ASTM A240 Stainless Steel
3. Finish: Polyester Based Architectural/Marine Grade Powder Coat Finish
4. Color: TBD
5. Attachment: Freestanding
6. Dimensions: Dimensions vary – see plans

- B. Or Approved Equal

PART 3 EXECUTION

3.1 GENERAL

- A. The Contractor shall verify that finished grades and other operations affecting mounting surfaces have been completed prior to the installation of site furnishings. Site furnishings shall be installed plumb and true, at locations indicated, in accordance with the approved manufacturer's instructions.

3.2 SITE FURNISHINGS

- A. Work shall be executed only by workmen experienced in the trade.
- B. Examine areas to receive site furnishings.
- C. Notify Lansdscape Architect of conditions that would adversely affect installation or subsequent use.
- D. Do not begin installation until unacceptable conditions are corrected.
- E. Coordinate site furnishing installation with installation of the surrounding surface at grade beneath the site furnishings.

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F. Installation

1. Install site furnishings in accordance with manufacturer's instructions at locations indicated on the Drawings.
2. Install site furnishings level and plumb.

G. Adjusting

1. Finish Damage: Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Landscape Architect.
2. Component Damage: Remove and replace damaged components that cannot be successfully repaired as determined by Landscape Architect.

H. Cleaning

1. Clean site furnishings promptly after installation in accordance with manufacturer's instructions.
2. Do not use harsh cleaning materials or methods that could damage finish.

I. Protection

1. Protect site furnishings, from paint spatter, splashed concrete, and other construction damage by wrapping and taping in place plastic sheeting or heavy kraft paper around the furnishings until adjacent work is completed.
2. Protect installed site furnishings to ensure that, except for normal weathering, site furnishings will be without damage or deterioration at time of Substantial Completion.

3.5 SITE FURNISHINGS

- A.** Site furnishings shall be located as indicated on the Drawings and installed manufacturer's standard.

END OF SECTION 32 33 00

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SECTION 329113 - TOPSOIL

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. The general provisions of the Contract, including the General Conditions, Supplementary Conditions and General Requirements, apply to the work specified in this Section.

1.2 SUMMARY

- A. Testing, screening, amending, placing and finish grading all stockpiled and borrow topsoil as shown on the Drawings and specified herein.
 1. Provide all borrow topsoil and compost necessary to properly complete all lawn and planting operations.
 2. Provide 6" depth of topsoil in all lawn seeding areas.

1.3 RELATED SECTIONS

- A. Section 32 91 13 - Lawn

1.4 QUALITY ASSURANCE

A. Topsoil

1. Testing: Representative samples of borrow topsoil and stockpiled topsoil shall be completely analyzed/ tested to determine:
 - a. Nutrient analysis using the Modified Morgan extractant for soil available P, K, Ca, and Mg.
 - b. Soil pH.
 - c. Organic content- determined by loss of weight on ignition.
 - d. Particle size analysis - sand, silt, and clay - analysis shall be determined using the hydrometer or pipette methods of particle size analysis with size fractions based upon size limits established by USDA.
2. Before delivery of any borrow topsoil, furnish the Architect with a 5 gallon sample of material.
3. Topsoil testing costs shall be borne by the Contractor.
4. Testing laboratory shall be:

Soils Testing Laboratory
Horticulture Storage Building
University of Connecticut
2019 Hillside Road
Storrs, CT 06269

Substitute laboratory may be used only if approved by the Owner and Architect.

1.5 SUBMITTALS

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- A. Submit topsoil test results for approval.
 - B. Submit materials certificates and product data for the following items, clearly marked, to indicate proposed materials. Printed data shall state application rates and amount of product to be added, if applicable.
 - 1. Soil amendments and conditioners
 - 2. Compost
 - C. Submit batch delivery tickets for the following items, indicating the trade name, the supplier/distributor's name and the amount of product delivered to the contracting firm/project site.
 - 1. Soil amendments and conditioners
 - 2. Compost
 - 3. Processed sand
 - D. Submit materials certificate and certified test report for processed sand and gravel.
- 1.6 **PRODUCT HANDLING:** Coordinate delivery of borrow topsoil such that it is placed as delivered and no stockpiling is required.
- 1.7 **PROJECT CONDITIONS:**
- A. Verify that subsurface drains are complete and fully functional prior to beginning work of this Section. Protect subsurface drains from failure.
 - B. Coordinate topsoil placement with irrigation equipment installation (if applicable).

PART 2 PRODUCTS

2.1 BORROW TOPSOIL

- A. Shall be clean, fertile, friable, and well draining; not to contain materials harmful to plant life. All topsoil to be free of any subsoil earth clods, sods, stones over 3/4 inch in any dimension, sticks, roots, weeds, litter and other deleterious material. Topsoil shall be uniform in quality and texture and contain specified organic matter and mineral elements necessary for sustaining healthy plant growth.
- B. Topsoil shall have a pH of 6.0 to 8.0.
- C. Organic Matter Content: 3 - 6%
- D. Nutrient levels shall be achieved by the Contractor's addition of amendments to the topsoil to meet the optimum nutrient levels specified in the testing laboratory report.
- E. Single source of all borrow topsoil is required.
- F. Topsoil shall meet the USDA Soils Textural Classification percentage of sand, silt and clay for "sandy loam or ""fine sandy loam' classifications.
- G. Free of any toxic chemical, waste or any material or condition that would prevent the establishment of a suitable lawn.

2.3 **AMENDMENTS/CONDITIONERS:** As recommended by the Topsoil Test Report.

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2.4 COMPOST

- A. Compost shall be either Pioneer Valley Compost or Agresoil Premium Organic Compost as distributed by: Agresource, phone 800-313-3320 or approved equal.
- B. Compost shall be derived from organic wastes such as food and agricultural residues, animal manures, mixed solid waster and biosolids (treated sewage sludge) that meet all State Environmental Agency requirements. The product shall be well composted, free of viable weed seeds and contain material of a generally humus nature capable of sustaining growth of vegetation, with no materials toxic to plant growth.
- C. Compost shall have the following properties:

Parameters	Range
pH	5.5 - 8.0
Moisture Content	35% - 55%
Soluble Salts	4.0 mnhos (dS)
C:N ratio	15 - 30:1
Particle Size	<1"
Organic Matter Content	>50%
Bulk Density	<1000 lbs./cubic yard
Foreign Matter	<1% (dry weight)

- D. Compost generator shall also provide minimum available nitrogen and other macro and micro-nutrients to determine fertilizer requirements.

2.5 SAND: Processed to meet the following particle size criteria:

Description	Sieve Mesh	Diameter of sieve (mm)	Allowable range % retained
Gravel	10	2.00	0- 5%
Very coarse sand	18	1.00	0-20% combined with Gravel
Coarse	35	0.50	at least 60% in this range
Medium	60	0.25	at least 60% in this range
Fine	100	0.15	10% maximum
Very Fine	270	0.05	3% maximum
Silt		0.002	5% maximum
Clay		<0.002	3% maximum

In addition, there shall be 100% passing the No. 5 screen (4mm), and no more than 10% combined very fine sand, silt, and clay.

PART 3 EXECUTION

3.1 TOPSOIL PREPARATION

- A. Provide properly amended topsoil to complete the work of this Section.

3.2 SHAPING AND GRADING OF SUBSOIL AT LAWN AREAS

- A. At completion of rough grading, shape and grade subgrade areas to lines and levels as noted on the

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drawings.

- B. Shape subgrade areas to allow placement of uniform depth of topsoil. Adjustments may be necessary due to field conditions. Provide all shaping adjustments at no additional cost to the owner.
- C. Harrow or otherwise loosen the subgrade soil to a depth of 4 inches.
- D. Remove all sticks, stones, or foreign material two (2) inches or greater in dimension from surface. Remove debris and stone off-site.

3.3 SPREADING TOPSOIL AND TOPSOIL/COMPOST MIXES

- A. Do not apply topsoil materials to the scarified subgrade or gravel layer without approval by the Engineer. No vehicular traffic or rubber tired equipment shall be allowed on finished subgrade. Topsoil materials shall not be spread until topsoil has been amended as required. Topsoil materials shall not be worked in a frozen or muddy condition.
- B. Uniformly distribute and spread topsoil materials over all graded lawn areas to conform smoothly to the lines, grades, and elevations shown or otherwise required. Maintain consistent depths of material throughout the project area. Install topsoil materials in athletic fields from the sidelines/edges towards the center of each field.
- C. Manually supply topsoil around all trees to remain. Avoid damage to root systems. Depth of topsoil around existing trees to be determined by Engineer.
- D. Spread topsoil mixtures in two (2) equal lifts in all locations scheduled to receive 8" or more total topsoil thickness. Bottom lift shall be incorporated into the loosened subgrade or gravel layer as applicable, by disking, harrowing, or other approved means.
- E. Place topsoil in layers that will provide the scheduled thickness after natural settlement and light rolling.
- F. Spread topsoil from edges inward toward the middle of areas receiving topsoil. Do not allow equipment directly on the loosened subgrade.
- G. Do not over compact the topsoil. Do not allow rubber-tired equipment on topsoil areas. Use the lightest weight equipment practicable. Sequence operations to minimize the number of equipment passes required.
- H. Track topsoil slopes -parallel to the fall line.
- I. Place topsoil materials only when it can be immediately followed by seeding operations.
- J. Resupply and place topsoil to eroded, settled or damaged areas until all lawn areas are stabilized. Care shall be taken not to damage grass or pavement areas in the replacement to topsoil.
- K. Compact subgrade soils where fill is required to 80-85% maximum dry density.

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3.4 PROTECTION

- A. Remove weeds prior to lawn development operations. No weeds shall be allowed to go to seed.
- B. Keep heavy equipment, trucks, etc. off topsoil areas at all times.
- C. If over compaction to topsoil occurs, scarify to the full depth of the topsoil and regrade topsoil.

3.5 EXCESS MATERIALS

- A. Excess material, including tailings from screening operations shall be legally disposed of offsite.

3.6 FIELD QUALITY CONTROL

- A. Following spreading of topsoil, and prior to the start of seeding operations, set grades as shown on the plans.

END OF SECTION 329113

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SECTION 329200 - LAWN

Part 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The general provisions of the Contract, including General and Supplementary Conditions, and General Requirements apply to the work specified in this Section.

1.2 SECTION INCLUDES

- A. Contractor shall provide and install all topsoil, fertilizer, amendments and grass seed for seeded lawns as shown on the Drawings and as specified herein, including, but not necessarily limited to:

1. Fine grading for seed bed.
2. Providing and incorporating amendments as indicated for good seeded lawn growth.
3. Seed all areas identified on the Drawings as seeded lawn.
4. Providing and installing erosion control systems as necessary.
5. Mowing, watering, and maintaining the seeded lawn until established and accepted.
6. Treating all lawn areas with crabgrass and broadleaf weed controls as needed to insure that lawn is free of weeds and crabgrass.
7. Protection, security and repair of damage to all seeded lawn areas.
8. Repair of seeded lawn areas damaged by the work of other sections of this Contract.

1.3 RELATED SECTIONS

- A. Section 32 91 13 - Topsoil

1.4 QUALITY ASSURANCE

- A. Qualifications of Installers: Provide at least one person who shall be present at all times during execution of this portion of the Work, who shall be thoroughly familiar with the type of materials being installed and who shall direct all work performed under this Section.
- B. Preventatives and Controls: Prior to the application of the preventatives and controls specified, confirm that each of the materials is permitted in the State of Connecticut.

1.5 PRODUCT HANDLING

- A. Delivery and Storage:

1. Seed, sod, fertilizer, lime, and chemical preventatives and controls shall be delivered in standard size unopened containers, showing weight, analysis, and name of manufacturer.
2. Protect materials from deterioration during delivery and while stored at the site.

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1.6 GUARANTEE

- A. Duration of guarantee shall be until the completion of the specified maintenance period and until Owner's final acceptance of sod lawn areas.

1.7 SCHEDULE

- A. Construct seeded and sodded lawns between April 1 and June 1 and between August 15 and October 1 unless otherwise permitted by the Owner's Representative.

1.8 EXISTING WORK

- A. Verify that topsoil surface is true to grade, smooth, free of irregularities, and properly installed to the scheduled thickness and in good condition to receive the work of this Section.

1.9 SUBMITTALS:

- A. Provide copies of a material certificate signed by the seed vendor and the Contractor, (stating botanical and common names, percentages by weight, and percentages of purity, germination and weed seed for each 'grass' seed species) certifying that the seed mixture complies with the specified requirements.
- B. Certification by sod source/grower of sod type for approval prior to delivery of sod to the site showing the seed composition and percentages of each grass type proposed in the blend.
- C. Submit materials certificates and product data for the following items, clearly marked, to indicate proposed materials. Printed data shall state application rates and amounts of product to be added, if applicable.
 - 1. Fertilizers
 - 2. Lime
 - 3. Chemical preventatives and controls
- D. Submit batch delivery tickets for the following items, indicating the trade name, the supplier/distributor's name and the amount of product delivered to the contracting firm/project site.
 - 1. Fertilizers
 - 2. Seed mixes

1.10 TOPSOIL TESTING

- A. Insure that topsoil has been tested in accordance with Section 32 91 13.

1.11 INSPECTION AND ACCEPTANCE OF SEEDED AND SODDED AREAS

- A. Submit written notice requesting inspection at least 10 days prior to the anticipated date.

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- B. Maintenance responsibilities end with final acceptance which shall be a minimum of 60 consecutive calendar days from the date of seeding or sodding. Seeded or sodded areas will not be accepted in 'pieces' unless specifically agreed to by the Owner. No seeded or sodded areas will be accepted prior to the substantial completion of this Contract and prior to the completion of a minimum of 5 mowings.
- C. A satisfactory stand of acceptable grass is defined as:
 - 1. Consisting of a uniform dense stand of established permanent grass species. Engineer will be the judge. Any part of the seeded or sodded lawn that does not show a uniform dense lawn grass shall be repaired. Lawns must be free of weeds, crabgrass, and other undesirable plants, and with no diseases present.
- D. Final acceptance will not be made until all damaged areas, including areas outside the property limits, have been restored to their original conditions by topsoiling, seeding, and other necessary operations.
- E. Upon stabilization of seeded or sodded lawn areas, erosion control devices and protection fencing shall be removed and disposed of off-site.

1.12 PROTECTION AND SECURITY

- A. Provide protection and security as necessary to prevent damage to lawn areas by any cause, including malicious vandalism and unauthorized usage, prior to acceptance of sod lawn by Owner.

Part 2 - PRODUCTS

2.1 LIME: ground limestone, 95% passing through a 100 mesh screen. Calcium carbonate equivalency of 90% or higher.

2.2 FERTILIZER:

- A. Topsoil Fertilizer: complete at the ratios recommended in the topsoil test reports.
- B. Starter Fertilizer: guaranteed analysis of 10.20.10.
- C. Secondary Fertilizer: guaranteed analysis of 15.15.15.

2.3 LAWN SEED

- A. Provide fresh, clean, new-crop seed; blue tag certified complying with the tolerance for purity and germination established by the Office of Seed Analysis of North America. Provide seed of the grass species, proportions and maximum percentages of weed seed. Provide seed in cleaned, sealed, properly labeled containers. Seed that is wet, moldy, or otherwise damaged will not be accepted. Handle seed in accordance with the manufacturer's recommendations for exposure to extremes of heat, cold, or moisture.

B. LAWN SEED QUALITY:

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1. Weed Seed: maximum of 0.50%, no noxious weed seed.
 2. Purity: minimum 97% pure.
 3. Crop: maximum 0.50%
 4. Germination Rate: minimum 80%
- C. SEED MIXTURE (percent by weight):

35% Masterpiece Tall Type Fescue
20% Adventure II Tall Fescue
20% Kittyhawk SST Tall Fescue/ Aztec Tall Fescue
15% Secretariat Perennial Ryegrass
5% Famous Kentucky Bluegrass
5% Baron Kentucky Bluegrass

- 2.4 HYDROMULCH: Soil Guard Bonded Fiber Matrix as manufactured by Weyerhaeuser or approved equal.
- 2.5 CHEMICAL PREVENTATIVES AND CONTROLS: Commercial materials labeled for turf maintenance.
- 2.6 WATER: Potable.

Part 3 - EXECUTION

3.1 SEDED LAWN: RATES OF APPLICATION

<u>Material</u>	<u>Application Rate</u>
Topsoil Fertilizer, Lime and Topsoil Conditioners	As recommended by the topsoil test report.
Grass Seed	5 lbs./1,000 S.F.
<u>Material</u>	<u>Application Rate</u>
Hydromulch	As recommended by manufacturer.
Starter Fertilizer	10 lbs./1,000 S.F.
Crabgrass Preventative	As recommended by the manufacturer.
Lawn Pest/Disease Control	As recommended by the manufacturer.
Soil Insect Control	As recommended by the manufacturer.

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Broad Leaf Weed Control	As recommended by the manufacturer.
Secondary Fertilizer	6.5 lbs./1,000 S.F.

3.2 SEEDED LAWN: BED PREPARATION

- A. Apply lime, topsoil fertilizer, and other recommended conditioners at the rates recommended by the topsoil tests in all areas where topsoil and topsoil/compost mix have been installed. Cultivate topsoil to a 4" depth by spring-toothed harrow or other approved methods to thoroughly incorporate amendments into the topsoil. Maintain a loose friable seed bed. At no time will rubber tired loaders or graders having greater compaction than a small farm tractor be allowed on topsoil. Keep all heavy equipment and trucks off prepared topsoil. Do not prepare while ground is wet or frozen.
- B. Provide additional topsoil where and as required to properly meet all proposed finish grades.
- C. Remove any weeds, debris, foreign matter and stones having any dimension greater than 3/4". Remove from property.
- D. Fine grade to a smooth uniform surface. The entire area shall present an even grade with no depressions where water will stand. Grades shall be within 1/2" of designated elevation. Any protective fencing around existing trees shall be removed and disposed of by the Contractor at this time. Topsoil shall be smoothly blended to existing finish grades around trees, erosion control devices and adjacent existing conditions, maintain existing surface drainage patterns. Smoothly round-off all top and toe of slopes. Reinstall erosion control devices and protective fencing as required.
- E. Approval of surface by Engineer shall be obtained before seeding operations begin.
- F. All areas to receive seed shall be compacted evenly and uniformly using a two-hundred pound (200 lb.) roller.
- G. Perform bulk density and compaction tests to monitor degree of soil compaction/seed bed friability where directed. Where required, loosen the seed bed to obtain no greater than 70% of the ASTM D-1557 modified optimum density.

3.3 SEEDED LAWN: DEVELOPMENT

- A. All disturbed areas not developed otherwise shall be developed as lawn with six (6) inches of topsoil as indicated on the drawings and as specified.

3.4 SEEDED LAWN: SEEDING PROCEDURE

- A. Seeding shall be done when wind does not interfere with uniform distribution of hydroseeding mixture.
- B. Apply starter fertilizer, seed and maximum 10% of mulch in one operation by the use of an approved spraying machine. Avoid spraying mix on adjacent surfaces, walks,

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building walls, and curbs.

- C. Apply remaining 90-100% of the mulch in a second separate application.
- D. Mix materials with water. Keep in an agitated state so that the materials are uniformly suspended in the water. Apply all materials at the specified rates.
- E. Do not overseed with unapproved quick-germinating species.

3.5 SEEDED LAWN: ESTABLISHMENT

- A. Maintain a moist seed bed at all times. Water seed bed so that the topsoil is wet to a depth of 2". Apply complete coverage to the seeded area as necessary to insure proper germination conditions.
- B. Protect all lawn areas with barricades, if necessary, to keep all traffic off the area. Repair all damage to lawn areas including topsoil replacement, at no additional cost to owner.
- C. Re-seed all areas which have failed to show a uniform stand of grass after the initial plants have appeared. All areas disturbed/prepared for reseeding in spring or summer shall receive crabgrass preventative.

3.6 SEEDED LAWN: MAINTENANCE

- A. Maintenance Period Required: Contractor shall maintain lawn from immediately after seeding or sodding and shall continue maintenance until final acceptance.
- B. Provide all reseeding, watering, mowing, weeding, insect or disease control, re-fertilizing, repair of washouts and other maintenance procedures which are necessary to produce a uniform stand of grass.
- C. Grass must be maintained at a height of 1 1/2 - 3". Mowing frequency shall be weekly minimum and must be adequate to insure that no more than 1/3 of the grass blade height is removed at any one time. Remove heavy clippings. The Contractor shall provide a minimum of five (5) mowings. Initial mowing shall occur when grass reaches 2 1/2" height.
- D. Secondary Fertilization: Apply secondary fertilizer 14 days after seeding. Apply per manufacturer recommendations.

3.7 EROSION PREVENTATIVES: Install erosion control system in any seeded areas which receive concentrated run-off water and areas as required by the Owner or Owner's Representative. Erosion control materials shall be secured as recommended by the manufacturer or as indicated on the Drawings.

3.8 CRABGRASS AND BROADLEAF WEED CONTROL

- A. Treat any lawn areas infested with crabgrass or broadleaf weeds with weed control products in conformance with manufacturer's recommendations, as required after identification of weed/crabgrass presence.

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B. Time: Conform to the manufacturer's recommendations.

C. Rate: Conform to the manufacturer's recommendations.

3.9 DISEASE CONTROL

A. Treat any diseased lawn areas with proper disease control product in conformance with the manufacturer's recommendations, as required after diagnosis of disease organisms.

B. Time: Conform to the manufacturer's recommendations.

C. Rate: Conform to the manufacturer's recommendations.

3.10 PROJECT CLEAN-UP

A. Upon completion of all lawn areas, remove all excess soil, debris, and other materials resulting from work operations of this Section. Restore all improvements to original condition. Broom clean all walks and pavements. All clean-up shall be completed at the end of each working day.

B. Upon stabilization of lawn areas, remove all erosion control systems. Re-seed or re-sod as required.

END OF SECTION 329200

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SECTION 329300 - LANDSCAPE PLANTING

PART 1 GENERAL

1.1 CONDITIONS AND REQUIREMENTS

- A. The General Conditions, Supplementary Conditions, and Division 1 – General Requirements apply.

1.2 SECTION INCLUDES

- A. Provide all labor, materials, equipment, services etc. necessary and incidental for the completion of all landscape work as shown on the drawings and specified herein.
- B. The Contractor shall be liable for any damage to property caused by landscaping operations and all areas and construction disturbed shall be restored to their original condition to the satisfaction of the Engineer.
- C. The Contractor shall carefully correlate his work with that of other Contractors.
- D. The Contractor is required to install and maintain his finished work at his expense as specified.

1.3 RELATED SECTIONS

- A. Section 32 91 13 - Topsoil
- B. Section 32 92 00 - Lawn

1.4 SUBMITTALS

- A. Manufacturer's Data: Submit copies of the manufacturer's and/or source data for all materials specified, including soils.
- B. Samples: Submit samples of all topsoil, soil mixes, mulches, and organic materials. Samples shall weigh 1 kg (2 lb.) and be packaged in plastic bags. Samples shall be typical of the lot of material to be delivered to the site and provide an accurate indication of color, texture, and organic makeup of the material.
- C. Plant Photographs: Submit color photographs of representative specimens of each type of tree and shrub on the plant list. Photos shall be 75 x 125 mm (3 x 5 in.) taken from angle that depicts the size and condition of the typical plant to be furnished. A scale rod or other measuring device shall be included in the photograph. For species where more than 20 plants are required, include a minimum of three photos that show the average plant, the best quality plant, and the worst quality plant to be provided. Label each photograph with the plant name, plant size, and name of the growing nursery.
- D. Nursery Sources: Submit a list of all nurseries that will supply plants, along with a list of the plants they will provide and the location of the nursery.
- E. Soil Test: Submit soil test analysis report for each sample of topsoil and planting mix per submittal requirements Section 329300 - Topsoil.

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1.5 MATERIALS STORAGE AND CLEAN-UP

- A. The Contractor shall keep the premises free from rubbish and all debris at all times and shall arrange his material storage so as not to interfere with the operation of the project. All unused materials, rubbish and debris shall be removed from the site.

1.6 COMPLETION AND ACCEPTANCE

- A. The Contractor shall notify the Engineer when the work of this section is substantially complete. The Engineer shall then review the work and prepare the "punch list" of items remaining or work that is unacceptable. At this time the Engineer may issue the "Notification of Substantial Completion" if the majority of the work is complete to the satisfaction of said Engineer.
- B. The completion of the contract will be accepted and Notice of Completion recorded only when the entire contract is completed to the satisfaction of the Engineer.
- C. Work under this Section will be accepted by the Owner's Construction Representative upon satisfactory completion of all work including "punch list" items.

1.7 WARRANTY

- A. All plant material (ornamental grasses) and planting supplies (edging, bark mulch, etc.) shall be guaranteed for a period of one (1) year from the date of "Notification of Substantial Completion" of the landscaping installation.

1.8 LANDSCAPE MAINTENANCE

- A. The Landscape Contractor shall maintain his finished work for a period of not less than one (1) year commencing from the time the installation is complete to the satisfaction of the Engineer.
- B. **IMPORTANT:** It is the Contractor's responsibility to determine water application rates. Water if rainfall does not exceed 3/4" in any 8 day period.
- C. The Landscape Contractor shall maintain the landscaping until final acceptance.

PART 2 PRODUCTS

2.1 TOPSOIL

- A. Refer to Section 32 91 13 - Topsoil

2.2 PLANTING SOIL MIXTURE

- A. Topsoil for ornamental grass bed areas shall be mixed with well-rotted manure in the following proportions:

Seven (7) cubic yards of topsoil to two (2) cubic yards of manure. They shall be thoroughly mixed by placing the manure evenly over the topsoil piles and turning the piles at least three (3) times or until thoroughly mixed to the satisfaction of the Engineer.

2.3 PLANT STOCK

- A. Plant material shall be first quality stock and shall conform to the code of standards set forth in the current edition of the American Standards for Nursery Stock sponsored by the American Association of Nurserymen, Inc.

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- B. Species and variety as specified on the drawings and delivered to the site shall be certified true to their genus, species and variety and as defined within the current edition of International Code of Nomenclature for Cultivated Plants, issued by the International Union of Biological Sciences. Substitutions are not permitted without Engineer's written approval.
1. For plant size and types see Drawings for plant list.
- C. Plants shall be nursery grown and shall be of varieties specified in the plant list bearing botanical names.
- D. Planting stock shall be well-branched and well-formed, sound, vigorous, healthy, free from disease, sun-scale, windburn, abrasion, and harmful insects or insect eggs; and shall have healthy, normal unbroken root systems. deciduous trees and shrubs shall be symmetrically developed, of uniform habit of growth, with straight trunks or stems, and free from objectionable disfigurements. Evergreen trees and shrubs shall have well-developed symmetrical tops with typical spread of branches for each particular species or variety. Plants shall have been grown under climatic conditions similar to those in the locality of the project. Plants budding into leaf or having soft growth shall be sprayed with an anti-desiccant at the nursery before digging.
- E. Stock Sizes: All stock measurements - caliper, height branching level, number of canes, ball sizes shall be in strict accordance with the latest edition of the American Standard for Nursery Stock. Minimum acceptable sizes as specified on the Drawings.
- F. All stock shall be balled and burlapped or container grown stock. Bareroot stock of any kind is unacceptable unless otherwise indicated on the Drawings.

2.4 MULCH FOR PLANTING PITS/BEDS (SHREDDED CEDAR BARK)

- A. Shredded cedar bark mulch shall be a natural forest product composed of shredded bark or wood not exceeding three inches (3") in length and on inch (1") in width. Mulch shall be derived from tree material, not from wood waste or by-products like sawdust, shredded palettes, or other debris. It shall be of a uniform grade and dark brown color with no additives or any other treatment. Mulch with leaves, twigs, and/or debris shall not be acceptable. The pH factor should range from 5.8 to 6.2.

2.5 WATER

- A. Water shall not contain elements toxic to plant life.

2.6 ANTI-DESICCANT

- A. Anti-desiccant shall be an emulsion that will provide a film over plant surfaces permeable enough to permit transpiration, and not damage the plant.

PART 3 EXECUTION

3.1 GENERAL PREPARATION

- A. Prior to beginning the work of this section, verify that site grading and preparation have been properly completed.
- B. Clearing shall consist of the satisfactory removal and disposal of brush and rubbish occurring within all lawn and planting areas.

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3.2 UNDERGROUND OBSTRUCTIONS TO PLANTING

- A. If underground utilities, are encountered, other locations for planting may be selected by the Engineer. Damage to utility lines shall be repaired at the Contractor's expense at no additional cost to the Owner.
- B. Remove all miscellaneous debris below the ground surface and dispose of according to the specifications.

3.3 PREPARATION OF PLANTING MIXTURE

- A. Before mixing, clean topsoil of roots, plants, sod, stones, clay lumps and other extraneous materials harmful or toxic to plant growth, by screening.
- B. To prepare planting mixture mix recommended soil amendments and fertilizers with topsoil at rates specified. Delay addition of fertilizer if planting mixture will not be used within two (2) days.

3.4 ORNAMENTAL GRASS PLANTING

- A. All planting shall be performed by personnel familiar with the accepted procedure of planting and under the constant supervision of a qualified planting foreman.
- B. All planting is to be done as shown on drawings and as specified herein and in strict accordance with standard horticultural practices.
- C. **PLANTING SEASONS AND CONDITIONS**
 1. Planting shall be done only when the ground is not frozen, snow covered, or in an otherwise unsuitable condition for planting.
 2. Unless otherwise directed by the Engineer, deciduous material shall be planted from March 1st to May 1st and from October 15th to December 15; evergreen material shall be planted from April 1st to May 15th and from September 1st to October 15th, or as approved by the Engineer.
- D. **LAYOUT:** Plant material locations and bed outlines shall be staked on the project site by the Contractor and approved by the Engineer before any plant pits or beds are excavated. Plant material locations may be adjusted by the Engineer to meet field conditions.

E. INSTALLATION OF ORNAMENTAL GRASS

1. **Setting Plants:**
 - a. Container-grown plants shall be handled and moved only by the container. Plants shall be set plumb and held in position until sufficient soil has been firmly placed around roots or ball. Plants shall be set in relation to surrounding grade so that they are even with the depth at which they are grown in the nursery, collecting field, or container.

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Fertilizer in tablet form shall be placed prior to backfilling and in accordance with the manufacturer's specifications.

- b. Container-grown stock shall be removed from containers without damaging plant or root system. Planting shall be completed as specified for balled or burlapped plants.

2. **Mulching:**

- a. Bark mulch for planting beds shall be installed to a minimum depth of three inches (3") in all areas specified on the landscaping plans.
- b. Prior to the installation of bark mulch all areas to be covered shall be weed free and shall be treated with pre-emergent herbicide.
- c. Mulching shall take place within 48 hours after planting.
- d. Mulch shall be kept out of the crowns of ornamental grasses and off buildings, sidewalks, light standards, and other structures.
- e. The top of all areas of bark cover shall be 1" below the top of adjacent curb, walk or edge of pavement.

3. **Plant Sizes:** For plant size and types see Drawings for plant list.

END OF SECTION 329300

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SECTION 334000 - STORM DRAINAGE

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Form 817 shall mean the State of Connecticut, Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction, Form 817 or its latest edition and any supplemental specifications.

1.2 SUMMARY

- A. This Section includes the installation of storm drainage outside the building and the abandonment and removal of existing storm drainage as indicated on the Drawings.

1.3 RELATED SECTIONS

- A. Section 03 30 01 - Portland Cement Concrete
- B. Section 31 22 13 - Formation of Subgrade
- C. Section 31 23 16 - Earthwork
- D. Section 32 11 23 - Processed Aggregate Base

1.4 SUBMITTALS

- A. Shop Drawings: Include plans, elevations, details, and attachments for the following:
 - 1. Precast concrete manholes and other structures, including frames, covers, and grates.
 - 2. Cast-in-place concrete manholes and other structures, including frames, covers, and grates.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Do not store plastic structures, pipe, and fittings in direct sunlight.
- B. Protect pipe, pipe fittings, and seals from dirt and damage.
- C. Handle precast concrete manholes and other structures according to manufacturer's written rigging instructions.

1.6 PROJECT CONDITIONS

- A. Site Information: Perform site survey, research public utility records, and verify existing utility locations.
- B. Locate existing structures and piping to be closed and abandoned.
- C. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 - 1. Notify Architect not less than two days in advance of proposed utility interruptions.

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2. Do not proceed with utility interruptions without Architect's written permission.

PART 2 PRODUCTS

2.1 PIPING

- A. High Density Polyethylene Pipe: Corrugated smooth-lined high density polyethylene pipe, type N-12 as manufactured by Advanced Drainage Systems, Inc (ADS). Pipe coupler connections shall be watertight type "Pro-Link WT" by ADS.
- B. Reinforced-Concrete Sewer Pipe and Fittings: ASTM C 76, Class III, Wall B, for gasketed joints.
 1. Gaskets: ASTM C 443, rubber.
- C. Roof Drainage Pipe: PVC Drainage Pipe and Fittings conforming to the following:
 1. PVC Drainage Pipe and Fittings, NPS 15 (DN375) and Smaller: ASTM D 3034, SDR 40, for solvent-cemented or gasketed joints.
 2. Gaskets: ASTM F 477, elastomeric seals.

2.2 CATCH BASINS

- A. Precast Concrete Catch Basins:
 1. Precast Units shall conform to Form 817, Article M.08.02, 4- Precast Units for Drainage Structures and ASTM C 478, precast, reinforced concrete, of depth indicated, with provision for rubber gasketed joints.
 2. Base Section: 6-inch minimum thickness for floor slab and 4-inch minimum thickness for walls and base riser section, and having separate base slab or base section with integral floor.
- B. Masonry Catch Basins:
 1. Masonry Units shall conform to Form 817, Article M.08.02, 1- Brick or 2- Concrete Building Brick or 3- Masonry Concrete Units for Catch Basins, Manholes or Drop Inlets.
 2. Mortar shall conform to Form 817, Article M.11.04.
- C. Catch Basin Frames and Grates:
 1. Frames and Grates shall conform to Form 817, Article M.08.02, 5- Metal for Drainage Structures.

2.3 CONCRETE FOR CAST-IN-PLACE STRUCTURES

- A. General: Cast-in-place concrete according to ACI 318, ACI 350R, and the following:
 1. Cement: ASTM C 150, Type II.
 2. Fine Aggregate: ASTM C 33, sand.
 3. Coarse Aggregate: ASTM C 33, crushed gravel.
 4. Water: Potable.

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- B. Portland Cement Design Mix: 4000 psi (27.6 MPa) minimum, with 0.45 maximum water-cementitious ratio.
 - 1. Reinforcement Fabric: ASTM A 185, steel, welded wire fabric, plain.
 - 2. Reinforcement Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed steel.
- C. Ballast and Pipe Supports: Portland cement design mix, 3000 psi (20.7 MPa) minimum, with 0.58 maximum water-cementitious ratio.
 - 1. Reinforcement Fabric: ASTM A 185, steel, welded wire fabric, plain.
 - 2. Reinforcement Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed steel.

PART 3 EXECUTION

3.1 EARTHWORK

- A. Excavating, trenching, and backfilling are specified in Section 02300 - Earthwork.

3.2 INSTALLATION, GENERAL

- A. General Locations and Arrangements: Drawing plans and details indicate general location and arrangement of storm drainage and sanitary sewer piping. Location and arrangement of piping layout take design considerations into account. Install piping as indicated, to extent practical.
- B. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements. Maintain swab or drag in line, and pull past each joint as it is completed.
- C. Install gravity-flow piping and connect to building's storm drains, of sizes and in locations indicated. Terminate piping as indicated.
 - 1. Install piping to grade and elevations as shown on plans.
 - 2. Install piping with minimum cover as recommended by the manufacturer.

- D. Join and install PVC pipe in accordance with ASTM D 3212.

3.3 CATCH-BASIN/YARD DRAIN INSTALLATION

- A. Construct catch basins / yard drains to sizes and shapes indicated.
- B. Set frames and grates to elevations indicated.

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3.4 INSTALLATION OF IDENTIFICATION

- A. Install continuous plastic underground warning tape during backfilling of trench for underground water service piping. Locate 6 to 8 inches directly over piping.

3.6 CLOSING ABANDONED STORM DRAINAGE SYSTEMS

- A. Abandoned Piping: Close open ends of abandoned underground piping indicated to remain in place. Include closures strong enough to withstand hydrostatic and earth pressures that may result after ends of abandoned piping have been closed. Use either procedure below:

1. Close open ends of piping with at least 8-inch thick, brick masonry bulkheads or with at least 8-inch thick, cast-in-place concrete plug.
2. Close open ends of piping with threaded metal caps, plastic plugs, cast-in-place concrete plugs or other acceptable methods suitable for size and type of material being closed. Do not use wood plugs.

- B. Abandoned Structures: Excavate around structure as required and use one procedure below:

1. Remove structure and close open ends of remaining piping.
2. Remove top of structure down to at least 36 inches below final grade. Fill to within 12 inches of top with stone, rubble, gravel, or compacted dirt. Fill to top with concrete.
3. Backfill to grade according to Division 2 Section "Earthwork."

3.7 FIELD QUALITY CONTROL

- A. Clear interior of piping and structures of dirt and superfluous material as work progresses. Maintain swab or drag in piping, and pull past each joint as it is completed.

1. In large, accessible piping, brushes and brooms may be used for cleaning.
2. Place plug in end of incomplete piping at end of day and when work stops.
3. Flush piping between manholes and other structures to remove collected debris, if required by authorities having jurisdiction.

- B. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches of backfill is in place, and again at completion of Project. If inspection indicates poor alignment, debris, displaced pipe, infiltration, or other defects, correct such defects and re-inspect.

END OF SECTION 334000

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SECTION 334623.16 - BROKEN STONE

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Division 1 General Requirements and Specific Requirements, apply to this Section.
- B. State of Connecticut Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction, Form 817 or its latest edition and any supplemental specifications (referenced herein as "Form 817").

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Furnish and place broken stone in the locations where shown on the plans or as directed by the Engineer. This stone will be used for drainage applications and other miscellaneous work, as shown on the plans and as directed by the Engineer.

1.3 QUALITY ASSURANCE

- A. Material Standards: As defined in the State of Connecticut Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction, Form 816 inclusive of all supplements.
- B. Testing: Compaction tests may be required by the Owner and will be paid for by the Contractor. No specific testing schedule has been established at this time. If tests indicate that density requirements have not been achieved, the Contractor shall continue compacting. All retesting in these areas shall be paid for by the Contractor.
- C. Density and Compaction Testing: The Contractor is responsible to schedule compaction tests as required by the Owner and to allow adequate time for the proper execution of said tests.

1.4 SUBMITTALS

- A. Submit certified test reports and materials certificates, for products specified in this Section, indicating compliance of all proposed materials with specified requirements.

1.5 PROTECTIONS

- A. Dust Control: Use all means necessary to control dust on and near the construction areas caused by the Contractor's performance of the work in conformance with Form 816.

PART 2 PRODUCTS

2.1 BROKEN STONE

- A. Broken Stone shall conform to Article M.05.01, Form 816.
- B. **IMPORTANT:** Material substitutions will not be approved under any circumstances. All recycled materials will be rejected.

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PART 3 EXECUTION

3.1 MATERIAL PLACEMENT/COMPACTION

- A. Install broken stone base material at the locations as shown on the Drawings and in accordance with Article 3.04.03 of Form 816. Dimensions specified are after compaction.
- B. Compact base material with vibratory roller to minimum 95% modified AASHTO laboratory density (ASTM D-1557, Method C).

END OF SECTION 334623.16