



July 22, 2016

### Invitation to Bid

The City of Norwalk is soliciting bids for the Athletic turf and field renovations at Brien McMahon High School. The work includes, but is not necessarily limited to the following: Site preparation, Sedimentation and erosion controls, Earthwork, Surface and subsurface drainage, Walkway and Parking lots and Drives pavements, Utilities (electric, water), Fencing, Miscellaneous improvements and equipment, Artificial Turf base preparation, Plant material. The budget estimate for the renovation services is approximately \$900,000.00. The requirements of these services are outlined in greater detail within the drawings contained within Section 2 – Project Specifications.

<b>PROJECT NUMBER:</b>	<b>3705</b>
<b>DEADLINE :</b>	<b>2:00 PM, August 8, 2016</b>
<b>BID TITLE :</b>	<b>Turf and Field Renovation at Brien McMahon High School</b>
<b>SITE LOCATION:</b>	<b>Brien McMahon High School 300 Highland Avenue Norwalk, CT 06854</b>

**BID DOCUMENTS** for this project are available over the Internet at <http://www.norwalkct.org> Adobe Acrobat reader is required to view this document. If you do not have this software you may download the required software from Adobe.

A Pre-bid Conference for this project will be held at 10:00 a.m., Tuesday, July 26, 2016, on the baseball field at Brien McMahon High School, 300 Highland Avenue, Norwalk, CT 06854. The pre-bid conference is not mandatory, but highly recommended.

All questions concerning this solicitation must be directed in writing to Carleen Megaro via e-mail, to: [cmegaro@norwalkct.org](mailto:cmegaro@norwalkct.org). The deadline for submission of questions for this bid solicitation is **2:00PM, August 1, 2016. Please include the Project Number and Bid Title in the subject line**, thank you.

Bidders will be required to provide:

- 10% bid bond with your response (see sect. 3.1 C).
- Performance, labor, and materials bond for 100% of the project upon award if the contract value exceeds \$50,000.00 (see sect. 3.1 C & D).
- Copies of current certifications as applicable to this solicitation.
- Original bid response, plus seven (7) copies.

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SPECIAL NOTES:

- 1) **PROJECT SCHEDULE** - Construction shall commence on or about October 15, 2016 and shall be completed on or about by December 1, 2016.
- 2) **BUILDING PERMITS** - Contractors shall obtain and pay for all required permit(s) for this project. Permits fees are **NOT** waived for this project.
- 3) References to Department of Public Works, Director of Public Works, and Engineer in section 3 and section 4 are to be interpreted as "Owner's designated representative".
- 4) Section 4, Item 109-04-2b, Contractor Charges is changed to read "...profit and overhead shall be figured at fifteen (15) percent unless some other basis is approved by the Director."
- 5) Section 3.8, Liquidated Damages, change to read "Liquidated damages as defined in Article 27 of the Norwalk General Conditions for Construction will be \$250.00 per day.
- 6) Contractors are hereby reminded that all submitted bid amounts **MUST** include all costs/insurance premium required to satisfy the various insurance limits as identified in these documents.
- 7) Prevailing Wage Rates shall apply to these services. A copy of the State of Connecticut prevailing wage rates is included as a component of this solicitation. See Section 5 for this information

**BIDDER LISTS (List of Plan Holders)** will not be published.

**ADDENDAS**, if issued, will be available over the Internet at <http://www.norwalkct.org> It is the responsibility of the bidders to verify the issuance of any addenda. **We strongly suggest that you check for any addenda a minimum of forty eight hours in advance of the bid deadline.**

**SUMMARIES** will be available any time after 5:00 PM on the day of the bid opening over the Internet at <http://www.norwalkct.org> . The document number to request will be the same as the project number indicated in the invitation to bid. Bid results will not be provided over the phone.

**AWARD NOTIFICATION** will be issued by mail.

If, after review of the bid documents, your firm is interested in performing the services specified, provide the information requested, sign and return the complete documents, along with your detailed proposal, to the Purchasing Department by the due date.

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**SEALED BID RESPONSES: One (1) Original plus seven (7) copies are to be delivered to:**

City of Norwalk

Purchasing Department, Room 103

125 East Avenue

Norwalk, CT 06856-5125

NOTE: The City of Norwalk will not accept any sealed bid submissions via email or facsimile (fax). Please indicate the bid number and bid title on the envelope.

*The City of Norwalk is an Affirmative Action/Equal Opportunity Employer; Minority/Women's Business Enterprises are encouraged to apply*

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PROJECT TECHNICAL SPECIFICATIONS FOR  
ATHLETIC TURF AND FIELD RENOVATION AT BRIEN MCMAHON  
HIGH SCHOOL, 300 HIGHLAND AVENUE, NORWALK, CT 06854

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CITY OF NORWALK - GENERAL CONDITIONS FOR CONSTRUCTION

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**SECTION 1 – FORMS OF PROPOSAL**

**1.1A Response Form – BID # 3705 – Turf and Field Renovation at Brien McMahon High School**

<b>Vendor Name -</b>		
<b>Address -</b>		
<b>Phone -</b>	<b>Fax -</b>	<b>Email -</b>
<b>Manager -</b>		<b>Fed ID#</b>

The undersigned hereby declares that he has or they have carefully examined the plans, specifications and project site and has satisfied him as to all the quantities and conditions, and understands that in signing this proposal he waives all right to plead any misunderstanding regarding the same.

The undersigned further understands and agrees that he will furnish and provide all the necessary material, machinery, implements, tools, labor, services, and other items of whatever nature, and to do and perform all the work necessary under the aforesaid conditions, to carry out the contract and to accept in full compensation therefore the amount of the contract as agreed to by the Contractor and the City.

**1. Construction – Turf and Field Renovation at Brien McMahon High School**

<b>Total Lump Sum Price</b>	\$
<b>Total Lump Sum Price in Writing:</b>	

Bid Security in the form of a (check one) is attached.		Bond		Certified Check
Cost for performance bond <u>included in lump sum</u>	\$			per thousand dollars
Insurance Agency Name -		Tel.-		
Agency Address -				

Submitted by -	
Authorized Agent of Company (name and title)	Date

The above signatory acknowledges receipt of the following addenda issued during the bidding period and understands that they are a part of the bidding documents (if applicable):

Addendum #		Dated		Addendum #		Dated	
Addendum #		Dated		Addendum #		Dated	
Addendum #		Dated		Addendum #		Dated	

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<b>PROJECT:</b>	<b>3705- Turf and Field Renovation at Brien McMahon High School</b>
<b>VENDOR NAME:</b>	

**1.2 STATEMENT OF BIDDERS QUALIFICATIONS**

Please answer the following questions regarding your company's past performance. Attach a financial statement or other supportive documentation. Failure to reply to this instruction may be regarded as justification for rejecting a bid.

1. Number of years in business - \_\_\_\_\_
2. Number of personnel employed Part-time - \_\_\_\_\_, Full - \_\_\_\_\_,
3. List projects of this type/size your firm has completed within the last three years:

Project	Date	Contact Person	Phone No.

<b>4. ORGANIZATIONAL STRUCTURE OF BIDDER (check which applies)</b>	<input type="checkbox"/>	general partnership
	<input type="checkbox"/>	limited partnership
	<input type="checkbox"/>	limited liability corporation
	<input type="checkbox"/>	limited liability partnership,
	<input type="checkbox"/>	corporation doing business under a trade name
	<input type="checkbox"/>	individual doing business under a trade name
	<input type="checkbox"/>	other (specify)

<b>5. STATUS OF THE BUSINESS AND ITS CURRENT STANDING WITH THE SECRETARY OF STATE'S OFFICE; e.g., are all required filings current and in good standing or has the entity been withdrawn or canceled</b>	<u>Connecticut corporations</u> - Will the Secretary of State be able to issue a Certificate of Good Standing within 30 days of the bid opening?	Yes	No
	<u>Out-of -State corporations</u> - Do you have a valid license to do business in the State of Connecticut? (Evidence in the form of a Certificate of Authority from the Connecticut Secretary of State will be required within 30 days of the bid opening.)	Yes	No

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<b>PROJECT:</b>	<b>3705- Turf and Field Renovation at Brien McMahon High School</b>
<b>VENDOR NAME:</b>	

<b>6. Is your local organization an affiliate of a parent company? If so, Indicate the principal place of business of your company and the name of the agent for service if different from what has been indicated on the response form:</b>				
Business Name				
Address				
City		State		Zip
Name of Agent				

**NOTE:** In the case of a Limited Liability Corporation or a Limited Liability Partnership a certified copy of the Articles of Organization certified as valid and in effect as of the date of the bid opening will be required within 30 days of the bid opening.

A listing of the corporate officers, in the case of a corporation; the general or managing partners, in the case of a partnership; or the managers and members in the case of either a limited liability partnership or company will be required within 30 days of the bid opening.

**7.** The awarded contractor may be required to submit one copy of the following information relative to its company's financial statements prior to contract signing. This information must represent the current circumstance which surrounds the financial position of the bidding organization. Note: This information will be kept confidential if provided in a separate envelop from your bid pricing.

All information should be supported with appropriate audited financials.

- a. Book Value (Total Assets (-) Total Liabilities)
- b. Working Capital (Current Assets (-) Current Liabilities)
- c. Current Ratio (Current Assets/Current Liabilities)
- d. Debt to Equity Ratio (Long Term Debt/Shareholder's Equity)
- e. Return on Assets (Net Income/Total Assets)
- f. Return on Equity (Net Income/Shareholder's Equity)
- g. Return on Invested Capital (Net Income/Long Term Debt = Shareholders' Equity)

**8. SUBCONTRACTORS:** If subcontractors are to be used, please list firm name, address, name of principal, and phone number below or on a separate sheet. Also indicate portion or section of work subcontractor will be performing.

COMPANY NAME	ADDRESS	PRINCIPAL	PHONE

All responses to this questionnaire are understood to be proprietary to the vendor, and will be considered confidential. Additional information may be requested subsequent to your responding to this bid request.

END OF SECTION

### 1.3 SAMPLE CONTRACT

*“The following document is the City’s standard construction services contract. Please be advised that the substantive terms and requirements outlined therein may be revised only with the approval of Norwalk’s Corporation Counsel.”*

**CITY OF NORWALK  
CONTRACT FOR CONSTRUCTION SERVICES  
WITH «VendorName»  
«Project»**

This Contract entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2016, by the **CITY OF NORWALK**, a municipal corporation organized and existing under the laws of the State of Connecticut (hereinafter referred to as "CITY"), acting by and through «ContractAuthorizer», its «ContractAuthorizerTitle», duly authorized, and «VendorName», a corporation organized and existing under the laws of the State of Connecticut with an office and principal place of business located at «VendorAddress1» «VendorAddress2», «VendorCity», «VendorState» «VendorZip», acting herein by «VendorAuthorizer», its «VendorAuthorizerTitle», duly authorized (hereinafter the "CONTRACTOR").

WITNESSETH: That the CITY and CONTRACTOR, for the consideration hereinafter named, agree as follows:

#### **ARTICLE 1. WORK TO BE DONE**

The CONTRACTOR shall (a) furnish all the materials, machinery, implements, tools, labor, services, and other items of every kind (the “Work”) using its best skill and attention required to perform and complete in the most substantial and workmanlike manner the project generally identified as «Project» (hereinafter the “Project”). The Work shall be performed in strict compliance with the City of Norwalk Department of Public Works General Provisions; the general and technical specifications and conditions of contract; the Project Plans; Special Conditions and Addenda; State Labor Department minimum wage rates; any addenda to the specifications; and all requirements of the Contract Documents, as defined herein.

The CITY will compensate the CONTRACTOR for the satisfactory completion of the Project and of all of the CONTRACTOR's duties, obligations and responsibilities under this Contract, subject to additions and deductions as herein provided, the total sum of «ContractBudgetInEnglish»(\$«ContractBudget») in the manner set forth herein and the Contract Documents.

The Project shall be performed in accordance with the true intent and meaning of the Contract Documents without any expense of any nature whatsoever to the CITY exceeding the compensation stated herein. The CONTRACTOR’s Work hereunder shall be overseen by «VendorAuthorizer», its duly authorized «VendorAuthorizerTitle».

The CONTRACTOR hereby represents that it has carefully examined and understands all of the terms and requirements of the Contract Documents, has investigated the nature, locality and site of the Project (the Site) and the conditions and difficulties under which it is to be performed and that it enters into this Contract on the basis of its own examination, investigation and evaluation of such and not in reliance on any opinions or representations of the CITY or any third party, including any officer, agent, servant or employee thereof.

## **ARTICLE 2. ADMINISTRATION OF CONTRACT BY CITY**

The Work to be performed under this Contract shall be administered on behalf of the CITY by «DepartmentHead», «DepartmentHeadTitle», referred to as the "Director." The CONTRACTOR acknowledges and agrees that any instructions, reviews, advice, approvals or directives rendered to it by the Director or his designated representative consistent with the Contract Documents are authorized on behalf of the CITY. However, notwithstanding the above, no advice, directive or other recommendation or request by the CITY shall give rise to liability or responsibility on the CITY's part for any portion of the Work, nor shall it relieve the CONTRACTOR of its responsibilities hereunder.

## **ARTICLE 3. DOCUMENTS FORMING THE CONTRACT**

The Contract Documents shall be deemed to include the Bid Documents; Addendum No. 1; the CONTRACTOR's bid response, dated \_\_\_\_\_; this written Contract, including all bonds and insurance certificates; the City of Norwalk Department of Public Works General Provisions; the general and technical specifications and conditions for the Project; the Project plans; Special Conditions and Addenda; State Labor Department minimum wage rates (if applicable); any addenda to the specifications; and all provisions required by law to be inserted in this Contract, whether or not physically inserted.

This Contract will supersede any Contract or contract form that may have been included in the bid specifications, which form was included for information purposes only, and any writings or documents not incorporated herein by specific reference. This Contract, together with the other Contract Documents are all intended to supplement and complement each other and shall, to the fullest extent possible, be so construed and interpreted. If, however, any provision of this Contract irreconcilably conflicts with any provision of the other Contract Documents, the provision imposing a greater obligation on the CONTRACTOR shall govern.

## **ARTICLE 4. EXAMINATION OF DOCUMENTS AND SITE**

The CONTRACTOR confirms that it has carefully examined the Project Site, as well as its surrounding territory. As a result, the CONTRACTOR acknowledges that it is fully informed regarding all existing conditions, both natural and manmade, as well as all such above grade, at grade and subsurface conditions that may in any way affect the Work to be done and labor and materials to be furnished for the proper completion of the Project, including, by way of example, the existence of poles, wires, pipes, ducts, conduits and other facilities and structures of municipal and public service corporations on, over or under the Project site. The CONTRACTOR further acknowledges that it has secured such information by personal

investigation, research, and inquiry into all reasonably available data concerning the actual Site and has not relied upon the estimates or records of the CITY; and that it will make no claim against the CITY by reason of reliance on any such estimates, tests, information, data or representations made by any officer, agent, representative or employee of the CITY, or for costs incurred as a result thereof.

In addition, the CONTRACTOR agrees that, prior to starting any part of the Work, it shall carefully study and compare the various drawings, plans and other Contract Documents relative to that portion of the Work in order to facilitate construction and determine whether inconsistencies or conflicts exist.

## **ARTICLE 5. DATE OF COMPLETION**

The CONTRACTOR further agrees that it will begin the Project herein described within ten (10) days of the date hereof, unless written instruction from the Director is given to begin at a different date. The CONTRACTOR shall diligently and continuously prosecute and complete the same and coordinate its Work with all other work being performed on the Project according to any schedules that may be issued from time to time during the Project and any other scheduling requirements listed in the Contract Documents, so as not to delay, impede, obstruct, hinder or interfere with the commencement, progress or completion of any part of the Project and so that the Project shall be entirely completed no later than «**CompletedDate**» (the “Completion Date”), unless such Completion Date is extended by written notice signed by the Director.

### **THE CONTRACTOR ACKNOWLEDGES THAT TIME IS OF THE ESSENCE IN TERMS OF COMPLETION OF THE CONTRACTOR'S WORK HEREUNDER.**

No extension beyond this date of completion shall be effective unless in writing signed by the Director. Any extension shall be for such time and upon such terms and conditions as may be set by the Director, which may include charges for professional services, engineering and inspection expenses incurred, (including expenses incurred by railroad companies on contracts which affect a railroad right of way) as a result. Notice of application for any extension shall be filed with the Director at least fifteen (15) days prior to the date of completion set forth above.

The CONTRACTOR shall work during such days and times as required by the CITY so as not to interfere with its use or operation of the Site. However, if the CITY deems it necessary, it may direct the CONTRACTOR to work overtime. If so directed, the CONTRACTOR shall work overtime and, provided that it is not in default under any of the terms or provisions of this Contract or of other Contract Documents, the CITY will pay the CONTRACTOR for such actual additional wages paid directly for such overtime work, if any, at rates which have been approved by the CITY.

The CONTRACTOR shall contribute to and cooperate with the development of the Project schedules and other efforts to achieve timely completion of the Work. The CONTRACTOR shall be required to provide information for the scheduling of the times and sequence of operations required in order for its Work to meet the CITY's overall schedule requirements and it shall continuously monitor the Project schedule so as to be fully familiar

with the timing, phasing and sequence of operations of the Work and of any other work performed by others on the Project. The CONTRACTOR shall diligently execute the Work in accordance with the requirements of the Project schedule including any revisions thereto.

In the event the CONTRACTOR is delayed, obstructed, hindered or interfered with in the commencement, prosecution or completion of the Work by any cause including, but not limited to, any act, omission, neglect, negligence or default of the CITY or of anyone employed by it, or by any other contractor or subcontractor on the Project, or by damage caused by fire or other casualty or by any other cause beyond the control of and not due to any fault, neglect, act or omission of the CONTRACTOR, its officers, agents, employees, subcontractors or suppliers, the CONTRACTOR's

exclusive remedy shall be an extension of time for a period equivalent to the time lost by reason of any and all of the aforesaid causes. Provided, however, that the CONTRACTOR shall not be entitled to any such extension of time unless the CONTRACTOR (1) notifies the CITY in writing of the cause or causes of such delay, obstruction, hindrance or interference within forty-eight (48) hours of the commencement thereof and (2) demonstrates that it could not have anticipated or avoided such delay, obstruction, hindrance or interference and has used all available means to minimize the consequences thereof. Notwithstanding the foregoing, if any of the Contract Documents are at variance with granting such time extension, then the provisions of such documents shall control.

In no event shall the CONTRACTOR be entitled to money damages or an adjustment to the sum payable hereunder by virtue of any such delay.

In the event of a delay in the progress of the Work or disruption of, hinderance, obstruction, or interference with the Work due to any fault, neglect, action or omission of the CONTRACTOR or any of its officers, agents, servants, employees, subcontractors or suppliers which results in any additional cost, expense, liability or damage to the CITY including, legal fees and disbursements incurred by the CITY (whether incurred in defending claims arising from such delay or in seeking reimbursement or indemnity from the CONTRACTOR and/or its surety hereunder or otherwise) or any damages or additional costs or expenses for which the CITY may or shall become liable, no extension of time shall be granted and the CONTRACTOR (and its surety) shall be liable to compensate the CITY for and indemnify it against all such costs, expenses, damages and liability. In addition, the CONTRACTOR shall not only fulfill all of its obligations imposed by this Contract at its own cost and expense, but also work such overtime as may be necessary to make up for all time lost in the performance of the Work and of the Project. Should the CONTRACTOR fail to make up for the time lost by reason of such delay, the CITY shall have the right to hire other contractors to work overtime, if needed, and to take whatever other action it deems necessary to avoid delay in the completion of the Work and of the Project. The cost and expense of such overtime and/or such other action, including all other consequential damages and expenses, shall be borne by the CONTRACTOR hereunder.

## **ARTICLE 6. CONTINGENCIES, EXTRA WORK, AND CHANGES**

Whenever the CITY determines that, for any reason deemed to be in the best interests of the Project, the scope of Work or plans for the Project should be revised to provide for changes,

deletions, contingencies, additional or extra work, it may issue a Change Order to the CONTRACTOR. Once the CITY has issued and signed a written Change Order in its standard form, the CONTRACTOR shall forthwith comply with the specifications of such Change Order. In such event, allowances for additions and/or deductions to the prices listed in the bid documents will be made commensurate with such changes in the scope or extent of the Work. Any such action by the CITY shall not constitute grounds for a claim by the CONTRACTOR for damages, loss of anticipated profits, or for costs resulting from any variations between the approximate quantities and quality of Work contemplated in the bid documents and as built.

All changes, additions or omissions in the Work ordered in writing by the CITY shall be deemed to be a part of the Work hereunder and shall be performed and furnished in strict accordance with all of the terms and provisions of the Contract Documents based on a negotiated cost for the Work and materials. The CONTRACTOR shall be responsible for keeping its surety informed of all such modifications to this Contract. The obligations of CONTRACTOR's surety shall not be reduced, waived or adversely affected by the issuance of such Change Orders, additions or deductions and the CITY shall not be required to inform the surety of the same or to obtain the consent of the surety to such modifications.

Payment for any unforeseen Work and/or changes shall be made as provided for in the Standard Specifications.

#### **ARTICLE 7. MEANS AND METHODS**

The CONTRACTOR shall supervise and direct the Work using its best skill and attention in order to perform and complete the Project according to the Contract Documents in a timely and workmanlike manner. The CONTRACTOR shall be responsible for safeguarding the Site and all adjacent property from damage and for implementing all reasonable and necessary construction means, methods, techniques, sequences and procedures for safety precautions, protection against vandalism, and compliance with fire insurance rating bureau procedures, in connection with the performance of the Work. CONTRACTOR further assumes responsibility for all actions and omissions of its agents, employees, subcontractors, suppliers and all of their respective agents, employees and any other person performing any part of the Work.

#### **ARTICLE 8. NO COLLUSION OR FRAUD**

The CONTRACTOR hereby agrees that all persons interested as principal or principals in the bid or proposal submitted by the CONTRACTOR for this Project are named therein; that this Contract has been secured without any connection with any person or persons other than those named; that this Contract was secured without collusion or fraud; and that neither any officer nor employee of the CITY, nor any member of the immediate family of any such person, has or will have a financial interest in the performance of this Contract, in the supplies, Work or business to which it relates, or in any portion of the profits thereof.

## **ARTICLE 9. ESTIMATES AND PAYMENT**

As the Project progresses in accordance with the Contract and in a manner that is satisfactory to the CITY, the CITY hereby agrees to make payments to the CONTRACTOR, based upon the prices set out in the CONTRACTOR's Proposal. The procedure for processing payments is as follows: on or before the last day of each month the CONTRACTOR shall submit to the CITY, in the form required by the CITY, a written Application For Payment showing the value of the Work performed and in place as of that date. From this amount shall be deducted all previous payments and all charges for services, materials, equipment and other items chargeable to the CONTRACTOR. The balance of such Application must be approved by the CITY and should represent the value of Work done and material furnished in accordance with the terms and conditions of this Contract during the preceding month. The CONTRACTOR shall be paid ninety-five (95%) percent of such amount. The five (5) percent retained shall be held by the CITY until final completion and acceptance of all Work covered by this Contract; compliance by the CONTRACTOR with all of its responsibilities hereunder including the provision of signed waivers of lien from CONTRACTOR, its subcontractors and suppliers; the posting of a twenty-five percent (25%) maintenance bond by the CONTRACTOR insuring the Project for a period of two (2) years from the date of final acceptance; and the making of all payments due all subcontractors and material suppliers in connection with the Project. Nothing herein shall modify or limit detailed payment provisions contained in the Contract Documents and approved by the Director.

Prior to commencing the Work, the CONTRACTOR shall submit to the CITY a detailed Schedule of Values showing the breakdown of the total contract price into its various parts for approval. The CITY may modify the Schedule of Values, or may require additional information or a more detailed breakdown of costs, subject to their final approval. All Applications for Payments will thereafter be submitted according to the approved payment Schedule.

The CITY reserves the right to advance the date of any payment (including the final payment) under this Contract if, in its judgment, it becomes desirable to do so.

The CONTRACTOR agrees that, if and when requested to do so by the CITY, it shall furnish such information, evidence and substantiation as the CITY may require with respect to the nature and extent of all obligations incurred by the CONTRACTOR for or in connection with the Work, all payments made by the CONTRACTOR thereon, and the amounts remaining unpaid and the reasons therefor.

The CONTRACTOR warrants that: (1) title to Work, materials and equipment covered by an Application for Payment will pass to the CITY either by incorporation in construction or upon receipt of any payment for the same by the CONTRACTOR, whichever occurs first; (2) Work, materials and equipment covered by Applications for Payment shall be free and clear of liens, claims, security interests or encumbrances; and (3) no Work, materials or equipment covered by an Application for Payment shall be acquired by the CONTRACTOR, or any other entity or person performing any Work at the Site or furnishing materials or equipment for the Project, subject to an Contract or arrangement under which any interest therein or an encumbrance thereon is retained by the seller of such or is otherwise imposed by the

CONTRACTOR or such other entity or person.

With each Application For Payment the CONTRACTOR shall certify to the CITY that the Work, for which payment is requested, has been fully completed in accordance with the Contract Documents; that all amounts owed to any subcontractor and subconsultant for Work or materials covered by all previous progress payments have been paid in full; and that the CONTRACTOR has no claim outstanding against the CITY related to this, or any previous progress payment, except any such claim as has been previously served by way of a detailed, verified statement upon the CITY prior to the filing of such Application For Payment. If requested to do so, the CONTRACTOR will file signed Waivers of Lien with each Application for Payment in a form satisfactory to the CITY.

The CONTRACTOR's refusal to accept any payment as tendered shall constitute a waiver of any right to interest thereon.

It is further agreed that so long as the CONTRACTOR fails to comply with any lawful or proper direction concerning the Work or material given by or on behalf of the Director, the CONTRACTOR shall not be entitled to have any estimate made for the purpose of payment. No such estimate shall be rendered until the CONTRACTOR fully and satisfactorily complies with all such directions.

If any of the following occurs: (1) a claim or lien is made or filed with or against the CITY, the Project, or the Project funds by any person claiming that the CONTRACTOR or any subcontractor or other person under subcontract has failed to make payment for any labor, services, materials, equipment, taxes or other items or obligations furnished or incurred for or in connection with the Work; (2) there is evidence of such nonpayment or of any claim or lien for which, if established, the CITY might become liable and which is chargeable to the CONTRACTOR; (3) the CONTRACTOR or any subcontractor or other person under subcontract causes damage to the Work or to any other work on the Project; (4) or if the CONTRACTOR fails to perform or is otherwise in default under any of the terms or provisions of this Contract, the CITY shall have the right to retain from any payment then due or thereafter to become due an amount which it deems sufficient to (i) satisfy, discharge and/or defend against any such claim or lien or any action which may be brought or judgment which may be recovered thereon, (ii) make good any such nonpayment, damage, failure or default, and (iii) compensate the CITY for and indemnify and hold it harmless against any and all actual or potential losses, liabilities, damages, costs and expenses, including legal fees and disbursements, which may be sustained or incurred in connection therewith. The CITY shall have the right to apply and charge against the CONTRACTOR so much of the amount retained as may be required for the foregoing purposes. If the amount is insufficient therefor, the CONTRACTOR shall be liable for the difference and promptly pay the same to the CITY. No person shall have any right or claim by reason of the CITY's failure or refusal to withhold monies. No interest shall be payable by the CITY on any amounts withheld under this provision.

This provision is not intended to limit or in any way prejudice any other right of the CITY.

No payment (final or otherwise) made under or in connection with this Contract shall be conclusive evidence of the proper performance of the Work or of this Contract, in whole or in part, and no such payment shall be construed to be an acceptance of defective, faulty or improper work or materials nor shall it release the CONTRACTOR from any of its obligations under this Contract; nor shall entrance upon and use of the Site by the CITY constitute acceptance of the Work or any part thereof.

If, in the judgment of the Director, the Project is "substantially," although not entirely, completed, and in this event the withholding of the retained percentage would be an injustice to the CONTRACTOR, the Director may, provided that he receives certification that the essential items in the Contract have been completed in accordance with the terms of the Contract, include in the final account such uncompleted items. The CITY will pay the CONTRACTOR therefor at the item prices in the Contract upon the CONTRACTOR's depositing with the Director a certified check drawn upon a legally incorporated bank or trust company equal to at least double the value of such uncompleted Work. The deposit may be used by the Director to complete the uncompleted portion of the Contract and any unused portion may be returned to the CONTRACTOR upon its satisfactory completion of the uncompleted Work within a specified number of working days after it has been notified to proceed.

#### **ARTICLE 10. PAYMENT TO SUBCONTRACTORS AND SUPPLIERS**

The CONTRACTOR shall, within thirty (30) days after its receipt of payment from the CITY, pay all amounts due any supplier or subcontractor, whether for labor performed or materials furnished hereunder, when such labor or materials have been included in a requisition submitted by the CONTRACTOR and paid by the CITY.

The CONTRACTOR shall include in each of its contracts and subcontracts hereunder a provision requiring each contractor or subcontractor to pay all amounts due any of its own subcontractors, (second tier subcontractors), whether for labor performed or materials furnished, within thirty (30) days after such contractor or subcontractor is paid by the CONTRACTOR an amount that includes payment for labor or materials furnished by such second tier subcontractor.

#### **ARTICLE 11. FINAL PAYMENT**

Final payment and payment of any amounts retained shall not become due until the following conditions precedent have been met: (1) the CITY accepts the Project and approves of all the Work performed hereunder; (2) the CONTRACTOR submits the following documents satisfactory to the CITY (a) certification that all payrolls, bills for materials, labor and equipment, and all other indebtedness connected with the Project, for which the CITY or CITY's property might be liable, have been paid or otherwise satisfied and that there are no claims, obligations, or liens outstanding or unsatisfied for labor, services, materials, equipment or other items performed, furnished or incurred for or in connection with the Work; (b) written consent of surety, if applicable; (c) a certificate confirming that insurance required by the Contract Documents is to remain in force for the required period of time following completion of the Work; (d) a satisfactory maintenance bond posted with the CITY ensuring the Project in compliance with Section 109-13 of the General Conditions for a period of two (2) years from the

date of final acceptance; (e) the CONTRACTOR provides all required certifications that all products and materials comply with applicable specifications and have been properly installed and/or incorporated into the Project including all applicable manufacturers' warranties for same; (f) any other information and documentation establishing payment or satisfaction of all outstanding obligations, to the extent and in such form as may be designated by the CITY, such as, by way of example only, receipts, releases and waivers of liens, including the execution and delivery by the CONTRACTOR, in a form satisfactory to the CITY, of a general release running to and in favor of the CITY; (g) all required Certified Payrolls acceptable to the State of Connecticut Department of Labor; and (h) all Change Orders with sufficient backup/documentation acceptable to the CITY. Should any claim be made or other obligation arise after final payment is made, the CONTRACTOR shall refund to the CITY all expenses paid by the CITY to satisfy, discharge or defend against any such claim, obligation or lien or any action brought or judgment recovered thereon and all costs and expenses, including legal fees and disbursements, incurred in connection therewith.

If the CONTRACTOR cannot, for reasonable cause not of its own fault, furnish any such information or documentation required by the CITY, the CONTRACTOR may furnish a bond satisfactory to the CITY promising to indemnify the CITY against any Project related, outstanding obligation. If any lien remains unsatisfied after final payments are made by the CITY, the CONTRACTOR shall reimburse the CITY for moneys the CITY may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

Final payment being tendered by the CITY shall constitute a waiver of claims by the CITY except those arising from:

- A. unsettled liens;
- B. faulty or defective Work or materials;
- C. failure of the Work or materials to comply with requirements of the Contract Documents; or
- D. terms of special warranties provided by the CONTRACTOR, its suppliers, or its subcontractors, or within the Contract Documents.
- E. Claims arising after the authorization of any payment.

Acceptance by the CONTRACTOR, or anyone claiming by or through it, of any interim or final payment hereunder shall constitute and operate as a release of the CITY from any and all claims of any liability or responsibility to the CONTRACTOR for anything done to, furnished for, relating to or in connection with the Project hereunder, and for any act, neglect, default on the part of the CITY or any of its officers, agents, or employees unless the CONTRACTOR serves a detailed and verified statement of claim upon the CITY prior to the acceptance of such payment. Such statement shall specify the items and details upon which the claim is based and any claim shall be limited to such items. The CONTRACTOR's refusal to accept the final payment as tendered shall constitute a waiver of any right to interest thereon.

## **ARTICLE 12. FINAL ACCEPTANCE OF WORK**

When, in the opinion of the Director, the CONTRACTOR has fully performed all the required Work under this Contract and any Change Orders issued for the Project to the CONTRACTOR, the Director shall recommend the acceptance of the Work so completed. If the recommendation is accepted, the CITY shall thereupon notify the CONTRACTOR in writing of such acceptance, and copies of such acceptance shall be sent to other interested parties. However, the CITY has the right to reject the whole or any portion of the Work should it be found or known to be inconsistent with the terms of the Contract Documents or otherwise improper. All certifications upon which partial payments may have been made, being merely estimates, are subject to correction in the final determination or upon final payment.

## **ARTICLE 13. SAFETY**

The CONTRACTOR agrees that it is responsible for preventing accidents and ensuring safety of all persons engaged in the Project or in the vicinity of the Work including members of the general public. The CONTRACTOR shall comply with all laws, ordinances, rules, regulations, codes, standards, orders, notices and requirements concerning safety applicable to the Work, including, among others, the Federal Occupational Safety and Health Act of 1970, as amended, and all standards, rules, regulations and orders which have been or shall be adopted or issued thereunder, and with all safety standards established during the progress of the Work.

The CONTRACTOR shall at all times provide sufficient, safe and proper facilities for the inspection of the Work by the CITY and its authorized representatives in the field, at shops or at any other place where materials or equipment for the Work are in the course of preparation, manufacture, treatment or storage. The CONTRACTOR shall, immediately upon receiving written notice from the CITY, stop any part of the Work which is deemed unsafe and proceed to take down all portions of the Work and remove all materials whether worked or unworked, that may be noted as unsound, defective or improper or as in any way failing to conform to this Contract or the Plans, Specifications or other Contract Documents. The CONTRACTOR, at its own cost and expense, shall replace the same with proper and satisfactory Work and materials and make good all Work damaged or destroyed by or as a result of such unsound, defective, improper or nonconforming Work or materials or by the taking down, removal or replacement thereof. The CONTRACTOR agrees that it shall not have nor make any claim for costs, damages, delays or extensions of time arising out of such stoppages. Should the CONTRACTOR neglect to take such corrective measures, the CITY may do so at the cost and expense of the CONTRACTOR and may deduct the cost thereof from any payments due or to become due to the CONTRACTOR.

Notwithstanding the foregoing, CONTRACTOR shall at all times be responsible for ensuring the safety of all persons and property at the Site, regardless of any action or failure to act on the part of the CITY. Nothing set forth herein, nor any action or failure to act by the CITY, shall relieve the CONTRACTOR of its obligations and responsibilities with regard to safety and safeguarding of the Site and all persons and property thereon or adjacent thereto.

## **ARTICLE 14. COMPLIANCE WITH GOVERNMENTAL LAW AND REGULATIONS**

The CONTRACTOR shall comply with all applicable laws, codes and regulations governing the Work and the Project, including any and all special requirements of the Contract Documents, including specifically the City of Norwalk Code Chapter 34 and shall require the same of its Trade Contractors and Subcontractors. In addition, all Trade Contractors and Subcontractors working on the Project shall have, throughout the period of the Work, valid State of Connecticut Department of Consumer Protection issued licenses to do business according to the current, applicable regulations.

### **A. Equal Employment Opportunity and Affirmative Action**

The CONTRACTOR for itself and all subcontractors and subconsultants employed in connection with the Project shall agree to abide by the provisions of State of Connecticut Executive Orders Numbers 3 and 17 and Presidential Executive Orders Numbers 11246, 11375 and 11063.

The CONTRACTOR or its subcontractors and subconsultants further agree and warrant that in the performance of this Contract it 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, gender identity or expression, intellectual disability, mental disability or physical disability, including, but not limited to, blindness -unless it is shown by the CONTRACTOR, its subcontractors and/or subconsultants 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. 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. The terms stated in this paragraph shall be defined as set forth in Connecticut General Statutes Section 4a-60(d).

The CONTRACTOR shall not permit any coercion, intimidation, threatening or interference with any individual in the exercise or enjoyment of, or on account of his or her having exercised or enjoyed, or on account of his or her having aided or encouraged any other individual in the exercise or enjoyment of, any right granted or protected by state or federal laws, including without limitation, the Americans with Disabilities Act.

The CONTRACTOR agrees to comply with any request of the City of Norwalk or the Connecticut Commission on Human Rights and Opportunities to provide information and permit access to pertinent books, records and accounts concerning its employment practices and procedures.

For purposes hereof, discrimination in employment shall include, but need not be limited

to, employment advertising, recruitment, layoff, termination, rates of pay or other forms of compensation, conditions or privileges of employment and selection for apprenticeship.

The CONTRACTOR agrees and warrants that it will make good faith efforts to employ minority business enterprises as contractors, subcontractors and suppliers of materials on or related to the Project. For purposes of this paragraph the term “minority business enterprise” shall be defined as set forth in Connecticut General Statutes Section 4a-60(e).

The CONTRACTOR will cause the foregoing provisions to be inserted in all trade contracts and subcontracts for any Work related to the Project or covered by this Contract so that such provisions will be binding upon each trade contractor and subcontractor.

B. In addition, CONTRACTOR shall comply and shall require its trade contractors and subcontractors who perform any Work in connection with the Project to comply with all current, applicable terms of the following, as the same may be amended from time to time:

- The Civil Rights Act of 1964, as amended;
- Federal Labor Standards (29 CFR Parts 3, 5 and 5a);  
Davis Bacon Act;
- Copeland "Anti-Kickback" Act (18 USC 874), as supplemented in the  
Department of Labor Regulations (20 CFR - Part 3);
- Flood Disaster Protection Act (PL 93-291);
- Hatch Act (Title 4 USC Chapter 15);
- Section 504 of the Rehabilitation Act of 1973;
- The Americans With Disabilities Act;

C. Prevailing Wage Requirements

This Contract shall be subject to the Connecticut State Prevailing Wage regulations and requirements and applicable prevailing wage rates- as such may be amended or revised from time to time; and

The CONTRACTOR shall comply, at its own cost, with all such applicable prevailing wage rate regulations, as the same may be revised or amended from time to time. Under no circumstances shall the CONTRACTOR be entitled to any additional payment or any increase in the costs, fees or expenses payable by the CITY hereunder, based on any increase in the cost of compliance with applicable regulations, requirements or any increase in the applicable, prevailing wage rates.

D. State Labor and Employment Regulations

Pursuant to Connecticut General Statutes, Section 31-52a, the following provision shall be incorporated into this Contract and each subcontract hereunder insofar as this Contract or any such subcontract relates to a public works project, including, but not limited to, construction, remodeling or repairing of any public facility or structure (except public buildings covered by Section 31-52), site preparation or improvement, appurtenances or highways, or the preparation

or improvement of any land or waterway on or in which a structure is situated or to be constructed:

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 (6) 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.

Pursuant to Connecticut General Statutes, Section 31-53, the following provision shall be incorporated into this Contract and each subcontract hereunder for work relating to the construction of a public works project where the total cost of all Work to be performed in connection with the Project is Four Hundred Thousand Dollars (\$400,000.00) or more, or for work relating to the remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project if the total cost of all work to be performed in connection with such project is One Hundred Thousand Dollars (\$100,000.00) or more:

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 CITY of Norwalk. Any contractor who is not obligated by Contract 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.

In the event that the CITY determines that any mechanic, laborer or workman employed by the CONTRACTOR or any subcontractor directly on the Site for the Work contemplated hereunder has been or is being paid a rate of wages less than that required to be paid, as stated herein, the CITY may, by written notice to the CONTRACTOR, terminate the CONTRACTOR's right to proceed with the Work hereunder or such part of the Work for which there has been a failure to pay the required wages. In the event of such termination, the CITY may prosecute the Work to completion by contract or otherwise and the CONTRACTOR and its sureties shall be liable to the CITY for all costs incurred thereby in excess of the compensation to be paid under this Contract.

Each employer subject to the provisions of Section 31-53 of the Connecticut General Statutes shall comply with the applicable requirements at its own cost and expense and shall not be entitled to any additional payment or increase in its fees payable hereunder as a result of or due to the cost of compliance.

## **ARTICLE 15. RIGHT TO SUSPEND WORK OR TERMINATE CONTRACT**

A. If, at any time, the CITY determines that the Work hereunder is not being performed according to the Contract or for the best interest of the CITY or should the CONTRACTOR at any time refuse or neglect to supply a sufficient number of skilled workers or materials of the proper quality and quantity; or fail in any respect to prosecute the Work with promptness and diligence; or cause by any act or omission the stoppage, impede, obstruct, hinder or delay of or interference with or damage to the Work of any other contractors or subcontractors on the Project; or fail in the performance of any of the terms and provisions of this Contract or of the other Contract Documents; or should there be filed by or against the CONTRACTOR a petition in bankruptcy or for an arrangement or reorganization; or should the CONTRACTOR become insolvent or be adjudicated a bankrupt or go into liquidation or dissolution, either voluntarily or involuntarily or under a court order, or make a general assignment for the benefit of creditors, or otherwise acknowledge insolvency -- then in any of such events, each of which shall constitute a default hereunder on the CONTRACTOR's part, the CITY shall have the right, in addition to all other rights and remedies provided by this Contract and the other Contract Documents or by law, to temporarily suspend the execution of the Work by the CONTRACTOR and proceed with the Work under its own direction in accordance with the Contract specifications and in such manner as the Director determines to be in the best interests of the CITY or, the CITY may terminate the CONTRACTOR's employment under this Contract while it is in progress, and thereupon proceed with the Project in such manner and by such process as it determines to be in the best interest of the Project.

In any of the foregoing events, the CONTRACTOR shall not be entitled to receive any further payment under this Contract until the Work shall be wholly completed to the satisfaction of the CITY, as evidenced by written acceptance signed by the Director. All costs, expenses, losses and damages, including attorneys' fees, and all other charges incurred by the CITY for the completion of the Work as a result shall be charged to the CONTRACTOR and deducted by the CITY from any monies due or payable or to become due or payable hereunder. Such costs and expenses shall include not only the cost of completing the Work to the satisfaction of the CITY and of performing and furnishing all labor, services, materials, equipment, and other items required therefor, but also all losses, damages, costs and expenses, (including legal fees and disbursements incurred in connection with reprourement, in defending claims arising from such default and in seeking recovery of all such costs and expenses from the CONTRACTOR and/or its surety), and disbursements sustained, incurred or suffered by reason of or resulting from the CONTRACTOR's default. If such costs and expenses and other charges exceed the amount stated herein, such excess amount shall be charged to and promptly paid by the CONTRACTOR to the CITY. In computing the amounts chargeable to the CONTRACTOR, the CITY shall not be held to a basis of the lowest prices for which the completion of the Project or any part thereof might have been accomplished, but the CONTRACTOR shall be liable for all sums actually paid or expenses actually incurred in affecting prompt completion of the Project hereunder. The rights described herein are in addition to any other rights and remedies provided by law.

Should the CITY reactivate the performance of the Project, in whole or in part, within one (1) year from the time of suspension, any fees paid to the CONTRACTOR pursuant to this Contract shall be applied as payment on the fees as set forth in the Contract at the time of reactivation.

Should reactivation occur after a period of suspension exceeding one (1) year but not sooner, the CONTRACTOR and the CITY may renegotiate the Contract based upon current conditions or may unilaterally elect to terminate the Contract.

Termination or suspension under this section shall not give rise to any claim against the CITY for damages or compensation in addition to that provided hereunder.

## **ARTICLE 16. INTERPRETATION OF PLANS/SHOP DRAWINGS**

The Work shall be performed and furnished under the direction and to the satisfaction of the CITY and, where appropriate, its Architect or Engineer. The CONTRACTOR shall be responsible for identifying any ambiguity in, or difference in interpretation of the plans, specifications or other Contract Documents, or between or among any of them, and immediately submitting the issue to the CITY, which will transmit the same to the responsible professional designer (i.e., Professional Engineer or Architect) who shall resolve the same. Any decision in relation thereto shall be final and conclusive upon the parties. The CITY will furnish to the CONTRACTOR any additional information and Plans as may be prepared to further describe the Work and the CONTRACTOR shall conform to and abide by the same.

Notwithstanding the dimensions on the Plans, Specifications and other Contract Documents it shall be the obligation and responsibility of the CONTRACTOR to take such measurements as will insure the proper matching and fitting of the Work covered by this Contract with contiguous work.

The CONTRACTOR shall prepare and submit to the Director such shop drawings as may be necessary to describe completely the details and construction of the Work. Approval of such shop drawings shall not relieve the CONTRACTOR of its obligation to perform the Work according to the Plans, Specifications, the Special Conditions, Addenda and all other Contract Documents, nor of its responsibility for the proper matching and fitting of the Work with contiguous work and the coordination of the Work with other work being performed on the Site, which obligation and responsibility shall continue until completion and acceptance of the Project.

The CONTRACTOR's submission of a shop drawing shall constitute the CONTRACTOR's representation that it has reviewed the submission for accuracy and compliance with all Contract Documents and that, wherever engineering is required to be performed, same has been performed by a qualified and licensed engineer which shall have responsibility therefor.

Should the proper and accurate performance of the Work hereunder depend upon the proper and accurate performance of other work not covered by this Contract, the CONTRACTOR shall carefully examine such other work, determine whether it is in fit, ready and suitable condition for the proper and accurate performance of the Work hereunder, use all means necessary to discover any defects in such other work, and before proceeding with the Work hereunder, report promptly any such improper conditions and defects to the CITY in writing and allow the CITY a reasonable time to have such improper conditions and defects

remedied.

#### **ARTICLE 17. REJECTED WORK AND MATERIAL**

In the event the CITY finds that the materials furnished, the finished Project or the Work performed hereunder by the CONTRACTOR, for any reason, does not conform with the requirements of the Contract Documents including any performance and Project specifications and has resulted or will result in an inferior or unsatisfactory product, the materials or Work shall be removed and replaced or otherwise corrected, to the satisfaction of the CITY, by and at the expense of the CONTRACTOR.

The CONTRACTOR agrees that it shall at once remove from the Site at its own expense all Work or material which may be rejected by the CITY and replace the same with Work or material satisfactory to the CITY. All Work shall be in a first class and satisfactory condition at the time of final acceptance.

#### **ARTICLE 18. LAWS, PERMITS, AND LICENSES**

The CONTRACTOR shall observe all Federal, State, and local laws and regulations and shall procure all necessary licenses and permits, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the Work hereunder without any additional charge or expense to the CITY. CONTRACTOR shall be responsible for and shall correct, at its sole cost and expense, any violation thereof resulting from or in connection with the performance or failure to perform the Work.

The CONTRACTOR shall at any time upon demand furnish such proof as the CITY may require showing such compliance and the correction of such violations. The CONTRACTOR agrees to save harmless and indemnify the CITY, its officers and employees, from and against any and all loss, injury, claims, actions, proceedings, liability, damages, fines, penalties, costs and expenses, including legal fees and disbursements, caused or occasioned directly or indirectly by the CONTRACTOR's failure to comply with any of said laws, ordinances, rules, regulations, standards, orders, notices or requirements or to correct such violations therefor in connection with the performance of Work.

#### **ARTICLE 19. EQUAL EMPLOYMENT OPPORTUNITY**

The CONTRACTOR shall agree to provide the Commission on Human Rights and Opportunities with such information requested by the Commission concerning its employment practices and procedures. The CONTRACTOR will cause the foregoing provisions to be inserted in all subcontracts for any of the Work covered by this Contract so that such provisions will be binding upon each subcontractor.

#### **ARTICLE 20. SUCCESSORS AND ASSIGNS**

This Contract shall bind the successors, assigns and representatives of the parties hereto. Notwithstanding the foregoing, this Contract may not be assigned by the CONTRACTOR nor

shall the CONTRACTOR's rights, title or interest herein or hereto be assigned, transferred, conveyed, sublet, or disposed of without the previous written consent of the Director.

## **ARTICLE 21. RESPONSIBILITY FOR THE SITE**

At all times throughout the performance of this Contract and until final acceptance of the Work hereunder, the CONTRACTOR shall be in control of and responsible for the Site and for any loss or damage to the Work to be performed and furnished under this Contract, however caused. This shall include responsibility for loss of or damage to materials, tools, equipment, appliances or other personal property owned, rented or used by the CONTRACTOR or anyone employed by it in the performance of the Work, however caused. Accordingly, the CONTRACTOR shall, at its own cost and expense, (1) keep the Site free at all times from all waste materials, packaging materials and other rubbish accumulated in connection with the execution of its Work, (2) clean and remove from its own Work and from all contiguous work of others any soiling, staining, mortar, plaster, concrete or dirt caused by the execution of its Work and make good all defects resulting therefrom, (3) at the completion of its Work in each area, perform such cleaning as may be required to leave the area "broom clean," and (4) at the entire completion of its Work, remove all of its tools, equipment, scaffolds, shanties and surplus materials. Should the CONTRACTOR fail to perform any of the foregoing to the CITY's satisfaction, the CITY shall have the right to perform and complete such Work itself or through others and charge the cost thereof to the CONTRACTOR.

## **ARTICLE 22. INSURANCE**

The CONTRACTOR agrees to obtain at its own cost and expense all insurance required by the attached Insurance Rider and to keep the same in continuous effect for a period of two (2) years following the date on which the Director indicates the termination of the CONTRACTOR's responsibilities hereunder. Before commencing the Project, the CONTRACTOR shall furnish the CITY's Corporation Counsel a certificate of insurance, and shall thereafter provide renewal certificates, as appropriate, evidencing such coverage written by a company or companies acceptable to the CITY. Each insurance certificate shall be endorsed to name the City of Norwalk as an additional insured party and shall provide that the insurance company providing coverage shall notify the CITY by certified mail at least thirty (30) days prior to the effective termination of or any change in the policy or policies coverage. No change in the coverage provided hereunder shall be made without the prior written approval of the Director.

**Waiver of Subrogation: Contractor hereby waives the right to subrogate or seek recovery from City of Norwalk and its insurance carriers.**

## **ARTICLE 23. INDEMNIFICATION**

The CONTRACTOR expressly agrees to at all times indemnify, defend and save harmless the City of Norwalk and its respective officers, agents and employees, on account of any and all demands; claims; damages; losses; litigation; financial costs and expenses, including counsel's fees; and compensation arising out of personal injuries (including death), any damage to property, real or personal, and any other loss, expense or grievement directly or indirectly

arising out of, related to or connected with the Project and the Work to be performed hereunder by the CONTRACTOR, its employees, agents, subcontractors, material suppliers, or anyone directly or indirectly employed by any of them. The CONTRACTOR shall and does hereby assume and agree to pay for the defense of all such claims, demands, suits, proceedings and litigation. The provisions of this paragraph shall survive the expiration or early termination of this Contract; shall be separate and independent of any other provision or requirement of this Contract; and shall not be limited by reason of any insurance coverage provided hereunder.

The CITY may withhold from any payment due or to become due to the CONTRACTOR an amount sufficient in its judgment to protect and indemnify the CITY, its officers, agents, servants and employees from and against any and all such claims and liabilities described above.

Nothing in this provision, or elsewhere in this Contract, shall be deemed to relieve the CONTRACTOR of its duty to defend the CITY or any Indemnified Party, as specified in this Contract, pending a determination of the respective liabilities of the CONTRACTOR, the CITY, or any Indemnified Party, by legal proceeding or Contract.

In furtherance to but not in limitation of the indemnity provisions in this Contract, CONTRACTOR hereby expressly and specifically agrees that its obligation to indemnify, defend and save harmless as provided in this Contract shall not in any way be affected or diminished by any statutory or constitutional immunity it enjoys from suits by its own employees or from limitations of liability or recovery under workers' compensation laws.

#### **ARTICLE 24. SUBCONTRACTING AND ASSIGNMENTS**

The CONTRACTOR shall not subcontract any portion of the Work to be performed hereunder unless the prior written consent of the Director is given for both the Work to be subcontracted and the subcontractor to perform the same.

In the event that the CITY approves of the hiring of subcontractors or subconsultants to pursue the Project, the CONTRACTOR agrees to cooperate as fully as possible with the CITY and any and all such subcontractors and subconsultants in the interests of the Project. The CONTRACTOR shall be as fully responsible to the CITY for the acts and omissions of its subcontractors and subconsultants as it is for the acts and omissions of its direct employees and shall require any subcontractor or subconsultant approved by the CITY to agree in a written contract to observe and be bound by all obligations and conditions of this Contract to which CONTRACTOR is bound hereby including the requirements regarding insurance and indemnification.

Each subcontract Contract shall preserve and protect the rights of the CITY and the Project Architect/Design Engineer, under the Contract Documents with respect to the Work to be performed by the subcontractor so that the subcontracting thereof will not prejudice such rights, and shall allow the subcontractor, unless specifically provided otherwise, the benefits of all rights, remedies and redress against the CONTRACTOR that the CONTRACTOR has against the CITY pursuant to the Contract Documents.

Nor shall CONTRACTOR assign, sell, transfer, delegate or encumber any rights, duties or obligations arising under this Contract including, but not limited to, any right to receive payments hereunder, without the prior written consent of the CITY in its sole discretion. The giving of any such consent to a particular assignment shall not dispense with the necessity of such consent to any further or other assignments. In the event CONTRACTOR assigns, sells, encumbers or otherwise transfers its rights to any monies due or to become due under this Contract as security for any loan, financing or other indebtedness (herein "Assignment"), notification to the CITY of such Assignment must be sent by certified mail, return receipt requested, and the Assignment shall not be effective as against the CITY until the CITY provides its written consent to such Assignment. CONTRACTOR agrees that any such Assignment shall not relieve the CONTRACTOR of any of its Contracts, duties, responsibilities or obligations under this Contract and the other Contract Documents and shall not create a contractual relationship or a third party beneficiary relationship of any kind between the CITY and assignee or transferee. CONTRACTOR further agrees that all of the CITY's defenses and claims arising out of this Contract with respect to any Assignment are reserved unless expressly waived in writing by a duly authorized corporate officer. CONTRACTOR hereby agrees to indemnify, defend and hold harmless the CITY from and against any and all loss, cost, expense or damages that the CITY has or may sustain or incur in connection with such Assignment.

## **ARTICLE 25. WARRANTY**

The CONTRACTOR hereby warrants to the CITY that all of the Work shall be in conformance with the Plans, Specifications, and all Contract Documents and shall be of good quality and free from any faults and defects.

The CONTRACTOR shall remove, replace and/or repair at its own expense and at the convenience of the CITY any portion of the Work, materials or equipment which, at any time up until two (2) years from the date of final acceptance of the Work hereunder, the Architect or the CITY shall condemn as unsound, defective or improper or as in any way failing to conform to this Contract or the plans, specifications or other Contract Documents, and the CONTRACTOR, at its own cost and expense, shall replace the same with proper and satisfactory Work, materials and/or equipment.

Without limiting the generality of the foregoing, the CONTRACTOR warrants to the CITY that all materials and equipment furnished under this Contract will be of first class quality and new, unless otherwise required or permitted by the other Contract Documents; that the Work performed and materials used pursuant to this Contract will be free from any defects and that the Work will conform with the requirements of the Contract Documents. Work not conforming to such requirements, not of the prescribed quality, or not capable of meeting the CITY's performance specifications, including substitutions not properly approved and authorized, shall be considered defective and must be removed and replaced by CONTRACTOR at its own cost and expense. All warranties contained in this Contract and in the Contract Documents shall be in addition to and not in limitation of all other warranties or remedies required and/or arising pursuant to applicable law.

## **ARTICLE 26. NOTICE OF CLAIMS**

Claims by either party must be in writing and sent within thirty (30) days following the occurrence of an event giving rise to the claim or within thirty (30) days after the claimant first acquires knowledge of or information concerning the claim, whichever occurs later to the extent that such knowledge or information could not have been reasonably obtained earlier. Claims must be made in writing and sent to the other party at the address(es) listed herein and shall describe the nature of the claim, the events or circumstances that gave rise to the claim with reasonable detail, and the amount thereof to the best of the claimant's information.

## **ARTICLE 27. LIQUIDATED DAMAGES**

It is understood by the parties that timely completion of the Project is essential. Failure of the CONTRACTOR to complete the Project by the date stated herein will result in the CITY and the public incurring damages, additional costs and inconveniences that would be impossible or extremely difficult to accurately quantify at the time. Therefore, the parties agree that, if the CONTRACTOR fails to satisfactorily complete the Project hereunder within the time specified or within any extension of time that may have been allowed, there shall be deducted from any monies due or that may become due the CONTRACTOR, the sum of \_\_\_\_\_ **HUNDRED DOLLARS** (\$\_\_\_\_\_) for each and every calendar day, including Saturdays and legal holidays, that the Project remains incomplete in accordance with Article 5 of this Contract. This sum shall not be imposed as a penalty, but as liquidated damages due the CITY from the CONTRACTOR by reason of the damages incurred, inconvenience and additional costs and expenses to the public together with other problems suffered as a result of any such delay thereby occasioned.

## **ARTICLE 28. GENERAL PROVISIONS**

A. This Contract shall be deemed binding only to the extent that sufficient funds are available and appropriated to the CITY for payment in accordance with the terms hereof and no liability on account of this Contract shall be incurred by the CITY beyond such moneys as are properly made available and appropriated for the Project.

B. The relationship of the CONTRACTOR to the CITY is that of an independent CONTRACTOR. The CONTRACTOR covenants and agrees that it will conduct itself consistent with such status; that it will neither hold itself nor any of its employees or agents out as nor claim to be an officer, agent, or employee of the CITY by reason hereof; and that it will not, neither for itself nor on behalf of any of its employees, agents, or subcontractors, by reason hereof, make any claim, demand or application to or for any right or privilege applicable to an officer or employee of the CITY, including, but not limited to, workers' compensation coverage, unemployment insurance benefits, social security coverage, or retirement membership or credit.

C. The CONTRACTOR hereby certifies that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal or state department or agency. Should the CONTRACTOR be unable to certify the above statement, it shall attach a certified statement explaining such to this Contract. The CONTRACTOR further agrees to include the foregoing



**To the Contractor:**

«VendorAuthorizer», «VendorAuthorizerTitle»  
«VendorName»  
«VendorAddress1»  
«VendorCity», «VendorState» «VendorZip»

K. The CITY of Norwalk's hiring practices strive to comply with all applicable federal regulations regarding employment eligibility and employment practices. Thus, all individuals and entities seeking to do work for the CITY are expected to comply with all applicable laws, governmental requirements and regulations, including the regulations of the United States Department of Justice pertaining to employment eligibility and employment practices. The CITY reserves the right at its discretion, but does not assume the obligation to require proof of valid citizenship or, in the alternative, proof of a valid green card for each person employed in the performance of work or services for the City of Norwalk. By reserving this right the CITY does not assume any obligation or responsibility to enforce or ensure compliance with the applicable laws and/or regulations.

L. The Contract and its attached exhibits include applicable State of Connecticut and federal governmental requirements that the Contractor must comply with and must require its subcontractors and consultants to comply with. The Contractor hereby acknowledges that such requirements are subject to revision by the state or federal governmental authorities from time to time during the Contract term and that, by entering into a Contract with the City, the Contractor agrees to be subject to such revised requirements and changes in law or regulations as in effect at any given time and, as a result thereof, shall perform any additional obligations with respect to the particular Project, throughout the term of this Contract. The Contractor shall observe all federal, state and local laws, Ordinances, policies, practices and regulations. In addition, the Contractor agrees to promptly procure all necessary approvals, licenses and permits, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the Work.

M. In case of a conflict between the provisions of the Contract any state and federal requirements, or any specification, guide, manual, policy, or requirement of the Contract Documents, or other publication referenced herein, the provision containing additional details or more stringent requirements will control. In case of the Contractor's inability to determine the controlling provision or where it is not possible to comply with the requirements of multiple provisions, the City shall have the right to determine, in its sole discretion, which provision applies. The Contractor shall promptly request in writing the City's determination upon the Contractor's inability to determine the controlling provision or upon becoming aware of any such conflict. This provision shall survive the expiration or termination of the Contract.

N. With respect to any referenced guide, manual, policy, document, or other publication noted in the Contract and noted to be subject to revision throughout the term of the Contract, the Contractor agrees to comply with the version of the document or publication that is in effect on the date effective of the Contract.

O. The Contractor shall cooperate fully with the City and permit the City, or other

state or federal authority, as applicable, to review, at any time during the Work, all activities performed by the Contractor with respect to any Work under this Contract. Upon request of the City, the Contractor shall timely furnish all documents related to the Work so that the City may evaluate the Contractor's activities with respect to the Project, including, but not limited to, its performance of the Work pursuant to this Contract, and applicable law.

P. The CONTRACTOR hereby represents to the CITY as follows:

(i) That it is a legally existing corporation under the laws of its state of incorporation and has not previously filed, nor is presently contemplating filing, nor has received notice of a petition of, nor contemplates receiving notice of a petition of, bankruptcy, liquidation, receivership or any other action for the protection of creditors or debtors;

ii) that it has the financial resources to perform this Contract and that it is not the subject of any litigation or action, pending or threatened, regarding this Contract or which, if resulting in an adverse decision, would affect its ability to perform its duties under this Contract;

(iii) that it has, and has exercised, the required corporate power and authority and has complied with all applicable legal requirements necessary to adopt, execute and deliver this Contract and to assume the responsibilities and obligations created hereunder;

(iv) that this Contract is duly executed and delivered by an authorized corporate officer, in accordance with such officer's powers to bind the CONTRACTOR hereunder, and constitutes a valid and binding obligation enforceable in accordance with its terms, conditions and provisions; and

(v) that it is in compliance with all applicable regulations and laws governing employment practices.

**IN WITNESS WHEREOF**, this Contract has been executed in four (4) counterparts by the CITY, acting by and through its Mayor, who has caused the seal of his office to be affixed hereto, and the CONTRACTOR has duly executed this Contract on the day and year first above written.

Signed, Sealed and Delivered  
in the Presence of:

**CITY OF NORWALK**

\_\_\_\_\_  
Witness

By: \_\_\_\_\_

\_\_\_\_\_  
Witness

«ContractAuthorizer»  
Its «ContractAuthorizerTitle»  
Duly Authorized

Date Signed: \_\_\_\_\_

Signed, Sealed and Delivered  
in the Presence of:

«VendorName»

\_\_\_\_\_  
Witness

By: \_\_\_\_\_

\_\_\_\_\_  
Witness

«VendorAuthorizer»

Its «VendorAuthorizerTitle»

Duly Authorized

(Affix corporate seal of  
contractor if a corporation)

Date Signed: \_\_\_\_\_

APPROVED AS TO FORM:  
OFFICE OF CORPORATION COUNSEL

By: \_\_\_\_\_

APPROVED AS TO  
AVAILABILITY OF FUNDS:

By: \_\_\_\_\_  
Comptroller

Date: \_\_\_\_\_

## INSURANCE RIDER

The Contractor shall provide and maintain insurance coverage related to its services in connection with the Project in compliance with the following requirements.

The insurance required shall be written for not less than the scope and limits of insurance specified hereunder, or required by applicable federal, state and/or municipal law, regulation or requirement, whichever coverage requirement is greater. It is agreed and understood that the scope and limits of insurance specified hereunder are minimum requirements and shall in no way limit or preclude the City from requiring additional limits and coverage to be provided under the Contractor's policies.

### Minimum Scope and Limits of Insurance:

**Workers' Compensation Insurance:** With respect to all operations the Contractor performs, it shall carry Workers' Compensation Insurance in accordance with the requirements of the laws of the State of Connecticut.

**Commercial General Liability:** With respect to all operations the Contractor performs it shall carry Commercial General Liability insurance providing for a total limit of One Million Dollars (\$1,000,000) coverage per Occurrence for all damages arising out of bodily injury, personal injury, property damage, products/completed operations, and contractual liability coverage for the indemnification obligations arising under this Agreement. The Annual Aggregate limit shall not be less than Two Million Dollars (\$2,000,000).

**Automobile Liability:** With respect to each owned, non-owned, or hired vehicles the Contractor shall carry Automobile Liability insurance providing One Million Dollars (\$1,000,000) coverage per accident for bodily injury and property damage.

**Umbrella/Excess Liability:** With respect to all operations the Contractor performs, the insurance limits required can be provided with a combination of Umbrella or Excess Liability insurance that would "follow form" of the underlying required terms and conditions.

**Environmental Liability:** If applicable, based on the Contractor's Scope of Work, the Contractor is required to provide environmental and remediation (Contractor's Pollution Liability –CPL-) insurance in the amount of Five Million Dollars (\$5,000,000) per claim limit and Five Million Dollars (\$5,000,000) aggregate limit per occurrence. If the insurance is provided with a combination of excess pollution liability policies, the policy shall be written on a follow form coverage wording to its underlying Schedule of insurance.

**Errors and Omissions/Professional Liability:** With respect to any damage caused by an error, omission or any negligent or wrongful act of the Contractor or any subcontractor or subconsultant in connection with any professional services performed under this Agreement the Contractor shall carry One Million Dollars (\$1,000,000) coverage per claim.

**"Tail" Coverage:** If any of the required liability insurance is on a "claims made" basis, "tail" coverage will be required at the completion of the Project for a duration of twenty-four (24) months, or the maximum time period reasonably available in the marketplace. Contractor shall furnish certification of "tail" coverage as described or continuous "claims made" liability coverage for twenty-four (24) months following Project completion. Continuous "claims made" coverage will be acceptable in lieu of "tail" coverage, provided its retroactive date is on or before the effective date of this Agreement. If continuous "claims made" coverage is used, Contractor shall be required to keep the coverage in effect for a duration of not less than twenty-four (24) months from the date of final completion of the Project.

**Acceptability of Insurers:** The Contractor's policies shall be written by insurance companies licensed to do business in the State of Connecticut, with an AM Best rating of A-VII, or otherwise acceptable to the City.

**Subcontractors:** The Contractor shall require all subcontractors to provide the same "minimum scope and limits of insurance" as required herein, with the exception of Errors and Omissions/Professional Liability insurance, unless Errors and Omissions/Professional Liability insurance is applicable to the Work performed by the subcontractors. All Certificates of Insurance shall be provided to the City's Corporation Counsel as required herein.

**Aggregate Limits:** Any aggregate limits must be declared to and be approved by the City. It is agreed that the Contractor shall notify the City whenever fifty percent (50%) of the aggregate limits are eroded during the required coverage period. If the aggregate limit is eroded for the full limit, the Contractor agrees to reinstate or purchase additional limits to meet the minimum limit requirements stated herein. Any premium for such shall be paid by the Contractor.

**Deductibles and Self-Insured Retentions:** Any deductible or self-insured retention must be declared to and approved by the City. All deductibles or self-insured retentions are the sole responsibility of the Contractor to pay and/or to indemnify.

**Notice of Cancellation or Nonrenewal:** Each insurance policy required shall be endorsed to state that coverage shall not be suspended, voided, or cancelled in coverage or in limits before the expiration date except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the City. Notwithstanding this requirement, the Contractor is primarily responsible for providing such written notice to the CITY thirty (30) days prior to any policy change or cancellation that would result in a change of the amount or type of coverage provided. In the event of any such change the Contractor shall provide comparable substitute coverage so that there is no lapse in applicable coverage or reduction in the amount of coverage available to the CITY related to the Contractor's services.

**Waiver of Governmental Immunity:** Unless requested otherwise by the City, the Contractor and its insurer shall waive governmental immunity as defense and shall not use the defense of governmental immunity in the adjustment of claims or in the defense of any suit brought against the City.

**Additional Insured:** The liability insurance coverage, except Errors and Omissions,

Professional Liability, or Workers' Compensation, if included, required for the performance of the Project shall include the City of Norwalk as an Additional Insured with respect to the Contractor's activities to be performed under this Agreement. Coverage shall be primary and non-contributory with any other insurance and self-insurance.

**Waiver of Subrogation:** Contractor hereby waives the right to subrogate or seek recovery from City of Norwalk and its insurance carriers.

**Certificate of Insurance:** As evidence of the insurance coverage required by this Agreement, the Contractor shall furnish Certificate(s) of Insurance to Corporation Counsel's Office prior to the Contractor's commencement of services under this Agreement. The Certificate(s) will specify all parties who are endorsed on the policy as Additional Insureds (or Loss Payees). The Certificates and endorsements for each insurance policy are to be signed by a person authorized by the insurer to bind coverage on its behalf. Renewals of expiring Certificates shall be filed thirty (30) days prior to expiration. The City reserves the right to require complete, certified copies of all required policies at any time.

All insurance documents required should be mailed to the City of Norwalk Corporation Counsel, 125 East Avenue, Room 237, P.O. Box 5125, Norwalk, Connecticut 06856-5125.

**Waiver of requirements:** The Corporation Counsel may vary these insurance requirements at Corporation Counsel's sole discretion if Corporation Counsel determines that the City's interests will be adequately protected by the provision of different types or other amounts of coverage.

## 1.4 INSURANCE RIDER

The Contractor shall provide and maintain insurance coverage related to its services in connection with the Project in compliance with the following requirements.

The insurance required shall be written for not less than the scope and limits of insurance specified hereunder, or required by applicable federal, state and/or municipal law, regulation or requirement, whichever coverage requirement is greater. It is agreed and understood that the scope and limits of insurance specified hereunder are minimum requirements and shall in no way limit or preclude the City from requiring additional limits and coverage to be provided under the Contractor's policies.

### Minimum Scope and Limits of Insurance:

**Workers' Compensation Insurance:** With respect to all operations the Contractor performs, it shall carry Workers' Compensation Insurance in accordance with the requirements of the laws of the State of Connecticut.

**Commercial General Liability:** With respect to all operations the Contractor performs it shall carry Commercial General Liability insurance providing for a total limit of One Million Dollars (\$1,000,000) coverage per Occurrence for all damages arising out of bodily injury, personal injury, property damage, products/completed operations, and contractual liability coverage for the indemnification obligations arising under this Agreement. The Annual Aggregate limit shall not be less than Two Million Dollars (\$2,000,000).

**Automobile Liability:** With respect to each owned, non-owned, or hired vehicles the Contractor shall carry Automobile Liability insurance providing One Million Dollars (\$1,000,000) coverage per accident for bodily injury and property damage.

**Umbrella/Excess Liability:** With respect to all operations the Contractor performs, Contractor shall provide Umbrella/Excess Liability insurance with limits of \$1,000,000 per Occurrence and \$1,000,000 Aggregate. The insurance limits required can be provided with a combination of Umbrella or Excess Liability insurance that would "follow form" of the underlying required terms and conditions.

**"Tail" Coverage:** If any of the required liability insurance is on a "claims made" basis, "tail" coverage will be required at the completion of the Project for a duration of twenty-four (24) months, or the maximum time period reasonably available in the marketplace. Contractor shall furnish certification of "tail" coverage as described or continuous "claims made" liability coverage for twenty-four (24) months following Project completion. Continuous "claims made" coverage will be acceptable in lieu of "tail" coverage, provided its retroactive date is on or before the effective date of this Agreement. If continuous "claims made" coverage is used, Contractor shall be required to keep the coverage in effect for a duration of not less than twenty-four (24) months from the date of final completion of the Project.

**Acceptability of Insurers:** The Contractor's policies shall be written by insurance companies licensed to do business in the State of Connecticut, with an AM Best rating of A-VII, or otherwise acceptable to the City.

**Subcontractors:** The Contractor shall require all subcontractors to provide the same "minimum scope and limits of insurance" as required herein, with the exception of Errors and Omissions/Professional Liability insurance, unless Errors and Omissions/Professional Liability insurance is applicable to the Work performed by the subcontractors. All Certificates of Insurance shall be provided to the City's Corporation Counsel as required herein.

**Aggregate Limits:** Any aggregate limits must be declared to and be approved by the City. It is agreed that the Contractor shall notify the City whenever fifty percent (50%) of the aggregate limits are eroded during the required coverage period. If the aggregate limit is eroded for the full limit, the Contractor agrees to reinstate or purchase additional limits to meet the minimum limit requirements stated herein. Any premium for such shall be paid by the Contractor.

**Deductibles and Self-Insured Retentions:** Any deductible or self-insured retention must be declared to and approved by the City. All deductibles or self-insured retentions are the sole responsibility of the Contractor to pay and/or to indemnify.

**Notice of Cancellation or Nonrenewal:** Each insurance policy required shall be endorsed to state that coverage shall not be suspended, voided, or cancelled in coverage or in limits before the expiration date except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the City. Notwithstanding this requirement, the Contractor is primarily responsible for providing such written notice to the CITY thirty (30) days prior to any policy change or cancellation that would result in a change of the amount or type of coverage provided. In the event of any such change the Contractor shall provide comparable substitute coverage so that there is no lapse in applicable coverage or reduction in the amount of coverage available to the CITY related to the Contractor's services.

**Waiver of Governmental Immunity:** Unless requested otherwise by the City, the Contractor and its insurer shall waive governmental immunity as defense and shall not use the defense of governmental immunity in the adjustment of claims or in the defense of any suit brought against the City.

**Additional Insured:** The liability insurance coverage, except Errors and Omissions, Professional Liability, or Workers' Compensation, if included, required for the performance of the Project shall include the City of Norwalk as an Additional Insured with respect to the Contractor's activities to be performed under this Agreement. Coverage shall be primary and non-contributory with any other insurance and self-insurance.

**Waiver of Subrogation:** Contractor hereby waives the right to subrogate or seek recovery from City of Norwalk and its insurance carriers.

**Certificate of Insurance:** As evidence of the insurance coverage required by this Agreement, the Contractor shall furnish Certificate(s) of Insurance to Corporation Counsel's Office prior to the Contractor's commencement of services under this Agreement. The Certificate(s) will specify all parties who are endorsed on the policy as Additional Insureds (or Loss Payees). The Certificates and endorsements for each insurance policy are to be signed by a person authorized by the insurer to bind coverage on its behalf. Renewals of expiring Certificates shall be filed thirty (30) days prior to expiration. The City reserves the right to require complete, certified copies of all required policies at any time.

All insurance documents required should be mailed to the City of Norwalk Corporation Counsel, 125 East Avenue, Room 237, P.O. Box 5125, Norwalk, Connecticut 06856-5125.

**Waiver of requirements:** The Corporation Counsel may vary these insurance requirements at Corporation Counsel's sole discretion if Corporation Counsel determines that the City's interests will be adequately protected by the provision of different types or other amounts of coverage.

END OF SECTION

**SECTION 2**  
**PROJECT SPECIFICATIONS/SCOPE OF WORK**

**Note:** For more information on the project please see the **PROJECT MANUAL, TECHNICAL SPECS, SIGNAGE AND DRAWINGS** included at the end of the bid package.

**SECTION 3 - GENERAL BIDDING INFORMATION  
FOR  
CONSTRUCTION**

Rev. 08/08/2013, Express Request Doc. #1006

**3.1 GENERAL:**

A. The City reserves the right to require the successful firm to execute a contract in a format supplied by Corporation Counsel. Award of all or a portion of the requirement may be subject to approval by the Norwalk Common Council.

B. The City of Norwalk General Conditions For Construction and the Contract documents prepared by the City shall govern as the terms and conditions for this project.

1. A copy of the City of Norwalk General Conditions for Construction (04082008) is available upon request. A copy of this document is located on the City's website: [www.norwalkct.org](http://www.norwalkct.org) Document number 1008. <http://www.norwalkct.org/DocumentCenter/Home/View/866>

C. A certified or cashiers check or bid bond in the amount indicated in the **Invitation to Bid** must accompany your response. The certified or cashiers checks will be returned to all unsuccessful candidates upon the awarding of the contract. If your quotation is not accompanied by a bid bond or check at the bid opening the bid will be automatically rejected.

D. The successful firm will be required to furnish a performance bond and labor and materials bond acceptable to Corporation Counsel, each for the full contract amount, prior to execution of a contract and/or performance under Purchase Orders. Indicate the cost for these bonds, included in the lump sum bid(s) on the response form. **Note:** The requirement for a maintenance bond is not contingent on the dollar threshold for other bonds indicated in the invitation to bid. Please refer to Sections 3.17 and 109-15 for maintenance bond requirements.

For 3.1, C & D:

Surety Companies must be listed on the current Federal Register, licensed in the State of Connecticut and have an underwriting limitation exceeding the value of the project with no more than 5% of capitol in surplus tied to any one risk.

Banks must have a branch office in Connecticut with insurance provided by the FDIC.

E. The award of any contract is subject to the following conditions and contingencies:

- (1). The approval of such governmental agencies as may be required by law.
- (2). The appropriation of adequate funds by the proper agencies.
- (3). If the bidder is a corporation or other legal business entity, it must have a current license to do business in the State of Connecticut that is on file with the Connecticut Secretary of State's office, or it must be organized under the laws of the State of Connecticut and current in terms of its required filings.

Note: If you are an out-of state business and the performance of your contract with the City requires that tangible personal property will be used or consumed in this state, you must comply with Connecticut General Statutes 12-430-7 a copy of which can be found at <http://www.ct.gov/drs/cwp/view.asp?A=1514&Q=501308>

Questions concerning this statute should be addressed to the Commissioner of Revenue Services for the State of Connecticut, Department of Revenue Services, 92 Farmington Avenue, Hartford CT 06115.

Registration by out-of state corporations with the Connecticut Secretary of State, 30 Trinity Street, Hartford CT 06106, telephone 860-509-6002, is required by law as a condition for doing business in the State of Connecticut.

F. Notice is hereby given to all bidders that as a municipality the City of Norwalk is subject to and bound to comply with the terms of the Freedom of Information Act. Consequently, please be informed that under the terms of the Act some or all of your submissions, including attachments, may be subject to disclosure to the public or press upon request. The FOI Act recognizes that certain documents are exempt from disclosure or may be held confidentially. However, these exemptions are considered exceptions to the general rule favoring disclosure and are generally narrowly construed. You should consult with legal counsel before making your submission if you have any questions about what submitted document may be disclosed. You are hereby requested to submit those documents to which an exemption is claimed under seal along with those non-exempt documents. These sealed documents shall initially be held in confidence but may be released to the extent required or allowed by law.

G. When work is required in which no specific payment item is listed in the Proposal Form, the cost of such work will be included in the unit prices bid.

### **3.2 QUALIFICATIONS OF CANDIDATES:**

The City may make such investigations as deemed necessary to determine the ability of the candidate to perform the work and the degree to which any candidate meets the criteria for Award listed herein.

### **3.3 RECYCLING POLICY:**

The City of Norwalk is committed to protecting the environment and managing solid waste. Where possible and practical the City will procure recycled and/or recyclable products. The City will consider alternate proposals which maximize the use of products which are produced from post consumer waste, which reduce waste or consumption, or that offer products with a salvage value.

The City requests that it's vendors eliminate all non-essential packaging that may be used in the delivery process.

### **3.4 OBLIGATIONS OF THE CANDIDATE:**

At the time of the opening of proposals, each candidate will be presumed to be thoroughly familiar with the specifications, the various sites, the City's requirements, and the objectives for each element of the project item or service.

### **3.5 LABOR RATES:**

See sections 102.18 and 107.12 of the City of Norwalk General Conditions for Construction. NOTE: Prevailing Wage Rates apply when (1) the total cost of work performed on **new construction is \$400,000** or more; or (2) the total cost of all work in connection with an alteration, repair, remodeling, refinishing, refurbishing or **rehabilitation is \$100,000** or more.

### **3.6 SITE INSPECTION:**

Information contained in these documents is provided with the understanding as outlined in section 102-06 of General Conditions for Construction. Candidates are required to conduct a thorough inspection or study of existing conditions/equipment.

### **3.7 INSURANCE REQUIREMENTS:**

A certificate of insurance must be presented to the Corporation Counsel at the time of award and must name the City as an additional insured on the face of the document. In addition, please list the name and address of your insurance agent as part of the returned bid proposal. The City's Standard insurance requirements, if not listed within the bid documents are available on the Purchasing Department's website within the Terms and Conditions section, refer to document number 1007.

All policies must be written on a "per occurrence" basis. "Claims Made" Policies are not acceptable. The Contractor is responsible for the cost of maintaining such insurance throughout the duration of the project.

### **3.8 LIQUIDATED DAMAGES:**

Liquidated damages as defined in Article 20 of the Norwalk General Conditions for Construction will be \$100.00 per day.

### **3.9 RETAINAGE:**

The City will retain 5% of the total project cost until such time as a guarantee bond, satisfactory to the Corporation Council's office is posted with the City (sect. 109-15, Gen. Cond. for Construction) or other terms for retainage are specifically stated in the contract for this project.

### **3.10 ACCEPTABLE BRANDS:**

The attached specifications are not intended to limit consideration to the particular service organization or manufacturer from which they were developed. References to brand names or numbers are to be interpreted as establishing a standard of quality and is not to be construed as limiting competition. Brand names used within these specifications shall be presumed to be followed by the words "or approved equal".

Burden of proving a product and/or material as equal to a specific product and/or material by brand name is the responsibility of the contractor.

Final determination as to what is an "or equal" product will be made by the Purchasing Agent in

conjunction with other City staff. The City will award on the basis of the criteria stated herein, and reserves the right to waive or require compliance with any element of the specifications.

### **3.11 HOW TO RESPOND:**

Supply the required information on the response and prequalification form. An authorized agent of your organization must sign and date the response form and any supplementary proposal document.

If a prospective bidder needs clarification or interpretation of any items in the General Conditions, and/or Specifications, he/she must request such in writing, addressed to the Director of Purchasing at least fourteen calendar days prior to the bid opening. Responses shall also be in writing, and shall be distributed to all bidders. The City of Norwalk, or its agents shall not be responsible for any oral instructions or interpretations given to a bidder.

Return the response forms, bond (if required), and any informational literature (**six copies**) to the *City of Norwalk Purchasing Department, Room 103, 125 East Avenue, P.O.Box 5125, Norwalk, Ct. 06856-5125* using the return bid envelope (if provided in your bid package). Be sure to indicate the request number, name, and opening time on the face of the envelope otherwise we will not be able to insure the confidentiality of the bid.

Late bids – bid submissions delivered or received later than the date and time specified on the invitation to bid will not be considered and will be returned unopened. The bidder shall assume full responsibility for the timely delivery of their submission at the location designated for the receipt of the submissions.

Failure to follow these guidelines may be just cause for rejection of the bid.

### **3.12 CRITERIA FOR AWARD:**

This Request for proposal/bid does not necessarily contemplate an award based solely on price. Rather, the City reserves its rights to accept or reject any and all proposals / bids, or any part thereof, to waive defects in the same, or accept any proposal / bid or a combination of proposals / bids deemed to be in its best interests.

### **3.13 THE RFP PROCESS:**

Bids are advertised as required by law. The City may also mail invitations to businesses as it deems appropriate. Placement on a vendor mailing list or a history of having received invitations in the past or having received prior contract awards in no way obligates the City to continue any form of direct notification. At the discretion of the Purchasing Agent the City may remove vendors from the mailing list for whatever reason including a poor performance history or failure to respond to previous invitations.

Refer any questions that may arise during the solicitation and award process, in writing, to the Purchasing Agent.

### **3.14 TIME PROVISIONS:**

The content of any proposal submitted is to remain valid and available to the City for ninety (90) days from the day proposals are due.

### **3.15 ASSIGNMENT OF CONTRACT:**

The successful candidate agrees that he will not assign, transfer, or subcontract any portion of the award.

### **3.16 INDEMNIFICATION:**

Contractor shall not assert any claim arising out of any act or omission by any agent, officer or employee of the City in the execution or performance of this Agreement against any such agent, officer or employee. Such claims may be made against the City.

No member of the governing body of the City, and no other officer, employee, or agent of the City shall have any personal interest, direct or indirect, in this Agreement, except as permitted by the Code of Ethics of the City of Norwalk; and the Contractor covenants that no person having such interest shall be employed in the performance of this Agreement.

The Contractor expressly agrees to at all times indemnify, defend and save harmless the City of Norwalk and its respective officers, agents, and employees on account of any and all demands, claims, damages, losses, litigation, financial costs and expenses, including counsel's fees, and compensation arising out of personal injuries (including death), any damage to property, real or personal and any other loss, expense or aggrievement directly or indirectly arising out of, related to or in connection with the Project and the work to be performed hereunder by the Contractor, its employees, agents, subcontractors, material suppliers, or anyone directly or indirectly employed by any of them. The Contractor shall and does hereby assume and agree to pay for the defense of all such claims, demands, suits, proceedings and litigation. The provisions of this paragraph shall survive the expiration or early termination of this Agreement and shall not be limited by reason of any insurance coverage.

### **3.17 WARRANTIES, GUARANTEES, & INSTRUCTIONS:**

All work shall be warranted by the Contractor for a minimum period of two (2) years from the date of completion of the work against all defective workmanship and materials furnished by the Company. Where longer periods of Warranty/ Guarantee are required by these specifications, the contract documents, or are provided for by specific or implied warranty of materials, goods or equipment or by general law, the longer period of time will govern.

The Contractor shall promptly replace or repair in a manner satisfactory to the City any such defective work after notice from the City to do so. Work will be assumed to be defective if it is determined by the City that the material or equipment is not performing in a satisfactory manner, consistent with its intended use or operation. If the Contractor fails to make such replacement or repairs, the City may perform or cause to be performed all necessary work and the Company and its sureties shall be liable for all costs thereof.

Original manufacturers' warranties, guarantees, instruction sheets, parts lists, and certificates of title are to be delivered to the Purchasing Agent. Copies of all such materials are to be provided to the department accepting delivery.

### **3.18 TERMS AND CONDITIONS: See Section 4**

### **3.19 ASSIGNMENT OF ANTITRUST CLAIMS:**

The Contractor offers and agrees to assign to the City of Norwalk all of its right, title and interest in and to any and all causes of action it may have under Section 4 of the Clayton Act, 15 U.S.C. Section 15, or under Chapter 624 of the Connecticut General Statutes, arising out of the purchase of services, goods, property or intangibles of any kind pursuant to a purchase order, contract agreement, subcontract or other form of public purchase by the City of Norwalk. This assignment shall be made and become effective upon award or acceptance by the City of Norwalk of the bid, purchase order or contract agreement with the Contractor without requiring any additional or further act or acknowledgement by the parties.

The Contractor shall include the terms of this assignment to the City of Norwalk in any contract, agreement or purchase document that it may enter into for services, goods, property or intangibles used for or incorporated into any work or materials, performed for or provided to the City of Norwalk.

### **3.20 SMOKING POLICY**

No person shall smoke in any municipal or school system facility.

### **3.21 BUILDING PERMIT FEES**

Refer to Section 4, 107-01

END OF SECTION

# SECTION 4

## CITY OF NORWALK GENERAL CONDITIONS FOR CONSTRUCTION

**NOTE:** SECTION 4 contains the City's General Terms and Conditions for construction. Your Firm is responsible for obtaining a copy of this document prior to bidding. If you do not have a revision dated 04/20/2011 or later on file you may download a copy of this document from the Terms and Conditions section of the City of Norwalk's website at [www.norwalkct.org](http://www.norwalkct.org), <http://www.norwalkct.org/DocumentCenter/Home/View/866> Document number 1008.

## **SECTION 5**

### **PREVAILING WAGE ADDENDEUM**

(Note: Page numbering in this section is not sequential with other sections within this document)

The Contractor shall weekly submit to the Director a certified payroll, which shall consist of a complete copy of its records relating to the wages and hours worked by each employee and a schedule of the occupation or work classification at which each mechanic, laborer or workman on the Project is employed during each work day and week. The submission shall be in such manner and form as the State Labor Commissioner requires and in compliance with the requirements of Public Act 93392. This weekly submission shall also include a statement signed by the employer (the Contractor) indicating the information set forth in Section I (f) of Public Act 93-392."

## 5.1 – LIVING WAGE ORDINANCE

### GENERAL INFORMATION

# Rev. 033116, Express Request Doc. #1019

**NOTE:** SECTION 5.1 contains information concerning City's Living Wage Ordinance. You are responsible for obtaining a copy prior to bidding. If you do not have a revision dated 03/31/2016 or later on file you may download a copy of this Ordinance from the Terms and Conditions section of the City of Norwalk's website at <http://www.norwalkct.org>

Document number **1019:** <http://www.norwalkct.org/DocumentCenter/Home/View/862>

**SECTION 5**  
**PREVAILING WAGE ADDENDEUM**

(Note: Page numbering in this section is not sequential with other sections within this document)

The Contractor shall weekly submit to the Director a certified payroll, which shall consist of a complete copy of its records relating to the wages and hours worked by each employee and a schedule of the occupation or work classification at which each mechanic, laborer or workman on the Project is employed during each work day and week. The submission shall be in such manner and form as the State Labor Commissioner requires and in compliance with the requirements of Public Act 93392. This weekly submission shall also include a statement signed by the employer (the Contractor) indicating the information set forth in Section 1 (f) of Public Act 93-392."

## 5.1 – LIVING WAGE ORDINANCE

### GENERAL INFORMATION

#### **Rev. 033116, Express Request Doc. #1019**

**NOTE:** SECTION 5.1 contains information concerning City's Living Wage Ordinance. You are responsible for obtaining a copy prior to bidding. If you do not have a revision dated 03/31/2016 or later on file you may download a copy of this Ordinance from the Terms and Conditions section of the City of Norwalk's website at <http://www.norwalkct.org>

Document number **1019:** <http://www.norwalkct.org/DocumentCenter/Home/View/862>



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**PREVAILING WAGE BID PACKAGE**

- [Prevailing Wage Law Poster](#) (PDF, 97KB)
- [Section 31-53b: Construction safety and Health Course. Proof of completion required for employees on public building projects.](#) (PDF, 10KB)
  - [Informational Bulletin - The 10-Hour OSHA Construction Safety and Health Course](#) (PDF, 20KB)
- [Notice For All Mason Contractors](#) (PDF, 5KB)
- [CT General Statute 31-55a](#)
- [Contracting Agency Certification Form](#) (PDF, 89KB)
- [Contractor's Wage Certification Form](#) (PDF, 11KB)
- [Payroll Certification - Public Works Projects](#)
- [Occupational Classification Bulletin](#)
- [Footnotes \(Rev. 06/15\)](#) (PDF, 24KB)

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Opportunity \* Guidance \* Support



# **THIS IS A PUBLIC WORKS PROJECT**

**Covered by the**

# **PREVAILING WAGE LAW**

**CT General Statutes Section 31-53**

**If you have QUESTIONS regarding your wages  
CALL (860) 263-6790**

Section 31-55 of the CT State Statutes requires every contractor or subcontractor performing work for the state to post in a prominent place the prevailing wages as determined by the Labor Commissioner.

**Sec. 31-53b. Construction safety and health course. New miner training program. Proof of completion required for mechanics, laborers and workers on public works projects. Enforcement. Regulations. Exceptions.** (a) Each contract for a public works project entered into on or after July 1, 2009, by the state or any of its agents, or by any political subdivision of the state or any of its agents, described in subsection (g) of section 31-53, shall contain a provision requiring that each contractor furnish proof 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 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.

(b) Any person required to complete a course or program under subsection (a) of this section who has not completed the course or program shall be subject to removal from the worksite if the person does not provide documentation of having completed such course or program by the fifteenth day after the date the person is found to be in noncompliance. The Labor Commissioner or said commissioner's designee shall enforce this section.

(c) Not later than January 1, 2009, the Labor Commissioner shall adopt regulations, in accordance with the provisions of chapter 54, to implement the provisions of subsections (a) and (b) of this section. Such regulations shall require that the ten-hour construction safety and health courses required under subsection (a) of this section be conducted in accordance with federal Occupational Safety and Health Administration Training Institute standards, or in accordance with Federal Mine Safety and Health Administration Standards or in accordance with 29 CFR 1910.268, as appropriate. The Labor Commissioner shall accept as sufficient proof of compliance with the provisions of subsection (a) or (b) of this section a student course completion card issued by the federal Occupational Safety and Health Administration Training Institute, or such other proof of compliance said commissioner deems appropriate, dated no earlier than five years before the commencement date of such public works project.

(d) This section shall not apply to employees of public service companies, as defined in section 16-1, or drivers of commercial motor vehicles driving the vehicle on the public works project and delivering or picking up cargo from public works projects provided they perform no labor relating to the project other than the loading and unloading of their cargo.

(P.A. 06-175, S. 1; P.A. 08-83, S. 1.)

History: P.A. 08-83 amended Subsec. (a) by making provisions applicable to public works project contracts entered into on or after July 1, 2009, replacing provision re total cost of work with reference to Sec. 31-53(g), requiring proof in certified payroll form that new mechanic, laborer or worker has completed a 10-hour or more construction safety course and adding provision re new miner training program, amended Subsec. (b) by substituting "person" for "employee" and adding "or program", amended Subsec. (c) by adding "or in accordance with Federal Mine Safety and Health Administration Standards" and setting new deadline of January 1, 2009, deleted former Subsec. (d) re "public building", added new Subsec. (d) re exemptions for public service company employees and delivery drivers who perform no labor other than delivery and made conforming and technical changes, effective January 1, 2009.

# **Informational Bulletin**

## **THE 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE**

(applicable to public building contracts entered into *on or after July 1, 2007*, where the total cost of all work to be performed is at least \$100,000)

- (1) This requirement was created by Public Act No. 06-175, which is codified in Section 31-53b of the Connecticut General Statutes (pertaining to the prevailing wage statutes);
- (2) The course is required for public building construction contracts (projects funded in whole or in part by the state or any political subdivision of the state) entered into on or after July 1, 2007;
- (3) It is required of private employees (not state or municipal employees) and apprentices who perform manual labor for a general contractor or subcontractor on a public building project where the total cost of all work to be performed is at least \$100,000;
- (4) The ten-hour construction course pertains to the ten-hour Outreach Course conducted in accordance with federal OSHA Training Institute standards, and, for telecommunications workers, a ten-hour training course conducted in accordance with federal OSHA standard, 29 CFR 1910.268;
- (5) The internet website for the federal OSHA Training Institute is [http://www.osha.gov/fso/ote/training/edcenters/fact\\_sheet.html](http://www.osha.gov/fso/ote/training/edcenters/fact_sheet.html);
- (6) The statutory language leaves it to the contractor and its employees to determine who pays for the cost of the ten-hour Outreach Course;
- (7) Within 30 days of receiving a contract award, a general contractor must furnish proof to the Labor Commissioner that all employees and apprentices performing manual labor on the project will have completed such a course;
- (8) Proof of completion may be demonstrated through either: (a) the presentation of a *bona fide* student course completion card issued by the federal OSHA Training Institute; *or* (2) the presentation of documentation provided to an employee by a trainer certified by the Institute pending the actual issuance of the completion card;
- (9) Any card with an issuance date more than 5 years prior to the commencement date of the construction project shall not constitute proof of compliance;

- (10) Each employer shall affix a copy of the construction safety course completion card to the certified payroll submitted to the contracting agency in accordance with Conn. Gen. Stat. § 31-53(f) on which such employee's name first appears;
- (11) Any employee found to be in non-compliance shall be subject to removal from the worksite if such employee does not provide satisfactory proof of course completion to the Labor Commissioner by the fifteenth day after the date the employee is determined to be in noncompliance;
- (12) Any such employee who is determined to be in noncompliance may continue to work on a public building construction project for a maximum of fourteen consecutive calendar days while bringing his or her status into compliance;
- (13) The Labor Commissioner may make complaint to the prosecuting authorities regarding any employer or agent of the employer, or officer or agent of the corporation who files a false certified payroll with respect to the status of an employee who is performing manual labor on a public building construction project;
- (14) The statute provides the minimum standards required for the completion of a safety course by manual laborers on public construction contracts; any contractor can exceed these minimum requirements; and
- (15) Regulations clarifying the statute are currently in the regulatory process, and shall be posted on the CTDOL website as soon as they are adopted in final form.
- (16) Any questions regarding this statute may be directed to the Wage and Workplace Standards Division of the Connecticut Labor Department via the internet website of <http://www.ctdol.state.ct.us/wgwkstnd/wgemenu.htm>; or by telephone at (860)263-6790.

**THE ABOVE INFORMATION IS PROVIDED EXCLUSIVELY AS AN EDUCATIONAL RESOURCE, AND IS NOT INTENDED AS A SUBSTITUTE FOR LEGAL INTERPRETATIONS WHICH MAY ULTIMATELY ARISE CONCERNING THE CONSTRUCTION OF THE STATUTE OR THE REGULATIONS.**

November 29, 2006

**Notice**  
**To All Mason Contractors and Interested Parties**  
**Regarding Construction Pursuant to Section 31-53 of the**  
**Connecticut General Statutes (Prevailing Wage)**

The Connecticut Labor Department Wage and Workplace Standards Division is empowered to enforce the prevailing wage rates on projects covered by the above referenced statute.

Over the past few years the Division has withheld enforcement of the rate in effect for workers who operate a forklift on a prevailing wage rate project due to a potential jurisdictional dispute.

The rate listed in the schedules and in our Occupational Bulletin (see enclosed) has been as follows:

**Forklift Operator:**

- **Laborers (Group 4) Mason Tenders** - operates forklift solely to assist a mason to a maximum height of nine feet only.
- **Power Equipment Operator (Group 9)** - operates forklift to assist any trade and to assist a mason to a height over nine feet.

The U.S. Labor Department conducted a survey of rates in Connecticut but it has not been published and the rate in effect remains as outlined in the above Occupational Bulletin.

***Since this is a classification matter and not one of jurisdiction, effective January 1, 2007 the Connecticut Labor Department will enforce the rate on each schedule in accordance with our statutory authority.***

Your cooperation in filing appropriate and accurate certified payrolls is appreciated.



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## STATUTE 31-55a

 [print Statute 31-55a \(PDF, 383KB\)](#)

### - SPECIAL NOTICE -

#### To All State and Political Subdivisions, Their Agents, and Contractors

#### Connecticut General Statute 31-55a - Annual adjustments to wage rates by contractors doing state work.

*Each contractor that is awarded a contract on or after October 1, 2002, for (1) the construction of a state highway or bridge that falls under the provisions of section 31-54 of the general statutes, or (2) the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project that falls under the provisions of section 31-53 of the general statutes shall contact the Labor Commissioner on or before July first of each year, for the duration of such contract, to ascertain the prevailing rate of wages on an hourly basis and the amount of payment or contributions paid or payable on behalf of each mechanic, laborer or worker employed upon the work contracted to be done, and shall make any necessary adjustments to such prevailing rate of wages and such payment or contributions paid or payable on behalf of each such employee, effective each July first.*

- The prevailing wage rates applicable to any contract or subcontract awarded on or after October 1, 2002 are subject to annual adjustments each July 1st for the duration of any project which was originally advertised for bids on or after October 1, 2002.
- Each contractor affected by the above requirement 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 Web Site. The annual adjustments will be posted on the Department of Labor Web page: [www.ctdol.state.ct.us](http://www.ctdol.state.ct.us). For those without internet access, please contact the division listed below.
- 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.

**Any questions should be directed to the Contract Compliance Unit, Wage and Workplace Standards Division, Connecticut Department of Labor, 200 Folly Brook Blvd., Wethersfield, CT 06109 at (860)263-6790.**

[Workplace Laws](#)

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## STATUTE 31-55a

### - SPECIAL NOTICE -

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**Any questions should be directed to the Contract Compliance Unit, Wage and Workplace Standards Division, Connecticut Department of Labor, 200 Folly Brook Blvd., Wethersfield, CT 06109 at (860)263-6790.**

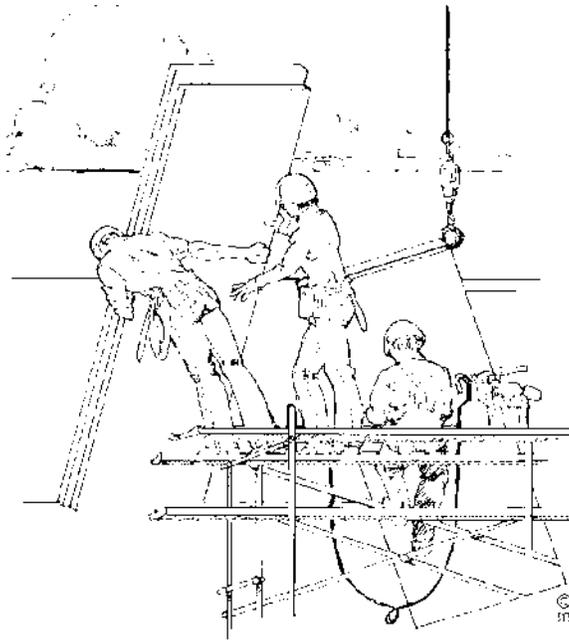
~NOTICE~

TO ALL CONTRACTING AGENCIES

Please be advised that Connecticut General Statutes Section 31-53, requires the contracting agency to certify to the Department of Labor, the total dollar amount of work to be done in connection with such public works project, regardless of whether such project consists of one or more contracts.

Please find the attached “Contracting Agency Certification Form” to be completed and returned to the Department of Labor, Wage and Workplace Standards Division, Public Contract Compliance Unit.

 Inquiries can be directed to (860)263-6543.



CONNECTICUT DEPARTMENT OF LABOR  
WAGE AND WORKPLACE STANDARDS DIVISION  
CONTRACT COMPLIANCE UNIT

*CONTRACTING AGENCY CERTIFICATION FORM*

I, \_\_\_\_\_, acting in my official capacity as \_\_\_\_\_,  
authorized representative title

for \_\_\_\_\_, located at \_\_\_\_\_,  
contracting agency address

do hereby certify that the total dollar amount of work to be done in connection with  
\_\_\_\_\_, located at \_\_\_\_\_,  
project name and number address

shall be \$\_\_\_\_\_, which includes all work, regardless of whether such project  
consists of one or more contracts.

*CONTRACTOR INFORMATION*

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Authorized Representative: \_\_\_\_\_

Approximate Starting Date: \_\_\_\_\_

Approximate Completion Date: \_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Return To: Connecticut Department of Labor  
Wage & Workplace Standards Division  
Contract Compliance Unit  
200 Folly Brook Blvd.  
Wethersfield, CT 06109

Date Issued: \_\_\_\_\_

CONNECTICUT DEPARTMENT OF LABOR  
WAGE AND WORKPLACE STANDARDS DIVISION

**CONTRACTORS WAGE CERTIFICATION FORM**  
**Construction Manager at Risk/General Contractor/Prime Contractor**

I, \_\_\_\_\_ of \_\_\_\_\_  
Officer, Owner, Authorized Rep. Company Name

do hereby certify that the \_\_\_\_\_  
Company Name  
\_\_\_\_\_  
Street  
\_\_\_\_\_  
City

and all of its subcontractors will pay all workers on the  
\_\_\_\_\_  
Project Name and Number  
\_\_\_\_\_  
Street and City

the wages as listed in the schedule of prevailing rates required for such project (a copy of which is attached hereto).

\_\_\_\_\_  
Signed

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

\_\_\_\_\_  
Notary Public

Return to:

Connecticut Department of Labor  
Wage & Workplace Standards Division  
200 Folly Brook Blvd.  
Wethersfield, CT 06109

*Rate Schedule Issued (Date):* \_\_\_\_\_



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In accordance with Connecticut General Statutes, 31-53 Certified Payrolls with a statement of compliance shall be submitted monthly to the contracting agency.

**Note:** Once you have downloaded these forms and are ready to print them out, set the print function on your PC to the horizontal print orientation.

**Note2:** Please download both the Payroll Certification for Public Works Projects **and** the Certified Statement of Compliance for a complete package. The Certified Statement of Compliance appears on the same page as the Fringe Benefits Explanation page.

**Announcement: The Certified Payroll Form WWS-CPI can now be completed on-line!**

- [Certified Payroll Form WWS-CPI](#) (PDF, 727KB)
- [Sample Completed Form](#) (PDF, 101KB)

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[New] In accordance with Section 31-53b(a) of the C.G.S. each contractor shall provide a copy of the OSHA 10 Hour Construction Safety and Health Card for each employee, to be attached to the first certified payroll on the project.

**PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS**

**WEEKLY PAYROLL**

Connecticut Department of Labor  
Wage and Workplace Standards Division  
200 Folly Brook Blvd.  
Wethersfield, CT 06109

In accordance with Connecticut General Statutes, 31-53 Certified Payrolls with a statement of compliance shall be submitted monthly to the contracting agency.

CONTRACTOR NAME AND ADDRESS:											SUBCONTRACTOR NAME & ADDRESS				WORKER'S COMPENSATION INSURANCE CARRIER						
PAYROLL NUMBER	Week-Ending Date	PROJECT NAME & ADDRESS									POLICY #				EFFECTIVE DATE:		EXPIRATION DATE:				
PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/FEMALE AND RACE*	WORK CLASSIFICATION	DAY AND DATE							Total ST Hours	BASE HOURLY RATE	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS				GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY	
				S	M	T	W	TH	F	S	Total O/T Hours				TOTAL FRINGE BENEFIT PLAN CASH	FICA	FEDERAL WITH-HOLDING	STATE WITH-HOLDING			LIST OTHER
			Trade License Type & Number - OSHA 10 Certification Number	HOURS WORKED EACH DAY																	
												\$	1. \$								
												Base Rate	2. \$								
													3. \$								
													4. \$								
												\$	5. \$								
												Cash Fringe	6. \$								
												\$	1. \$								
												Base Rate	2. \$								
													3. \$								
													4. \$								
												\$	5. \$								
												Cash Fringe	6. \$								

**\*FRINGE BENEFITS EXPLANATION (P):**

Bona fide benefits paid to approved plans, funds or programs, except those required by Federal or State Law (unemployment tax, worker’s compensation, income taxes, etc.).

Please specify the type of benefits provided:

- 1) Medical or hospital care \_\_\_\_\_ 4) Disability \_\_\_\_\_
- 2) Pension or retirement \_\_\_\_\_ 5) Vacation, holiday \_\_\_\_\_
- 3) Life Insurance \_\_\_\_\_ 6) Other (please specify) \_\_\_\_\_

**CERTIFIED STATEMENT OF COMPLIANCE**

For the week ending date of \_\_\_\_\_,

I, \_\_\_\_\_ of \_\_\_\_\_, (hereafter known as Employer) in my capacity as \_\_\_\_\_ (title) do hereby certify and state:

**Section A:**

1. All persons employed on said project have been paid the full weekly wages earned by them during the week in accordance with Connecticut General Statutes, section 31-53, as amended. Further, I hereby certify and state the following:

- a) The records submitted are true and accurate;
- b) The rate of wages paid to each mechanic, laborer or workman and the amount of payment or contributions paid or payable on behalf of each such person to any employee welfare fund, as defined in Connecticut General Statutes, section 31-53 (h), are not less than the prevailing rate of wages and the amount of payment or contributions paid or payable on behalf of each such person to any employee welfare fund, as determined by the Labor Commissioner pursuant to subsection Connecticut General Statutes, section 31-53 (d), and said wages and benefits are not less than those which may also be required by contract;
- c) The Employer has complied with all of the provisions in Connecticut General Statutes, section 31-53 (and Section 31-54 if applicable for state highway construction);
- d) Each such person is covered by a worker’s compensation insurance policy for the duration of his employment which proof of coverage has been provided to the contracting agency;
- e) The Employer does not receive kickbacks, which means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided directly or indirectly, to any prime contractor, prime contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a prime contractor in connection with a subcontractor relating to a prime contractor; and
- f) The Employer is aware that filing a certified payroll which he knows to be false is a class D felony for which the employer may be fined up to five thousand dollars, imprisoned for up to five years or both.

2. OSHA~The employer shall affix a copy of the construction safety course, program or training completion document to the certified payroll required to be submitted to the contracting agency for this project on which such persons name first appears.

\_\_\_\_\_  
 (Signature) (Title) Submitted on (Date)

**\*\*\*THIS IS A PUBLIC DOCUMENT\*\*\*  
\*\*\*DO NOT INCLUDE SOCIAL SECURITY NUMBERS\*\*\***



[New] In accordance with Section 31-53b(a) of the C.G.S. each contractor shall provide a copy of the OSHA 10 Hour Construction Safety and Health Card for each employee, to be attached to the first certified payroll on the project.

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS										Connecticut Department of Labor Wage and Workplace Standards Division 200 Folly Brook Blvd. Wethersfield, CT 06109									
In accordance with Connecticut General Statutes, 31-53 Certified Payrolls with a statement of compliance shall be submitted monthly to the contracting agency.										WEEKLY PAYROLL									
CONTRACTOR NAME AND ADDRESS: Landon Corporation, 15 Connecticut Avenue, Northford, CT 06472					SUBCONTRACTOR NAME & ADDRESS XYZ Corporation 2 Main Street Yantic, CT 06389					WORKER'S COMPENSATION INSURANCE CARRIER Travelers Insurance Company POLICY # #BAC8888928 EFFECTIVE DATE: 1/1/09 EXPIRATION DATE: 12/31/09									
PAYROLL NUMBER	Week-Ending Date	PROJECT NAME & ADDRESS							Total ST Hours	BASE HOURLY RATE	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS			GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY		
		DAY AND DATE											FICA	FEDERAL	STATE			LIST OTHER	
PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/FEMALE AND RACE*	WORK CLASSIFICATION	S	M	T	W	TH	F	S	Total O/T Hours	TOTAL FRINGE BENEFIT PLAN CASH	FICA	WITH-HOLDING	WITH-HOLDING	LIST OTHER	RATE JOB	CHECK # AND NET PAY	
Trade License Type & Number - OSHA 10 Certification Number				20	21	22	23	24	25	26	HOURS WORKED EACH DAY								
Robert Craft 81 Maple Street Willimantic, CT 06226		M/C	Electrical Lineman E-1 1234567 Owner OSHA 123456		8	8	8	8	8		S-TIME 40 O-TIME	\$ 30.75 Base Rate \$ 8.82 Cash Fringe	1. \$ 5.80 2. \$ 3. \$ 2.01 4. \$ 5. \$ 6. \$				P-xxxx	\$1,582.80	#123 \$ xxx.xx
Ronald Jones 212 Elm Street Norwich, CT 06360	65%	M/B	Electrical Apprentice OSHA 234567		8	8	8	8	8		S-TIME 40 O-TIME	\$ 19.99 Base Rate \$ 16.63 Cash Fringe	1. \$ 2. \$ 3. \$ 4. \$ 5. \$ 6. \$	xx.xx	xxx.xx	xx.xx	G-xxx	\$1,464.80	#124 \$xxx.xx
Franklin T. Smith 234 Washington Rd. New London, CT 06320 SECTION B		M/H	Project Manager			8					S-TIME 8 O-TIME	\$ Base Rate \$ Cash Fringe	1. \$ 2. \$ 3. \$ 4. \$ 5. \$ 6. \$	xx.xx	xx.xx	xx.xx	M-xx.x	\$1,500.00	#125 xxx.xx
											S-TIME O-TIME	\$ Base Rate \$ Cash Fringe	1. \$ 2. \$ 3. \$ 4. \$ 5. \$ 6. \$						

7/13/2009 \*IF REQUIRED  
WWS-CP1

\*SEE REVERSE SIDE

PAGE NUMBER 1 OF 2

OSHA 10 ~ATTACH CARD TO 1ST CERTIFIED PAYROLL

**\*FRINGE BENEFITS EXPLANATION (P):**

Bona fide benefits paid to approved plans, funds or programs, except those required by Federal or State Law (unemployment tax, worker's compensation, income taxes, etc.).

Please specify the type of benefits provided:

- 1) Medical or hospital care Blue Cross 4) Disability \_\_\_\_\_
- 2) Pension or retirement \_\_\_\_\_ 5) Vacation, holiday \_\_\_\_\_
- 3) Life Insurance Utopia 6) Other (please specify) \_\_\_\_\_

**CERTIFIED STATEMENT OF COMPLIANCE**

For the week ending date of 9/26/09,

I, Robert Craft of XYZ Corporation, (hereafter known as

Employer) in my capacity as Owner (title) do hereby certify and state:

**Section A:**

1. All persons employed on said project have been paid the full weekly wages earned by them during the week in accordance with Connecticut General Statutes, section 31-53, as amended. Further, I hereby certify and state the following:

- a) The records submitted are true and accurate;
- b) The rate of wages paid to each mechanic, laborer or workman and the amount of payment or contributions paid or payable on behalf of each such employee to any employee welfare fund, as defined in Connecticut General Statutes, section 31-53 (h), are not less than the prevailing rate of wages and the amount of payment or contributions paid or payable on behalf of each such employee to any employee welfare fund, as determined by the Labor Commissioner pursuant to subsection Connecticut General Statutes, section 31-53 (d), and said wages and benefits are not less than those which may also be required by contract;
- c) The Employer has complied with all of the provisions in Connecticut General Statutes, section 31-53 (and Section 31-54 if applicable for state highway construction);
- d) Each such employee of the Employer is covered by a worker's compensation insurance policy for the duration of his employment which proof of coverage has been provided to the contracting agency;
- e) The Employer does not receive kickbacks, which means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided directly or indirectly, to any prime contractor, prime contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a prime contractor in connection with a subcontractor relating to a prime contractor; and
- f) The Employer is aware that filing a certified payroll which he knows to be false is a class D felony for which the employer may be fined up to five thousand dollars, imprisoned for up to five years or both.

2. OSHA~The employer shall affix a copy of the construction safety course, program or training completion document to the certified payroll required to be submitted to the contracting agency for this project on which such employee's name first appears.

Robert Craft owner 10/2/09  
 (Signature) (Title) Submitted on (Date)

**Section B: Applies to CONNDOT Projects ONLY**

That pursuant to CONNDOT contract requirements for reporting purposes only, all employees listed under Section B who performed work on this project are not covered under the prevailing wage requirements defined in Connecticut General Statutes Section 31-53.

Robert Craft owner 10/2/09  
 (Signature) (Title) Submitted on (Date)

Note: CTDOL will assume all hours worked were performed under Section A unless clearly delineated as Section B WWS-CP1 as such. Should an employee perform work under both Section A and Section B, the hours worked and wages paid must be segregated for reporting purposes.

**\*\*\*THIS IS A PUBLIC DOCUMENT\*\*\*  
 \*\*\*DO NOT INCLUDE SOCIAL SECURITY NUMBERS\*\*\***



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UNDER CONSTRUCTION ✖

*Under construction on 6/28/2016  
please check back for updated information*

- Employee Complaint Forms
- Employer Forms
- Laws/Legislation
- Manuals and Publications
- Compliance Assistance
- Prevailing Wages
- Standard Wage Rates
- Workplace Standards
- Employment of Minors
- FMLA
- Joint Enforcement
- Commission For Worker
- Misclassification (JEC)
- Stop Work Orders
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**Connecticut Department of Labor  
Wage and Workplace Standards Division  
FOOTNOTES**

⇒ Please Note: If the “Benefits” listed on the schedule for the following occupations includes a letter(s) (+ a or + a+b for instance), refer to the information below.

Benefits to be paid at the appropriate prevailing wage rate for the listed occupation.

If the “Benefits” section for the occupation lists only a dollar amount, disregard the information below.

**Bricklayers, Cement Masons, Cement Finishers, Concrete Finishers, Stone Masons**  
(Building Construction) and  
(Residential- Hartford, Middlesex, New Haven, New London and Tolland Counties)

- a. Paid Holiday: Employees shall receive 4 hours for Christmas Eve holiday provided the employee works the regularly scheduled day before and after the holiday. Employers may schedule work on Christmas Eve and employees shall receive pay for actual hours worked in addition to holiday pay.

**Elevator Constructors: Mechanics**

- a. Paid Holidays: New Year’s Day, Memorial Day, Independence Day, Labor Day, Veterans’ Day, Thanksgiving Day, Christmas Day, plus the Friday after Thanksgiving.
- b. Vacation: Employer contributes 8% of basic hourly rate for 5 years or more of service or 6% of basic hourly rate for 6 months to 5 years of service as vacation pay credit.

**Glaziers**

- a. Paid Holidays: Labor Day and Christmas Day.

**Power Equipment Operators**  
(Heavy and Highway Construction & Building Construction)

- a. Paid Holidays: New Year’s Day, Good Friday, Memorial day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday. Holidays falling on Saturday may be observed on Saturday, or if the employer so elects, on the preceding Friday.

**Ironworkers**

- a. Paid Holiday: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

**Laborers (Tunnel Construction)**

- a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. No employee shall be eligible for holiday pay when he fails, without cause, to work the regular work day preceding the holiday or the regular work day following the holiday.

**Roofers**

- a. Paid Holidays: July 4<sup>th</sup>, Labor Day, and Christmas Day provided the employee is employed 15 days prior to the holiday.

**Sprinkler Fitters**

- a. Paid Holidays: Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day, provided the employee has been in the employment of a contractor 20 working days prior to any such paid holiday.

**Truck Drivers**

(Heavy and Highway Construction & Building Construction)

- a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas day, and Good Friday, provided the employee has at least 31 calendar days of service and works the last scheduled day before and the first scheduled day after the holiday, unless excused.

Project: Brien McMahon High School Turf And Field Renovation

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

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

ID#: H 22483

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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: 3705

Project Town: Norwalk

FAP Number:

State Number:

Project: Brien McMahon High School Turf And Field Renovation

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**CLASSIFICATION**

**Hourly Rate**

**Benefits**

01) 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\*\*

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1) Boilermaker	33.79	34% + 8.96
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1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons	33.48	28.76
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2) Carpenters, Piledrivermen	32.00	24.42
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As of:

Wednesday, July 20, 2016

Project: Brien McMahon High School Turf And Field Renovation

2a) Diver Tenders	32.00	24.42
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3) Divers	40.46	24.42
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03a) Millwrights	32.47	24.84
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4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	46.95	20.15
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4a) Painters: Brush and Roller	32.02	20.15
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4b) Painters: Spray Only	35.02	20.15
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4c) Painters: Steel Only	34.02	20.15
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Project: Brien McMahon High School Turf And Field Renovation

4d) Painters: Blast and Spray 35.02 20.15

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4e) Painters: Tanks, Tower and Swing 34.02 20.15

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5) Electrician (Trade License required: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9) 38.02 23.75+3% of gross wage

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6) Ironworkers: Ornamental, Reinforcing, Structural, and Precast Concrete Erection 35.22 31.99 + a

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7) Plumbers (Trade License required: (P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2) and 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) 40.62 29.71

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---LABORERS----

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8) Group 1: Laborer (Unskilled), Common or General, acetylene burner, concrete specialist 28.55 18.90

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Project: Brien McMahon High School Turf And Field Renovation

9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen	28.80	18.90
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10) Group 3: Pipelayers	29.05	18.90
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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	29.05	18.90
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12) Group 5: Toxic waste removal (non-mechanical systems)	30.55	18.90
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13) Group 6: Blasters	30.30	18.90
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Group 7: Asbestos/lead removal, non-mechanical systems (does not include leaded joint pipe)	29.55	18.90
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Group 8: Traffic control signalmen	16.00	18.90
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Project: Brien McMahon High School Turf And Field Renovation

Group 9: Hydraulic Drills	29.30	18.90
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---LABORERS (TUNNEL CONSTRUCTION, FREE AIR). Shield Drive and  
Liner Plate Tunnels in Free Air.---

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13a) Miners, Motormen, Mucking Machine Operators, Nozzle Men, Grout Men, Shaft & Tunnel Steel & Rodmen, Shield & Erector, Arm Operator, Cable Tenders	32.22	18.90 + a
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13b) Brakemen, Trackmen	31.28	18.90 + a
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---CLEANING, CONCRETE AND CAULKING TUNNEL---

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14) Concrete Workers, Form Movers, and Strippers	31.28	18.90 + a
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15) Form Erectors	31.60	18.90 + a
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Project: Brien McMahon High School Turf And Field Renovation

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

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16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	31.28	18.90 + a
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17) Laborers Topside, Cage Tenders, Bellman	31.17	18.90 + a
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18) Miners	32.22	18.90 + a
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---TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED  
AIR: ----

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18a) Blaster	38.53	18.90 + a
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19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	38.34	18.90 + a
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Project: Brien McMahon High School Turf And Field Renovation

20) Change House Attendants, Powder Watchmen, Top on Iron Bolts	36.41	18.90 + a
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21) Mucking Machine Operator	39.11	18.90 + a
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---TRUCK DRIVERS---(\*see note below)

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Two axle trucks	28.83	21.39 + a
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Three axle trucks; two axle ready mix	28.93	21.39 + a
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Three axle ready mix	28.98	21.39 + a
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Four axle trucks, heavy duty trailer (up to 40 tons)	29.03	21.39 + a
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Project: Brien McMahon High School Turf And Field Renovation

Four axle ready-mix	29.08	21.39 + a
<hr/>		
Heavy duty trailer (40 tons and over)	29.28	21.39 + a
<hr/>		
Specialized earth moving equipment other than conventional type on-the road trucks and semi-trailer (including Euclids)	29.08	21.39 + a
<hr/>		
---POWER EQUIPMENT OPERATORS---		
<hr/>		
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)	38.55	23.55 + a
<hr/>		
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)	38.23	23.55 + a
<hr/>		
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)	37.49	23.55 + a
<hr/>		

Project: Brien McMahon High School Turf And Field Renovation

Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper) 37.10 23.55 + a

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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) 36.51 23.55 + a

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Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller. 36.51 23.55 + a

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Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer). 36.20 23.55 + a

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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). 35.86 23.55 + a

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Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine. 35.46 23.55 + a

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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). 35.03 23.55 + a

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Project: Brien McMahon High School Turf And Field Renovation

Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc. 32.99 23.55 + a

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Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment. 32.99 23.55 + a

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Group 12: Wellpoint Operator. 32.93 23.55 + a

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Group 13: Compressor Battery Operator. 32.35 23.55 + a

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Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain). 31.21 23.55 + a

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Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator. 30.80 23.55 + a

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Group 16: Maintenance Engineer/Oiler 30.15 23.55 + a

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Project: Brien McMahon High School Turf And Field Renovation

Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	34.46	23.55 + a
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Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (minimum for any job requiring CDL license).	32.04	23.55 + a
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\*\*NOTE: SEE BELOW

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

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20) Lineman, Cable Splicer, Technician	45.43	6.25% + 20.70
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21) Heavy Equipment Operator	40.89	6.25% + 18.56
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22) Equipment Operator, Tractor Trailer Driver, Material Men	38.62	6.25% + 17.99
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Project: Brien McMahon High School Turf And Field Renovation

23) Driver Groundmen 24.99 6.25% + 11.81

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23a) Truck Driver 34.07 6.25% + 16.60

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---LINE CONSTRUCTION---

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24) Driver Groundmen 30.92 6.5% + 9.70

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25) Groundmen 22.67 6.5% + 6.20

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26) Heavy Equipment Operators 37.10 6.5% + 10.70

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

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*As of:*

Wednesday, July 20, 2016

Project: Brien McMahon High School Turf And Field Renovation

28) Material Men, Tractor Trailer Drivers, Equipment Operators

35.04

6.5% + 10.45

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Project: Brien McMahon High School Turf And Field Renovation

*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 \$3.00 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 journeyman 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](http://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:

Wednesday, July 20, 2016

Project: Brien McMahon High School Turf And Field Renovation

*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.

## SECTION 01100 - SUMMARY OF WORK

### PART 1 -GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 PROJECT DESCRIPTION

- A. The project consists of Athletic field renovations at Brien McMahon High School located on Highland Avenue in Norwalk, Connecticut.
- B. The work includes, but is not necessarily limited to the following:
  - 1. Site preparation.
  - 2. Sedimentation and erosion controls.
  - 3. Earthwork.
  - 4. Surface and subsurface drainage.
  - 5. Walkway and Parking lots and Drives pavements.
  - 6. Utilities (electric, water).
  - 7. Fencing.
  - 8. Miscellaneous improvements and equipment.
  - 9. Artificial Turf base preparation.
  - 10. Plant material.

#### 1.3 WORK SEQUENCE

- A. Work is to be conducted so as to provide the least possible interference with normal activity and travel along Highland Avenue and within the school property.

#### 1.4 CONTRACTOR USE OF PREMISES

- A. General: Limit use of the premise to construction activities in areas indicated; allow for Owner occupancy.
  - 1. Confine operations to areas within the Contract limits as indicated. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.
- B. Sanitary Facilities: Provide and install temporary sanitary facilities for use by workmen during the entire construction period. Maintain all temporary sanitary facilities in a clean, sanitary condition.

PART 2 - PRODUCTS AND MATERIALS (Not Applicable)

PART 3 -EXECUTION (Not Applicable)

**END OF SECTION 01110**

## SECTION 01200 - SUBMITTALS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for submittals required for the following:
  - 1. Contractor's construction schedule.
  - 2. Submittal schedule.
  - 3. Shop drawings.
  - 4. Product literature.
  - 5. Samples.
  - 6. Credentials.
  - 7. Certifications.
  - 8. As-built documents.
  - 9. Test reports.
- B. Administrative Submittals: Refer to other Division 1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not necessarily limited to, the following:
  - 1. Applications for payment.
  - 2. Insurance certificates.
  - 3. City construction permits (fees by contractor)

#### 1.3 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
- B. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
- C. Coordinate transmittal of different types of submittals for related elements of the work so processing will not be delayed by the need to review submittals concurrently for coordination.
  - 1. The Landscape Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- D. Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals including time for submittals.

1. Allow one (1) week for initial review. Allow additional time if processing must be delayed to permit coordinating with subsequent submittals. The Landscape Architect will promptly advise the Contractor when a submittal being processed must be delayed for coordination.
  2. If an intermediate submittal is necessary, process the same as the initial submittal.
  3. Allow one (1) week for reprocessing each submittal.
  4. No extension of contract time will be authorized because of failure to transmit submittals to the Landscape Architect sufficiently in advance of the work to permit processing.
- E. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
1. Provide a space approximately 4" x 5" on the label or beside the title block on shop drawings to record the Contractor's review and approval markings and the action taken.
  2. Include the following information of the label for processing and recording action taken:
    - a. Project name.
    - b. Date.
    - c. Name and address of architect.
    - d. Name and address of contractor.
    - e. Name and address of subcontractor.
    - f. Name and address of supplier.
    - g. Name of manufacturer.
    - h. Name and title of appropriate specification section.
    - i. Drawing number and detail references, as appropriate.
- F. Submittal Transmittal: Package each submittal appropriate for transmittal and handling. Transmit each submittal from Contractor to Landscape Architect using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.
1. On the transmittal, record relevant information and requests for data. On the form or separate sheet, record deviations from Contract Document requirements, including minor variations and limitations. Include the Contractor's certification that information complies with Contract Document requirements.

#### 1.4 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Prepare a fully-developed, horizontal bar-chart type construction schedule. Submit within ten (10) days of the date established for "Commencement of the Work".
  - 1. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the work as indicated in the "Schedule of Values".
  - 2. Within each time bar, indicate estimated completion percentage in ten percent (10%) increments. As work progresses, place a contrasting mark in each bar to indicate actual completion.
  - 3. Prepare the schedule on a sheet or series of sheets of stable transparency or other reproducible media of sufficient width to show data for the entire construction period.
  - 4. Secure time commitments for performing critical elements of the work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the work. Show each activity in proper sequence. Indicate graphically the sequences necessary for completion of related portions of the work.
  - 5. Coordinate the construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests and other schedules.
  - 6. Indicate completion in advance of the date established for substantial completion. Indicate substantial completion on the schedule to allow time for the Landscape Architect's procedures necessary for certification of substantial completion.
- B. Phase: Provide notations on the schedule to show how the sequence of the work is affected by requirements for phased completion to permit work by separate Contractors.
- C. Work Stages: Indicate important stages of construction for each major portion of the work including testing and installation.
- D. Area Separations: Provide a separate time bar to identify each major construction area for each major portion of the work. Indicate where each element in an area must be sequenced or integrated with other activities.
- E. Distribution: Following response to the initial submittal, print and distribute copies to the Landscape Architect, Owner, subcontractors and other parties required to comply with the scheduled dates.
  - 1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the work and are no longer involved in construction activities.

## 1.5 SUBMITTAL SCHEDULE

- A. After development and acceptance of the construction schedule, prepare a complete schedule of submittals. Submit the schedule within ten (10) days of the date required for establishment of the Contractor's construction schedule.
  - 1. Coordinate submittal schedule with the list of subcontracts, schedule of values and the list of products, as well as the Contractor's construction schedule.
- B. Prepare the schedule in chronological order; include submittals required during the first fourteen (14) days of construction. Provide the following information:
  - 1. Schedule date for the first submittal.
  - 2. Relate section number.
  - 3. Submittal category.
  - 4. Name of subcontractor.
  - 5. Description of the part of work covered.
  - 6. Scheduled date for re-submittal.
  - 7. Scheduled date for the Landscape Architect's final release or approval.
- C. Distribution: Following the response to the initial submittal, print and distribute copies to the Landscape Architect, Owner, subcontractors and to the parties required to comply with the submittal dates indicated.
  - 1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the work and are no longer involved in construction activities.
- D. Schedule Updating: Revise the schedule after each meeting or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

## 1.6 SHOP DRAWINGS

- A. Submit newly prepared information drawn to accurate scale. Highlight, encircle or otherwise indicate deviations from the Contract Documents. **Do not reproduce** Contract Documents or copy standard information as the basis of shop drawings. Standard information prepared without specific reference to the project is not considered shop drawings.

- B. Shop drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates and similar drawings. Include the following information:
1. Dimensions.
  2. Identification of products and materials included.
  3. Compliance with specified standards.
  4. Notation of coordination requirements.
  5. Notation of dimensions established by field measurement.
  6. Sheet Size: Except for templates, patterns and similar full-size drawings, submit shop drawings on sheets at least 8 ½" but no larger than 30" x 42".
  7. Initial Submittal: Submit three (3) blue or black-line prints for the Landscape Architect's review; two (2) will be returned to the Contractor.
  8. Do not use shop drawings without an appropriate final stamp, indicating action taken in connection with the construction.
- C. Coordination drawings are a special type of shop drawing that show the relationship and integration of different construction elements that require careful coordination during fabricating or installation to fit in the space provided or function as intended.
1. Preparation of coordination drawings is specified in section "Project Coordination" and may include components previously shown in detail on shop drawings or product literature.
  2. Submit coordination drawings for integration of different construction elements. Show sequences and relationships of separate components to avoid conflicts in use of space.

## 1.7 PRODUCT LITERATURE

- A. Collect product literature into a 'single' submittal for each element of construction. Product literature includes printed information such as manufacturer's installation instructions, catalog cuts and standard color charts. Where product literature must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings".
1. Mark each copy to show applicable choices and options. Where printed product literature includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:
    - a. Manufacturer's printed recommendations.
    - b. Compliance with recognized trade association standards.
    - c. Compliance with recognized testing agency standards.
    - d. Application of testing agency labels and seals.
    - e. Notation of dimensions verified by field measurements.

f. Notation of coordination requirements.

2. Before product literature is submitted for approval, certify that each product complies with the drawings and specifications. Certification shall be in the form of a stamp which states: "This product literature has been checked prior to submittal to the Landscape Architect and it complies in all respects, except as noted, with the requirements of the drawings and specifications."

Contractor \_\_\_\_\_

Signed \_\_\_\_\_

Dated \_\_\_\_\_

3. Submit product literature that contains **only** information relative to the particular materials to be furnished. Do not submit catalogs or information that describes different items or products other than those items or products to be used, unless all irrelevant information is marked-out and relevant material is clearly marked.
4. Do not submit product literature until compliance with the requirements of the Contract Documents has been confirmed.
5. Submittals: Submit four (4) copies of **each** required submittal. The Landscape Architect will retain one (1) copy and will return the others marked with the action taken and corrections or modifications required.
  - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
6. Distribution: Furnish copies of the final submittal to the installers, subcontractors, suppliers, manufacturers, fabricators and others required for performance of construction activities. Show the distribution on transmittal forms.
  - a. Do not proceed with the installation until an applicable copy of the product literature applicable is in the installer's possession.
  - b. Do not permit use of the unmarked copies of the product literature in connection with construction.

## 1.8 SAMPLES

- A. Submit fully-fabricated samples, cured and finished as specified and physically identical with the material or product proposed. Samples to include partial sections of color range sets, showing color and texture.
  1. Display samples in the manner specified to facilitate review of qualities indicated. Include the following:
    - a. Generic description of the sample.

- b. Sample source.
  - c. Product name or name of manufacturer.
  - d. Compliance with recognized standards.
  - e. Availability and delivery time.
2. Submit samples for review of kind, color, and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
  - a. Where variation in color and texture or other characteristics are inherent in the material or product represented, submit multiple units (not less than three (3)), that show approximate limits of the variations.
  - b. Refer to other specification sections for requirements for samples that illustrate construction characteristics.
3. Preliminary Submittals: Where samples are for selection of color and texture or similar characteristics from a range of standard choices, submit a full set of choices for the material or product.
  - a. Preliminary submittals will be reviewed and returned with the Landscape Architect's mark indicating selection and other action.
4. Maintain the approved sample at the project site for quality comparisons throughout the course of construction.
  - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.

#### 1.9 LANDSCAPE ARCHITECT'S ACTION

- A. Except for submittals for record, information or similar purposes, where action and return is required or requested, the Landscape Architect will review each submittal, mark to indicate action taken and return promptly.
  1. Compliance with specified characteristics is the Contractor's responsibility.

- B. Action Stamp: The Landscape Architect will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:
1. Final Unrestricted Release: Where submittals are marked “Furnished as Submitted”, that part of the work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
  2. Final-But-Restricted Release: When submittals are marked “Furnished as Corrected”, that part of the work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.
  3. Returned for Re-Submittal: When submittals are marked “Revise and Resubmit” do not proceed with that part of the work covered by the submittal, including purchasing, fabrication, delivery or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat, if necessary, to obtain a different action mark.
    - a. Do not permit submittals marked “Rejected”, to be used at the project site or elsewhere where work is in progress.
  4. Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned marked “Action Not Required”.

PART 2 -PRODUCTS AND MATERIALS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

**END OF SECTION 01200**

## SECTION 01300 - PROJECT COORDINATION

### PART 1- GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section specifies administrative and supervisory requirements necessary for Project coordination including, but not necessarily limited to, the following:
  - 1. Coordination.
  - 2. Administrative and supervisory personnel.
  - 3. General installation provisions.
  - 4. Cleaning and protection.
- B. Progress meetings and pre-installation conferences are included in Section 01400 "Project Meetings."
- C. Requirement for the Contractor's Construction Schedule are included in Section 01200 "Submittals."

#### 1.3 COORDINATION

- A. Coordination: Coordinate construction activities included under various Sections of the Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections of the Specifications that are dependent upon each other for proper installation.
  - 1. Where installation of one part of the Work is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results.
- B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflict and ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
  - 1. Preparation of schedules.
  - 2. Installation and removal of temporary facilities.
  - 3. Delivery and processing of submittals.
  - 4. Progress meetings.
  - 5. Project close-out activities.

## PART 2 -PRODUCTS AND MATERIALS (Not Applicable)

## PART 3 - EXECUTION

### 3.1 GENERAL INSTALLATION PROVISIONS

- A. Inspection of Conditions: Require the installer of each major work component to inspect both the substrata and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.
- B. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in the Contract Documents.
- C. Inspect materials or equipment immediately upon delivery and again **prior** to installation. Reject damaged and defective items.
- D. Recheck measurements and dimensions before starting each installation.
- E. Install each component during weather conditions and Project status that will ensure the best possible results.

### 3.2 CLEANING AND PROTECTION

- A. During handling and installation, clean and protect construction in progress and adjoining materials in place.
- B. Clean and maintain completed construction, as frequently as necessary, through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- C. Limited Exposures: Supervise construction activities to ensure that no part of the construction, completed or in-progress, is subject to harmful dangerous, damaging, or otherwise deleterious exposure during the construction period.

**END OF SECTION 01300**

## SECTION 01400 - PROJECT MEETINGS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for project meetings, including, but not necessarily limited to, the following:
  - 1. Pre-Construction Conference.
  - 2. Coordination Meetings.
  - 3. Progress Meetings.

#### 1.3 PRE-CONSTRUCTION CONFERENCE

- A. Schedule a pre-construction conference and organizational meeting at the Project site or other convenient location not later than fifteen (15) days after execution of the Agreement with the Owner and **prior** to commencement of construction activities. Conduct the meeting to review responsibilities and personnel assignments.
- B. Attendees: The Owner's representative, the Landscape Architect, the Contractor and its superintendent, major subcontractors and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the Work.
- C. Agenda: Discuss items of significance that could affect progress, including such topics as:
  - 1. Tentative construction schedule.
  - 2. Critical Work sequencing.
  - 3. Designation of responsible personnel.
  - 4. Procedures for processing filed decisions and Change Orders.
  - 5. Procedures for processing Applications for Payment.
  - 6. Distribution of Contract Documents.
  - 7. Submittals.
  - 8. Preparation of Record documents.
  - 9. Use of the premises.
  - 10. Contractor's parking areas.
  - 11. Equipment deliveries and priorities.

12. Safety procedures.
13. First aid.
14. Sanitary facilities.
15. Working hours.

#### 1.4 COORDINATION MEETINGS

- A. Conduct Project coordination meetings at regularly scheduled times convenient for all parties involved. Project coordination meetings are in addition to specific meetings held for other purposes, such as regular progress meetings and special pre-installation meetings.
- B. Request representation at each meeting by every party currently involved in coordination or planning for the construction activities involved.
- C. Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

#### 1.5 PROGRESS MEETINGS

- A. Conduct weekly progress meetings at the Project site at regularly scheduled intervals. Notify the Owner and Landscape Architect of scheduled meeting dates. Coordinate dates of meetings with preparation of the payment request.
- B. The Owner's representative will prepare a meeting report outlining persons in attendance and all relevant items discussed. Copies of the meeting report will be issued within three (3) days of the meeting to the Contractor, the Landscape Architect and all other persons in attendance.
- C. Attendees: In addition to representatives of the Owner and Landscape Architect, each subcontractor concerned with current progress or involved in planning, coordination of performance of future activities shall be represented at these meetings by persons familiar with the Project and authorized to conclude matters relating to progress.
- D. Agenda: Review and correct or approve minutes of the previous meeting prepared by the Owner's representative. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the current status of the Project.
- E. Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

**END OF SECTION 01400**

## SECTION 01500 - QUALITY CONTROL

### PART 1 -GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for quality control services.
- B. Quality control services include inspections and tests and related actions, including reports performed by independent agencies, governing authorities, and the Contractor. They do not include Contract Enforcement activities performed by the Landscape Architect.
- C. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve the Contractor of responsibility for compliance with Contract Document requirements.
- D. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.
  - 1. Specific quality control requirements for individual construction activities are specified in the Sections that specify those activities. Those requirements, including inspections and tests, cover production of standard products as well as customized fabrication and installation procedures.
  - 2. Inspections, tests and related actions specified are not intended to limit the Contractor's quality control procedures that facilitate compliance with Contract Document requirements.
  - 3. Requirements for the Contractor to provide control services required by the Landscape Architect, Owner, or Authorities having jurisdiction are not limited by provisions of this Section.

#### 1.3 RESPONSIBILITIES

- A. Contractor Responsibilities: The Contractor shall provide inspections, tests, and similar quality control services specified in individual Specification Sections and required by governing authorities, except where they are specifically indicated to be the Owner's responsibility, or are provided by another identified entity. These services include those specified to be performed by an independent agency and not by the Contractor. Costs for these services shall be included in the Contract Sum.
  - 1. The Owner will engage and pay for the services of an independent agency to perform inspections and tests specified as the Owner's responsibility.

- a. Where the Owner has engaged a testing agency or other entity for testing and inspection of a part of the Work, and the Contractor is also required to engage an entity for the same or related element, the Contractor shall not employ the entity engaged by the Owner, unless otherwise agreed in writing with the Owner.
2. Retesting: The Contractor is responsible for retesting where results of required inspections, test or similar services prove unsatisfactory and do not indicate compliance with Contract Document requirements, regardless of whether the original test was the Contractor's responsibility.
  - a. Cost of retesting construction revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original construction.
3. Associated Services: The Contractor shall cooperate with agencies performing required inspections, tests and similar services and provide reasonable auxiliary services, as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include, but are not limited to:
  - a. Providing access to the Work and furnishing incidental labor and facilities necessary to facilitate inspections and tests.
  - b. Taking adequate quantities of representative samples of materials that require testing or assisting the agency in taking samples.
  - c. Providing facilities for storage and curing of test samples, and delivery of samples to testing laboratories.
  - d. Providing the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.
  - e. Security and protection of samples and test equipment at the Project site.
4. Owner Responsibilities: The Owner will provide inspections, tests and similar quality control services specified to be performed by independent agencies and not by the Contractor, except where they are specifically indicated as the Contractor's responsibility or are provided by another identified entity. Costs for these services are not included in the Contract Sum.
  - a. The Owner will employ and pay for the services of an independent agency, testing laboratory or other qualified firm to perform services which are the Owner's responsibility.
5. Duties of the Testing Agency: The independent testing agency engaged to perform inspections, sampling and testing of materials and construction specified in individual Specification Sections shall cooperate with the Landscape Architect and Contractor in performance of its duties, and shall provide qualified personnel to perform required inspections and tests.

- a. The agency shall notify the Landscape Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  - b. The agency is not authorized to release, revoke, alter or enlarge requirements of the Contract Documents, or approve or accept any portion of the Work.
  - c. The agency shall not perform any duties of the Contractor.
6. Coordination: The Contractor and each agency engaged to perform inspections, test and similar services shall coordinate the sequence of activities to accommodate required services with a minimum of delay. In addition the Contractor and each agency shall coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.
- a. The Contractor is responsible for scheduling times for inspections, tests, taking samples and similar activities.

#### 1.4 SUBMITTALS

- A. The independent testing agency shall submit a certified, written report of each inspection, test or similar service to the Landscape Architect in duplicate, unless the Contractor is responsible for the service. If the Contractor is responsible for the service, submit a certified, written report of each inspection, test or similar service through the Contractor, in duplicate.
  - 1. Submit additional copies of each written report directly to the governing authority, when the authority so directs.
- B. Report Data: Written reports of each inspection, test or similar service shall include, but not be limited to:
  - a. Date of issue.
  - b. Project title and number.
  - c. Name, address and telephone number of testing agency.
  - d. Dates and locations of samples and test or inspections.
  - e. Names of individuals making the inspection or test.
  - f. Designation of the Work and test method.
  - g. Identification of product and Specification Section.
  - h. Complete inspection or test data.
  - i. Test results and an interpretation of test results.
  - j. Ambient conditions at the time of sample-taking and testing.
  - k. Comments or professional opinion as to whether inspected or tested Work complies with contract Document requirements.

- l. Name and signature of laboratory inspector.
- m. Recommendations on retesting.

## 1.5 QUALITY ASSURANCE

- A. Qualification for Service Agencies: Engage inspection and testing service agencies, including independent testing laboratories, which are prequalified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories, and which specialize in the types of inspections and tests to be performed.
  - 1. Each independent inspection and testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the State in which the Project is located.

## PART 2 -PRODUCT AND MATERIALS (Not Applicable)

## PART 3 -EXECUTION

### 3.1 REPAIR AND PROTECTION

- A. General: Upon completion of inspection, testing, sample-taking and similar services, repair damaged construction and restore substrates and finishes to eliminate deficiencies, including deficiencies in visual qualities of exposed finishes.
- B. Protect construction exposed by or for quality control service activities, and protect repaired construction.
- C. Repair and protection is the Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.

**END OF SECTION 01500**

## SECTION 01600 - PRODUCT SUBSTITUTIONS

### PART 1-GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling request for substitutions made **during** the bidding period.
- B. The Contractor's Construction Schedule and the Schedule of Submittals are included under Section 01200 "Submittals."

#### 1.3 DEFINITIONS

- A. Definitions used in this Article are not intended to change or modify the meaning of other terms used in the Contract Documents.
- B. Substitutions: Requests for changes in products, materials, equipment, and methods of construction required by Contract Documents proposed by the Contractor **during** the bidding period are considered request for "substitutions." The following are **not** considered substitutions:
  - 1. Revisions to Contract Documents requested by the Owner or Landscape Architect.
  - 2. Specified options of products and construction methods included in Contract Documents.

#### 1.04 SUBMITTALS

- A. Substitution Request Submittal: Requests for substitutions will be considered only if received during the bidding period. Requests received more than ten (10) days after commencement of the Work may be considered or rejected at the discretion of the Landscape Architect.
  - 1. Submit requests in the form and in accordance with procedures required for Change Order proposals.
  - 2. Identify the product, or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate.
    - a. Product Literature, including Drawings and descriptions of products, fabrication and installation procedures.
    - b. Samples, where applicable or requested.
    - c. A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements, such as size, weight, durability, performance, and visual effect.

- d. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractor's that will become necessary to accommodate the proposed substitution.
- e. A Statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract time.
- f. Cost information, including a proposal of the net change, if any in the Contract Sum.
- g. Certification by the Contractor that the substitution proposed is equal-to or better in every significant respect to that required by the Contract Documents, and that it will perform adequately in the application indicated. Include the Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.

## PART 2 -PRODUCTS AND MATERIALS

### SUBSTITUTIONS

- A. Conditions: The Contractor's substitution request will be received and considered by the Landscape Architect when one or more of the following conditions are satisfied, as determined by the Landscape Architect, otherwise requests will be returned without action except to a record noncompliance with these requirements.
  - 1. Extensive revisions to Contract Documents are not required.
  - 2. Proposed changes are in keeping with the general intent of Contract Documents.
  - 3. The request is timely, fully documented and properly submitted.
  - 4. The request is directly related to an "or equal" clause or similar language in the Contract Documents unless specified "substitutions not permitted".
  - 5. The specified product or method of construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed substitution can be coordinated.
  - 6. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provide the required warranty.
- B. The Contractor's submittal and the Landscape Architect's acceptance of Shop Drawings, Product Literature or Samples that relate to the construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

### PART 3 -EXECUTION (Not Applicable)

**END OF SECTION 01600**

## SECTION 01650 - EXECUTION REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

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

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Progress cleaning.
5. Starting and adjusting.
6. Protection of installed construction.
7. Correction of the Work.

- B. Related Sections:

1. Division 1 Section "Submittal Procedures" for submitting surveys.
2. Division 1 Section "Closeout Procedures" for submitting final survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

#### 1.3 SUBMITTALS

- A. Qualification Data: For land surveyor.

- B. As-Built Survey:

1. Draft Copy. Submit at Substantial Completion.
  - a. Scale: 1" = 40'.
  - b. Mapping Details. Include the following.
    - 1) Contours at 2-foot intervals.
    - 2) Drainage structure invert and outlet elevations.
    - 3) Existing and constructed features, labeled, including monitoring wells, limits of snow fence barrier including subgrade elevations, walks, walls, utilities and access locations.

2. Final Copy. Address Landscape Architect's comments and resubmit within 30 days of receipt of Landscape Architect's comments, and before request for Site Final Inspection.
  - a. Deliverables:
    - 1) Original, certified, fixed-line mylar.
    - 2) Three blackline copies.
    - 3) Electronic copy of survey on CD in **[AutoCAD Version 2010 or newer]** format.
  - C. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.
  - D.

#### 1.4 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
  1. Structural Elements: When cutting and patching structural elements, notify Engineer of locations and details of cutting and await directions from the Engineer before proceeding. Shore, brace, and support structural element during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection

#### PART 2 - PRODUCTS (Not Used)

#### PART 3 - EXECUTION

##### 3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.
  1. Before construction, verify the location and invert elevation at points of connection of storm sewer, and electrical services and other utilities.
  2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present

where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
  - a. Description of the Work.
  - b. List of detrimental conditions, including substrates.
  - c. List of unacceptable installation tolerances.
  - d. Recommended corrections.
2. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- B. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of the Contractor, submit a request for information to Engineer.
- C. Surface and Substrate Preparation: Comply with manufacturer's recommendations for preparation of substrates to receive subsequent work.

### 3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Engineer promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
  1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
  2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
  3. Inform installers of lines and levels to which they must comply.
  4. Check the location, level and plumb, of every major element as the Work progresses.
  5. Notify Engineer when deviations from required lines and levels exceed allowable tolerances.
  6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, subgrade elevations including snow fence barrier, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Landscape Architect.

### 3.4 FIELD ENGINEERING

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
  - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Landscape Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Landscape Architect before proceeding.
  - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
  - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
  - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
  - 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- C. Coordinates
  - 1. Establish X, Y and Z coordinates for benchmarks and survey control points.
    - a. Maximum Permissible Error: 0.10 feet, plus or minus in any coordinate direction.
- D. Certified Survey: On completion of walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework, include subgrade elevations (snow fence barrier elevation).

### 3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
  2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- E. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

### 3.6 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
  3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
    - a. Utilize containers intended for holding waste materials of type to be stored.
  4. Coordinate progress cleaning for joint-use areas where more than one installer has worked.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
1. Remove liquid spills promptly.
  2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

- E. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements of the City of Bridgeport.
- F. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- G. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period.

### 3.7 PROTECTION OF INSTALLED CONSTRUCTION

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

### 3.8 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.
  - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

END OF SECTION

## SECTION 01700 - PROJECT CLOSEOUT

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for project closeout, including, but not necessarily limited to, the following:
  - 1. Inspection procedures.
  - 2. Project record document submittal.
  - 3. Submittal of warranties.
  - 4. Final cleaning.

#### 1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for Certification of Substantial Completion, complete the following. List exceptions in the request.
  - 1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show one hundred percent (100%) completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion, as indicated in these Contract Documents, and a statement showing an accounting of changes to the Contract Sum.
    - a. If one hundred percent (100%) completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
  - 2. Advise Owner of pending insurance change-over requirements.
  - 3. Submit specific warranties, certifications, and similar documents.
  - 4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access.
  - 5. Submit record as-built documentation survey and similar final record information.
  - 6. Complete final clean-up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.
- B. Inspection Procedures: On receipt of a request for inspection, the Landscape Architect will either proceed with inspection or advise the Contractor of unfilled requirements. The Landscape Architect will prepare the Certificate of Substantial Completion following inspections, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.

1. The Landscape Architect will repeat inspection when requested and assured that the Work has been substantially completed.
2. Results of the completed inspection will form the basis of requirements for final acceptance.

#### 1.4 FINAL ACCEPTANCE

- A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
  1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations, where required.
  2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
  3. Submit a certified copy of the Landscape Architect's final punch list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Landscape Architect.
- B. Re-inspection Procedure: The Landscape Architect will re-inspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Landscape Architect.
  1. Upon completion of re-inspection, the Landscape Architect will prepare a certificate of final acceptance, or advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled, but are required for final acceptance.
  2. If necessary, re-inspection will be repeated.

#### 1.5 RECORD DOCUMENT SUBMITTALS

- A. General: Do not use record documents for construction purpose; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Landscape Architect's reference during normal working hours.
- B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-referenced at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
  1. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.
  2. Mark new information that is important to the Owner, but was not shown on Contract Drawings or Shop Drawings.
  3. Note related Change Order numbers where applicable.

4. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.
- C. Record Specifications: Maintain one (1) complete copy of the Project Manual, including addenda, and one (1) copy of other written Construction Documents, such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Literature.
1. Upon completion of the Work, submit record Specifications to the Landscape Architect for the Owner's records.
- D. Record Product Literature: Maintain one (1) copy of each Product Literature submittal. Mark these documents to show significant variation in actual Work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned later by direct observation. Note related Change Orders and mark-up of record drawings and Specifications.
1. Upon completion of mark-up, submit complete set of record Product Literature to the Landscape Architect for the Owner's record.
- E. Record Sample Submitted: Immediately prior to the date or dates of Substantial Completion, the Contractor will meet at the site with the Landscape Architect and the Owner's personnel to determine which of the submitted Samples that have been maintained during progress of the Work are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's Sample storage area.
- F. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Landscape Architect for the Owner's records.

## PART 2 -PRODUCTS AND MATERIALS (Not Applicable)

## PART 3 -EXECUTION

### FINAL CLEANING

- A. General: General cleaning during construction is required by the General Conditions.

- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, cleaning and maintenance program. Comply with manufacturer's instructions.
1. Complete the following cleaning operations, before requesting inspection for Certification of Substantial Completion.
    - a. Remove labels that are not permanent labels.
    - b. Clean exposed exterior hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances.
    - c. Clean the site, including landscaped areas, of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.
- C. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

**END OF SECTION 01700**

# Brien McMahon High School Athletic Field Conversion

NORWALK, CT

July 21, 2016



LOCATION PLAN  
APPROX. SCALE: 1"=300'

## DRAWING LIST

C-00	COVER
C-01	EXISTING CONDITIONS PLAN
C-02	GENERAL NOTES
C-03	REMOVALS AND SEDIMENT AND EROSION CONTROL PLANS
C-04	MATERIALS PLAN
C-05	OVERALL LAYOUT PLAN
C-06	BASEBALL INFIELD ENLARGEMENT PLAN
C-07	GRADING PLAN
C-08	DRAINAGE AND UTILITIES PLAN
C-09	SEDIMENT AND EROSION CONTROL DETAILS
C-10	SITE DETAILS - 01
C-11	SITE DETAILS - 02
C-12	SITE DETAILS - 03
C-13	SITE DETAILS - 04



**GENERAL NOTES**

- SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SHOWN ON THE DRAWINGS TO SCALE OR TO THEIR ACTUAL DIMENSION OR LOCATION. COORDINATE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.
- DO NOT RELY SOLELY ON ELECTRONIC VERSIONS OF DRAWINGS, SPECIFICATIONS, AND DATA FILES THAT ARE PROVIDED BY THE ENGINEER. FIELD VERIFY LOCATION OF PROJECT FEATURES.
- PERFORM NECESSARY CONSTRUCTION NOTIFICATIONS, APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK AS REQUIRED BY THE CONTRACT DOCUMENTS.
- THE TOPOGRAPHY AND PHYSICAL FEATURES SHOWN ARE A COMPILATION OF ACTUAL FIELD SURVEY PERFORMED ON THE GROUND BY CABEZAS-DEANGELIS, LLC DURING 3-12-2016 AND FROM FIELD MEASUREMENTS PERFORMED BY STANTEC. THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION OF EXISTING CONDITIONS AND VARIATIONS AND SHALL REPORT ANY TO THE LANDSCAPE ARCHITECT PRIOR TO THE COMMENCEMENT OF WORK.
- WHEN CONSTRUCTION SEQUENCE ALLOWS, THE CONTRACTOR SHALL COORDINATE AND COMBINE ALL ARCHITECTURAL REVIEWS FOR MINIMAL SITE VISITS BY LANDSCAPE ARCHITECT.

**REGULATORY REQUIREMENTS**

- BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. PERFORM CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
- THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE CONSTRUCTION SITE. A MINIMUM 6' HT FENCE SHALL BE INSTALLED IN ALL LOCATIONS NECESSARY ALONG WITH LOCKABLE GATE AT ALL EXISTING OPENINGS TO THE CONSTRUCTION AREA. ENSURE AREA IS SECURED AND LOCKED DOWN AT END OF EACH DAY. EXISTING ONSITE FENCING MAY BE USED FOR SECURING THE SITE WHERE CONSTRUCTION SEQUENCING ALLOWS.
- DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.

**EARTHWORK**

- NOTIFY UTILITY LOCATOR SERVICE AT LEAST 72 HOURS BEFORE STARTING EXCAVATION.

**IMPORTANT NOTE:**

THE LOCATIONS OF SHOWN UNDERGROUND UTILITIES ARE APPROXIMATE. ADDITIONAL UTILITIES MAY EXIST. PRIOR TO ANY EXCAVATION OR CONSTRUCTION CONTACT -

"CALL BEFORE YOU DIG" DIAL 811

- STOP WORK IN THE VICINITY OF SUSPECTED CONTAMINATED SOIL, GROUNDWATER OR OTHER MEDIA. IMMEDIATELY NOTIFY THE OWNER SO THAT APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN. RESUME WORK IN THE IMMEDIATE VICINITY ONLY UPON DIRECTION BY THE OWNER.

**DEMOLITION**

- EXISTING CONDITIONS AS SHOWN ARE APPROXIMATE AND ARE NOT NECESSARILY SHOWN TO THEIR ACTUAL SCALE, DIMENSION OR LOCATION. CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING CONDITIONS WITHIN THE CONTRACT LIMIT LINE INCLUDING BUT NOT LIMITED TO WALKS, TREES, FENCING, UTILITIES, STRUCTURES, ETC. THE CONTRACTOR SHALL REPORT TO LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION ANY CONFLICTS THAT WILL IMPEDE CONSTRUCTION, INCREASE COST TO OWNER OR RESULT IN PERMANENT DAMAGE TO EXISTING SITE AMENITIES.
- CONTRACTOR SHALL CONDUCT ALL DEMOLITION AND SITE PREPARATION NECESSARY FOR THE COMPLETION OF NEW WORK INCLUDING BUT NOT LIMITED TO THOSE ITEM NOTED ON C-03.
- CONTRACTOR SHALL PERFORM A SITE WALK WITH THE OWNER'S REPRESENTATIVE TO CONFIRM EXISTING ELEMENTS TO BE DEMOLISHED OR REMOVED AND STORED.
- INSTALL TREE PROTECTION TO THE LIMITS OF THE EXISTING DRIP LINE. NO CONSTRUCTION ACTIVITIES OF ANY KIND SHALL OCCUR WITHIN TREE PROTECTION LIMITS UNLESS OTHERWISE NOTED. THIS INCLUDES BUT IS NOT LIMITED TO MATERIAL STOCKPILING, CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE, CONSTRUCTION MOBILIZATION AND/OR VEHICLE PARKING. IF CONSTRUCTION ACTIVITIES MUST OCCUR WITHIN THE DRIP LINE THEY MUST BE DONE SO BY NON MECHANICAL MEANS TO AVOID DAMAGE TO THE EXISTING TREE ROOTS AND COMPACTION OF THE EXISTING SOIL.
- ROOT PRUNE, DEEP ROOT FEED AND FERTILIZE ALL EXISTING TREES TO REMAIN. ALL COMPENSATORY PRUNING AND FERTILIZING OF TREES SHALL BE PERFORMED BY LICENSED ARBORIST.
- THE CONTRACTOR SHALL IDENTIFY ALL EXISTING IRRIGATION EQUIPMENT (HEADS, PIPING, PUMPS, ETC.) WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL CUT AND REUSE EXISTING HEADS, PIPING, PUMPS, ETC. IN PROPOSED LAWN AREAS WITHOUT ADDING ADDITIONAL MATERIALS OR SITE WORK. ALL EXISTING PIPING AND HEADS NOT SCHEDULED FOR REUSE SHALL BE CUT AT THE CONTRACT LIMIT LINE AND SHALL BE SUFFICIENTLY CAPPED TO ALLOW FOR THE FULL FUNCTION OF THE REMAINING IRRIGATION SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR PRESSURIZING THE SYSTEM AFTER CONSTRUCTION AND VERIFYING THE PIPING AND FITTINGS FOR ANY LEAKS PRIOR TO BURYING THE SYSTEM.

**WORK RESTRICTIONS**

- DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, FIRE HYDRANTS, AND UTILITIES WITHOUT APPROPRIATE PERMITS.
- WORK IS RESTRICTED TO THE HOURS AS DETERMINED BY THE CITY OF NORWALK.

**CONSTRUCTION LAYOUT**

- EMPLOY A LICENSED SURVEYOR (LICENSED IN THE STATE OF CONNECTICUT) FOR LAYOUT OF ALL IMPROVEMENTS.
- PROVIDE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED SITE IMPROVEMENTS. FIELD VERIFY EXISTING PAVEMENT AND GROUND ELEVATIONS AT THE INTERFACE WITH PROPOSED PAVEMENTS AND DRAINAGE STRUCTURES BEFORE START OF CONSTRUCTION.
- PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, FIELD VERIFY PROPOSED UTILITY ROUTES AND IDENTIFY ANY INTERFERENCES OR OBSTRUCTIONS WITH EXISTING UTILITIES OR PUBLIC RIGHTS-OF-WAY.
- IMMEDIATELY INFORM THE LANDSCAPE ARCHITECT IN WRITING IF EXISTING UTILITY CONDITIONS CONFLICT OR DIFFER FROM THAT INDICATED AND IF THE WORK CANNOT BE COMPLETED AS INDICATED.
- DIMENSIONS ARE FROM FACE OF CURB, FACE OF BUILDING, FACE OF WALL, CENTER OF FENCE, AND CENTER LINE OF PAVEMENT MARKINGS, UNLESS NOTED OTHERWISE.
- BOUNDS OR MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.
- DIMENSIONS NOTED AS +/- ARE CHECK DIMENSIONS. DO NOT USE CHECK DIMENSIONS TO PERFORM INITIAL LAYOUT OF NEW WORK. FOLLOWING INITIAL LAYOUT, USE CHECK DIMENSIONS TO VERIFY DISTANCES SHOWN. REPORT DISCREPANCIES OF 5% OR MORE FROM CHECK DIMENSIONS TO ARCHITECT FOR REVIEW PRIOR TO CONSTRUCTION.

**UTILITIES**

- TERMINATE EXISTING UTILITIES IN CONFORMANCE WITH LOCAL, STATE AND INDIVIDUAL UTILITY COMPANY STANDARD SPECIFICATIONS AND DETAILS. COORDINATE UTILITY SERVICE DISCONNECTS WITH UTILITY REPRESENTATIVES.
- THE TYPE, SIZE AND LOCATION OF DEPICTED UNDERGROUND UTILITIES ARE APPROXIMATE REPRESENTATIONS OF INFORMATION OBTAINED FROM FIELD LOCATIONS OF VISIBLE FEATURES, EXISTING MAPS AND PLANS OF RECORD, UTILITY MAPPING, AND OTHER SOURCES OF INFORMATION OBTAINED BY THE ENGINEER. ASSUME NO GUARANTEE AS TO THE COMPLETENESS, SERVICEABILITY, EXISTENCE, OR ACCURACY OF UNDERGROUND FACILITIES. FIELD VERIFY THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES.
- PAY ALL FEES AND COSTS ASSOCIATED WITH UTILITY MODIFICATIONS AND CONNECTIONS, REGARDLESS OF THE ENTITY THAT PERFORMS THE WORK.
- COORDINATE THE WORK AND WORK SCHEDULE WITH UTILITY COMPANIES. PROVIDE ADEQUATE NOTICE TO UTILITIES TO PREVENT DELAYS IN CONSTRUCTION.
- INTERIOR DIAMETERS OF STORM DRAIN AND SANITARY SEWER STRUCTURES SHALL BE DETERMINED BY THE PRECAST MANUFACTURER, BASED ON THE INDICATED PIPE SYSTEM LAYOUT AND LOCAL MUNICIPAL STANDARDS.  
  
MINIMUM INTERIOR DIAMETERS:  
0 TO 20 FEET DEEP; 4 FEET.  
20 FEET OR GREATER; 5 FEET.
- RIM ELEVATIONS FOR MANHOLES, VALVE COVERS, GATE AND PULL BOXES, AND OTHER STRUCTURES ARE APPROXIMATE. SET OR RESET RIM ELEVATIONS AS FOLLOWS:  
  
IN PAVEMENTS AND CONCRETE SURFACES: FLUSH  
IN SURFACES ALONG ACCESSIBLE ROUTES: FLUSH  
IN LANDSCAPE, SEEDED, AND OTHER EARTH SURFACES AREAS: 1 INCH ABOVE SURROUNDING AREA; TAPER EARTH TO RIM ELEVATION.
- INSTALL PROPOSED PRIVATE UTILITY SERVICES ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY THE AUTHORITY HAVING JURISDICTION (WATER, SEWER, GAS, TELEPHONE, ELECTRIC, FIRE ALARM, ETC.) COORDINATE FINAL DESIGN LOADS AND LOCATIONS WITH OWNER AND ARCHITECT.

**WATER SERVICE NOTES**

- CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT LOCATION, SIZE AND CONTENTS OF THE EXISTING VAULTED WATER SERVICE TO THE SITE.
- CONTRACTOR IS RESPONSIBLE FOR THE FULL INSTALLATION, CONNECTIVITY AND OPERATION OF ALL PROPOSED ON-SITE WATER SERVICES INCLUDING, BUT NOT LIMITED TO, POTABLE WATER LINE, ALL NECESSARY BACKFLOW PREVENTERS (CONTRACTOR TO VERIFY), WATER VALVES IN FIELD.
- CONTRACTOR SHALL COORDINATE WITH THE CITY THE SIZE AND MODEL WATER SUPPLY VALVES LOCATED IN FIELD QUICK COUPLERS TO ALLOW FOR CITY HOSE HOOK-UP.
- CONTRACTOR SHALL COORDINATE ALL WATER SERVICES WITH CITY AND REQUIRED MUNICIPAL WATER SERVICE DISTRICT.
- ALL WATER SERVICE WORK AND COMPONENTS SHALL COMPLY WITH ALL CITY AND STATE BUILDING DEPARTMENT CODES.
- ALL WATER SERVICES SHALL HAVE THE NECESSARY FITTINGS, HOOKUPS, ETC. TO ALLOW FOR THE BLOWOUT OR BACK DRAINING FOR FREEZE PROTECTION AS PER CITY STANDARDS. CONTRACTOR SHALL COORDINATE WITH CITY.
- ALL FITTINGS (ELBOWS, Y'S, T'S, ETC.) SHALL BE BRASS BARBED AND DOUBLE CLAMPED.
- WATER SERVICE PIPING SHALL BE 2" PE4710-IDR, RATED PC250 POTABLE WATER PIPE AS MANUFACTURED BY CHARTER PLASTICS COMPANY (800-486-7473) OR APPROVED EQUAL.
- CONTRACTOR SHALL REUSE EXISTING IRRIGATION SUPPLY'S TO THE FIELD FOR NEW WATER SERVICE.

**GRADING AND TURF NOTES**

- ALL GRADING AND ELEVATIONS SHOWN ON THE PLAN ARE TO FINISHED CONSTRUCTED GRADES INCLUDING THOSE WITHIN FIELDS.
- ARTIFICIAL TURF, LINE STRIPING AND TURF INFILL MATERIAL ARE NOT IN CONTRACT (N.I.C.).
- THAT CONTRACTOR SHALL COORDINATE WITH CITY AND TURF MANUFACTURER TO VERIFY THE THICKNESS OF THE TURF INFILL. SEE DETAILS FOR RELATIONSHIPS BETWEEN TURF FIBERS, TURF INFILL AND OTHER SITE IMPROVEMENTS.

**SITE RESTORATION**

- UPON COMPLETION OF CONSTRUCTION AND PRIOR TO TOPSOILING, GRADING & SEEDING, LAWN / LANDSCAPED AREAS USED FOR CONSTRUCTION ACCESS AND EQUIPMENT MOVEMENTS SHALL BE DECOMPACTED TO A DEPTH OF 12" OR AS DEEP AS TO NOT DISTURB EXISTING ROOT SYSTEMS. DECOMPACT SOIL MANUALLY, BREAKING COMPACTED SOIL INTO PIECES NO LARGER THAN 2". RAKE AND REMOVE STONES, LOOSE ROOTS AND OTHER DEBRIS PRIOR TO PLACEMENT OF TOPSOIL.
- UNLESS OTHERWISE NOTED PROVIDE 6 INCHES OF TOPSOIL AND SEED TO AREAS DISTURBED DURING CONSTRUCTION AND NOT DESIGNATED TO BE RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.). ALL LAWN / LANDSCAPED AREAS THAT ARE DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE SEEDED WITH GENERAL LAWN SEED MIX.
- REPAIR DAMAGES RESULTING FROM CONSTRUCTION LOADS, AT NO ADDITIONAL COST TO OWNER.
- RESTORE AREAS DISTURBED BY CONSTRUCTION OPERATIONS TO THEIR ORIGINAL CONDITION OR BETTER, AT NO ADDITIONAL COST TO OWNER.

**PREPARATION OF LAWN AREAS**

- PREPARATION OF A CLEAN, WEED FREE SOIL SURFACE IS NECESSARY FOR OPTIMAL RESULTS. PRIOR TO SEEDING OF OPEN AREAS, THE CONTRACTOR SHALL APPLY HERBICIDE SUCH AS 'RODEO' TO PREPARED SOIL AREAS. CONTROL MEASURES TO REDUCE OR ELIMINATE UNDESIRABLE VEGETATION SHOULD BE PLANNED DURING SITE PREPARATION AND WELL IN ADVANCE OF THE SEEDING. PERMIT SUFFICIENT PERIOD FOR GERMINATION OF UNDESIRABLE INVASIVE PLANTS, TILLING AND PREPARING SOIL AND APPLYING HERBICIDE A MINIMUM OF 10 DAYS PRIOR TO SEEDING. THE CONTRACTOR SHALL PROVIDE TWO (2) SEPARATE APPLICATIONS OF HERBICIDE TO OPEN SOIL AREAS.
- ALWAYS APPLY SEED ON CLEAN BARE SOIL. THE MIX MAY BE APPLIED BY HYDROSEEDING (AS APPROVED BY THE LANDSCAPE ARCHITECT), BY MECHANICAL SPREADER, OR ON SMALL SITES IT CAN BE SPREAD BY HAND. LIGHTLY RAKE, OR ROLL TO ENSURE PROPER SOIL-SEED CONTACT. BEST RESULTS ARE OBTAINED WITH A FALL SEEDING FOR LAWN AREAS. PROVIDE A LIGHT MULCHING OF WEED-FREE STRAW TO CONSERVE MOISTURE. IF CONDITIONS ARE DRIER THAN USUAL, WATERING MAY BE REQUIRED.
- GRASS SEED MIX FOR GENERAL LAWN AREAS SHALL BE AS FOLLOWS:

PERCENT BY WEIGHT	SPECIES	PERCENT PURITY	PERCENT GERMINATION
10%	NORTH STAR KENTUCKY BLUEGRASS	98%	80%
35%	*VICTORY CHEWINGS FESCUE	98%	85%
25%	*JASPER CREEPING RED FESCUE	98%	85%
30%	*CUTTER PERENNIAL RYEGRASS	97%	90%

SPECIES MARKED WITH AN ASTERISK(\*) SHALL BE HIGH ENDOPHYTE. SOWING RATE FOR GENERAL LAWN AREAS SHALL BE 220 LBS/ACRE.

**PLANTING AND SEEDING NOTES**

- ALL REMAINING LAWN / LANDSCAPED AREAS NOT NOTED ON THIS PLAN TO RECEIVE PLANTINGS OR SPECIFIC SEED MIX SHALL BE SEEDED WITH ZONE 6 LAWN SEED MIX.
- ALL SEED SHALL BE FRESH, RECLEANED SEED OF THE LATEST CROP. ALL SEED SHALL BE CERTIFIED, AND MUST BEAR THE SEALS OF CERTIFICATION ON EACH BAG.
- ALL SEEDING RATES ARE RECOMMENDED, AND SHALL BE CONFIRMED FROM SEED SUPPLIER, AND REVIEWED WITH LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- ALL SEEDED SLOPED AREAS SHALL HAVE RIDGES SET, THAT RUN PARALLEL TO SLOPE. REVIEW METHODOLOGY WITH LANDSCAPE ARCHITECT PRIOR TO INITIATING.
- CONTRACTOR SHALL REVIEW PLANT MATERIAL LOCATIONS WITH LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. PROPOSED TREE AND SHRUB LOCATIONS WILL BE FLAGGED BY CONTRACTOR.
- IF A DISCREPANCY EXISTS BETWEEN PLANT QUANTITIES AS SHOWN ON THE DRAWING AND IN THE PLANT LIST, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING AND INSTALLING THE LARGER QUANTITY.























## SECTION 02100 - SITE PREPARATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes the following items:

1. Site layout lines and levels
2. Clearing and grubbing.
3. Demolition and removals.
4. Debris and waste material removal.
5. Disposals.
6. Tree pruning.
7. Tree protection.
8. Temporary construction fence.

- B. Related Sections include the following:

1. Section 02300 – Earthwork.
2. Section 02821 – Chain Link Fencing and Gates

#### 1.3 REFERENCES

- A. State of Connecticut Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction.
- B. American Society for Testing and Materials (ASTM).
- C. National Arborist Association (NAA).

#### 1.4 DEFINITIONS

- A. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches (50 mm) in diameter; and free of weeds, roots, and other deleterious materials

#### 1.5 SUBMITTALS

- A. Submit credentials for the following in accordance with the Conditions of Contract and Division 1 Section “Submittals).

1. Arborist credentials of the 'person' who will perform the Work specified under this Section; include the State of Connecticut license information and at least three (3) references).

#### 1.6 COORDINATION

- A. Thoroughly coordinate and schedule the Work of this Section with all trades involved to prevent interferences and in order to allow adequate time at the proper stage of construction to properly perform all the Work of this Section.

#### 1.7 PROJECT CONDITIONS

- A. Thoroughly coordinate all street closings and/or obstructions, including pavement and curbing removals with all governing authorities and utility companies.
- B. The existing property lines and topographic contours noted on the drawings are given for the convenience of the Contractor. The Landscape Architect and the Owner will not be responsible for interpretations or conclusions drawn by the Contractor. Notify the Landscape Architect **immediately** of any discrepancies in the existing property lines or existing topographic elevations.
- C. The location of existing structures, utilities, storm drainage structures and piping are noted on the drawings but should not be relied upon. Check and verify the location of all existing structures, utilities and piping **prior** to commencing work.
- D. Call 1-800-922-4455 (Call Before You Dig) and register before beginning any excavation at least five (5) working days **prior** to the start of construction.
- E. Locate and identify existing underground and overhead electrical services and other utilities within contract limits. Provide adequate means of protection of utilities and services designated to remain. Repair utilities damaged during site work operations.
- F. Perform site work operations and the removal of debris and waste materials to assure minimum interference with the streets.
- G. Provide a temporary and lockable portable toilet for use by the workmen. Place the facility where noted on the drawings. Clean the sanitary facility once every two (2) weeks during the entire construction period. Remove the facility upon project completion.
- H. Obtain written permission from governing authorities when required to obstruct the street. Provide alternate routes around obstructed traffic ways when required by governing authorities. Provide traffic control when and as required by the City of Norwalk. All fees associated with permits and traffic control (police detail) shall be paid for by the contractor.
- I. Remove all encumbrances which interfere with the proper fulfillment of the work without additional cost to the Owner.
- J. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.
- K. Control dust caused by work operations. Dampen surfaces with water, as required, to control all dust.

Comply with air pollution control regulations of governing authorities. Exercise every reasonable precaution throughout the life of the contract to minimize dust arising from construction operations, hauling, storage or demolition.

- L. Protect existing and adjacent structures, pavement and utilities to remain from damage caused by work operations. Cost of repair or restoration of damage at the Contractor's expense. Protect all bench marks, control points and Landscape Architecting reference points; re-establish if damaged or disturbed.
- M. Protect and maintain benchmarks and survey control points from disturbance during construction.
- N. Failure on the part of the Landscape Architect or his representative to disapprove work, in the course of work operations or during observation of the work, is not to be interpreted as acceptance of the work not in conformance with the specifications. Improper work and/or materials are to be corrected whenever discovered.

## PART 2 -PRODUCTS AND MATERIALS

### 2.1 SEDIMENTATION CONTROL BALES, SEDIMENT CONTROL FENCE, SEDIMENT CONTROL BLANKET, PROJECT SIGNS AND SAFETY FENCE

- A. Sedimentation Control Bales and Sediment Control Fence shall conform to the requirements of Section 2.18, 2.19 and 7.55 and Article M.04 of the State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges and Incidental Construction", including any supplements.
- B. Blanket: Minimum width of 6 feet.
  - 1. Mat: Machine-produced of 100 percent coconut fiber with colored line or thread along outer edges to indicate material overlap limits.
    - a. Weight: 0.50 lb./sq.yd.
    - b. Overlap: Approximately 2 to 5 inches.
  - 2. Top and Bottom Cover: Heavy-weight polypropylene netting with ultraviolet additives to delay breakdown.
    - a. Mesh Size: 0.625-inch by 0.625 inch.
    - b. Weight: 3 lbs/1000 sq. ft.
- C. Sew blanket and covers together on 1.5 inch center at 50 stitches per roll width with UV stable polypropylene thread.

Blanket: North American Green S150 or Bon Terra S2.

- D. Project Signs shall conform to the requirements of Section 12.08 and Article M.18.09, M.18.10, M.18.11, M.18.12, M.18.13, M.18.14 and M.18.15 of the State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges and Incidental Construction", Form 816,

including current supplement. The signs shall contain the information as shown in this specification.

- E. Safety Fence shall be 6' high, Chain Linked Fence per Section 02821 Fencing of these specifications. Posts shall be as specified by the manufacturer or as approved by the Landscape Architect.

### PART 3 -EXECUTION

#### 3.1 EXAMINATION

- A. Examine the areas and conditions where the site preparation is to be provided. Notify the Landscape Architect, in writing, of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.

#### 3.2 SITE LAYOUT, LINES AND LEVELS

- A. Before removals, excavation, filling or rough grading operations are started; the work and site areas are to be completely staked out for the work of this Contract. Site layout lines and levels for the Work of this Contract are to be performed by a professional surveyor licensed by the State of Connecticut. Establish and maintain control points and benchmarks.
- B. Site layout, lines and levels may be subject to possible modifications, whether by inaccuracies in existing grades or by other conditions. Except in the case of substantial increases in quantity of materials, authorized in writing by the Landscape Architect, such modifications will not entitle the Contractor to additional compensation.

#### 3.3 TEMPORARY CONSTRUCTION FENCE

- A. Before removals, excavation, filling or rough grading operations are started; the Contractor shall install a temporary construction the project area as noted on the drawings. Install gate for direct access off of the sidewalk along Brewster Street. Refer to fence drawings for layout and details.
- B. Before removals, excavation, filling or rough grading operations are started; install a safety fence as shown on the Site Preparation Plans or as approved by the Landscape Architect and as per the manufacturer's recommendation.

#### 3.4 CLEARING AND GRUBBING

- A. As soon as the work has been staked out, notify the Landscape Architect so that their representative can designate and review all existing trees and vegetation to remain. Supply suitable tags of a permanent nature for identification purposes. Do not use paint for trees to remain.
- B. Before removals, excavation, filling or rough grading operations are started; provide sedimentation erosion-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties, roadways and walkways before beginning clearing and grubbing activities.

- C. Clear all areas within the contract limits of trees, shrubs, saplings, stumps, ground and tree vines, roots, brush, rubbish, stone walls and any other objectionable materials with the exception of those trees and vegetation designated to remain, either as noted on the drawings or as designated by the Landscape Architect to remain.
- D. Removal of trees and shrubs to include all grubbing and excavating, as necessary, to take out the entire root system. Do not **bury** stumps on the Owner's property. Legally dispose of all stumps off of the Owner's property.
- E. Depressions caused by removal of stumps or roots shall be filled and compacted with material suitable for refilling and compacted as specified.
- F. Use hand methods for grubbing brush, grass, weeds or vines inside the drip line of trees to remain.

### 3.5 TOPSOIL STRIPPING

- A. Remove sod and grass before stripping topsoil.
- B. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.
  1. Strip surface soil of unsuitable topsoil, including trash, debris, weeds, roots, and other waste materials.
- C. Stockpile topsoil materials away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust.
  1. Limit height of topsoil stockpiles to 72 inches (1800 mm).
  2. Do not stockpile topsoil within drip line of remaining trees.
  3. Dispose of excess topsoil as specified for waste material disposal.
  4. Stockpile surplus topsoil and allow for re-spreading deeper topsoil

### 3.6 DEBRIS AND WASTE MATERIAL REMOVAL

- A. Remove and properly dispose of all existing debris and waste materials including, but not limited to, metal, cars, garbage, tires, containers and their contents and any other materials deemed to be debris or waste materials by the Owner within the limits of the project.

### 3.7 SITE DEMOLITION AND REMOVALS

- A. Remove existing pavements, curbing and fencing where noted on the drawings for the completion of the Work of this Contract. Completely remove all existing foundations, abandoned utilities and all other items that interfere with new construction.
- B. Existing construction features are to be removed as required for the execution of the Work of this Contract. Such work is to be done in a manner to avoid any damage to the construction and finishes that are to remain and not to be demolished. Where new work is required to be built adjacent to or connected with existing construction, the existing construction is to be cut or removed and replaced with new construction to the extent required to solidly build and anchor the new work in place.

### 3.8 DISPOSALS

- A. Properly dispose of all materials and debris resulting from the clearing, demolition and removal operations.
- B. Legally dispose of all materials and debris off of the Owner's property.
- C. Maintain all disposal routes clear, clean and free of debris. Keep all streets clean along the disposal routes.
- D. On-site burning of combustible materials is **not** permitted.
- E. Accumulation of materials for disposal is not permitted. Disposal is to be made as fast as materials accumulate.
- F. Obtain all required and necessary permits or approvals for off-site disposals. All associated fees to be paid for by the contractor.

### 3.9 TREE PRUNING

- A. All pruning work to be performed by an experienced arborist licensed by the State of Connecticut.
- B. Pruning to follow Class 1 - Fine Pruning Standards of the National Arborist Association.
- C. Prune each tree of all dead, dying, diseased, weak, interfering and objectionable branches, as well as selective thinning to lessen wind resistance. Removal of branches to include those on the main trunk, as well as those inside the leaf area. Include removal of lower branches as directed by the Landscape Architect.

### 3.10 TREE PROTECTION

- A. Equipment or materials are not to be parked or repaired within twenty feet (20') of the drip line (outer limit of branches) of any existing tree to remain. Do not stockpile or dump oil, grease, gasoline, concrete or other debris within thirty feet (30') of the drip line of any tree to remain.
- B. Do not excavate within drip line of trees, unless otherwise indicated.
- C. Where excavation for new construction is required within drip line of trees, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible.
  - 1. Cover exposed roots with burlap and water regularly.
  - 2. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.
  - 3. Coat cut faces of roots more than 1-1/2 inches (38 mm) in diameter with emulsified asphalt or other approved coating formulated for use on damaged plant tissues.
  - 4. Cover exposed roots with wet burlap to prevent roots from drying out. Backfill with soil as soon as possible.

- D. Any tree damaged during construction is to be repaired by an Arborist licensed by the State of Connecticut. Should any existing tree to remain be severely damaged or scarred during the construction process, such tree is to be replaced with a similar species of tree with a caliper of eight inches (8") at breast height.

**END OF SECTION 02100**

## SECTION 02240 -DEWATERING

### 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. This Section includes construction dewatering.
- B. Related Sections include the following:
  - 1. Section 02300 – Earthwork.
  - 2. Section 02260 – Excavation Support and Protection.

#### 1.3 PERFORMANCE REQUIREMENTS

- A. Dewatering Performance: The contractor shall design, furnish, install, test, operate, monitor, and maintain dewatering system of sufficient scope, size, and capacity to control ground-water flow into excavations and permit construction to proceed on dry, stable subgrades.
  - 1. Maintain dewatering operations to ensure erosion control, stability of excavations and constructed slopes, that excavation does not flood, and that damage to subgrades and permanent structures is prevented.
  - 2. Prevent surface water from entering excavations by grading, dikes, or other means.
  - 3. Accomplish dewatering without damaging existing buildings adjacent to excavation.
  - 4. Remove dewatering system if no longer needed.

#### 1.4 SUBMITTALS

- A. Shop Drawings for Information: For dewatering system. Show arrangement, locations, and details of wells and well points; locations of headers and discharge lines; and means of discharge and disposal of water.
  - 1. Include layouts of piezometers and flow-measuring devices for monitoring performance of dewatering system.
  - 2. Include a written report outlining control procedures to be adopted if dewatering problems arise.
  - 3. Include Shop Drawings signed and sealed by the qualified professional Engineer responsible for their preparation.

- B. Qualification Data: For Installer and professional Engineer.
- C. Photographs or videotape, sufficiently detailed, of existing conditions of adjoining construction and site improvements that might be misconstrued as damage caused by dewatering operations.
- D. Record drawings at Project closeout identifying and locating capped utilities and other subsurface structural, electrical, or mechanical conditions performed during dewatering.
  - 1. Note locations and capping depth of wells and well points.
- E. Field Test Reports: Before starting excavation, submit test results and computations demonstrating that dewatering system is capable of meeting performance requirements.

### 1.5 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with water disposal requirements of authorities having jurisdiction.

### 1.6 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Architect and then only after arranging to provide temporary utility services according to requirements indicated.
- B. Survey adjacent structures and improvements, employing a qualified professional land surveyor, establishing exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.
  - 1. During dewatering, regularly resurvey benchmarks, maintaining an accurate log of surveyed elevations for comparison with original elevations. Promptly notify Landscape Architect if changes in elevations occur or if cracks, sags, or other damage is evident in adjacent construction.

## PART 2 -PRODUCTS (Not Used)

## PART 3 -EXECUTION

### 3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by dewatering operations.
  - 1. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding site and surrounding area.
  - 2. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.

- B. Install dewatering system to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.

### 3.2 INSTALLATION

- A. Install dewatering system utilizing wells, well points, or similar methods complete with pump equipment, standby power and pumps, filter material gradation, valves, appurtenances, water disposal, and surface-water controls.
- B. Before excavating below ground-water level, place system into operation to lower water to specified levels. Operate system continuously until drains, sewers, and structures have been constructed and fill materials have been placed, or until dewatering is no longer required.
- C. Provide an adequate system to lower and control ground water to permit excavation, construction of structures, and placement of fill materials on dry subgrades. Install sufficient dewatering equipment to drain water-bearing strata above and below bottom of foundations, drains, sewers, and other excavations.
  - 1. Do not permit open-sump pumping that leads to loss of fines, soil piping, subgrade softening, and slope instability.
- D. Reduce hydrostatic head in water-bearing strata below subgrade elevations of foundations, drains, sewers, and other excavations.
  - 1. Maintain piezometric water level a minimum of 24 inches (600 mm) below surface of excavation.
- E. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water in a manner that avoids inconvenience to others. Provide sumps, sedimentation tanks, and other flow-control devices as required by authorities having jurisdiction.
- F. Provide standby equipment on-site, installed and available for immediate operation, to maintain dewatering on continuous basis if any part of system becomes inadequate or fails. If dewatering requirements are not satisfied due to inadequacy or failure of dewatering system, restore damaged structures and foundation soils at no additional expense to Owner.
  - 1. Remove dewatering system from Project site on completion of dewatering. Plug or fill well holes with sand or cut off and cap wells a minimum of 36 inches (900 mm) below overlying construction.
- G. Damages: Promptly repair damages to adjacent facilities caused by dewatering operations.

**END OF SECTION 02240**

## SECTION 02260 -EXCAVATION SUPPORT AND PROTECTION

### 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. This Section includes temporary excavation support and protection systems.
- B. Related Sections include the following:
  - 1. Section 02300 – Earthwork.
  - 2. Section 02240 - Dewatering

#### 1.3 PERFORMANCE REQUIREMENTS

- A. The contractor shall design, furnish, install, monitor, and maintain excavation support and protection system capable of supporting excavation sidewalls and of resisting soil and hydrostatic pressure and superimposed and construction loads.
  - 1. Provide professional engineering services needed to assume engineering responsibility, including preparation of Shop Drawings and a comprehensive engineering analysis by a qualified professional engineer.
  - 2. Prevent surface water from entering excavations by grading, dikes, or other means.
  - 3. Install excavation support and protection systems without damaging existing buildings, pavements, and other improvements adjacent to excavation.

#### 1.4 SUBMITTALS

- A. Shop Drawings for Information: Prepared by or under the supervision of a qualified professional engineer for excavation support and protection systems.
  - 1. Include Shop Drawings signed and sealed by the qualified professional engineer responsible for their preparation.
- B. Qualification Data: For Installer and professional engineer.
- C. Photographs or videotape, sufficiently detailed, of existing conditions of adjoining construction and site improvements that might be misconstrued as damage caused by the absence of, the installation of, or the performance of excavation support and protection systems.

## 1.5 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Architect and then only after arranging to provide temporary utility services according to requirements indicated.
- B. Survey adjacent structures and improvements, employing a qualified professional land surveyor; establish exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.
  - 1. During installation of excavation support and protection systems, regularly resurvey benchmarks, maintaining an accurate log of surveyed elevations and positions for comparison with original elevations and positions. Promptly notify Landscape Architect if changes in elevations or positions occur or if cracks, sags, or other damage is evident in adjacent construction.

## PART 2 -PRODUCTS

### 2.1 MATERIALS

- A. General: Provide materials that are either new or in serviceable condition.
- B. Structural Steel: ASTM A 36/A 36M, ASTM A 690/A 690M, or ASTM A 992/A 992M.
- C. Steel Sheet Piling: ASTM A 328/A 328M, ASTM A 572/A 572M, or ASTM A 690/A 690M; with continuous interlocks.
- D. Wood Lagging: Lumber, mixed hardwood, nominal rough thickness of 4 inches (100 mm).
- E. Cast-in-Place Concrete: ACI 301, of compressive strength required for application.
- F. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.

## PART 3 -EXECUTION

### 3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards that could develop during excavation support and protection system operations.
  - 1. Shore, support, and protect utilities encountered.
- B. Install excavation support and protection systems to ensure minimum interference with utilities, roads, streets, walks, and other adjacent occupied and used facilities.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed

or obstructed traffic ways if required by authorities having jurisdiction.

- C. Locate excavation support and protection systems clear of permanent construction so that forming and finishing of concrete surfaces is not impeded.
- D. Monitor excavation support and protection systems daily during excavation progress and for as long as excavation remains open. Promptly correct bulges, breakage, or other evidence of movement to ensure that excavation support and protection systems remain stable.
- E. Promptly repair damages to adjacent facilities caused by installing excavation support and protection systems.

### 3.2 SOLDIER BEAMS AND LAGGING

- A. Install steel soldier beams before starting excavation. Space soldier beams at regular intervals not to exceed allowable flexural strength of wood lagging. Accurately align exposed faces of flanges to vary not more than 2 inches (50 mm) from a horizontal line and not more than 1:120 out of vertical alignment.
- B. Install wood lagging within flanges of soldier beams as excavation proceeds. Trim excavation as required to install lagging. Fill voids behind lagging with soil, and compact.
- C. Install wales horizontally at centers indicated and secure to soldier beams.

### 3.3 SHEET PILING

- A. Before starting excavation, install one-piece sheet piling lengths and tightly interlock to form a continuous barrier. Limit vertical offset of adjacent sheet piling to 60 inches (1500 mm). Accurately align exposed faces of sheet piling to vary not more than 2 inches (50 mm) from a horizontal line and not more than 1:120 out of vertical alignment. Cut tops of sheet piling to uniform elevation at top of excavation.

### 3.4 TIEBACKS

- A. Tiebacks: Drill for, install, grout, and tension tiebacks into position. Test load-carrying capacity of each tieback and replace and retest deficient tiebacks.
  - Test loading shall be observed by a qualified professional Landscape Architect responsible for design of excavation support and protection system.
  - Maintain tiebacks in place until permanent construction is able to withstand lateral earth and hydrostatic pressures.

### 3.5 BRACING

- A. Bracing: Locate bracing to clear columns, floor framing construction, and other permanent work. If necessary to move brace, install new bracing before removing original brace.
  1. Do not place bracing where it will be cast into or included in permanent concrete work, unless otherwise approved by Architect.
  2. Install internal bracing, if required, to prevent spreading or distortion of braced frames.
  3. Maintain bracing until structural elements are supported by other bracing or until permanent

construction is able to withstand lateral earth and hydrostatic pressures.

### 3.6 REMOVAL AND REPAIRS

- A. Remove excavation support and protection systems when construction has progressed sufficiently to support excavation and bear soil and hydrostatic pressures. Remove in stages to avoid disturbing underlying soils or damaging structures, pavements, facilities, and utilities.
  - 1. Remove excavation support and protection systems to a minimum depth of 48 inches (1200 mm) below overlying construction and abandon remainder.
  - 2. Repair or replace, as approved by Architect, adjacent work damaged or displaced by removing excavation support and protection systems.
- B. Leave excavation support and protection systems permanently in place.

**END OF SECTION 02260**

## SECTION 02300 -EARTHWORK

### 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. This Section includes the following:
  - 1. Preparing subgrades for walks, pavements, lawns, and plantings.
  - 2. Granular fill base for concrete sidewalks, bituminous concrete sidewalks, concrete curbs and Athletic surfacing.
  - 3. Process Aggregate base course for bituminous concrete roadway pavement.
  - 4. Subbase course for bituminous concrete areas.
  - 5. Subsurface drainage backfill for walls and trenches.
  - 6. Excavating and backfilling trenches for buried mechanical and electrical utilities and pits for buried utility structures.
- B. Related Sections include the following:
  - 1. Section 02100 – Site Preparation.
  - 2. Section 02240 – Dewatering.
  - 3. Section 02260 – Excavation Support and Protection.

#### 1.3 UNIT PRICES

- A. Rock Measurement: Volume of rock actually removed, measured in original position, but not to exceed the following:
  - 1. 24 inches (600 mm) outside of concrete forms other than at footings.
  - 2. 18 inches (450 mm) outside of concrete forms at footings.
  - 3. 6 inches (150 mm) outside of minimum required dimensions of concrete cast against grade.
  - 4. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
  - 5. 12 inches (300 mm) beneath pipe in trenches, and the greater of 24 inches (600 mm) wider than pipe or 42 inches (1065 mm) wide.

- B. Unit prices for rock excavation include replacement with approved materials.

#### 1.4 DEFINITIONS

- A. Backfill: Soil materials used to fill an excavation.
  - 1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
  - 2. Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Processed Aggregate Base: Layer placed between the subbase course and bituminous concrete roadway pavement and bituminous concrete parking areas.
- C. Granular Fill: Layer placed between the excavated subgrade and the concrete sidewalks, bituminous concrete sidewalks, concrete curbs and stone dust paths.
- D. Bedding Material Course: Layer placed over the excavated subgrade in a trench before laying pipe.
- E. Borrow: Satisfactory soil imported from off-site for use as fill or backfill.
- F. Drainage Course: Layer supporting slab-on-grade used to minimize capillary flow of pore water.
- G. Excavation: Removal of material encountered above subgrade elevations.
  - 1. Additional Excavation: Excavation below subgrade elevations as directed by Architect. Additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
  - 2. Bulk Excavation: Excavations more than 10 feet (3 m) in width and pits more than 30 feet (9 m) in either length or width.
  - 3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation.
- H. Fill: Soil materials used to raise existing grades.
- I. Rock: Rock material in beds, ledges, unstratified masses, and conglomerate deposits and boulders of rock material exceeding 1 cu. yd. (0.76 cu. m) for bulk excavation or 3/4 cu. yd. (0.57 cu. m) for footing, trench, and pit excavation that cannot be removed by rock excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering, ripping, or blasting, when permitted:
  - 1. Excavation of Footings, Trenches, and Pits: Late-model, track-mounted hydraulic excavator; equipped with a 42-inch- (1065-mm-) wide, short-tip-radius rock bucket; rated at not less than 120-hp (89-kW) flywheel power with bucket-curling force of not less than 25,000 lbf (111 kN) and stick-crowd force of not less than 18,700 lbf (83 kN); measured according to SAE J-1179.
  - 2. Bulk Excavation: Late-model, track-mounted loader; rated at not less than 210-hp (157kW) flywheel power and developing a minimum of 45,000-lbf (200-kN) breakout force; measured according to SAE J-732.

- J. Rock: Rock material in beds, ledges, unstratified masses, and conglomerate deposits and boulders of rock material 3/4 cu. yd. (0.57 cu. m) or more in volume that when tested by an independent geotechnical testing agency, according to ASTM D 1586, exceeds a standard penetration resistance of 100 blows/2 inches (97 blows/50 mm).
- K. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- L. Structural Fill: Layer placed over subgrade supporting footings and foundations where unsuitable materials exist.
- M. Subbase Course: Layer placed between the subgrade and the Processed Aggregate base course for bituminous concrete roadway pavement and bituminous concrete parking areas
- N. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, granular fill or topsoil materials.
- O. Degree of compaction: The degree of compaction is expressed as a percentage of maximum density obtained by test procedures according to AASHTO T 180, Method D.
- P. Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.
- Q. 3/8" Stone: Layer placed under manholes and catch basins.
- R. 3/4" Stone: Pipe bedding and other miscellaneous uses.

## 1.5 SUBMITTALS

- A. Product Data: For the following:
  - 1. Each type of plastic warning tape.
  - 2. Drainage fabric.
  - 3. Separation fabric.
- B. Samples: For the following:
  - 1. 15-lb (14-kg) samples, sealed in airtight containers, of each proposed soil material from on-site or borrow sources.
  - 2. 12-by-12-inch (300-by-300-mm) sample of drainage fabric.
  - 3. 12-by-12-inch (300-by-300-mm) sample of separation fabric.
- C. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated:

1. Classification according to ASTM D 2487 of each on-site or borrow soil material proposed for fill and backfill.
2. Laboratory compaction curve according to AASHTO T 180, Method D for each on-site or borrow soil material proposed for fill and backfill.

## 1.6 QUALITY ASSURANCE

- A. Geotechnical Testing Agency Qualifications: An independent testing agency qualified according to ASTM E 329 to conduct soil materials and rock-definition testing, as documented according to ASTM D 3740 and ASTM E 548.

## 1.7 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by the Landscape Architect and then only after arranging to provide temporary utility services according to requirements indicated:
  1. Notify Landscape Architect not less than two days in advance of proposed utility interruptions.
  2. Do not proceed with utility interruptions without Landscape Architect's written permission.
  3. Contact utility-locator service for area where Project is located before excavating.
- B. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shut off services if lines are active.

## 1.8 PROTECTION

- A. Dewater when excavations are to some extent below existing groundwater levels and the site is subject to surface water and groundwater flow during the course of construction.
  1. Control and pitch the grading to prevent water from running into the excavated areas or to prevent damage to other structures or work already accomplished.
  2. The Contractor shall furnish all pumping and other dewatering equipment necessary to keep excavated area dry during construction. The groundwater shall be pumped adequately so that the water table is maintained a minimum of 2 feet below the bottom of the excavation at all times. Filters shall be used on the dewatering devices to prevent the removal of fines from the soil. Water shall not be conducted onto adjacent property except in existing water courses.
  3. Operations and Performance: Operate the dewatering system continuously, twenty-four (24) hours per day, and seven (7) days per week, until such time as construction work below existing water levels is complete, unless directed otherwise. Measure and record the performance of the dewatering system at the same time each day by use of suitable observation wells or piezometers installed in conjunction with the dewatering system. After placement of initial slabs and backfill, the water level may be allowed to rise, but at no time allow it to be higher than 1 foot below the prevailing level of excavation or backfill.

## 1.09 ENGINEERING AND SURVEY WORK

- A. The Contractor shall engage the services of a registered Land Surveyor to stake the location and elevation of all paved areas, catch basins, curbing, etc.
- B. Upon completion of the work the Contractor's Land Surveyor shall furnish a certified topographic As-Built drawing showing the as-built location and elevation of all buildings, parking areas, driveways, landscape areas, utility locations, etc.

## PART 2 -PRODUCTS

### 2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, and SM, or a combination of these group symbols; free of rock or gravel larger than 3 inches (75 mm) in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: ASTM D 2487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH, and PT, or a combination of these group symbols.
  - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Backfill and Fill: Satisfactory soil materials.
- E. Processed Aggregate Base: Conforming to the requirements of SubArticles M.05.01-1, M.05.01-2 and M.05.01-3 of the State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges and Incidental Construction", Form 816, including current supplemental.
- F. Subbase: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; conforming to the requirements of SubArticles M.02.02, M.02.06 and sized to meet the requirements of Grading "A" of the State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges and Incidental Construction", Form 816, including current supplemental.
- G. Granular Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; conforming to the requirements of SubArticles M.02.01-1, M.02.01-2, M.02.06 and sized to meet the requirements of Grading "C" of the State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges and Incidental Construction", Form 816, including current supplemental.
- H. Structural Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; conforming to the requirements of ASTM D 422 and ASTM D 1140; with 50 to 100 percent passing a  $\frac{3}{4}$ " (19-mm) sieve and not more than 10 percent passing a No. 200 (0.075-mm) sieve.

- I. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch (38-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.
- J. Bedding Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; conforming to the requirements of SubArticles M.01.01 for No. 6 stone of the State of Connecticut Department of Transportation “Standard Specifications for Roads, Bridges and Incidental Construction”, Form 816, including current supplemental.
- K. Drainage Fill: Washed, narrowly graded mixture of crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2- inch (38-mm) sieve and 0 to 5 percent passing a No. 8 (2.36-mm) sieve.
- L. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate grading Size 67; with 100 percent passing a 1inch (25-mm) sieve and 0 to 5 percent passing a No. 4 (4.75-mm) sieve.
- M. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.
- N. 3/8” Stone: Conforming to the requirements of Section M.01.01 for No.8 stone of the State of Connecticut Department of Transportation “Standard Specifications for Roads, Bridges and Incidental Construction”, Form 816, including current supplemental
- O. 3/4" Stone: Conforming to the requirements of Section M.01.01 for No.6 stone of the State of Connecticut Department of Transportation “Standard Specifications for Roads, Bridges and Incidental Construction”, Form 816, including current supplemental.
- P. Gravel shall be composed of hard, durable stone and coarse to fine sand, not frozen and free from loam and undesirable organic matter, containing no stone having any dimension greater than two-thirds (2/3) of the depth of layer to be compacted. Gravel borrow or bank-run gravel shall conform to Article M.02 of the CONNDOT Standard Specification Form 816 and the following gradation requirements:

<u>% PASSING BY WEIGHT</u>	<u>U.S. STANDARD SIEVE SIZE</u>
3½"	100
1½"	55-100
No. 4	25-60
No.40	5-25
No. 200	0-5

- Q. Processed aggregate shall conform to the applicable requirements of CONNDOT Standard Specifications Form 814 section M.05 and shall have the following gradation:

<u>% PASSING BY WEIGHT</u>	<u>U.S. STANDARD SIEVE SIZE</u>
2¼"	100
2"	95-100
¾"	50-75

1/4"	25-45
No. 40	5-20
No. 100	2-12
No. 200	0-8

R. Material for use as pipe bedding shall conform to the following requirements:

1. It shall be sand or sandy soil all of which passes a 3/8" sieve and not more than ten percent (10%) passes a No. 200 sieve.

## 2.2 ACCESSORIES

- A. Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches (150 mm) wide and 4 mils (0.1 mm) thick, continuously inscribed with a description of the utility; colored as follows:
- B. 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.
  5. Green: Sewer systems.

## PART 3 -EXECUTION

### 3.1 PREPARATION

- 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.
- B. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.
- C. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

### 3.2 DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.
2. Install a dewatering system to keep subgrades dry and convey ground water away from excavations. Maintain until dewatering is no longer required.

### 3.3 EXPLOSIVES

- A. Explosives: Do not use explosives.

### 3.4 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavation to subgrade elevations regardless of the character of surface and subsurface conditions encountered, including rock, soil materials, and obstructions.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

- B. Classified Excavation: Excavation to subgrade elevations classified as earth and rock. Rock excavation will be paid for by adjusting the Contract Sum according to unit prices included in the Contract Documents.

1. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; together with soil, boulders, and other materials not classified as rock or unauthorized excavation.

- a. Intermittent drilling; blasting, if permitted; ram hammering; or ripping of material not classified as rock excavation is earth excavation.

2. Rock excavation includes removal and disposal of rock.

- a. Do not excavate rock until it has been classified and cross-sectioned by Architect.

### 3.5 EXCAVATION FOR FOUNDATION AND STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch (25 mm). Extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.

- B. All soft, yielding materials, organic materials or other materials deemed to be unsuitable for subgrade below footings and foundations shall be removed and replaced with structural fill to the bottom of footing and foundation elevation. Holes and depressions made by the removal of material shall be compacted uniformly. The structural fill shall be compacted, in 8" lifts, to ninety-five percent (95%) maximum dry density at optimum moisture content.

### 3.6 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated cross sections, elevations, and grades. See Sections 02741 and 02751 for details on subbase and granular fill preparation.

### 3.7 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.
  - 1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.
- B. 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 (300 mm) higher than top of pipe or conduit, unless otherwise indicated.
  - 1. Clearance: 12 inches (300 mm) on each side of pipe or conduit.
  - 2. Clearance: As indicated.
- C. 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 projecting stones and sharp objects along trench subgrade.
  - 1. For pipes and conduit less than 6 inches (150 mm) in nominal diameter and flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
  - 2. For pipes and conduit 6 inches (150 mm) or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe circumference. Fill depressions with tamped sand backfill.
  - 3. Excavate trenches 6 inches (150 mm) deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.
- D. Trench Bottoms: Excavate trenches 4 inches (100 mm) deeper than bottom of pipe elevation to allow for bedding course. Hand excavate for bell of pipe.
  - 1. Excavate trenches 6 inches (150 mm) deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

### 3.8 APPROVAL OF SUBGRADE

- A. Notify Landscape Architect or Architect when excavations have reached required subgrade.
- B. If Landscape Architect or Architect determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
  - 1. Additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
- C. Proof roll subgrade with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof roll wet or saturated subgrades.

- D. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect.

### 3.9 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill may be used when approved by Landscape Architect.
  - 1. Fill unauthorized excavations under other construction or utility pipe as directed by Landscape Architect or Architect.

### 3.10 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow materials and satisfactory excavated soil materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
  - 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

### 3.11 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
  - 1. Construction below finish grade including, where applicable, dampproofing, waterproofing, and perimeter insulation.
  - 2. Surveying locations of underground utilities for record documents.
  - 3. Inspecting and testing underground utilities.
  - 4. Removing concrete formwork.
  - 5. Removing trash and debris.
  - 6. Removing temporary shoring and bracing, and sheeting.
  - 7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

### 3.12 UTILITY TRENCH BACKFILL

- A. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- B. Backfill trenches excavated under footings and within 18 inches (450 mm) of bottom of footings; fill with concrete to elevation of bottom of footings.
- C. Provide 4-inch- (100-mm-) thick, concrete-base slab support for piping or conduit less than 30 inches (750 mm) below surface of roadways. After installing and testing, completely encase piping or conduit in a minimum of 4 inches (100 mm) of concrete before backfilling or placing roadway subbase.
- D. Place and compact initial backfill of subbase material, free of particles larger than 1 inch (25 mm), to a height of 12 inches (300 mm) over the utility pipe or conduit.

1. Carefully compact material under pipe haunches and bring backfill evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of utility system.
- E. Coordinate backfilling with utilities testing.
  - F. Fill voids with approved backfill materials while shoring and bracing, and as sheeting is removed.
  - G. Place and compact final backfill of satisfactory soil material to final subgrade.
  - H. Install warning tape directly above utilities, 12 inches (300 mm) below finished grade, except 6 inches (150 mm) below subgrade under pavements and slabs.

### 3.13 FILL

- A. Preparation: Remove vegetation, topsoil, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface before placing fills.
- B. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- C. Place and compact fill material in layers to required elevations as follows:
  1. Under grass and planted areas, use satisfactory soil material.
  2. Under walks and pavements, use satisfactory soil material.
  3. Under steps and ramps, use Engineered fill.
  4. Under building slabs, use Engineered fill.
  5. Under footings and foundations, use Engineered fill.

### 3.14 MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within 2 percent of optimum moisture content.
  1. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
  2. Remove and replace, or scarify and air-dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

### 3.15 COMPACTION OF BACKFILLS AND FILLS

- A. Place backfill and fill materials in layers not more than 8 inches (200 mm) in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches (100 mm) in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
- C. Compact soil to not less than the following percentages of maximum dry unit weight according to AASHTO T 180, Method D:

1. Under bituminous concrete roadway pavement and bituminous concrete parking areas, scarify and re-compact top 12 inches (300 mm) of existing subgrade and each layer of backfill or fill material at 95 percent.
2. Under structures, foundations, footings, steps do not disturb the bottom of the excavation unless unsuitable soils are present, compact structural fill if required and each layer of backfill or fill material at 95 percent.
3. Under concrete walkways, pads and plazas scarify and re-compact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill material at 95 percent.
4. Under bituminous and stone dust paths, scarify and re-compact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill material at 95 percent.
5. Under lawn or unpaved areas, scarify and re-compact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill material at 85 percent.

### 3.16 GRADING

- A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
  1. Provide a smooth transition between adjacent existing grades and new grades.
  2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
  1. Lawn or Unpaved Areas: Plus or minus 1 inch (25 mm).
  2. Walks: Plus or minus 1 inch (25 mm).
  3. Pavements: Plus or minus 1/2 inch (13 mm).
- C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch (13 mm) when tested with a 10-foot (3-m) straightedge.

### 3.17 SUBSURFACE DRAINAGE

- A. Underdrains: Place a layer of drainage fabric around perimeter of drainage trench as indicated. Place a 4-inch (100-mm) course of 3/4" stone material on drainage fabric to support drainage pipe. Backfill with 3/4" stone in lifts no greater than 12 inches (300 mm) while bringing the geotextile fabric (filter fabric) up the side of the trench to the subgrade elevation. At the subgrade elevation fold the geotextile fabric over the subgrade for a length of 6".
  1. Compact each course of filter material to 95 percent of maximum dry unit weight according to AASHTO T 180, Method D.
- B. Drainage Backfill: Place a 4-inch (100-mm) course of 3/4" stone material on drainage fabric to support drainage pipe, a 12-inch (300-mm) course of 3/4" stone material shall be used in rock. Carefully compact material under pipe haunches and bring 3/4" stone material evenly up on both sides, to the width indicated, and along the full length and to 12 inches (300 mm) above the pipe crown of the drainage piping to avoid damage or displacement of pipe.
  1. Compact each course of filter material to 95 percent of maximum dry density according to

AASHTO T 180, Method D.

2. Place and compact impervious fill material over drainage backfill to final subgrade.

### 3.18 SUBBASE AND BASE COURSES

- A. Under pavements and walks, place subbase course on prepared subgrade and as follows:
  1. Place base course material over subbase.
  2. Compact subbase and base courses at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight for bituminous concrete roadway pavement and bituminous concrete parking areas, concrete sidewalks, bituminous concrete sidewalks and stone dust paths, according to AASHTO T 180, Method D.
  3. Shape subbase and base to required crown elevations and cross-slope grades.
  4. When thickness of compacted subbase or base course is 6 inches (150 mm) or less, place materials in a single layer.
  5. When thickness of compacted subbase or base course exceeds 6 inches (150 mm), place materials in equal layers, with no layer more than 6 inches (150 mm) thick or less than 3 inches (75 mm) thick when compacted.
- B. Pavement Shoulders: Place shoulders along edges of subbase and base course to prevent lateral movement. Construct shoulders, at least 12 inches (300 mm) wide, of satisfactory soil materials and compact simultaneously with each subbase and base layer to not less than 95 percent of maximum dry unit weight according to AASHTO T 180, Method D.

### 3.19 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent geotechnical engineer testing agency to perform field quality-control testing.
- B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.
- C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by the Landscape Architect or Architect.
- D. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:
  1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. (186 sq. m) or less of paved area or building slab, but in no case fewer than three tests.
  2. Foundation Wall Backfill: At each compacted backfill layer, at least one test for each 100 feet (30 m) or less of wall length, but no fewer than two tests.
  3. Trench Backfill: At each compacted initial and final backfill layer, at least one test for each 150 feet (46 m) or less of trench length, but no fewer than two tests.

- E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained.

### 3.20 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
  - 1. Scarify or remove and replace soil material to depth as directed by Landscape Architect or Architect; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
  - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.

### 3.21 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove surplus unsatisfactory soil and waste material, trash, and debris, and legally dispose of it in an EPA-approved landfill.
- B. Disposal: Transport surplus satisfactory soil to designated storage areas on Owner's property. Stockpile or spread soil as directed by Architect.
  - 1. Do not allow excavated materials to accumulate on-site.

**END OF SECTION 02300**

## SECTION 02630 -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.

#### 1.2 SUMMARY

- A. This Section includes storm drainage for the site.
- B. Underdrains.

#### 1.3 DEFINITIONS

- A. HDPE: High Density Polyethylene plastic.
- B. PVC: Polyvinyl chloride plastic.
- C. Reinforced concrete pipe.

#### 1.4 PERFORMANCE REQUIREMENTS

- A. Gravity-Flow, Nonpressure-Piping Pressure Ratings: At least equal to system test pressure.

#### 1.5 SUBMITTALS

- A. Product Data: For the following:
  - 1. ADS single wall, perforated, flexible pipe with sock or approved equal.
  - 2. Piping
  - 3. Trench drains.
  - 4. Yard Drains, manholes and ADA Grate

- B. Coordination Drawings: Show manholes and other structures, pipe sizes, locations, and elevations. Include details of underground structures and connections. Show other piping in same trench and clearances from sewerage system piping. Indicate interface and spatial relationship between piping and proximate structures.
- C. Coordination Profile Drawings: Show system piping in elevation. Draw profiles at horizontal scale of not less than 1 inch equals 50 feet (1:500) and vertical scale of not less than 1 inch equals 5 feet (1:50). Indicate underground structures and pipe. Show types, sizes, materials, and elevations of other utilities crossing system piping.
- D. Design Mix Reports and Calculations: For each class of cast-in-place concrete.
- E. Field Test Reports: Indicate and interpret test results for compliance with performance requirements.

## 1.6 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.

## 1.7 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 Landscape Architect not less than two days in advance of proposed utility interruptions.
  2. Do not proceed with utility interruptions without Architect's written permission.

## PART 2 -PRODUCTS

### 2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

## 2.2 PIPES AND FITTINGS

- A. Corrugated and Smooth High Density Polyethylene Plastic Pipe: Flexible, pre-fabricated, round pipe: AASHTO M 252, ASTM F 405 and ASTM F 606, single wall pipe as manufactured by ADS or approved equal.
  - 1. Soil tight Couplings: AASHTO M 294, corrugated, matching pipe and fittings to form soil tight joints.
- B. Perforated, PVC Sewer Pipe and Fittings: ASTM D 2729, bell and spigot ends for loose joints.
- C. Reinforced-Concrete Sewer Pipe and Fittings: ASTM C 76, Bell-and-spigot ends

## 2.3 BEDDING AND BACKFILL MATERIAL

- A. Bedding for HDPE and PVC shall be  $\frac{3}{4}$ " crushed stone conforming to the requirements of Section M.01.01 for No.6 stone of the State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges and Incidental Construction", Form 816, including current supplemental.
- B. Bedding for RCP shall be  $\frac{3}{4}$ " crushed stone conforming to the requirements of Section M.01.01 for No.6 stone of the State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges and Incidental Construction", Form 816, including current supplemental.

## 2.4 GEOTEXTILE FABRIC

- A. Drainage Fabric: Nonwoven geotextile, specifically manufactured as a drainage geotextile; made from polyolefins, polyesters, or polyamides; and with the following minimum properties determined according to ASTM D 4759 and referenced standard test methods:
  - 1. Grab Tensile Strength: 110 lbf (490 N); ASTM D 4632.
  - 2. Tear Strength: 40 lbf (178 N); ASTM D 4533.
  - 3. Puncture Resistance: 50 lbf (222 N); ASTM D 4833.
  - 4. Water Flow Rate: 150 gpm per sq. ft. (100 L/s per sq. m); ASTM D 4491.
  - 5. Apparent Opening Size: No. 50 (0.3 mm); ASTM D 4751.

Available styles are flat and sock.

## 2.5 YARD DRAINS

- A. Normal-Traffic, Precast Concrete Yard Drain: Form 816, Section M.08.02-4, precast, reinforced concrete, of depth indicated, with provision for rubber gasketed joints, capable of H-20 loading.

## 2.6 MANHOLES

- A. Precast Concrete Manholes: ASTM C 478, precast, reinforced concrete, of depth indicated, with provision for rubber gasketed joints.

1. Diameter: 48 inches minimum, unless otherwise indicated.
2. Ballast: Increase thickness of precast concrete sections or add concrete to base section, as required to prevent flotation.
3. Base Section: 8-inch minimum thickness for floor slab and 8-inch minimum thickness for walls and base riser section, and having separate base slab or base section with integral floor.
4. Riser Sections: 8-inch minimum thickness and lengths to provide depth indicated.
5. Top Section: Eccentric-cone type, unless concentric-cone or flat-slab-top type is indicated. Top of cone of size that accommodates frame and cover.
6. Gaskets: ASTM C 443, rubber.
7. Steps: ASTM C 478, individual steps or ladder.

## 2.7 CONCRETE

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.

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.

## 2.8 PIPE OUTLETS/INLETS

A. Riprap Slope: Modified riprap with cement grout. The Modified Riprap shall conform to the requirements of Section 7.03 and Article M.12.02 of the State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges and Incidental Construction", Form 816, including current supplement.

B. Modified Riprap Apron: Modified riprap. The Modified Riprap shall conform to the requirements of Section 7.03 and Article M.12.02 of the State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges and Incidental Construction", Form 816, including current supplement.

## 2.9 MISCELLANEOUS

A. Brick: ASTM C32, Grade MS.

B. Mortar: Composed by volume, of one (1) part Portland cement and two (2) parts sand.

C. Grout: Form 816, Section M.03.01-14.

D. Filter Fabric: Form 816, Section M.08.01-26.

## PART 3 -EXECUTION

### 3.1 EARTHWORK

- A. Excavating, trenching, and backfilling are specified in Division 2 Section "Earthwork."

### 3.2 IDENTIFICATION

- A. Materials and their installation are specified in Division 2 Section "Earthwork." Arrange for installing green warning tapes directly over piping and at outside edges of underground structures.
  - 1. Use warning tape or detectable warning tape over ferrous piping.
  - 2. Use detectable warning tape over nonferrous piping and over edges of underground structures.

### 3.3 INSTALLATION, GENERAL

- A. General Locations and Arrangements: Drawing plans and details indicate general location and arrangement of underground storm drainage 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. Use manholes for changes in direction, unless fittings are indicated. Use fittings for branch connections, unless direct tap into existing sewer is indicated.
- D. Use proper size increasers, reducers, and couplings where different sizes or materials of pipes and fittings are connected. Reducing size of piping in direction of flow is prohibited.

### 3.4 PIPE JOINT CONSTRUCTION AND INSTALLATION

- A. General: Join and install pipe and fittings according to installations indicated.
- B. HDPE Pipe and Fittings: As follows:
  - 1. Join pipe, tubing, and fittings with couplings for soil tight joints according to manufacturer's written instructions.
  - 2. Install according to ASTM D 2321 and manufacturer's written instructions.
  - 3. Install corrugated piping according to the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings."
- C. Join piping made of different materials or dimensions with couplings made for this application. Use couplings that are compatible with and that fit both systems' materials and dimensions.

### 3.5 UNDERDRAINS

- A. Underdrains: Place a layer of drainage fabric around perimeter of drainage trench as indicated. Place a 4-inch (100-mm) course of  $\frac{3}{4}$ " stone material on drainage fabric to support drainage pipe. Place 6" PVC or HDPE pipe with holes facing down and with a minimum slope of 1%. Backfill with  $\frac{3}{4}$ " stone in lifts no greater than 12 inches (300 mm) while bringing the geotextile fabric (filter fabric) up the side of the trench to the subgrade elevation. At the subgrade elevation fold the geotextile fabric over the subgrade for a length of 6".
- B. Embankment Wall Underdrains: Place a layer of drainage fabric around perimeter of drainage trench as indicated. Place a 4-inch (100-mm) course of  $\frac{3}{4}$ " stone material on drainage fabric to support drainage pipe. Encase drainage pipe in a minimum of 12 inches (300 mm) of  $\frac{3}{4}$ " stone material and wrap in drainage fabric, overlapping sides and ends at least 6 inches (150 mm). The embankment wall underdrains shall outlet as shown on the drawings.

### 3.6 STORM DRAINAGE INLET AND OUTLET INSTALLATION

- A. Construct culvert endwall, as indicated on the plans and details.
- B. Construct modified riprap apron, as indicated on the plans and details.

### 3.7 YARD DRAIN AND TRENCH DRAIN INSTALLATION

- A. Construct yard drains and trench drains as indicated on the plans and as per the manufactures recommendations.

### 3.8 CONCRETE PLACEMENT

- A. Place cast-in-place concrete according to ACI 318 and ACI 350R.

### 3.9 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 (600 mm) of backfill is in place, and again at completion of Project.
  - 1. Submit separate reports for each system inspection.
  - 2. Defects requiring correction include the following:
  - 3. Alignment: Less than full diameter of inside of pipe is visible between structures.
  - 4. Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less

- than 92.5 percent of piping diameter.
5. Crushed, broken, cracked, or otherwise damaged piping.
  6. Infiltration: Water leakage into piping.
  7. Exfiltration: Water leakage from or around piping.
  8. Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.
  9. Reinspect and repeat procedure until results are satisfactory.
- C. Test new piping systems, and parts of existing systems that have been altered, extended, or repaired, for leaks and defects.
1. Do not enclose, cover, or put into service before inspection and approval.
  2. Test completed piping systems according to authorities having jurisdiction.
  3. Schedule tests and inspections by authorities having jurisdiction with at least 24 hours' advance notice.
  4. Submit separate reports for each test.
  5. Leaks and loss in test pressure constitute defects that must be repaired.
  6. Replace leaking piping using new materials, and repeat testing until leakage is within allowances specified.

**END OF SECTION 02630**

## SECTION 02741 – BITUMINOUS CONCRETE PAVEMENT

### 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 HAZARDOUS MATERIALS

- A. Provide materials which do not contain asbestos, polychlorinated biphenyls or any other hazardous materials.

#### 1.3 SUMMARY

- A. This Section includes the following:
  - 1. Construction of new bituminous concrete pavement areas.
  - 2. Subgrade preparation.
  - 3. Cut bituminous concrete pavement.
  - 4. Bituminous concrete walkway pavement.
  - 5. Edging
  - 6. Pavement Sleeves

- B. Related Sections include the following:

- 1. Section 02300 – Earthwork.

#### 1.4 DEFINITIONS

- A. Finish Grade: The final true or top elevation of the walkway pavement area and topsoil at adjacent lawn areas.
- B. Subgrade: The surface area upon which the base course material is placed that is a plane consistent with the bottom of the base course for the pavement structure.
- C. Degree of Compaction: The degree of compaction is expressed as a percentage of maximum density obtained by the test procedures presented in accordance with AASHTO T 180, Method D.

## 1.5 SUBMITTALS

- A. Submit manufacturers' product literature for the following in accordance with the Conditions of the Contract and Division 1 Section "Submittals":
  - 1. PVC pipe.
- B. Submit written credentials for the following in accordance with the Conditions of Contract and Division 1 Section "Submittals":
  - 1. The bituminous concrete Installer's company name, address, telephone number and a list of at least three (3) comparable installations occurring within the last five (5) years. Each installation is to include its' address location including the name, address and telephone number of the Owner and the date on which each installation was completed.
- C. Submit the following written certifications in accordance with the Conditions of Contract and Division 1 Section "Submittals":
  - 1. Plant design mix certification for the bituminous concrete mixture being installed. Design mix certification is to be issued by the asphalt plant supplying the bituminous concrete mixture.
  - 2. Compliance certification for all specified products and materials; refer to Article 1.9, paragraph C, this Section.
- D. Submit the following test report in accordance with the Conditions of Contract and Division 1 Section "Submittals":
  - 1. Sieve analysis for the base course aggregate including percentage by weight of asphalt cement.
- E. Related Sections include the following:
  - 1. Division 2 Section "Earthwork" for aggregate subbase and base courses and for aggregate pavement shoulders.

## 1.6 REFERENCES

- A. State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges and Incidental Construction", Form 816, including current supplemental.
- B. American Society for Testing and Materials (ASTM).
- C. AASHTO Standard Specifications for Transportation Materials and Methods of Sampling and Testing, Latest Edition, as amended.

## 1.7 STANDARDS

- A. Materials and methods required for the Work of this Section, regarding bituminous concrete walkway pavement, shall be as specified herein and in the Standard Specifications and/or State of Connecticut Department of Transportation Standards Specifications for Roads, bridges and Incidental Construction Form 816, 2004 edition and latest addenda thereto, herein after referred to as CTDOT Specifications.

## 1.8 COORDINATION

- A. Thoroughly coordinate and schedule the Work of this Section with all trades involved to prevent interferences and in order to allow adequate time at the proper stage of construction to properly perform all the Work of this Section.

## 1.9 QUALITY ASSURANCE

- A. Provide experienced installers who are thoroughly trained and experienced in the skills to install the Work of this Section and who will have qualified superintendents present, at all times, during the installations. The installer of the bituminous concrete walkway pavement must have a minimum of five (5) years experience in the installation of bituminous concrete walkways.
- B. Throughout the specifications, types of products may be specified by the manufacturer's or the supplier's name in order to establish standards of quality and performance and not for the purpose of limiting competition; unless specifically stated otherwise, assume the phrase "or equal", except that the burden is upon the Contractor to provide such equality with supporting data or samples to permit a fair evaluation with respect to quality, serviceability and warranty.
- C. Prior to substantial completion of the project, submit a written statement that certifies that all products and materials installed complies in all aspects with the drawings and specifications. Certification is to be signed and dated by the Contractor.
- D. Failure on the part of the Landscape Architect or his representative to disapprove work, in the course of work operations or during observation of the work, is not to be interpreted as acceptance of the work not in conformance with the specifications. Improper work and/or materials are to be corrected whenever discovered.

## 1.10 QUALITY CONTROL TESTING

- A. The Owner will employ and pay for a testing laboratory and inspection service to perform testing and field observations for the following:
  - 1. Sieve analysis of the base course aggregate.
  - 2. Field density tests of the pavement subgrades.
  - 3. field density tests of the pavement base course aggregate.
  - 4. Field density tests for the bituminous concrete surface course.

- B. Cooperate with the Owner's inspection service and give seventy-two (72) hours written notice prior to placement of the base course aggregate and bituminous concrete installation.
- C. Copies of the testing results and recommendations will be submitted to the Contractor. The owner's inspection service will be the sole and final judge of the suitability of the pavement materials and their related compaction densities.
- D. Remove and replace any item where test results or measurements indicate that it does not comply with the specified requirements.

## PART 2 -PRODUCTS

### 2.1 MATERIALS

- A. Bituminous Concrete Class 1 and Class 2 shall conform to the requirements of Section 4.06 and M.04 and M.04.03 of the State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges and Incidental Construction", Form 816, including current supplemental.
- B. Processed aggregate base shall conform to the requirements of Section 3.04 and M.05 of the State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges and Incidental Construction", Form 816, including current supplemental.
- C. Granular Fill: Gravel shall conform to the requirements of Section 9.22 and M.02.01 for granular fill, and excluding reclaimed materials and sized to meet the requirements of Grading "C", Article M.02.06 of the State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges and Incidental Construction", Form 816, including current supplemental.
- D. Subbase shall conform to the requirements of Section 2.12 and M.02 of the State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges and Incidental Construction", Form 816, including current supplemental.
- E. Tack coat shall consist of either emulsified asphalt, Grade MS-1 conforming to Section M.04.01, or cationic emulsified asphalt, Grade CSS-1 or CSS-1H conforming to Section M.04.01 of the State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges and Incidental Construction", Form 816, including current supplemental.
- F. Sleeves: Schedule 40, four-inch (4") I.D., polyvinylchloride pipe with solvent weld coupling in accordance with ASTM D1785 and ASTM D2467.

## PART 3 -EXECUTION

### 3.1 EXAMINATION

- A. Examine the areas and conditions where bituminous concrete walkway pavement is to be installed and notify the Landscape Architect, in writing, of conditions detrimental to the proper and timely completion of the work; do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.

### 3.2 SUBGRADE PREPARATION

- A. The surface area upon which the base course aggregate is placed shall be known as the subgrade, which is the plane coincident with the bottom of the base course, as indicated and detailed on the drawings.
- B. All soft, yielding material and other portions of the subgrade under the bituminous concrete pavement areas which will not compact readily when rolled or tampered are to be removed and all loose rock or boulders over four inches (4") in size found in the earth are to be removed or broken off to a depth of not less than one foot (1') below the subgrade. All holes or depressions made by the removal of material and the whole surface are to be compacted uniformly. Any portion of the subgrade which is not accessible to a roller shall be compacted thoroughly with mechanical tampers.
- C. The rolling and tamping shall be continued until the entire subgrade is uniformly and thoroughly compacted true to lines and grades given. In excavations, the ground shall not be disturbed below the elevation of the subgrade.
- D. Compact the subgrade for bituminous concrete roadway pavement and bituminous concrete parking areas to ninety-five percent (95%) maximum dry density at optimum moisture content and the subgrade for bituminous concrete sidewalks to ninety-five percent (95%) maximum dry density at optimum moisture content, in accordance with AASHTO T 180, Method D with particular attention to trench and sleeve backfill and areas adjacent to foundations and drainage structures.

### 3.3 PAVEMENT SLEEVE INSTALLATION

- A. **Prior** to placement of the aggregate base course for the bituminous concrete pavement, excavate and install PVC sleeves where noted on the drawings and where required for wiring for site lighting fixtures, irrigation piping and other utilities requiring sleeves. Coordinate placement of sleeves with contractors for irrigation and wiring for the site lighting fixtures.
- B. Backfill and thoroughly compact around and over all sleeves. Take precautions not to damage sleeves during the backfill and compaction process.
- C. Install ends of sleeves at least eighteen inches (18") beyond the edge of all pavements. Cap ends using duck tape to prevent clogging of sleeves prior to installation. Adequately mark each sleeve location on an 'as-built' field drawing for use by the irrigation contractor.
- D. All sleeves to have a minimum of eighteen inches (18") of cover.
- E. Install two (2) sleeves, side-by-side at each location where noted on the drawings for irrigation piping and electrical wiring.

### 3.4 PAVING GENERAL

- A. All work shall be in accordance with the Standard Connecticut Specifications. Pavement shall be put down with straight edges. Prior to the start of excavation, cut the edges of the existing pavement so as to prevent damage to the paving outside the requirements of construction.
- B. Where width of new pavement is less than 2', saw cut existing to provide minimum 2' of new pavement

- C. Apply joint adhesive to all longitudinal joints for proper adhesion of the new bituminous concrete pavement to the existing.
- D. All pavement thickness referred to on the plans are compacted thicknesses. Place sufficient mix to ensure that the specified thickness of pavement occurs wherever called for. Backfill shall be thoroughly compacted, in layers, using hand operated vibratory tampers.
- F. All manhole frames and utility boxes are to be set to grade of the base course until such time as the top course is placed. Then reset the frames to the grades of the top course. Manhole frames and utility boxes shall not be allowed to protrude above the surface of the base course. All excavated material removed for raising of the manhole frames and utility boxes are to be replaced with concrete. This ring of concrete shall be filled flush with the surrounding base course.
- G. The contact surfaces of curbings, castings, and other structures shall be painted with a tack coat prior to placement of paving.
- H. In no case will pavement be placed until the processed aggregate base is dry and compacted to at least 95% maximum density at optimum moisture content in accordance with AASHTO T 180, Method D.
- I. Place base course as soon as possible after the processed aggregate base or granular fill has been prepared, shaped and compacted. Similarly, place top course as soon as possible after the base course has been prepared, shaped and compacted. Place and compact base course by steel-wheeled rollers of sufficient weight to thoroughly compact the bituminous concrete.
- J. When the air temperature falls below 50 ° F, extra precautions shall be taken in drying the aggregates, controlling the temperatures of the materials and placing and compacting mixtures. No mixtures shall be placed when the air temperature is below 40 ° F, or when or when the material on which the mixtures are to be placed contains frost or has a surface temperature the Owner's Project Representative considers too low.
- K. Along curbs, structures and all other places not accessible with a roller, the paving mixture shall be thoroughly compacted with tampers. Such tampers shall weigh not less than 25 pounds and shall have a tamping face of not more than 50 square inches. The surface of the mixture after compaction shall be smooth and true to the established line and grade.
- L. No vehicular traffic or loads shall be permitted on the newly completed pavement until adequate stability has been attained and the material has cooled sufficiently to prevent distortion or loss of fines. If climatic or other conditions warrant it, the period of time before opening to traffic may be extended at the discretion of the Owner's Project Representative.
- M. Existing drainage patterns shall not be altered by the new pavement construction unless otherwise shown on the Drawings or directed by the Owner's Project Representative.
- N. Maintain pavement during the one year guarantee period and promptly (within 3 days of notice given by Owner's Project Representative or Owner) refill and repave any areas which have settled or are otherwise unsatisfactory for traffic.
- O. Furnish and spread calcium chloride on disturbed surfaces to control the dust conditions as directed by the Owner's Project Representative.

### 3.5 BITUMINOUS CONCRETE PAVEMENT

- A. Install the pavement where noted and as detailed on the drawings.
- B. Upon a properly compacted and approved subgrade, install base course aggregate to a compacted depth as detailed on the drawings. Each lift not to exceed six inches (6") in depth and not more than four inches (4") in loose depth for materials compacted by hand-operated tampers.
- C. Compact the base course aggregate to an in-place dry density of ninety-five percent (95%) at optimum moisture content in accordance with AASHTO T 180, Method D.
- D. Any area not available to a roller is to be compacted to required density by approved mechanical tampers. Puddling or jetting is not permitted.
- E. Place the bituminous concrete to achieve a compacted depth of two inches (2") and properly roll the bituminous concrete mixture on top of the base course aggregate having a surface temperature of forty degrees Fahrenheit (40° F) or greater, unless authorized by the Landscape Architect.
- F. Install the bituminous concrete in accordance with CTDOT Specification Section 9.22.03-4, in all applicable respects.

### 3.8 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and to prepare test reports.
  - 1. Testing agency will conduct and interpret tests and state in each report whether tested Work complies with or deviates from specified requirements.
- B. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- C. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.
- D. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.
- E. In-Place Density: Testing agency will take samples of uncompacted paving mixtures and compacted pavement according to ASTM D 979 or AASHTO T 168.
  - 1. Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041, and compacted according to job-mix specifications.
  - 2. In-place density of compacted pavement will be determined by testing core samples according to ASTM D 1188 or ASTM D 2726.
    - a. One core sample will be taken for every 1000 sq. yd. (836 sq. m) or less of installed pavement, with no fewer than 3 cores taken.
    - b. Field density of in-place compacted pavement may also be determined by nuclear method

according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726.

- F. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

### 3.9 CLEANUP AND PROTECTION

- A. Promptly remove all debris that is created by the Work of this Section.
- B. Upon completion of all Work of this Section, remove and legally dispose of all excess materials resulting from the Work of this Section.
- C. Accumulation of materials for disposal is not permitted. Disposal is to be made as fast as materials accumulate.
- D. Adequately protect all walkway pavements until final acceptance of the project by the Owner.

**END OF SECTION 02741**

## SECTION 02751 – SITE CONCRETE

### 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. This Section includes exterior cement concrete pavement for the following:
  - 1. Concrete Sidewalks.
  - 2. Cast in place Concrete Curbs.
  - 3. Concrete pads and plazas.
- B. Related Sections include the following:
  - 1. Section 02300 – Earthwork.

#### 1.3 REFERENCES

- A. State of Connecticut Department of Transportation “Standard Specifications for Roads, Bridges and Incidental Construction”, Form 816, including current supplementals.
- B. American Society for Testing and Materials (ASTM).
- C. American Concrete Institute (ACI).

#### 1.4 DEFINITIONS

- A. Finish Grade: The final true or top surface elevation of the concrete pavement area and topsoil at adjacent lawn areas.

#### 1.5 SUBMITTALS

- A. Product Data: For each type of manufactured material and product indicated.

- B. Design Mixes: For each concrete pavement mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.
- C. Written Credentials: for the following in accordance with the Conditions of the Contract and Division 1 Section "Submittals":
  - 1. The concrete installer's company name, address, telephone number and a list of at least three (3) comparable installation occurring within the last five (5) years. Each installation is to include its' address location including the name, address and telephone number of the Owner and the date on which each installation was completed.
- 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. Curing compounds.
  - 4. Applied finish materials.
  - 5. Bonding agent or adhesive.
  - 6. Joint fillers.

#### 1.6 QUALITY ASSURANCE

- A. 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.
- B. 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.
- C. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 to conduct the testing indicated, as documented according to ASTM E 548.
- 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.
- E. ACI Publications: Comply with ACI 301, "Specification for Structural Concrete," unless modified by the requirements of the Contract Documents.
- F. Failure on the part of the Landscape Architect or his representative to disapprove work, in the course of work operations or during observation of the work, is not to be interpreted as acceptance of the work not in conformance with the specifications. Improper work and/or materials are to be corrected whenever discovered.

## 1.7 QUALITY CONTROL TESTING

- A. The Owner will employ and pay for a testing laboratory and inspection service to perform testing and field observations for the following:
  - 1. Sieve Analysis of the base course aggregate.
  - 2. Field density tests of the subgrade.
  - 3. Design concrete mixes including alternate mix designs when warranted by material or field conditions.
  - 4. Sampling and testing for slump, air content and compressive strength for seven (7) day and twenty-eight (28) day tests of concrete.
- B. Copies of the testing results and recommendations will be submitted to the Contractor, the Owner and the Owner's representative. The Owner and/or his representative will be the sole and final judge of the suitability of the pavement materials and their related compaction densities.
- C. Remove and replace any item where test results or measurements indicate that it does not comply with the specified requirements.

## 1.8 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. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.
  - 1. Use flexible or curved forms for curves of a radius 100 feet (30.5 m) or less.
- 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 PRODUCTS

- A. Curing Compound: 'Resi-Chem Clean', Type 1 or ID, Class B, water-based, dissipating resin compound conforming to ASTM C309 as manufactured by Symons/Dayton Superior Corporation and supplied by A.H. Harris & Sons or approved equal.

## 2.3 STEEL REINFORCEMENT

- A. Plain-Steel Welded Wire Fabric: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.
- B. Deformed-Steel Welded Wire Fabric: ASTM A 497, flat sheet.
- C. Epoxy-Coated Welded Wire Fabric: ASTM A 884/A 884M, Class A, plain steel.
- D. Reinforcement Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.
- E. Epoxy-Coated Reinforcement Bars: ASTM A 775/A 775M; with ASTM A 615/A 615M, Grade 60 (Grade 420), deformed bars.
- F. Steel Bar Mats: ASTM A 184/A 184M; with ASTM A 615/A 615M, Grade 60 (Grade 420), deformed bars; assembled with clips.
- G. Plain Steel Wire: ASTM A 82, as drawn.
- H. Epoxy-Coated Wire: ASTM A 884/A 884M, Class A coated, plain steel.
- I. Joint Dowel Bars: Plain steel bars, ASTM A 615/A 615M, Grade 60 (Grade 420). Cut bars true to length with ends square and free of burrs.
- J. Epoxy-Coated Joint Dowel Bars: ASTM A 775/A 775M; with ASTM A 615/A 615M, Grade 60 (Grade 420), plain steel bars.
- K. Tie Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.
- L. Hook Bolts: ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6), internally and externally threaded. Design hook-bolt joint assembly to hold coupling against pavement form and in position during concreting operations, and to permit removal without damage to concrete or hook bolt.
- M. 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. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer coated wire bar supports.
- N. Epoxy Repair Coating: Liquid two-part epoxy repair coating, compatible with epoxy coating on reinforcement.

## 2.4 MATERIALS

- A. Sleeves: Schedule 40, four-inch (4") ID., polyvinylchloride pipe with solvent weld couplings in accordance with ASTM D1785 and D2467.
- B. Expansion Joint Filler: Preformed, non-extruding, bituminous impregnated can fiber filler in accordance with ASTM D1751; Federal Specifications HH-F-341 F, Type I.
- C. Detectable Warning Strip: The Detectable Warning Strip shall be a prefabricated detectable warning surface tile as manufactured from Engineered Plastics Inc. 300 International Drive, Suite 100 Williamsville, NY 14221, telephone number (800) 682-2525 or the approved equal from ADA Fabricators, INC. P.O Box 179 North Billerica, MA 01862 telephone number (978) 262-9900. The tile shall conform to the dimensions shown on the plans and have a brick red homogeneous color throughout in compliance with Federal Standard 595A Color #22144 or approved equal.

## 2.5 CONCRETE MATERIALS

- A. General: Use the same brand and type of cementitious material from the same manufacturer throughout the Project.
- B. Concrete for endwalls and steps shall conform to the requirements of Section 5.06 and M.03 of the State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges and Incidental Construction", Form 816, including current supplemental.
- C. Concrete for curbing shall conform to the requirements of Section 8.11 and M.03 of the State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges and Incidental Construction", Form 816, including current supplemental.
- D. Concrete for sidewalks, pads and plazas shall conform to the requirements of Section 9.21 and M.03 of the State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges and Incidental Construction", Form 816, including current supplemental.

## PART 3 -EXECUTION

### 3.1 PREPARATION

- A. The surface area upon which the base course aggregate is placed shall be known as the subgrade, which is the plane coincident with the bottom of the base course, as indicated and detailed on the drawings.
- B. All soft, yielding material and other portions of the subgrade under the concrete pavement areas which will not compact readily when rolled or tamped are to be removed and all loose rock or boulders over four inches (4") in size found in the earth are to be removed or broken off to a depth of not less than one foot (1') below the subgrade. All holes or depressions made by the removal of material and the whole surface are to be compacted uniformly. Any portion of the subgrade which is not accessible to a roller shall be compacted thoroughly with mechanical tampers.

- C. The rolling and tamping shall be continued until the entire subgrade is uniformly and thoroughly compacted true to lines and grades given. In excavations, the ground shall not be disturbed below the elevation of the subgrade.
- D. Compact the subgrade for concrete sidewalks, pads and plazas to ninety-five percent (95%) maximum dry density at optimum moisture content in accordance with AASHTO T 180, Method D with particular attention to trench and sleeve backfill and areas adjacent to foundations and drainage structures.
- E. In handling materials, tools and equipment, protect the subgrade from damage by exercising such precautions as may be necessary. At all times the subgrade surface is to be kept in such condition that it will drain readily and correctly.

### 3.2 PAVEMENT SLEEVE INSTALLATION

- A. **Prior** to placement of the aggregate base course for the concrete pavement, excavate and install PVC sleeves where noted on the drawings and where required for wiring for site lighting fixtures, irrigation piping and other utilities requiring sleeves. Coordinate placement of sleeves with contractors for irrigation and wiring for the site lighting fixtures.
- B. Backfill and thoroughly compact around and over all sleeves. Take precautions not to damage sleeves during the backfill and compaction process.
- C. Install ends of sleeves at least eighteen inches (18") beyond the edge of all pavements. Cap ends using duck tape to prevent clogging of sleeves prior to installation. Adequately mark each sleeve location on an 'as-built' field drawing for use by the irrigation contractor.
- D. All sleeves to have a minimum of eighteen inches (18") of cover.
- E. Install two (2) sleeves, side-by-side at each location where noted on the drawings for irrigation piping and electrical wiring.

### 3.3 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.

### 3.4 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.
  - 1. Apply epoxy repair coating to uncoated or damaged surfaces of epoxy-coated 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.

### 3.5 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.
  - 3. Provide tie bars at sides of pavement strips where indicated.
  - 4. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
  - 5. Use 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).
  - 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).

### 3.6 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 Architect.
- I. Screed 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 or spreading dry-shake surface treatments.
- J. Curbs and Gutters: When automatic machine placement is used for curb and gutter placement, submit revised mix design and laboratory test results that meet or exceed requirements. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing as specified for formed concrete. If results are not approved, remove and replace with formed concrete.
- K. 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.
- L. The Detectable Warning Strip for new construction shall be set directly in poured concrete according to the plans and the manufacturer's specifications or as directed by the Landscape Architect. The contractor shall place two 25 pound concrete blocks or sandbags on each tile to prevent the tile from floating after installation in wet concrete.
- M. 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.
- N. 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.

- O. 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.

### 3.7 CONCRETE FINISHING

- A. General: Wetting of concrete surfaces during screeding, initial floating, or finishing operations is prohibited.
- B. Float Finish: Begin the second floating operation 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. Cut down high spots, and fill low spots. Refloat surface immediately to uniform granular texture.
  - 1. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating float-finished concrete surface 1/16 to 1/8 inch (1.6 to 3 mm) deep with a stiff-bristled broom, perpendicular to line of traffic.

### 3.8 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 lb/sq. ft. x h (1 kg/sq. m x 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.
- C. Begin curing after finishing concrete, but not before free water has disappeared from concrete surface.
- D. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound, or a combination of these as follows:
  - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
    - a) Water.
    - b) Continuous water-fog spray.
    - c) Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

### 3.9 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, unlevelled 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.

### 3.10 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 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.
6. 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 laboratory-cured test specimens unless field-cured test specimens are required.
7. 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.

8. 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.
  9. When total quantity of a given class of concrete is less than 50 cu. yd. (38 cu. m), Architect may waive compressive-strength testing if adequate evidence of satisfactory strength is provided.
  10. 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.
  11. 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).
- C. Test results shall be reported in writing to Landscape Architect, 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.
- D. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Landscape Architect but will not be used as the sole basis for approval or rejection.
- E. 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 Landscape Architect. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed.

### 3.11 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 Architect 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.
- 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 02751**

## SECTION 02752 - CAST-IN-PLACE CONCRETE CURBS / TURF ANCHOR

### PART 1 GENERAL

#### 1.01 GENERAL REQUIREMENTS

- A. Include GENERAL CONDITIONS and all other Division 1 – General Requirements as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting, or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

#### 1.02 WORK INCLUDED

- A. Perform all work required to complete the work of the Section, as indicated. Such work includes, but is not limited to, the following:
  - 1. Cast-in-place curb for anchoring Non-filled Synthetic Turf System.

#### 1.03 RELATED SECTIONS

- A. Section 02300 – Earthwork.
- B. Section 02751 – Site Concrete.
- C. Section 02630 - Storm Drainage System.
- D. Section 02821 - Chain Link Fence and Gates.
- E. Section 02794 – Artificial Turf Base.

#### 1.04 REFERENCES

- A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirement shall govern.
- B. American Society for Testing and Materials (ASTM):
  - 1. C 33 Concrete Aggregates
  - 2. C 91 Masonry Cement
  - 3. C 94 Ready-Mix Concrete
  - 4. C 150 Portland Cement

- 5. C 260 Air Entraining Admixtures for Concrete
- 6. C 494 Chemical Admixtures for Concrete

C. Massachusetts Department of Transportation Standard Specifications (MassDOT Specifications).

#### 1.05 SUBMITTALS

A. Complete shop drawings of the infilled synthetic turf anchor specified shall be submitted. Contractor to review plan details for further information.

#### 1.06 TESTING AND INSPECTION

A. The Owner reserves the right to have tests made of mortar materials and mortar, at his option, as the job progresses. Tests will be performed by a recognized Testing Laboratory, selected by the Owner's Representative, with all costs paid by the Owner. The Contractor shall agree to abide by the results of the tests; he shall make all adjustments and changes to mortar and materials to meet the specification requirements at no additional cost to the Owner.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver manufactured products in manufacturer's original, unopened, and undamaged containers with labels intact and legible.

B. Store and handle manufactured products to prevent damage and deterioration.

### PART 2 PRODUCTS

#### 2.01 CAST-IN-PLACE CONCRETE CURB (CONCRETE TURF ANCHOR)

C. Ready-mix concrete shall conform to ASTM C-94, the batch plant shall be certified in compliance with the National Ready Mix Concrete Association standards. Concrete shall be 4000 psi.

D. Forms shall be steel or wooden forms at the Contractor's option and as approved by the Owner's Representative. Provide forms capable of producing uniform, straight, or curved concrete surfaces. Use only non-staining form release compounds.

E. A slump pour for the turf anchor haunch is acceptable. This haunch is meant to prevent future settlement against the anchor and will not be visible.

F. Portland Cement shall conform to ASTM C-150, type as required. Use only one brand of cement throughout the project. Limit the temperature of the cement to 140 degrees Fahrenheit when delivered to the batching plant.

G. Aggregates shall conform to ASTM C-33. Provide aggregates with a long history of

successful use in similar work and conditions. Grade fine aggregates from 1/4" to fines. Grade coarse aggregates from 1/4" to size specified.

- H. Water shall be clean, potable and free of all impurities that are detrimental to concrete.
- I. Air-entraining admixtures shall conform to ASTM C-260; use only admixtures which have been accepted in the mix design.
- J. Water reducing admixtures shall conform to ASTM C-494; use only admixtures which have been accepted in the mix designs.
- K. Curing/sealing compound shall be equivalent to Day-Chem Sil-Cure J13.
- L. Fiber Reinforcing monofilament additive by Fiber Solutions, Inc. Edgefield, SC or Approved Equal shall conform to ASTM D792 for specific gravity, ASTM D570 for water absorption, and ASTM 3822 for Tensile Strength or equivalent.
- M. Expansion materials:
  - 1. Expansion joints shall be located at the end of all curb runs and at a maximum of 60'.
  - 2. Expansion joint filler shall be preformed, non-bituminous type joint filler conforming to ASTM D 1752, Type II, similar to Sealtight Cork Expansion Joint Filler, manufactured by W.R. Meadows, Inc., Elgin, IL 60120, or approved equal.
  - 3. Premolded filler shall be one piece for the full depth and width of the joint leaving a sealant recess as indicated and shall be an asphaltic material.
  - 4. Use of multiple pieces of lesser dimensions to make up required depth and width of joint will not be permitted.
  - 5. Except as otherwise noted on the Drawing, joint filler shall be 1/2" thick.
  - 6. Expansion joint shall receive joint backer rod and shall be sealed with approved joint sealer.
  - 7. Control joints shall be tooled in every 20'.

### PART 3 EXECUTION

#### 3.01 CAST-IN-PLACE CONCRETE CURB (CONCRETE TURF ANCHOR)

- N. Contractor shall excavate area to the lines and grades shown to provide proper footing for all concrete curb.
- O. Contractor shall erect proper formwork to pour the concrete footings where required on Drawings. Formwork shall be free of defects and shall provide a smooth and even finish to the entire curb surface. Install form liners per manufacturer's instructions and as directed by the Owner's Representative.
  - 1. The Contractor's attention is called to the various types of curb details, the elevations of those curbs and the modification of the curb for use as a retaining wall as shown

on the drawings. Note the locations of expansion joints as well as rustications as shown on the drawings.

- P. Pour concrete and finish as indicated on the Drawings. Contractor shall leave forms for a minimum of 48 hours.
- Q. Contractor shall protect the concrete against injury from the elements and defacement of any nature during construction.
- R. Strictly comply with industry standards and the recommendations of the National Concrete Masonry Association, and Prestressed Concrete Institute, except where more restrictive requirements are specified in this Section.

END OF SECTION

SECTION 02791– CLAY INFIELD PAVEMENT

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Provide all materials, labor, equipment, and services necessary to perform the work of this section as shown on the Drawings, as specified, and as required by job conditions, including, but not limited to, the following:

- 1. Pitchers mounds

1.2 RELATED SECTIONS

A. Section 02300 – Earthwork.

1.3 SUBMITTALS

A. Refer to Section 01200.

- 1. Submit for review product data, certificates of conformance, samples, and other specified information on clay infield materials proposed for use.
- 2. Product data: manufacturer's printed descriptive literature about specified product that includes statements that product conforms to specified requirements.
- 3. Certificate of conformance: list applicable specification requirements and state that product conforms to these requirements. Certificate: signed by supplier and/or subcontractor as applicable, and countersigned by Contractor.
- 4. Previous installations: information documenting use of specified material at a minimum of 3 previous installations. Submit contact name and telephone number for each installation.
- 5. Submittals for each item shall include:

Item	Submittal
Pitcher’s mound	Product data, certificate of conformance, previous installations, and one 2 lb. sample bag

PART 2 – PRODUCTS

2.1 MATERIALS

A. Pitcher’s mound mixture: high-quality, shredded clay specifically manufactured for use in high wear clay infield areas. Clay shall be Dura Edge Professional by DuraEdge Products, Inc. (Tel. 866-807-0052) or approved equal.

- 1. Density: 2,700 lbs. per cubic yard.
- 2. Mechanical Analysis: Sand – 58-62%; Silt – 28%; Clay – 14%

3. Med-coarse sand (0.25mm-1.0mm) greater than or equal to 50%

4. Silt to clay ratio: 0.5 – 1.0

- B. Fortification: Clay for construction and fortification of pitcher's mound at the field and in the bullpens shall be Hilltopper Mound Clay as manufactured by Stabilizer Solutions, Phoenix, Arizona 85034.

## PART 3 – EXECUTION

### 3.1 INSPECTION

- A. Examine the subgrade and the conditions under which clay infield pavements are to be installed. Do not install clay infield pavements until any unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION OF CLAY INFIELD PAVEMENTS

- A. Subgrade preparation: grade subgrade to required elevations and firmly compact.
- B. Materials shall be installed to a finished depth of four (4) inches minimum. During installation, no more than 2" of material should be added at one time. Each 2" "lift" of material shall be compacted with a three (3) ton roller. The material should be rough graded with a dual laser-guided blade each time after rolling to insure consistent depth of installation. Final grading shall be performed with a dual laser-guided blade and roll as required.
- C. Place Clay fortification for baseball field and bull pens as follows:
1. Pitcher's mound, bull pens mounds, and bull pen home plates/catchers area to 6" depth min. in areas shown on drawings per supplier's instruction. Cover with ½" minimum infield mix.
- D. Check surface elevations for conformance with Drawings. Rake out mounds and fill in voids to create uniform surface grades.

END OF SECTION

## SECTION 02794– ARTIFICIAL TURF BASE

### PART 1 – GENERAL

#### 1.1 SECTION INCLUDES

- A. Provide all materials, labor, equipment, and services necessary to furnish and deliver work of this Section as shown on the Drawings, as specified and as required by job conditions including, but not limited to, the following:
  - 1. Inspection, preparation and acceptance of subgrade.
  - 2. Base course with underdrainage and collector drain.

#### 1.2 WORK INCLUDED

- A. Provide an inspection and written certification of subsurface drainage system and free draining subbase compliance with specified drainage rates prior to commencement of subsequent work.
- B. Coordinate Dual Ring Infiltrometer testing (to be paid for by Contractor) at a minimum of five (5) locations upon completion of the laser grading of the Free Draining Finishing Stone layer. Location to be determined by Owner’s Representative. Contractor is responsible for coordinating the schedules and restoring the Finishing Stone once tests are completed.\

#### 1.3 RELATED SECTIONS

- A. Section 01500 – Quality Control.
- B. Section 02300 – Earthwork.
- C. Section 02751 – Site Concrete.
- D. Section 02630 – Storm Drainage.

#### 1.4 STANDARDS

- A. State of Connecticut Department of Transportation (CDOT):
  - 1. Standard Specifications for Roads, Bridges and Incidental Construction, Form 814A, 1995.

#### 1.5 REFERENCES

- A. American Society for Testing and Materials (ASTM):
  - 1. ASTM D1557-02, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2,700 kN-m/m<sup>3</sup>)).

#### 1.6 SUBMITTALS

- A. Refer to Section 01200.

- B. In accordance with the General Requirements, submit copies of materials certificates signed and certified that the material item complies with, or exceeds, specified requirements.
- C. Product data: submit manufacturer's product data and installation recommendations for all furnished materials. Data shall include manufacturer or producer, source, item and kind and shall include all other necessary information to demonstrate that the materials comply with specified requirements.
- D. Qualification data: submit qualification data to demonstrate the contractor's (not manufacturer's) capabilities and experience in artificial turf installations. Qualification data shall include the following:
  - a) Certified list of existing installations (10 minimum) with telephone numbers for Owner's representative and Landscape Architect, date of installation and product information.
  - b) List of clients (5 minimum) with telephone numbers for whom significant service work has been performed following initial installation or significant artificial turf sub base services have been performed.

## 1.7 QUALITY ASSURANCE

- A. Contractor qualifications: The preparation, construction and installation of the field subgrade, drainage, turf anchor, base stone and finishing stone shall be completed by a specialty firm, Base Contractor, who shall have completed ten (10) synthetic turf field projects, each 80,000sf or larger, in the last five (5) years and who is acceptable to the manufacturer. The artificial turf base installer shall demonstrate conformance with the following qualifications:
  - 1. Must have been actively installing the same artificial turf system for a minimum of three years.
  - 2. Must directly employ the installers of the artificial turf system.
  - 3. Must employ supervisors who are certified by the manufacturer.

## 1.8 PROJECT CONDITIONS

- A. Field measurements: verify the existing conditions. No adjustments will be made to the Contract Sum for variations in the existing conditions.
- B. Existing utilities: do not interrupt utilities serving facilities occupied by the Owner or others unless permitted in writing by the landscape architect and then only after arranging to provide temporary utility services according to requirements indicated.
- C. Weather limitations: proceed with construction only when weather conditions permit the work to be performed in accordance with the manufacturer's written instructions and warranty requirements.

## PART 2 – PRODUCTS

### 2.1 GENERAL REQUIREMENTS

- A. Edge fastening: turf/backing shall be securely fastened along the full length of its perimeter as shown on the details.

### 2.2 MATERIALS

- A. Geotextile: non-woven fabric similar to Mirafi S600, or approved substitute.

A. Free Draining Crushed Stone:

1. Shall be double washed crushed stone consisting of inert angular material derived from a stone quarry that is hard, durable, washed stone, free of deleterious materials. Gradation shall conform to the following:

<u>Sieve Designation</u>	<u>% Passing by Weight</u>	
	Minimum	Maximum
1 in.	100	--
5/8 in.	100	--
½ in.	85	100
3/8 in.	15	45
No. 4	0	15
No. 8	0	5

2. Free Draining Crushed Stone shall bridge with selected Free Draining Finishing Stone material to prevent loss of Free Draining Finishing material into Crushed Stone layer.
3. Free Draining Crushed Stone to be fine graded to a tolerance of 1/4" in 10' with hydraulically controlled laser grading apparatus.
4. Free Draining Crushed Stone shall drain at a rate of no less than 10 inches per hour after compaction.
5. Based upon the type of Free Draining Crushed Stone and Free Draining Finishing Stone submitted, other criteria may be required for approval.

B. Free Draining Finishing Stone:

1. Shall be inert angular material derived from a stone quarry that is hard, durable and free of deleterious materials and shall consist of one of the following:
  - a. Durable crushed rock consisting of the angular fragments obtained by breaking and crushing solid or shattered natural rock, and free from a detrimental quantity of thin, elongated or other objectionable pieces.
    - i. A detrimental quantity will be considered as any amount in excess of 15% by total weight.
    - ii. Thin or elongated pieces are defined as follows: Thin stones shall be considered to be such stones whose average width exceeds four (4) times their average thickness. Elongated stones shall be considered to be such stones whose average length exceeds four (4) times their average width.
  - b. Durable crushed gravel stone obtained by artificial crushing of gravel boulders or fieldstone with a minimum diameter before crushing of 8 in.
2. Gradation shall conform to the following requirements (1/2" maximum particle size):

<u>Sieve Designation</u>	<u>% Passing by Weight</u>	
	Minimum	Maximum
1/2 in.	100	--
3/8 in.	85	100
1/4 in.	75	100
No. 4	60	90
No. 8	35	75
No. 16	10	55
No. 30	0	40
No. 60	0	15
No. 100	0	8
No. 200	0	2

3. Free Draining Finishing Stone shall bridge with selected Crushed Stone drainage material to prevent loss of Free Draining Finishing Stone into Crushed Stone layer.
  4. Free Draining Finishing Stone to be fine graded to a tolerance of 1/8" in 10' with hydraulically controlled laser grading apparatus.
  5. Free Draining Finishing Stone shall drain at a rate of no less than 10 inches per hour after compaction.
  6. Free Draining Finishing Stone shall be capable of being rolled with a ten ton roller without fracturing.
  7. Based upon the type of Free Draining Crushed Stone and Free Draining Finishing Stone submitted, other criteria may be required for approval.
- B. Underdrainage piping: 12" wide "AdvanEDGE" high-density, polyethylene pipe as manufactured by Advanced Drainage Systems, or approved substitute. Provide all couplings and fittings necessary for a complete installation.
- C. Perimeter drain: 12" diam. perforated PVC Schedule 40 or perforated ADS pipe.

PART 3 – EXECUTION

3.1 INSPECTION

- A. Examine the subgrade and the conditions under which the artificial turf is to be installed. Installation of the artificial turf shall not proceed until unsatisfactory conditions, if any, have been corrected.
- B. The installer of the artificial turf shall inspect the subgrade to ensure that it has been properly prepared and is ready for installation of the geotextile. Inspection shall consist of the following:
  1. Verify that lines and grades are in conformance with the Drawings. Grades shall be checked utilizing a laser level with spot elevations plotted on a 10' o.c. grid. The subgrade shall be prepared to tolerances of not more than 1/4" in 10' to allow for even drainage.
  2. Verify that the subgrade has been compacted to not less than 95% maximum obtainable density, in conformance with ASTM D1557.
  3. Verify that there are no soft spots.

4. Verify that there is no topsoil or other organic materials present in the subgrade.

### 3.2 SUBGRADE PREPARATION

- A. Subgrade shall be smooth, hard, and dry, prior to installation of the geotextile. Notify the Architect following completion of subgrade preparation to allow for inspection and compaction testing. Do not proceed with installation of the geotextile until approval by the Architect. Excavate trenches for collector drain as detailed.
- B. Coordination: coordinate with installation of goal post.

### 3.3 INSTALLATION

- A. Geotextile: place geotextile on prepared subgrade. Overlap edges of adjacent rolls by 18" minimum. Wrap geotextile under and around collector drain trench as detailed.
- B. Underdrainage piping: install at locations as shown on the Drawings. Secure underdrainage piping to geotextile with duct tape to prevent movement during placement of the base course.
- C. Free Draining Crushed Stone (FDCS) and Free Draining Finishing Stone (FDFS):
  1. Install the FDCS in such a manner as to avoid damage to the geotextile or prepared subgrade. Spread material from stockpiles laid along the sidelines, working from sideline to centerline parallel to the underdrainage system. Grading of FDCS and FDFS layers must be performed by laser-guided and controlled grading equipment – no exceptions. Compact FDCS with vibratory roller to completely settle material. Proof roll and mark "soft spots" for additional rolling or correction. Place FDFS layer and grade to required lines and grades. The finished surface of the FDFS layer shall slope as shown on the drawings. The finished surface shall not vary from the specified grade by more than 1/8" in 10' when measured in any direction using a 10' straightedge.
  2. The Base Contractor shall give the Owner's Representative three (3) business days of notice to review the rolled and compacted base and mark areas where there appear to be deficiencies. Upon the results of this review, the Base Contractor shall correct the deficiencies suitably including regrading, proper rolling and compaction and then execute a laser level topological survey on a 10-foot grid pattern. The Base Contractor shall provide a hard copy of the topological survey to the Infilled Synthetic Turf Contractor and the Owner's Representative for review and approval. The Base Contractor shall correct deficiencies suitably within tolerances, including proper rolling and compaction to achieve the final base surface which the synthetic turf system will be placed upon.
  3. The Free Draining Finishing Stone Layer shall be tested to insure a 95% maximum dry density per a standard proctor test. Contractor to complete testing and provide results to Owner's Representative.
  4. Contractor shall restore grades and shall bring in enough finishing stone to move material with Laser Grader to get to finish grade of base within specified tolerances with field plane of grade.
  5. The Base Contractor shall verify that the subsurface drainage system is functioning properly prior to commencement of the Infilled Synthetic Turf System installation. Provide verification to Owner's Representative.

6. Infilled Synthetic Turf Contractor shall provide written verification that he has examined the system and that the base and subsurface drainage system are functioning properly. Commencement of work prior to written verification constitutes acknowledgement that the systems are functioning properly.
  7. As outlined in 1.02.B, the Base Contractor shall coordinate Dual Ring Infiltrometer testing to support verification as described above.
  8. Upon completion and submission of the Dual Ring Infiltrometer testing results and submission of the written certifications by the Base Contractor and Turf Contractor to the Owner's Representative, the synthetic turf installation shall commence.
- D. Perimeter drain: install collector drain as detailed. Connect underdrainage to collector drain using all necessary pipe couplers and reducers and fasten securely. Carefully backfill perimeter drainage trench to avoid disturbance to piping.
- E. Testing of base course: the free draining crushed stone and free draining finishing stone layers shall be tested for proper permeability per Din 8035 Part 7, ASTM 2434 (constant head), or ASTM D3385 (double-ring) testing methods. Test samples shall be taken at the rate of one per 5000 square feet of surface area. Documented test results shall be submitted to the Architect for review and approval prior to installation of the turf carpet. Contractor shall be responsible for correcting deficiencies in base course permeability at no additional cost to the Contract Sum.

END OF SECTION

## SECTION 02821– CHAIN LINK FENCE AND GATES

### PART 1 - GENERAL

#### 1.1 SECTION INCLUDES

- A. Chain link fencing and gates.
- B. Baseball backstops.
- C. Ball Safety Net

#### 1.2 RELATED SECTIONS

- A. Section 02300 – Earthwork.
- B. Section 02751 – Site Concrete.

#### 1.3 SYSTEM DESCRIPTION

- A. Provide and install chain link fencing and gates as shown on the Drawings. Coordinate with the work of other trades to supply mounting hardware, sleeves, and other items as may be necessary.

#### 1.4 STANDARDS

- A. Provide chain link fencing, gates, backstops and netting as complete units with each produced by a single manufacturer, including all necessary erection accessories, fittings and fasteners.
- B. Standards: comply with the standards of the Chain Link Manufacturer's Institute for materials and installation.
- C. Handicapped accessibility: all gate latches and other operable hardware shall be in full conformance with ADA and other applicable codes for handicapped accessibility.
- D. ASTM – American Society for Testing and Materials

#### 1.5 SUBMITTALS

- A. Refer to Section 01200.
- B. In accordance with Division 1 requirements, submit manufacturers' data certifying that furnished materials comply with specifications.
- C. Submit shop drawings including details delineating fence heights, size of posts, rails, braces, footings and accessories.

- D. Submit shop drawings at an approved scale for location, installation and erection of all parts of the work under this Section. The Fence Contractor and ball safety netting manufacture shall work together on the shop drawings to combine systems.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Line posts: 2-3/8" O.D. standard weight galvanized steel pipe with 2.0 ounces of hot dipped zinc in accordance with ASTM-A120.
- B. Terminal posts: (end and corner posts) 4" O.D. standard weight galvanized steel pipe with 2.0 ounces of hot-dipped zinc in accordance with ASTM-A120.
- C. Top, bottom, and brace rails: 1-5/8" O.D. standard weight galvanized steel with 2.0 ounces of hot dipped zinc in accordance with ASTM-A120. Top rail couplings (6" min. length) shall be spaced at 21' o.c. maximum. Fabric tie wire shall be spaced at 24" o.c. maximum.
- D. Truss rod: 3/8" diameter galvanized steel solid rod.
- E. Tie wires: 9 gage aluminum
- F. Post tops: galvanized steel caps to provide a secure weather-tight closure.
- G. Hinges: Hinges shall be 180 degree opening color and finishes to match post and rail system.
- H. Miscellaneous: provide all other fittings and parts necessary for a complete fence installation.
- I. Vinyl-coated chain link fabric: PVC coating (7 mil thickness) thermally fused and bonded to 9 gage zinc-coated steel core wire in 2" mesh pattern per ASTM F668 Class 2b, unless detailed otherwise. Fabric shall be knuckled at both the top and bottom selvage. Color of PVC coating shall be black.
- J. PVC coated finish (posts, rails and other components): supplemental color coating of 10-15 mils thermally fused and bonded to zinc-coated components per ASTM F1043. Color shall match color of chain link fabric.
- K. Concrete for footings: standard mix Portland cement concrete with a minimum compressive strength of 3,000 PSI at 28 days. Comply with all applicable requirements of Section 02751.
- L. Epoxy grout: fast setting, expansive concrete cement or epoxy grout. Submit manufacturer's data for approval.
- M. Ball Safety Net: shall be equivalent to MBS Ground Sleeve Straight Post Model Multi-Sport BallStopper System as Manufactured by Aluminum Athletic Equipment, West Conshohocken, PA 19428 (800) 523-5471 or Sportsfield Specialties, 41155 State Highway 10, PO Box 231, Delhi, NY 13753, phone: 888-975-3343 or approved equal.
  - 1. Height of system shall be as noted in Project Plans and Details.
  - 2. Height of netting shall be as noted in Project Plans and Details. Provide clips every 12"

- to attach netting to fencing.
- 3. Post color shall be powder coated black.
- 4. Netting and cables shall be black.
- 5. Provide Ground Sleeve Plugs for each Ground Sleeve.
- 6. Provide Ground Sleeve Plug Removal Tool
- 7. Where the ball netting system is in line with the fencing, the ball netting system shall be an integral part of the fencing system. It shall not be offset from the fencing.
- 8. Contractor shall verify footing size requirements for posts supporting chain link fence/ball safety netting.

N. Baseball Backstop: The types of fencing required for the project are as indicated below, subject to detailed material requirements which follow:

- 1. All material shall be new, and products of recognized reputable manufacturers. Color to be black. Used, re-rolled or re-galvanized materials are not acceptable.
- 2. Like items of materials provided hereinafter shall be the end products of one manufacturer in order to achieve standardization for appearance, maintenance and replacement.
- 3. Fabric shall be premium grade helically wound and woven steel core wire in accordance with ASTM F668 Class 2B vinyl fabric, black.
- 4. Material specifics shall be as follows:

	Core (inches)	Wire (gauge)	Zinc (oz/S.F.)	Mesh Size
Back and Sides	0.148	6	.40	1 3/4"

- 5. Selvages: Fence fabric shall be knuckled selvage at top and bottom.
- 6. Framework shall be steel pipe - Type I: Cold formed and welded steel pipe complying with Group IA intermediate grade schedule 40 steel pipe, ASTM F 1083-06, with minimum yield strength of 50,000 psi (344 MPa), sizes as indicated. Protective coating per ASTM F 1043, external coating Type B, zinc with organic overcoat, 0.9 oz/ft<sup>2</sup> (275 g/m<sup>2</sup>) minimum zinc coating with chromate conversion coating and verifiable polymer film. Internal coating Type B, minimum 0.9 oz/ft<sup>2</sup> (275 g/m<sup>2</sup>) zinc or Type D, zinc pigmented, 81% nominal coating, minimum 3 mils (0.08 mm) thick. Color to be powder coated black.
- 7. Schedule of pipe sizes shall be as follows:
  - a. Corner, End and Line Posts: 6 5/8" o.d ( 168.3 mm), 18.97 lbs/ft.
  - b. Horizontal Rails: 1.9" o.d (48 mm), 2.72 lbs/ft.
- 8. Posts shall be of sufficient length to allow for installation to a minimum depth of 4 ft. below finish grade.
- 9. Post tops shall be provided with post caps which fit securely and exclude moisture.
- 10. Top Rails shall have lengths not less than eighteen feet and shall be fitted with min. 6 inch long outside sleeved or internally swaged couplings for connecting the lengths into a continuous run. Provide top rail with pass-through fittings at line posts and rail end cups and brace bands at terminal or gate posts.
- 11. Middle and Bottom Rails shall be secured to line posts with steel boulevard clamps, and to terminal, corner, gate or pull posts with rail end cups and brace bands.
- 12. Brace Rails shall be provided for each terminal post with fabric height of six feet or

- more. Extend brace to each adjacent post at approximate mid-height of fabric and secure with rail end cups and brace bands. Provide diagonal truss bracing with 3/8 inch steel rod and turnbuckle.
13. Fence fittings and accessories shall be fabricated of steel or cast iron and shall conform to minimum requirements of ASTM F-626, and as below. Following fabrication and galvanizing, all fence fittings shall receive a 10 to 14 mil thick fusion bonded vinyl coating to match fabric color. With the exception of field painting for nuts and bolts, no painted fittings will be accepted.
  14. Stretcher Bars shall not be less than 3/16 by 3/4 inch and not less than 2 inches shorter than the nominal height of the fabric with which they are to be used. One stretcher bar shall be provided for each end and gate post, and two for each corner and pull post.
  15. Fabric connectors shall be provided in sufficient number for attaching the fabric to all line posts at intervals not exceeding twelve inches (12"); and not exceeding twelve inches (12") when attaching fabric to top or bottom rail. Connectors shall be galvanized with a min. 0.8 oz s.f. coating of zinc.
  16. Unless designated otherwise on the details, tie wires shall be fabricated from rolled 9 gauge wire stock which has been cut to required lengths for hand-twisted connections at the site.
  17. Tension Bands shall be provided in sufficient number for attaching the fabric and stretcher bars to all terminal posts at intervals not exceeding twelve inches (12"). Tension bands shall be formed from flat or beveled steel and shall have a minimum thickness after galvanizing of 0.078 inch; and minimum width of 3/4 inch for posts 4 inch O.D. or less; and 0.108 inch thickness by 7/8 inch for posts larger than 4 inch O.D. Brace bands shall be formed from flat or beveled steel and shall have a minimum thickness of 0.108 inch after galvanizing; and a minimum width of 3/4 inch. Attachment bolts shall be 5/16 x 1-1/4 inch galvanized carriage bolts with nuts, ASTM A-307, Grade A.
  18. Other hardware required shall be fabricated from steel, and galvanized in accordance with ASTM A123 and/or ASTM A153.

## PART 3 - EXECUTION

### 3.1 INSPECTION

- A. General: Do not commence fencing and backstop installations before final grading is complete, with finish elevations established.
- B. Inspection: examine the conditions under which all new fencing and backstops are to be installed. Installation of fencing and backstops shall not proceed until all unsatisfactory conditions, if any, have been corrected.

### 3.2 FOOTINGS

- A. Drill/excavate holes of diameters and spacing as detailed for post footings in firm, undisturbed or compacted soil. Excavate hole depths approximately 6" lower than the post bottoms.

### 3.3 POST INSTALLATION

- A. Preparation: remove all loose and foreign materials from sides and bottoms of holes and moisten soil prior to placing concrete.

- B. Placement: center and align posts in holes 6" above bottom of excavation.
- C. Place concrete around posts in a continuous pour, and vibrate or tamp for consolidation. Check each post for vertical and top alignment, and hold in position during placement and finishing operations.
- D. Keep exposed concrete surfaces moist for at least 48 hours after placement, or cure with membrane curing materials, or other acceptable curing method.

### 3.4 CHAIN LINK FABRIC INSTALLATION

- A. General: install as detailed at locations as shown on the Drawings.
- B. Timing: allow concrete footings to attain at least 75% of minimum 28 day compressive strength, but in no case sooner than 48 hours after placement, before fabric is installed. Do not stretch or apply tension to fabric until the concrete has attained its full design strength.
- C. Rails: install all rails as detailed. Rails shall be parallel to finished grade.
- D. Braces: provide brace and truss assemblies at all terminal posts, gate posts and at both sides of corner and pull posts. Locate brace rail at mid-height of fence fabric. Install braces so posts are plumb when truss rod is under proper tension.
- E. Fabric: leave approximately 1-1/2" between finish grade and bottom of fabric selvage. Pull fabric taut and tie to posts and rails. Install fabric on side of fence as detailed and anchor to framework so that fabric remains in tension after pulling force is released.
- F. Ties: thread stretcher bars through or clamp to fabric 4" o.c., and secure to posts with metal bands.
- G. Use U-shaped tie wire, conforming to diameter of pipe to which attached, clasping pipe and fabric firmly with ends twisting at least 2 full turns. Bend ends of wire to minimize hazard to persons or clothing.
- H. Hardware: install hardware bolts on side of fence opposite fabric side. Peen ends of bolts or score threads to prevent removal of nuts.
- I. Baseball backstops: install as detailed at locations as shown on the Drawings. Comply with manufacturer's recommendations and accepted standard practice for chain link fence installation requirements.

### 3.5 BALL SAFETY NETTING

- A. General: Install netting per manufacturer's recommendations. Where netting is in line with chain link fence, netting shall come on top of the fence and be attached to the fence with snap hooks.

### 3.6 BASEBALL BACKSTOP

- A. General: Layout the backstops with the middle posts set at right angles to, and equally spaced from, a line extending from the pitcher's mound through home plate, 8' apart on centers unless

otherwise noted on the Drawings. End posts are set 8' on center from the corner posts and parallel with the sides of the diamond unless otherwise noted on the Drawings.

- B. Posts shall be 48" deep and integrated into the backstop wall as shown on drawings.
- C. Assemble, plumb and adjust the entire unit. (Check from all angles and from a 100' distance) Tighten all bolts and set screws securely.
- D. Attach fabric on field side so that fabric remains in tension after pulling force is released. Corner hood sections are to be cut to shape. Sharp ends are to be turned back into the fabric after cutting and before attaching to frame. One tension bar is to be used on each side panel. The remaining edges are to be tied with tie wire every few inches to the top and bottom rails of the wing. Secure the fabric to the rails by two loops of the tie wire, every 15". Turn the ends of the ties up tight around the rails leaving no sharp ends exposed.

END OF SECTION

## SECTION 02881– ATHLETIC EQUIPMENT

### PART 1 – GENERAL

#### 1.1 SECTION INCLUDES

- A. Provide all materials, labor, equipment, and services necessary to furnish and deliver work of this Section as shown on the Drawings, as specified and as required by job conditions including, but not limited to, the following:
  - 1. Player Benches
  - 2. Batting cage.
  - 3. Bases.
  - 4. Home plate.
  - 5. Pitcher’s rubber.
  - 6. Foul Poles
  - 7. Scoreboard
  - 8. Turf Cool Gate Valve Box
  - 9. Communications Box
  - 10. Dugout structures
  - 11. Tarps
  - 12. Bleacher with Enclosure
  - 13. Shot Put Throwing Circle
  - 14. Shot Put Cage
  - 15. Discus Throwing Circle

#### 1.2 RELATED SECTIONS

- 1) Section 01500 – Quality Control.

#### 1.3 STANDARDS

- A. Provide equipment complying with requirements in National Federation of State High Schools Associations (NFHS) rule book.

#### 1.4 SUBMITTALS

- A. Refer to Section 01200.
- B. In accordance with the General Requirements, submit manufacturer's product data for all athletic equipment. Submit color samples for selection by the Landscape Architect.

## PART 2 – PRODUCTS

### 2.1 MATERIALS

- A. Player Benches: 15' long player bench with 10" wide non-skid aluminum plank bench with backrest. 2'x2' heavy duty galvanized steel legs permanent mount system. Model # PB-20P1 by Jaypro 979 Hartford TPK, Waterford, CT 06385 1-800-243-0533 or approved equal.
- B. Batting cage: 70' long x 1'-6" wide outdoor Power House batting cage (model # "SESBBC-01") as manufactured by Sports Edge P.O. Box 837-259 Murdock Road Troutman, N.C 28166 (Tel. 800-334-6057); or approved substitute. Cage shall have 8 5/8" Diameter Structural Steel poles rates for 120 MPH wind loads. With premium Coating (STRYK5388). Posts shall be permanently anchored in concrete footings. (not in sleeves). Cage system shall include heavy duty galvanized 3/16" aircraft cable, net clips, net shall be HDPE #62 knotless K VX200 net with machine sewn stitched rope borers, with top center rib line and other accessories necessary for a complete installation.
- C. Bases: natural rubber cover over foam core bases similar to "Hollywood Original Jack Corbett bases" (model # 12901010) as manufactured by Schutt Sport 710S Industrial Dr. Litchfield, IL 62056-0426 (Tel. 800-426-9784); and supplied by Sports Edge P.O. Box 837-259 Murdock Road Troutman, N.C 28166 (Tel. 800-334-6057); or approved substitute. Provide set of 3 bases complete with 1-1/2" anchors and rubber plugs.
- D. Home plate: high-durability, all-rubber construction with waffle-bottom home plate similar to "Schutt" (model # 1207200) as manufactured by as manufactured by Schutt Sport 710S Industrial Dr. Litchfield, IL 62056-0426 (Tel. 800-426-9784); and supplied by Sports Edge P.O. Box 837-259 Murdock Road Troutman, N.C 28166 (Tel. 800-334-6057); or approved equal.
- E. Pitcher's rubber: heavy-duty rubber cover with aluminum tube insert pitcher's rubber similar to "Shutt Four-Sided Pro Pitching Rubber" (model # 12808500) as manufactured by as manufactured by Schutt Sport 710S Industrial Dr. Litchfield, IL 62056-0426 (Tel. 800-426-9784); and supplied by Sports Edge P.O. Box 837-259 Murdock Road Troutman, N.C 28166 (Tel. 800-334-6057); or approved equal.
- F. Foul Poles: 20' professional foul pole shall be one piece welded steel construction for permanent installation. Main uprights shall be 3 1/2" schedule 40 galvanized tubing with 12" wing panel constructed of 11 gauge expanded and flattened 3/4" steel fabric. Powder coated color Yellow.(model # BBFP-20) supplied by Sports Edge P.O. Box 837-259 Murdock Road Troutman, N.C 28166 (Tel. 800-334-6057); or approved equal.
- G. Scoreboards: 6'6" HT 20'L 10"D Fair-Play Baseball Score board (Model#BA-7220-2) Color to be selected by the City of Norwalk. by TransLux Corporation 17-Delaware Av DeMoines IA, 50317, 515-265-5305 or approved equal.
- H. Quick Coupler: Turf Cool Box(s) 18'Hx 18"Wx 15"D Vynyl Coping valve box (Model #TC-3700-QCV) supplied by Sports Edge P.O. Box 837-259 Murdock Road Troutman, N.C 28166 (Tel. 800-334-6057); or approved equal.
- I. Electrical Turf Box: 14'H x 18"Wx 15'D 3/16" aluminum communications box with 1 5/8" synthetic turf attachment ledge and 1" PVC Drain Stub (Model# 3500.5 Combox) supplied by Sports Edge P.O. Box 837-259 Murdock Road Troutman, N.C 28166 (Tel. 800-334-6057); or approved equal.
- J. Dugout Structures: 8'Hx 32'Lx7'D Shawnee shelter with 3.86 x 12 pitched roof surface mounted (Contractor to coordinate design and installation with Manufacture) by American Building Products 2 Industrial DR Salem, IL 62881 (800)851-0865; or approved equal.

- K. Tarp: 16 oz vinyl, weighted tarps that do not require stakes. Provide 5 tarps in sizes as follows. Model numbers refer to tarps as manufactured by Beacon Athletics, 2224 Pleasant View Road, #6, Middleton, WI, 53562 (Tel. 800-747-5985); or approved equal.

<u>Model No.</u>	<u>Quantity</u>	<u>Size</u>	<u>Application</u>
270-245-399	1	18' diameter	Pitchers mound
Custom	2	11'x19'	Bull pen mounds

- L. Bleachers with Enclosure (Alternate) - Shall be Sports Edge or approved equal that consist of the following:
1. Size:
    - A. 5 rows x 27', Model SEA5D27CA with ADA spaces. Seating Capacity: Bleachers to have net seating capacity of approximately 72 including two wheel chair spaces.
  2. Understructure:
    - A. The understructure, including bracing, shall be of welded aluminum angle construction. 6061-T6
    - B. The understructure of each unit shall consist of frames spaced at 6' centers joined by cross bracing at adequate points to comply with the design loads.
  3. Aisles:
    - A. (1) 4'-0" wide aisle(s) will be provided with aisle handrail. Additional planking shall be provided to close the aisle in the horizontal and vertical planes Black powder coated contrasting nosing will be at each leading edge of tread in the aisle.
  4. Frame Member Sizes:
    - A. Seat Posts: 1 3/4" x 1 3/4" x 3/16" min.
    - B. Foot Bracket: 2" x 2" x 3/16" min.
    - C. Cross bracing: 1/4" x 2" FB min.
    - D. Rail Posts. 3" x 2" x 1/4" min
  5. Decking:
    - A. The rise per row shall be 8", seat height 17", and depth per row 24".
    - B. Arrangement: Semi-closed deck arrangement consisting of various plank widths to reduce any opening in the deck to less than 4 inches.
  6. Seat Planks:
    - A. Seat Planks shall be 2" x 10" nominal, extruded 6063-T6 aluminum alloy with a clear Anodized 204-R1 finish and end cap. (Finished size shall be 1 3/4" x 9 5/8", with two internal legs).
  7. Tread Planks:
    - A. Tread planks shall be two 2" x 10" nominal, extruded 6063-T6 aluminum alloy with a mill finish and end cap. (Finished size shall be 1 3/4" x 9 5/8", with two internal legs.)
  8. Guardrails:
    - A. Guardrail system shall be at rear and sides of bleacher extending to the front of the third row. Railing shall be 1 5/8" O.D. anodized aluminum tube with endcaps at ends of

straight runs and elbows at corners. All railing shall be secured to angle rail posts by galvanized fasteners. Top of railing shall be 42" above the center of any adjacent seat. The guardrail system shall have no opening larger than 4" at any location more than 30" above grade. The guardrail system shall be capable of sustaining a horizontal load of 50 plf and a vertical load of 100 plf.

9. Riser Planks:

- A. Riser planks shall be 1" x 6" anodized extrusions and shall be provided under each row starting at row 2.
- B. NOTE. Aluminum planking shall be arranged to reject passage of a sphere larger than 4".

10. Aluminum Plank Hardware:

- A. Tie down assemblies consisting of a four way adjustable aluminum clip, with hot-dipped galvanized bolt, nut and washer shall be provided for each connection point at each support.

11. Warranty

- A. Free from defect in material and workmanship in the course of manufacturing for one (1) year.

- M. Shot Put Throwing Circle: Model # SE374, Aluminum Shot / Hammer Circle consisting of 2" x 2" x 1/4", aluminum angle that is roll bent to a 42" radius. Use with #SE363 cast aluminum shot toe board as supplied by Sports Edge P.O. Box 837-259 Murdock Road Troutman, N.C 28166 (Tel. 800-334-6057); or approved equal.
- N. Shot Put Cage: Model # SE805, High School, 4 main upright poles to be 2.5" Square 14ga. Steel powder coated White, 180 lb. test nylon weather treated netting, vinyl coated steel cable running throughout the top to reduce sag, net secured at ground level with (4) stakes, include 20" deep ground sleeves as supplied by Sports Edge P.O. Box 837-259 Murdock Road Troutman, N.C 28166 (Tel. 800-334-6057); or approved equal.
- O. Discus Throwing Circle: Model # SE375, Discus Circle consists of 2" x 2" x 1/4", aluminum angle roll bent to a 49 7/32" radius as supplied by Sports Edge P.O. Box 837-259 Murdock Road Troutman, N.C 28166 (Tel. 800-334-6057); or approved equal.
- P. Light Pole Padding: Light Pole Padding Model LPP, 6' height pad consisting of 19oz. heavy coated vinyl 2" thick high impact foam with 1 1/2"W sewn in hook and loop enclosure and manufactured by Sportsfield Specialties, 41155 State Highway 10, PO Box 23, Delhi, NY 13753, (888-975-3343). Contractor shall determine diameter outside diameter of existing light poles to assure proper fit. Color shall be red.

## PART 3 – EXECUTION

### 3.1 INSPECTION

- A. Examine the conditions under which all athletic equipment is to be installed. Installation shall not proceed until all unsatisfactory conditions, if any, have been corrected.

### 3.2 INSTALLATION – GENERAL

- A. Install all athletic equipment as detailed at locations as shown on the Drawings. Install as detailed and/or in accordance with manufacturer's recommendations and installation instructions.
- B. Coordinate with installation of artificial turf and skinned infield pavement during installation of athletic equipment.

END OF SECTION