REQUEST FOR PROPOSAL

RFP 16-14
FOR
BASEBALL/MULTIPURPOSE FIELD IMPROVEMENTS
AT
HAMDEN HIGH SCHOOL
HAMDEN, CONNECTICUT

May 11, 2016

MMI #1228-61

Prepared for:

The Town of Hamden
Hamden, Connecticut

Prepared by:

MILONE & MACBROOM, INC.
99 Realty Drive
Cheshire, Connecticut 06410
(203) 271-1773
www.miloneandmacbroom.com

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PROPOSAL REQUIREMENTS

REQUEST FOR PROPOSAL

BASEBALL/MULITPURPOSE FIELD IMPROVEMENTS

HAMDEN HIGH SCHOOL
HAMDEN, CONNECTICUT

Process

Upon receipt of the responses to this solicitation, the Town of Hamden may, but shall not be required to, invite one or more of the companies responding to this solicitation to present their qualifications to the town project committee. The final selection will be based on both the qualifications of the each company and the cost of the project that best meets the needs of the Town of Hamden.

Project Description

The existing natural grass baseball field will be reconstructed at Hamden High School. The existing grass baseball field will be replaced with a synthetic athletic turf multipurpose field having a sand-rubber in-fill, or 100% coated sand infill, to be used for a variety of sports including baseball, soccer, and field hockey. A channel edge drain will be installed along a portion of the field and will be integrated with a turf nailer. Chain link fencing will be installed around the remainder of the field, and its foundation will incorporate a flush concrete curb nailer. Two alternate turf systems are proposed for this project. The first will be a sand and crumb rubber infilled turf placed over a traditional dynamic stone base and drainage system. The alternate design will be for a shorter pile height turf system which utilizes 100% coated sand infill which will be installed over a resilient polypropylene shock pad/drainage mat. The turf system will be selected prior to the issuance of the contract for the prime contractor. This proposed project will also include expansion of existing bleachers, various wall systems, dugouts, press box, public address system, and a new lighting system.

The Town of Hamden, through a Request for Proposal (RFP), has pre-selected a synthetic turf manufacturer to supply and install the new synthetic turf. The pre-selected synthetic turf manufacturer will furnish and install its product as a subcontractor to the general Contractor, selected as part of this RFP, having the lowest qualified bid.

The cost established in response to the RFP shall remain in effect until October 2016 and shall not be modified by the Contractor.

Submittals

Prime Contracting firms wishing to be considered shall submit seven (7) copies of their concisely worded submittal package, consisting of (1) a letter of interest, together with general information on the company and proposed subcontractors; (2) statement of bidder's qualifications; (3) a list of successfully completed fields that demonstrates compliance with this project manual and the site plans.

The Proposal Form included in this RFP shall be submitted in a clearly marked separate envelope.

Submittals shall be based on the format and requirements set forth in this RFP. These shall be addressed to:

Finance Department
Town of Hamden
Hamden Government Center
2750 Dixwell Avenue
Hamden, CT 06518

Submittals shall be accepted until 11:00 a.m. on June 2, 2016. All submittals shall be clearly labeled "RFP, ATHLETIC FIELD IMPROVEMENTS AT HAMDEN HIGH SCHOOL."

Contact

Respondents with questions regarding the submission requirements may contact Mr. Phil Goodwin, Purchasing Agent, Town of Hamden, Hamden Government Center, 2750 Dixwell Avenue, Hamden, CT 06518, email: Purchasing@hamden.com. All questions shall be presented at least 72 hours prior to the response deadline to allow for sufficient time to draft and post addenda, if required.

1228-61-m1016-spec-01 - 0 - project front end

SAMPLE CONTRACT

DRAFT AIA® Document A101™ – 2007

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the « » day of «~~»~~ ~~May~~June » in the year «201~~5~~6 »
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

«Town of Hamden
2750 Dixwell Avenue
Hamden, CT »« »
« »
« »
« »

and the Contractor:
(Name, legal status, address and other information)

« »« »
« »
« »
« »

for the following Project:
(Name, location and detailed description)

«RFP #———16-14: ~~Athletic~~Baseball/Multipurpose Field Improvements at Hamden High School ~~Hamden»~~
~~«~~»
«~~»~~

The Architect/Engineer:
(Name, legal status, address and other information)

« Milone & MacBroom, Inc.
99 Realty Drive
Cheshire, CT 06410
(203) 271-1773~~»«~~ »
« »
« »
« »

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201™–2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

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ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, Request for Proposal #_____16-14 issued by the Town of Hamden, (including the Proposal Requirements, General Conditions, Supplemental Conditions, Special Provisions, General Information Specifications, Bid Form, Non-Collusion Statement, Proposal Form, Statement of Respondent's Qualifications, Prevailing Wage Information, and all Appendices), Contractor's Proposal (dated _____, 2015~~56~~), other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be as fixed in a written Notice to Proceed. Contractor shall coordinate the scheduling and performance of the Work with the Hamden Public Schools Director of Facilities or his designee. ~~the date of this Agreement, unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.~~

~~(Insert the date of commencement if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)~~

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~~«—»~~

~~If, prior to the commencement of the Work, the Owner requires time to file mortgages and other security interests, the Owner's time requirement shall be as follows:~~

~~«—»~~

§ 3.2 The Contract Time shall be measured from the date of commencement.

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§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than «→» (« ») days from the issuance by Owner of the Notice to Proceed. TIME IS OF THE ESSENCE IN THE COMPLETION OF THIS PROJECT.date of commencement, or as follows.:
(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

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Portion of Work	Substantial Completion Date

, subject to adjustments of this Contract Time as provided in the Contract Documents.
(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)

«_____ **Liquidated Damages. It is understood by the parties that time is of the essence with regard to the timely completion of the Project.** Failure of the Contractor to achieve substantial completion of the Project within the calendar days stated herein will result in the Owner and the public incurring damages, additional costs and inconveniences that would be impossible or extremely difficult to accurately quantify at the time. Therefore, the 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 Bidder, the sum of **FIVE HUNDRED DOLLARS AND NO CENTS ($500.00)** for each and every calendar day, including Saturdays, Sundays and legal holidays, that the Project remains incomplete. This sum shall not be imposed as a penalty, but as liquidated damages due Owner from Contractor by reason of the damages incurred, inconvenience and additional costs and expenses to the public together with other problems suffered as a result of any such delay thereby occasioned.
»

ARTICLE 4 CONTRACT SUM
§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be « » ($ « »), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:
(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

«) »

§ 4.3 Unit prices, if any:
(Identify and state the unit price; state quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price Per Unit ($0.00)
Per Pricing Schedule set forth in Contractor's Proposal	Per Unit Pricing in Pricing Schedule in Contractor's Proposal	Per Unit Pricing in Pricing Schedule in Contractor's Proposal

§ 4.4 Allowances included in the Contract Sum, if any:
(Identify allowance and state exclusions, if any, from the allowance price.)

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Item	Price

ARTICLE 5 PAYMENTS

§ 5.1 PROGRESS PAYMENTS

§ 5.1.1 Based upon Applications for Payment submitted to the Owner~~Architect~~ by the Contractor ~~and Certificates for Payment issued by the Architect~~, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

« »

§ 5.1.3 Provided that an Application for Payment is received by the Architect~~Architect~~ not later than the «15th » day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the «30th » day of the «following » month. If an Application for Payment is received by the Owner~~Architect~~ after the application date fixed above, payment shall be made by the Owner not later than «forty five » («45 ») days after the Owner~~Architect~~ receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall accurately allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the ~~Architect~~ Architect may require. This schedule, unless objected to by the ~~Architect~~ Architect or Owner, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

.1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of «five » percent («5 » %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™–2007, General Conditions of the Contract for Construction;

.2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of « five » percent («5 » %);

.3 Subtract the aggregate of previous payments made by the Owner; and

.4 Subtract amounts, if any, for which the Architect or Owner~~Architect~~ has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201–2007.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

.1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Owner or Architect ~~Architect~~ shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and
(Section 9.8.5 of AIA Document A201–2007 requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)

.2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201–2007.

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§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:
(If it is intended, prior to Substantial Completion of the entire Work, to reduce or limit the retainage resulting from the percentages inserted in Sections 5.1.6.1 and 5.1.6.2 above, and this is not explained elsewhere in the Contract Documents, insert here provisions for such reduction or limitation.)

« »

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 FINAL PAYMENT
§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201–2007, and to satisfy other requirements, if any, which extend beyond final payment~~; and~~; and

.2 a final Certificate for Payment has been issued by the Architect.

~~.2 a final Certificate for Payment has been issued by the Architect.~~

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§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the Contractor has satisfied the conditions precedent to final payment~~issuance of the Architect's final Certificate for Payment, or as follows:~~

« »

ARTICLE 6 DISPUTE RESOLUTION
§ 6.1 INITIAL DECISION MAKER
The Owner~~Architect~~ will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201–2007~~, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker~~.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

« »
« »
« »
« »

§ 6.2 BINDING DISPUTE RESOLUTION
For any Claim subject to, but not resolved by, mediation pursuant to Section 15.3 of AIA Document A201–2007, the method of binding dispute resolution shall be as follows:
(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)

[« »] Arbitration pursuant to Section 15.4 of AIA Document A201–2007

[« X »] Litigation in Connecticut Superior Court in and for the Judicial District of New Haven at New Haven~~a court of competent jurisdiction~~

[« »] Other *(Specify)*

« »

ARTICLE 7 TERMINATION OR SUSPENSION
§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2007.

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§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2007.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

~~§ 8.2 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.~~
~~*(Insert rate of interest agreed upon, if any.)*~~

~~« »~~ % ~~« »~~

§ 8.3 The Owner's representative:
(Name, address and other information)

« »
« »
« »
« »
« »
« »

§ 8.4 The Contractor's representative:
(Name, address and other information)

~~« »~~
« »
« »
« »
« »
« »

§ 8.5 ~~Neither~~ ~~t~~The ~~Owner's nor the~~ Contractor's representative shall not be changed without ten days written notice to the other party.

§ 8.6 Other provisions:

« »

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A101–2007, Standard Form of Agreement Between Owner and Contractor.

§ 9.1.2 The General Conditions are AIA Document A201–2007, General Conditions of the Contract for Construction, as modified.

§ 9.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

§ 9.1.4 The Specifications:

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(Either list the Specifications here or refer to an exhibit attached to this Agreement.)
«Specifications contained/set forth in Owner's RFP #_____. »

Section	Title	Date	Pages

§ 9.1.5 The Drawings:
(Either list the Drawings here or refer to an exhibit attached to this Agreement.)
«Drawings as listed/identified in Owner's RFP #_____. »

Number	Title	Date

§ 9.1.6 The Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 9.

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents:

.1 ~~AIA Document E201™–2007, Digital Data Protocol Exhibit, if completed by the parties, or the following:~~

~~«»~~

.2 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201–2007 provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor's bid are not part of the Contract Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)

« Owner's Request for Proposal #____
Contractor's Proposal(dated _____, 2015) »
Owner's Standards Terms, Conditions and Supplementary Conditions

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ARTICLE 10 INSURANCE AND BONDS
The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201–2007.
(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201–2007.)

Type of insurance or bond	Limit of liability or bond amount ($0.00)
Payment and Performance Bonds	100% of the Contract Price

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This Agreement entered into as of the day and year first written above.

OWNER *(Signature)*	CONTRACTOR *(Signature)*
« »« »	« »« »
(Printed name and title)	*(Printed name and title)*

DRAFT

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GENERAL CONDITIONS

DRAFT

AIA® Document A201™ – 2007

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)
«~~Athletic~~ Baseball/Multipurpose Field Improvements at Hamden High School~~Hamden~~»
«RFP #~~_____~~16-14
Hamden, CT
~~-~~»

THE OWNER:
(Name, legal status and address)
« Town of Hamden
2750 Dixwell Avenue
Hamden, CT »« »
« »

THE ARCHITECT:
(Name, legal status and address)
«Milone & MacBroom, Inc.
99 Realty Drive
Cheshire, CT 06410 »« »
« »

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, Owner's entire Request for Proposal #~~____~~16-14, Contractor's Proposal (dated _____, 201~~5~~6), other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. ~~Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.~~

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties. There are no intended third-party beneficiaries to the Contract.

§ 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

§ 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

§ 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

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§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 CAPITALIZATION
Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION
In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE
§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM
If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

ARTICLE 2 OWNER
§ 2.1 GENERAL
§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

~~§ 2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.~~

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER
~~§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or~~

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~~the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.~~

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 ~~The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site.~~ The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall conduct its own due diligence, familiarize itself with the site(s) where the Work will be performed and exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ **2.3 OWNER'S** RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ **2.4 OWNER'S** RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. ~~Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect.~~ If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, ~~conducted its own due diligence~~ and correlated personal observations with requirements of the Contract Documents.

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§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

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§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

3.4.4 The Contractor shall pay prevailing wages in accordance with Connecticut law.

§ 3.5 WARRANTY

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect. The Town of Hamden is exempt from the payment of Connecticut Sales Tax.

§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 **Concealed or Unknown Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

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§ 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

.1 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;

.2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and

.3 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ **3.10 CONTRACTOR'S** CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

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§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled

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to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

§ 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify, defend and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce

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other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

§ 4.1.1 The Owner has~~shall~~ retained an architect/engineer, Milone & MacBroom, Inc., ~~lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located~~. Milone & MacBroom~~That person or entity~~ is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be the~~an~~ Owner's representatives during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

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§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in

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number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 SUBCONTRACTUAL RELATIONS

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and

.2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

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When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ **6.1 OWNER'S** RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

§ 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

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§ **6.3 OWNER'S** RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

.1 The change in the Work;
.2 The amount of the adjustment, if any, in the Contract Sum; and
.3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
.2 Unit prices stated in the Contract Documents or subsequently agreed upon;
.3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
.4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

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§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

.1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
.2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
.5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 MINOR CHANGES IN THE WORK

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 PROGRESS AND COMPLETION

§ 8.2.1 **TIME LIMITS STATED IN THE CONTRACT DOCUMENTS ARE OF THE ESSENCE OF THE CONTRACT.** By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

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§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine. . Under no circumstances shall Owner be responsible or liable for any delay damages, including any Eichleay or other type of extended overhead or lost profit claims or damages, idle equipment costs, lost productivity or labor inefficiency costs or lost opportunity costs. Contractor acknowledges that it was aware of and considered this provision when submitting its bid and Contractor accepts the risk of delays.

§ 8.3.2 Claims for extensions of time~~relating to time~~ shall be made in accordance with applicable provisions of Article 15.

~~§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.~~

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.2 SCHEDULE OF VALUES

~~Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, t~~The Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location

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agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

.1 defective Work not remedied;
.2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
.3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
.4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
.5 damage to the Owner or a separate contractor;
.6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
.7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

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§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 FAILURE OF PAYMENT

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use and any approvals from the Owner's Building Official and Fire Marshal have been obtained/issued.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of

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items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the

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Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 The making of final payment shall not constitute a waiver, release or discharge of Claims by the Owner ~~except those arising from~~

~~.1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;~~

~~.2 failure of the Work to comply with the requirements of the Contract Documents; or~~

~~.3 terms of special warranties required by the Contract Documents~~.

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§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously and expressly made in writing and expressly identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

.1 employees on the Work and other persons who may be affected thereby;

.2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and

.3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

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§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY
If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 HAZARDOUS MATERIALS
§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

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§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

§ 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ **11.1 CONTRACTOR'S** LIABILITY INSURANCE

§ 11.1.1 All Insurances shall be provided on the terms and for the amounts required by the Insurance Requirements set forth within the General Bid Specifications within the Owner's Request for Proposal #____, which is made a part hereof.

The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

.1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;

.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;

.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;

.4 Claims for damages insured by usual personal injury liability coverage;

.5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;

.6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;

.7 Claims for bodily injury or property damage arising out of completed operations; and

.8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Owner's Request for Proposal and General Bid Specifications~~Contract Documents or required by law, whichever coverage is greater~~. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

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§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ **11.2 OWNER'S** LIABILITY INSURANCE
The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.3 PROPERTY INSURANCE
§ 11.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE
The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

§ 11.3.3 LOSS OF USE INSURANCE
The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action

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against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.3.7 WAIVERS OF SUBROGATION
The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

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§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The ~~Owner shall have the right to require the~~ Contractor shall~~to~~ furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements and~~or~~ specifically required in the Contract Documents on the date of execution of the Contract.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

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§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK
If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS
§ 13.1 GOVERNING LAW
The Contract shall be governed by the law of Connecticut~~the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4~~.

§ 13.2 SUCCESSORS AND ASSIGNS
§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.3 WRITTEN NOTICE
Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.4 RIGHTS AND REMEDIES
§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

§ 13.5 TESTS AND INSPECTIONS
§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection

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or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

~~§ 13.6 INTEREST~~
~~Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.~~

§ 13.7 TIME LIMITS ON CLAIMS
The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT
§ 14.1 TERMINATION BY THE CONTRACTOR
§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

.1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
.2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;
.3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
.4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed~~, including reasonable overhead and profit, costs incurred by reason of such termination, and damages~~.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract

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with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

.1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;

.2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;

.3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or

.4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

.1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

.2 Accept assignment of subcontracts pursuant to Section 5.4; and

.3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the direct cost and time caused by suspension, delay or interruption as described in Section 14.3.1. ~~Adjustment of the Contract Sum shall include profit.~~ No adjustment shall be made to the extent

.1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

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§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, ~~and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed~~.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. ~~Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been~~

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~~rendered.~~ Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 ~~If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.~~ The subject property is not subject to mechanic's liens because it is a government owned property used for public purposes.

§ 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the

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parties or court order. ~~If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.~~

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

~~§ 15.4 ARBITRATION~~

~~§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.~~

~~§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.~~

~~§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.~~

~~§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.~~

~~§ 15.4.4 CONSOLIDATION OR JOINDER~~

~~§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).~~

~~§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.~~

~~§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.~~

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SPECIAL PROVISIONS

TOWN OF HAMDEN, CONNECTICUT
BASEBALL/MULTIPURPOSE FIELD IMPROVEMENTS
AT
HAMDEN HIGH SCHOOL

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SECTION 00 00 01 INTRODUCTION TO THE SPECIAL PROVISIONS

This Special Provision Section consists of provisions, requirements, and specifications that shall apply to the various items of work that constitute the construction contemplated under this Contract.

Within the Special Provisions and/ or other portions of the Contract Documents, the following definitions shall apply:

1. **Contract Documents:** Shall mean that group of documents included in the agreement between the Owner and the Contractor as follows; Invitation to Bid, Information for Bidders, Bid Proposal Form, Contract Forms, General Conditions, Supplemental General Conditions, Special Conditions, Special Provisions, Standard Specifications, Supplemental Specifications, Prevailing Wage Rates, Appendix.

2. **Standard Specifications:** The State of Connecticut, Department of Transportation, Standard Specifications for Roads, Bridges and Incidental Construction, Form 816, 2004, as revised by the Supplemental Specifications dated January 2013 (otherwise referred to collectively as the Standard Specifications) is hereby made part of this contract, as modified by these Special Provisions. Only Division II "Construction Details," Division III "Materials Section" and referred to portions of Divisions I "General Requirements and Covenants" of the Standard Specifications shall apply.

   It should be noted that all references to the Articles for "Method of Measurement" and "Basis of Payment" of each Section of Division II of the Standard Specifications Sections shall be deleted and replaced with the following:

   > "Measurement and Basis of Payment – The work under this Section will not be measured for payment. Payment for this work, complete in place, including all materials, equipment, tools, labor and incidentals thereto for the satisfactory completion of the work shall be included in the appropriate various Lump Sum Bid Items that are listed in the Bid Schedule".

   It should also be noted that all other requirements of Divisions II and III of the Standard Specifications Sections shall apply except that portions of the Standard Specifications may be supplemented, revised amended and/ or replaced by the Special Provisions. The Special Provisions shall govern as modified and shall supersede the requirements of the Standard Specifications.

   Within the referred to portions of the Standard Specifications wherein the following terms are used, they shall mean respectively:

Engineer, State, Department, Commissioner	Town of HAMDEN acting directly or through a duly authorized representative.

Inspector	Town of HAMDEN acting directly or through a duly authorized representative assigned to make inspections of the work performed and materials furnished by the Contractor.
Laboratory	Laboratory designated by the Town of HAMDEN.

3. **Applicable Safety Code:** shall mean the latest edition including any and all amendments, revisions, and additions thereto of the Federal Department of Labor, Occupational Safety and Health Administration's "Occupational Safety and Health Standards" and "Safety and Health Regulations for Construction," the State of Connecticut, Labor Department, "Construction Safety Code," or State of Connecticut "Building Code," whichever is the more stringent for the applicable requirement.

4. **Regulatory Agency (ies):** Regulatory Agency(ies) shall be defined as the governing body or authority having jurisdiction over or responsibility for a particular activity within the scope of this Contract. They may be as specifically defined within the Contract Documents; otherwise the Contractor shall be responsible for determining and complying with the Regulatory Agency(ies) having jurisdiction in the local area of the proposed work under this Contract.

5. **"Coordination of Plans and Specifications and Other Contract Requirements":**

   All requirements indicated on the Contract Drawings or in the Special Provisions, the Standard Specifications, the Supplemental Specifications, or other Contract provisions shall be equally binding on the Contractor, unless there is a conflict between or among any of those requirements. In the case of such a conflict, the order of governance among those requirements, in order of descending authority, shall be as follows:

   1. Environmental Permits;
   2. Environmental Permit Applications;
   3. Special Provisions;
   4. Contract Drawings (enlarged details on plans, used to clarify construction, shall take precedence over smaller details of the same area. Information contained in schedules or tables, titled as such, shall take precedence over other data on plans);
   5. Supplemental Specifications;
   6. Standard Specifications and other Contract requirements

END OF SECTION 00 00 01

1228-61-m1016-spec-02 - 000001 - introduction to specical provisions

SECTION 00 00 02 NOTICE TO CONTRACTOR – SCHEDULE OF VALUES

1. LUMP SUM BID PRICES

All work for this project shall be performed under the Lump Sum Bid Items. It is the intent of this provision that the value of the following elements of the work within the project when added together shall equal the Total Lump Sum bid. Should the Contractor have any questions regarding the specific elements of work to be included within each schedule of value item, said question shall be directed to the Owner, in writing, sufficiently in advance of the bid date in order to allow for a proper response (see Instructions to Bidders).

2. LUMP SUM BID ITEMS

A. Site Preparation
The work under this item shall include all personnel and equipment necessary for mobilization including the movement of all the contractor's field offices, buildings, facilities, safety fencing, and equipment to and from the project site, and construction staking, as shown on the drawings and necessary to the performance of the work. If test pits are needed, it will be considered work under this item.

B. Site Removals
The work under this item shall include all materials, equipment, and labor to perform the removal and disposal of all items shown on the plans including but not limited to the removal of existing drainage pipes and structures, existing fencing and foundations, dugouts, clearing and grubbing, liming of trees, scoreboard, electrical wiring and irrigation systems.

C. Sediment and Erosion Controls
The work under this item shall also include all materials, equipment, and labor for the installation and maintenance of a construction entrance pad and sedimentation and erosion controls, including but not limited to sediment filter fence, hay bales, and inlet protection required either by the plans or by the contractor in order to maintain adequate erosion precautions during construction all in accordance with the plans and specifications.

D. Earthwork and Grading
The work under this item shall include all materials, equipment, and labor to perform necessary grading operations as shown on the Contract Drawings and described in the Special Provisions. Work under this item shall also include all stripping and stockpiling of existing topsoil and infield clay, and fine grading brought to the subgrade elevation required prior to the application of stone base material, processed stone, or topsoil as shown on the contract documents. Existing field topsoil and infield clay shall remain the property of the owner and transported and stockpiled at Town owned property designated on the plans.

E. Storm Drainage System

The work under this item shall include all materials, equipment, and labor to supply and install the storm drainage system within the project site as shown on the Contract Drawings and described in the Specifications, including but not limited to trenching and backfilling, shoring and bracing, installation of appropriate bedding, installation of drainage pipes, area drains, yard drains, manholes, and all other associated work shown on the Contract Drawings and as specified in the Special Provisions. This item should also include the labor and materials required to clean built up debris from the inlet and outlet of the drainage ditch and installation of riprap splash pads as depicted on the Contract Drawings.

F. Wall System

The work under this item shall include all materials, equipment, and labor to install all modular block walls. This work will include but not be limited to formation of subgrades, formation of forms, reinforced backfill and geogrids and modular block wall sections as shown on the Contract Drawings and as specified in the Special Provisions.

G. Bleacher Expansion

The work under this item shall include all materials, equipment, and labor to install the bleachers and bleacher foundations, and connect into the existing bleacher/grandstand system. This work will include but not be limited to formation of subgrades, formation of forms, reinforcement and geogrids as shown on the Contract Drawings and as specified in the Special Provisions.

H. Press Box

The work under this item shall include all materials, equipment, and labor to install the concrete retaining wall, foundation and press box. This work will include but not be limited to formation of subgrades, formation of forms and walls, reinforced backfill and geogrids as shown on the Contract Drawings and as specified in the Special Provisions.

I. Fencing

The work under this item shall include all materials, equipment, and labor to supply and install chain link fencing, gates, posts, and foundations, including but not limited to concrete footings, fabric, fittings, latches, pipe, drop-bar assemblies, sleeves, and fasteners as shown on the Contract Drawings and Special Provisions.

J. Baseball 30’ Backstop

The work under this item shall include all materials, equipment, and labor to supply and install 30' ht. chain link fence backstop and foundations, including but not limited to concrete footings, fabric, fittings, pipe, sleeves, and fasteners as shown on the Contract Drawings and Special Provisions

K. Miscellaneous Site Improvements

The work under this item shall include all materials, equipment, and labor to furnish and reconstruct bituminous concrete sidewalks, portable pitching mound, bullpen mounds, foul poles, batting cage, relocated flag monument, stone dust paths, as shown on the contract documents or as impacted by site work. All items shall include all base courses,

placement and formation of all materials necessary for the completion of the work as shown on the Contract Drawings and as specified in the Special Provisions. This item should also include any other miscellaneous incidental site work such as topsoil and seeding of disturbed areas.

L. Electrical Work
The work under this item shall include all materials, equipment, and labor to furnish and install all conduit, ground fault circuit interrupter (GFCI) outlets, bedding material, trenching, backfilling, disposal of surplus material, GFCI outlets, field lighting pull boxes including but not limited to conduit, connectors, and cable to service with pull cords, disconnect switch and ground, circuitry, penetrations into existing building, power outlets to each dugout and batting cage and necessary power/audio/video services to press box.

M. Multipurpose Scoreboard
The work under this item shall include all materials, equipment, and labor to install the scoreboard with foundations and support systems. This work will include but not be limited to formation of subgrades, formation of forms, reinforcement and wiring for power and audio as shown on the Contract Drawings and as specified in the Special Provisions.

N. Field Lighting
The work under this item shall include all materials, equipment, and labor to remove and replace all of the existing lighting fixtures, poles, and foundations on the (8) eight poles as shown on the Contract Drawings and as detailed in the Special Provisions. Included, as part of this item, is removal and disposal, if not reused, of two stockpiled light poles located within the project limits.

O. Public Address/Audio System
The work under this item shall include all materials, equipment, and labor to furnish and install a new audio system, components and all required connections to make function, in the proposed press box as specified on the contract drawings and described in the project manual. The conduit and pull cords for this item are included under 'Electrical Work'.

P. Project Closeout
The work under this item shall include all materials, equipment, and labor to provide project closeout services including preparing warranties, improvement location survey, and final project cleanup as shown on the Contract Drawings and as detailed in the Special Provisions.

3. SYNTHETIC TURF INFILL SYSTEMS OPTIONS:

The Town of Hamden is requesting bid prices for two different synthetic turf and infill systems (**the Total Base Lump Sum Bid shall include either TURF OPTION A or TURF OPTION B, whichever one offers the lowest total base bid lump sum price**).

A. **TURF SYSTEM A** – 2.5" Pile Ht. 100% Slit-Film Turf w/Sand-Crumb Rubber Infill

A.1 Synthetic Turf Subsurface Drainage System – System A

The work under this item shall include all materials, equipment, and labor for the installation of a subsurface field drainage system, complete, including but not limited to collector pipe system, channel edge drain system, flush concrete anchor curb, composite flat drain system, all base material, dynamic stone, and geotextile material as shown on the Contract Drawings and as specified in the Special Provisions.

A.2 Synthetic Turf and Markings – System A

The work under this item shall include all materials, equipment, and labor to install the 2.5" pile ht. 100% Slit-Film synthetic turf field, complete, including but not limited to installation of synthetic turf and sand and crumb rubber infill material, field markings, as shown on the Contract Drawings and as specified in the Special Provisions.

B. **TURF SYSTEM B** – 1.75" Pile Ht. 100% Slit-Film Fiber Turf w/100% Coated Sand Infill

B.1 Synthetic Turf Subsurface Drainage System – System B

The work under this item shall include all materials, equipment, and labor for the installation of a subsurface field drainage system, complete, including but not limited to collector pipe system, flush concrete anchor curb, shock pad/drainage board, all base material, stone base course, and geotextile material as shown on the Contract Drawings and as specified in the Special Provisions.

B.2 Synthetic Turf and Markings – System B

The work under this item shall include all materials, equipment, and labor to install the 1.75" pile ht. 100% Slit-Film synthetic turf field, complete, including but not limited to installation of synthetic turf and 100% coated sand infill material, field markings, as shown on the Contract Drawings and as specified in the Special Provisions.

4. BID ALTERNATES

NO.1 Ball Safety Netting

The work under this item shall include all materials, equipment, and labor to supply and install mesh ball safety netting. The netting will be attached to the proposed chain link fencing system with posts common to the proposed chain link fencing system. The foundations for the shared posts shall be increased in depth by 1' from the typical chain link fencing post as shown on the Contract Drawings and/or as specified in the Special Provisions.

NO.2 Batting Cage Synthetic Turf

The work under this item shall include Batting Cage Synthetic Turf Surface, in lieu of stone dust, and all materials, equipment, and labor for the installation of a subsurface turf drainage system, including but not limited to pitching of subgrade towards synthetic turf collector pipe, flush concrete anchor curb, all base material, dynamic stone, stone base course, and geotextile material as shown on the Contract Drawings and/or as specified in the Special Provisions. Batting Cage Synthetic Turf shall meet the following specifications: 100% polypropylene fiber, 5,000 denier mins., pile height: 0.3" min., 3/16"

tufting gauge, on a 5 mm pad/cushion, total weight system of 100 oz/sq. yd., non-infilled.

NO.3 Remove and Replace Softball Scoreboard

The work under this item shall include all materials, equipment, and labor necessary for removing the existing scoreboard at the softball field located to the north of the site and furnishing and installing a new electronic LED scoreboard, power supply and foundations. If deemed acceptable by a structural engineer the existing foundations and support systems may be reused. A credit must be offered for the reuse of the existing foundations and support system if deemed acceptable. Work shall conform as shown on the Contract Drawings and/or as specified in the Special Provisions.

NO. 4 Color Coated Fencing and Gates at Ice Rink

The work under this item shall include all materials, equipment, and labor to supply and install polymer color coated chain link fencing, gates, posts, and foundations, including but not limited to concrete footings, fabric, fittings, latches, pipe, drop-bar assemblies, sleeves, and fasteners. Work shall conform as shown on the Contract Drawings and/or as specified in the Special Provisions. Note that if owner selects Alternate Bid Item No. 4, then Bid Alternate Item No. 5 will not be.

NO. 5 Galvanized Fencing and Gates at Ice Rink

The work under this item shall include all materials, equipment, and labor to supply and install galvanized chain link fencing, gates, posts, and foundations, including but not limited to concrete footings, fabric, fittings, latches, pipe, drop-bar assemblies, sleeves, and fasteners. Work shall conform as shown on the Contract Drawings and/or as specified in the Special Provisions. Note that if owner selects Alternate Bid Item No. 5, then Bid Alternate Item No. 4 will not be.

5. UNIT PRICES BID ITEMS

A. Bituminous Concrete Patching and Repair for existing walks adjacent to field – per square foot (minimum of 50 square feet)

B. Windscreens for dugouts, backstop, and centerfield area – per square foot (minimum of 1,000 s.f. – Color: Dark Green)

C. Rock Removal/Excavation (excluding rock encountered during light pole foundation installation) – per cubic yard

END OF SECTION 00 00 02

1228-61-m1016-spec-03 - 000002 - ntc - schedule of values

SECTION 00 00 03 NOTICE TO CONTRACTOR – SPECIAL SITE CONDITIONS

These items will be reviewed in greater detail during the preconstruction meeting to be held prior to the initiation of construction activities at the time and date to be determined.

1. SAFETY PLAN

   As the area immediately surrounding the project area will be being used by students and the public alike, safety of the work site will be of the utmost importance to the Town. Because of this, prior to the commencement of construction, the contractor shall prepare a project-specific health and safety plan for approval by the owner.

2. PROTECTION OF EQUIPMENT AND MATERIALS

   It shall be the responsibility of the Contractor to secure and protect all equipment and materials stored at the site by whatever means they see fit throughout the duration of the project.

3. SCHEDULE

   The contractor should be familiar with the Key Dates and Project Completion dates listed in the General Conditions.

4. IMPROVEMENT LOCATION SURVEY

   The contractor should provide an A-2 Improvement Location Survey of all improvements installed as part of the Contract Drawings and Special Provisions. The survey should be prepared by a Licensed Surveyor licensed in the State of Connecticut. The Survey shall show a minimum of the following improvements: sidewalks, lighting, drainage, fencing, dugouts, walls, base plug locations, foul poles, bleachers, electrical structures and scoreboard.

5. DOT ENCROACHMENT PERMIT

   The contractor is responsible for securing an encroachment permit from the State of Connecticut Department of Transportation (DOT) prior to any work within the State property. The engineer has coordinated with DOT throughout the project. This correspondence is included in Appendix B. DOT will require the contractor to complete PMT-1 Application, post a bond in the amount of $10,000, and provide insurance certificates meeting their requirements. The contractor should make themselves familiar with these requirements and begin this process immediately upon notice to proceed.

END OF SECTION 00 00 03

1228-61-m1016-spec-04 - 000003 - ntc - special site conditions

SECTION 00 00 04 NOTICE TO CONTRACTOR – ANTICIPATED SOURCE OF MATERIAL – DYNAMIC STONE

With their submission, bidders shall submit their proposed source of dynamic stone material in anticipation that **Turf System A** is selected.

Note per the conditions of the Town's Planning and Zoning Conditions of Approval only basalt rock may be used for Dynamic Stone System. See P&Z COA in Appendix B for additional information.

Prior to the award of the Contract, the bidders may be requested to submit samples and testing requirements and results for the dynamic stone material, including but not limited to sieve analysis, resistance to abrasion, and soundness in conformance with the Special Provisions.

END OF SECTION 00 00 04

1228-61-m1016-spec-05 - 000004 - ntc - source of dynamic stone

SECTION 00 00 05 NOTICE TO CONTRACTOR – SUBMITTALS FOR IMPORTED AGGREGATES

In accordance with the requirements in these special provisions and the CTDOT Form 816, specifically the Materials Section, the contractor is hereby notified of the requirement to provide submittals that include tests on the gradation, abrasion, soundness and any other parameters specified for the various aggregate materials proposed for use on this project. The cost for such testing shall be the sole responsibility of the Contractor. The tests must be current and based on a specific source location/pile. No material shall be imported until the Engineer issues a written approval. The Contractor shall also provide testing and documentation of the imported and stockpiled material to confirm consistency with the approved submittals and compliance with these Special Provisions and Standard Specifications of CTDOT Form 816. See "Notice to Contractor – Materials Certificates and Testing" for additional information regarding the right reserved by the Engineer to perform independent testing.

In addition to the above requirements, the contractor is notified of the following additional testing that is applicable to the dynamic stone (Turf System A) to be used on the multipurpose field.

1. A sample of the stone, approximately one cubic foot, shall be delivered to the engineer along with submittals identified above.

2. Prior to the placement of the dynamic stone beneath the field, the contractor shall deliver the material and construct a 20' x 20' sample plot. The contractor will be responsible for providing a permeability test of the test plot in accordance with the specifications. The test plot shall remain in place during the placement of the stone.

3. The owner will arrange for a test of the material from the test plot for conformance with the approved submittal. The contractor should allow sufficient time to receive the test results prior to placement under the field.

END OF SECTION 00 00 05

1228-61-m1016-spec-06 - 000005 - ntc - submittal for imported aggregates

SECTION 00 00 06 NOTICE TO CONTRACTOR – SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

INDEX TO INSTRUCTIONS TO BIDDERS

1. Introduction
2. Key Dates
3. Project Completion
4. Contingencies
5. Obtaining RFP Package
6. Submission Instructions
7. Lump Sum Prices
8. Addenda
9. Costs for Preparing Response
10. Ownership of Submissions
11. Freedom of Information Act
12. Required Disclosures
13. Bidders Qualifications
14. Debarred Contractors
15. Legal Status
16. Presumption of Bidder's Full Knowledge
17. Insurance
18. Award Criteria, Selection, Contract Execution
19. Advertising
20. Town Inspection of Work
21. Rejected Work or Materials
22. Maintenance and Availability of Records
23. Representation of Town
24. Subcontracting
25. Compliance of Law

1. INTRODUCTION

The Town of Hamden (the "Town") is soliciting proposals for Athletic Facility Improvements at Hamden High School. This Invitation is not a contract offer.

The scope of this project is described more particularly in the Invitation for Bid that is a part of this Request for Proposals (RFP) package.

The location, general characteristics, and principal details of the work are indicated on drawings, dated: May 6, 2015 as prepared by Milone & MacBroom, Inc., which are listed as follows:

SHEET NUMBER	TITLE
00	Title Sheet
01	Site Plan - Existing Conditions
02	Site Plan - Removals
03	Site Plan – Layout
04	Site Plan – Grading and Sediment and Erosion Controls
05	Site Plan – Utilities
05A	Site Plan – Utilities – Turf System B
06-11	Structural Plans
12	Electrical Site Plan
13	Electrical Notes & Schedule
14	Electrical Diagrams and Details
15-20	Site Details

The above drawings are the contract drawings, referred to herein as the "Drawings."

The specification for the work are the State of Connecticut Department of Transportation, Bureau of Highways, "Standard Specifications for Roads, Bridges and Incidental Construction, Form 816, dated 2004, as amended to date. All bid items are based on the work described in the Standard Specifications as amended by the Special Provisions.

Interested parties should submit a proposal response in accordance with the requirements and directions set forth in this bid package.

The Town will return unopened any submission received after the date and time of the opening.

2. KEY DATES

Invitation to Bid Issued:	May 11, 2016
Mandatory Pre-Bid Conference:	May 19, 2016 @ 2 p.m.
Proposal Opening:	June 2, 2016 @ 11 a.m.
Interviews (if requested)	June 15, 2016 @ t.b.d.
Notice of Conditional Award of Contract:	June 23, 2016
Tentative Contract Execution:	June 30, 2016
Commencement of Work	July 7, 2016
Substantial Completion	October 31, 2016
Final Completion	November 7, 2016

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3. PROJECT COMPLETION

The contractor is advised that time is of the essence for this project. The Contractor shall provide a detailed work schedule for approval by the Town prior to execution of the Contract. The work schedule shall be updated weekly for the duration of the construction.

4. CONTINGENCIES

The Town reserves the right to cancel this bid process and any resulting Contract at any time if the Town deems such action to be in its best interests, including but not only if either of the following conditions exists:

- The Town, through changes in its requirements or methods of operation, no longer has a need for the subject matter of this Invitation; or

- The Town is not satisfied with the work under the Contract, or the successful bidder fails to comply with any of the Contract's terms and conditions.

5. OBTAINING RFP PACKAGE

The RFP package – i.e., each of the documents listed on the page preceding these Instructions and collectively referred to as the "Invitation" – may be obtained from the Town's Purchasing Department and will be provided electronically on a 'thumb drive' for a fee of $15 to be paid by cash or check only.

6. SUBMISSION INSTRUCTIONS

Submissions must be in the Town office identified above prior to the date and time the bid is scheduled to be opened publicly. Postmarks prior to the bid opening date and time do **NOT** satisfy this condition. The Town will **NOT** accept corrections and/or modifications received after the first bid is opened

publicly. Bids may not be withdrawn after bid opening, and bids must remain in effect for sixty (60) calendar days after bid opening, even if the bidder discovers errors in the bid after opening.

One (1) original bid must be submitted on the accompanying Bid Form and in sealed, opaque envelopes clearly labeled with the bidder's name, the bidder's address, the words "BID DOCUMENTS," and the Bid Title and Bid Opening Date, to prevent opening prior to the bid opening date. The bidder should also complete the following forms and submit as part of the bid submission:

- Disclosures
- Legal Status
- Bid Security
- Non-Collusion Affidavit
- Bidder Qualifications

The Town will reject, and not accept, bids submitted in unmarked envelopes that the Town opens in its normal course of business. The Town may, but shall not be required to, return such bid and inform the bidder that the bid may be resubmitted in a sealed envelope properly marked as described above.

Bids must be submitted on the prescribed form; all blank spaces for bid prices must be completed, and all prices shall be stated in both words and figures. Bid prices shall include all labor, materials, equipment, and transportation necessary to perform the work in accordance with the Contract. The person signing the bid must initial errors, alterations, and/or corrections on both the original bid and all required copies. Ditto marks or words such as "SAME" shall not be used in the Bid Form.

Bids may be withdrawn personally or in writing provided that the Town receives the withdrawal prior to the time and date fixed for the bid opening. Bids are considered valid for sixty (60) calendar days after bid opening, to permit the Town to review the bids and to investigate the bidders' qualifications prior to awarding the bid. Bidders may not withdraw, cancel, or modify their bid for a period of sixty (60) calendar days after the bid opening or the Bidder shall forfeit its Bid Security.

An authorized person representing the legal entity of the bidder must sign the bid.

7. LUMP SUM PRICES

Lump sum prices for each of the items in the bid shall include its prorated share of overhead, profit, and all costs associated with that item. The lump sum price represents the entire compensation that the Town shall pay for all of the work associated with the item.

8. ADDENDA

The Town will post an addendum or addenda, which shall be a part of this Invitation and the resulting Contract, containing all questions received as provided for above and decisions regarding same.

9. COSTS FOR PREPARING RESPONSE

This Invitation does not commit the Town to pay any costs incurred by bidders in preparing their submission material. Each bidder agrees that all costs it incurs in developing its proposal are its sole responsibility.

10. OWNERSHIP OF SUBMISSIONS

All submitted documents become property of the Town.

11. FREEDOM OF INFORMATION ACT

All information submitted or in response to a request for additional information is subject to disclosure under the Connecticut Freedom of Information Act as amended. A bidder's proposal may contain financial or other data that it claims constitute proprietary or confidential information or a trade secret. To protect such data from disclosure, a bidder should identify specifically the pages that contain claimed confidential information by visibly marking all such pages of the proposal

12. REQUIRED DISCLOSURES

In its proposal, each bidder must:

- State its inability to meet any specified requirement of the Invitation;
- Make a complete disclosure of all resolved and pending mediation, arbitration and litigation matters in which the bidder or its principals (regardless of their place of employment) have been involved for the most recent five (5) years;
- Make a complete disclosure of each instance of its or its principals' (regardless of their place of employment) conviction, guilty plea, nolo contendere plea, finding of civil liability or criminal responsibility in any civil action or for any criminal offense, except motor vehicle infractions; and
- Make a complete disclosure of each instance of its or its principals' (regardless of their place of employment) finding of a violation of any state or local ethics standards or other offense arising out of the submission of bids or proposals, or performance of work on public works projects or contracts.

A bidder's acceptability based on these disclosures and any investigation the Town deems necessary to determine a bidder's ability to perform the work described in this Invitation shall lie solely with the Town.

13. BIDDER'S QUALIFICATIONS

In order to be considered for the project, the successful bidder shall demonstrate that they, or one or more of their Subcontractors, meets the following requirements:

- Completed a minimum of five synthetic field installations of comparable size or greater to the project in the previous five calendar years.

The Contractor or Subcontractor with the above qualifications shall perform all the work required in Special Provisions, and Section 33 46 00 Athletic Field Subsurface Drainage System.

The Owner may make such investigations as it deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any proposal if the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the Contract and to complete the work contemplated therein.

14. DEBARRED CONTRACTORS

The Town will reject any bid from a bidder that is on a debarred Contractor list of the United States and/or the State of Connecticut.

15. LEGAL STATUS

Each bidder must complete the Bidder's Legal Status Disclosure form and must, if required, have a current license or registration to do business in the State of Connecticut that is on file with the Connecticut Secretary of the State's Office. The Town may, in its sole discretion, request acceptable evidence of any bidder's legal status.

16. PRESUMPTION OF BIDDER'S FULL KNOWLEDGE

At the time the first proposal is opened, the Town will presume that each bidder has read and understood each document comprising this Invitation and any addenda posted on the Town's website. A bidder's failure and/or omission to receive or examine any information concerning this Invitation shall in no way relieve it from any aspect of its bid or the obligations related to it.

At the time the first proposal is opened, the Town will also presume that each bidder is familiar with and will comply with all federal, state, and local laws, ordinances and regulations that in any manner relate to this Invitation and the performance of the work described in it.

By submitting a proposal, each bidder represents that it has thoroughly examined and become familiar with the scope of work outlined in this Invitation and it is capable of performing the work to achieve the Town's objectives.

Each bidder shall visit and examine the location of and the routes to be used during the work described in this Invitation and thoroughly familiarize itself with all actual conditions of the property before preparing its bid. The submission of a proposal shall be construed as an assurance that such examination has been made, and the Town will not recognize or award claims for compensation for additional labor, equipment or materials for difficulties encountered.

17. INSURANCE

The successful bidder shall, at its own expense and cost, obtain and keep in force during the entire duration of the work and during the completed operations period that is the subject of this Invitation the insurance coverages set forth in the Agreement.

18. AWARD CRITERIA/SELECTION/CONTRACT EXECUTION

The Town reserves the right to accept the bid that, all things considered, is in the best interests of the Town. Although price will be an important factor, it will not be the only basis for award. Due consideration will also be given to a bidder's experience, references, service, ability to respond promptly to requests, past performance satisfactory to the Town, and other criteria relevant to the interests of the Town, including the bid documents' compliance with the procedural requirements stated in this Invitation.

The Town will not award the contract to any bidder who is in arrears or in default to the Town on any debt, contract, security or any other obligation.

The Town reserves the rights, in its sole discretion: to accept any, all, or any part of proposals; to reject any, all, or any part of proposals; to waive any non-material deficiencies or clerical errors in the RFP process or proposal; and to award the contract that in its judgment will be in the Town's best interests.

All bidding companies who submitted proposals will be publicly opened and read aloud as received on the date, at the time, and at the place identified in this Invitation, however no prices submitted will be revealed at this time. Bidders may be present at the opening.

The Town may correct, after verification, any mistake in a bid that is obviously a clerical error, such as a price extension or decimal point error. If an error exists in an extension of prices, the unit price shall prevail. In the event of a discrepancy between the price quoted in words and in figures, the words shall control.

The Town will select the proposal that it deems to be in the Town's best interest and issue a Notice of Conditional Award of Contract to the successful bidder. The conditional award shall be subject to further discussions with the bidder that are deemed necessary by the Town and to the successful bidder's provision of the documents required by this Invitation and the execution of a Contract in the form contained in this Invitation. The successful bidder's failure to provide each required form or execute the Contract within ten (10) business days of the date of the Notice of Conditional Award of Contract shall be grounds for the Town to declare the bid withdrawn, to call the bid security, and to enter into discussions with another bidder.

The Contract Awarded and Contract Execution dates in Section 2 are anticipated, not certain, dates.

19. ADVERTISING

The successful bidder may not name the Town in its advertising, news releases, and promotional efforts without the Town's prior written approval.

If it chooses, the successful bidder may list the Town in a statement of references or similar document required as part of a public bid. The Town's permission to the successful bidder to do so is ***not*** a statement about the quality of the successful bidder's work or the Town's endorsement of the successful bidder or its work.

20. TOWN INSPECTION OF WORK

The Town may inspect the successful bidder's work at all reasonable times. This right of inspection is solely for the Town's benefit and does not transfer to the Town the responsibility for discovering patent or latent defects. The successful bidder has the sole and exclusive responsibility for performing in accordance with the Contract.

21. REJECTED WORK OR MATERIALS

The successful bidder, at its sole cost and expense, shall remove from the Town's premises rejected items, commodities and/or work within 48 hours of the Town's notice of rejection. Immediate removal may be required when safety or health issues are present.

22. MAINTENANCE AND AVAILABILITY OF RECORDS

The successful bidder shall maintain all records related to the work described in the Invitation for a period of three (3) years after final payment under the Contract or until all pending Town, state and federal audits are completed, whichever is later. Such records shall be available for examination and audit by Town, state and federal representatives during that time.

23. REPRESENTATION OF TOWN

In performing the work described in the Invitation, the successful bidder, its agents and employees shall act in an independent capacity and shall not act as, and are not, officers, employees or agents of the Town.

24. SUBCONTRACTING

The successful bidder agrees not to enter into any subcontracting agreement for any or all of the work described in the Invitation without obtaining the Town's prior written consent. All subcontracting shall be subject to the same terms and conditions as are applicable to the successful bidder. The successful bidder shall be fully and solely responsible for the performance of and payments to any Subcontractors.

25. COMPLIANCE WITH LAW

The successful bidder shall comply with all applicable laws, regulations, ordinances, codes and orders of the United States, the State of Connecticut and the Town related to its proposal and the performance of the work described in the Invitation. The successful bidder shall commit no trespass on private property in performing any of the work described in the Invitation.

By submitting a proposal, the successful bidder covenants that it has complied, and during the term of the Contract will comply, with the obligations under the Immigration Reform and Control Act ("IRCA") and that all employees it assigns to the Contract are authorized for employment in the United States of America. The successful bidder further covenants that it has properly completed, and during the term of the Contract will properly complete, I-9s for all employees assigned to the Contract. The successful bidder agrees to defend, indemnify and hold the Town harmless in the event that any of the successful bidder's employees provided under the Contract is found not to be authorized to work under the law or in the event that there is a determination that the successful bidder has failed to comply with IRCA's

obligations, including but not limited to the failure to prepare correctly and maintain I-9s. The successful bidder further agrees to defend, indemnify and hold harmless the Town from and against any and all claims brought against the Town as a result of these obligations, including but not limited to settlement fees, judgments, attorney's fees, and costs. These defense, hold harmless and indemnity obligations shall survive the Contract's termination or expiration.

26. LICENSES AND PERMITS

The successful bidder shall, for the term of the Contract, have and provide proof of all permits and licenses required by the Town and/or any other state or federal authority. The successful bidder shall immediately and in writing notify the Town of the loss or suspension of any such license or permit.

END OF SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

1228-61-m1016-spec-07 - 000006 - ntc - supplemental instructions

SECTION 03 30 00 CAST-IN-PLACE CONCRETE

Part 1 - GENERAL

1.1 SUMMARY
- A. Work under this Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes.

1.2 RELATED SECTIONS:
- A. Section 31 20 00 – Earth Moving
- B. Section 32 13 13 – Concrete Paving and Curbing

1.3 SUBMITTALS
- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture.
- C. Shop Drawings: For steel reinforcement and formwork.
- D. Material test reports and certificates.

1.4 QUALITY ASSURANCE
- A. Workmen: all workmen shall be thoroughly trained and experienced in the necessary crafts, and completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.
- B. Form 816 - State of Connecticut Department of Transportation "Standard Specification for Road, Bridges, and Incidental Construction" 2004 edition with supplements shall be used for material compliance and execution of the work in this section.
- C. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
  1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- D. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
  1. ACI 301, "Specification for Structural Concrete,"
  2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials"
- E. Pre-installation Conference: Conduct conference at Project site.
- F. A qualified testing agency for testing and inspection approved by the Engineer and paid for by the Contractor.

Part 2 - PRODUCTS

2.1 FORM-FACING MATERIALS
- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

2.2 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 deformed.
   1. Epoxy-Coated Reinforcing Bars: ASTM A 775/A 775M, epoxy coated, with less than 2 percent damaged coating in each 12-inch (300-mm) bar length.
B. Plain-Steel Welded Wire Reinforcement: ASTM A 185, plain, fabricated from as-drawn steel wire into flat sheets.
C. Deformed-Steel Welded Wire Reinforcement: ASTM A 497, flat sheet.
D. Epoxy-Coated Welded Wire Reinforcement: ASTM A 884/A 884M, Class A coated, Type 1, deformed steel.
E. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice."
F. Dowels: as specified on the Contract Drawings.

2.3 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
   1. Portland Cement: ASTM C 150, Type II.
B. Normal-Weight Aggregates: ASTM C 33, graded, 3/4-inch (19-mm) nominal maximum coarse-aggregate size.
   1. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
C. Water: ASTM C 94/C 94M and potable.
D. Air-Entraining Admixture: ASTM C 260.
E. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
   1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
   2. Retarding Admixture: ASTM C 494/C 494M, Type B.
   3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
   4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
   5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
   6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.4 VAPOR RETARDERS

A. Plastic Vapor Retarder: ASTM E 1745, Class A. Include manufacturer's recommended adhesive or pressure-sensitive tape.
B. Plastic Vapor Retarder: ASTM E 1745, Class B. Include manufacturer's recommended adhesive or pressure-sensitive tape.
C. Plastic Vapor Retarder: ASTM E 1745, Class C, or polyethylene sheet, ASTM D 4397, not less than 10 mils (0.25 mm) thick. Include manufacturer's recommended adhesive or pressure-sensitive joint tape.

2.5 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) when dry.
C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
D. Water: Potable.
E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.
F. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, non-dissipating [certified by curing compound manufacturer to not interfere with bonding of floor covering].
G. Clear, Solvent-Borne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.
H. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.

2.6 RELATED MATERIALS
A. Expansion- and Isolation-Joint-Filler Strips: [ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork.

2.7 CONCRETE MIXTURES
A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
B. Proportion normal-weight concrete mixture as follows:
1. Minimum Compressive Strength: 4000 psi or 3000 psi at 28 days as specified on the Contract Drawings.
2. Maximum Water-Cementitious Materials Ratio: 0.50, watertight concrete 0.45.
3. Slump Limit: 4 inches (100 mm) for concrete with verified slump of 2 to 4 inches (50 to 100 mm) before adding high-range water-reducing admixture or plasticizing admixture , plus or minus 1 inch (25 mm).
4. Air Content: 5 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch (38-mm) nominal maximum aggregate size.
5. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 1-inch (25-mm) or 3/4-inch (19-mm)] nominal maximum aggregate size.
6. Air Content: Do not allow air content of troweled finished floors to exceed 3 percent.

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

2.9 CONCRETE MIXING
A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116, and furnish batch ticket information.
1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

Part 3 - EXECUTION

3.1 FORMWORK

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

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

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

3.2 EMBEDDED ITEMS

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

3.3 VAPOR RETARDERS

A. Plastic Vapor Retarders: Place, protect, and repair vapor retarders according to ASTM E 1643 and manufacturer's written instructions.

1. Lap joints 6 inches (150 mm) and seal with manufacturer's recommended tape.

3.4 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

3.5 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.

C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:

1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch (3.2 mm). Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.

2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3.2-mm-) wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

D. Expansion Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

3.6 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
   1. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
C. Cold-Weather Placement: Comply with ACI 306.1.
D. Hot-Weather Placement: Comply with ACI 301.

3.7 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
   1. Apply to concrete surfaces not exposed to public view.
B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
   1. Apply to concrete surfaces exposed to public view. Retain rubbed finish in first paragraph below with smooth-formed finish above.
C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:
   1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
   2. Grout-Cleaned Finish: Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix one part portland cement to one and one-half parts fine sand with a 1:1 mixture of bonding admixture and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.
   3. Cork-Floated Finish: Wet concrete surfaces and apply a stiff grout. Mix one part portland cement and one part fine sand with a 1:1 mixture of bonding agent and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Compress grout into voids by grinding surface. In a swirling motion, finish surface with a cork float.
D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.8 FINISHING FLOORS AND SLABS

A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce finished profile amplitude of 1/4 inch (6 mm) in 1 direction.
C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.
D. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces indicated. While concrete is still plastic, slightly scarify surface with a fine broom.
   1. Comply with flatness and levelness tolerances for trowel finished floor surfaces.
F. Broom Finish: Apply a broom finish with picture frame border to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.

3.9 CONCRETE PROTECTING AND CURING
A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
B. Evaporation Retarder: Apply evaporation retarder to unformed 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. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
   1. Moisture Curing: Keep surfaces continuously moist for not less than seven days.
   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. Cure for not less than seven days. 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.
      a. After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer. Curing and sealing compound in subparagraph below is usually for floors and slabs and may act as a permanent surface finish.
   4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a 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. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.10 CONCRETE SURFACE REPAIRS

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

3.11 FIELD QUALITY CONTROL

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

1. Testing Services: Tests shall be performed according to ACI 301.

END OF SECTION 03 30 00

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SECTION 04 20 00 MODULAR BLOCK RETAINING WALL

Part 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and provisions of Contract, including the Standard Terms and Conditions of the Contract for Construction, apply to this Section.

A. Provide modular retaining wall system to lines and grades designated on Construction Drawings and as specified herein.
B. Construction of foundation soil preparation, leveling pad or footing installation, modular wall units, and wall anchors with unit fill and compacted backfill.

1.2 SUMMARY

This section includes the following:

A. Furnishing and installing segmental concrete units, geogrid reinforcement, wall fill, and backfill, to the lines and grades designated.
B. Furnishing and installation of appurtenant materials required for construction of the segmental concrete soil wall as shown.

1.3 RELATED SECTIONS

A. Section 31 10 00 – Site Preparation
B. Section 31 20 00 – Earthwork

1.4 REFERENCE STANDARDS

American Society for Testing and Materials (ASTM) latest edition

C 90	Hollow Load-Bearing Concrete Masonry Units
C 140	Sampling and Testing Concrete Masonry Units
C 145	Solid Load-Bearing Concrete Masonry Units

1.5 SUBMITTALS

A. Shop Drawings of the modular block retaining walls, designed by a professional engineer licensed in the State of Connecticut, shall be submitted to the Engineer.
B. Prior to construction the Contractor shall submit to the Engineer the geogrids Manufacturer's certification that the geogrid has been evaluated in full compliance with this Specification and is fit for use in long-term, critical soil reinforcement applications.
C. Product Data for each type of product indicated.
D. Samples of each color and texture of retaining wall unit required.

1.6 QUALITY ASSURANCE

A. Soil testing and associated testing for quality control during earthwork operations will be supplied by Owner in accordance with Section 31 20 00. Specific testing or inspection services required by retaining wall design shall be clearly delineated on Construction Documents.

B. Construction of mockup of adequate size to illustrate finish and construction techniques that may be required, at location acceptable to Owner, for wall system with which Owner is not familiar or for which unique design modifications are proposed.
C. Testing for compaction of subgrade and fill materials shall be performed by the Testing Laboratory selected and paid by the Contractor.
D. If compaction requirements, embedment of reinforcing, or other conditions are not met at any time during construction process, Contractor shall remove and reconstruct deficient areas to obtain proper conditions at no additional cost to Owner.
E. The Testing Laboratory shall promptly prepare reports and distribute to Owner and Engineer for testing required by certified and approved design documents. In event test performed fails to meet these requirements, Owner and Engineer shall be notified immediately by the Testing Laboratory.
F. All costs related to retesting due to failures shall be paid for by Contractor at no additional expense to Owner. Owner reserves right to employ the Testing Laboratory to direct testing that is deemed necessary. Contractor shall provide free access to site for testing activities.
G. Walls to be designed by a professional engineer licensed in the State of Connecticut and hired by Contractor.

Part 2 - PRODUCTS

2.1 MANUFACTURED UNITS

A. Retaining wall units, reinforcing, and accessories shall be supplied as indicated and specified in Construction Documents. Units produced under license from approved proprietary system shall be manufactured in facility meeting requirements of licensing system with adequate capacity to supply product to site in timely manner. Materials shall be stored as required to prevent damage and staining.
B. Acceptable retainage systems include the following products: See site plans.
C. Geogrids or other anchoring materials (when indicated on the drawings) shall be as manufactured or recommended by wall manufacturer of the type, size and length as specified and indicated in Construction Documents. Material shall be stored as required to protect from damage until used.
D. Crushed stone: Conforming to Conforming to the applicable sections of the State of Connecticut Department of Transportation Standard Specifications.

2.2 FILL AND BACKFILL

Unit fill, if required, and backfill materials, shall be as specified and indicated in Construction Documents. Reinforced backfill shall conform to the following specifications:

Reinforced Backfill

Sieve Size	Percent Passing
2 inch	100%
3/4 inch	100-75%

No. 4	100-20%
No. 40	60-0%
No. 200	35-0%

Part 3 - EXECUTION

3.1 EXCAVATION

Excavate to lines and grades required. Over-excavation and/or re-compaction shall be performed as required to produce specified bearing conditions.

3.2 SYSTEM INSTALLATION

Leveling pads and foundations, unit installation, cap installation, installation of geogrid or other anchor materials, and installation of accessories and appurtenances shall be carried out in accordance with these specifications, the manufacturer's recommendations and Construction Documents.

A. Geogrid (When Indicated on the Contract Drawings or Required)

The Contractor shall check the geogrid upon delivery to ensure that the proper material has been received during all periods of shipment and storage, the geogrid shall be protected from temperatures greater than 140° F, and all deleterious materials that might otherwise become affixed to the geogrid and adversely affect its performance. Follow manufacturer’s recommendations in regards to protection from direct sunlight.

A qualified and experienced Civil Engineer employed by the geogrid manufacturer or its supplier shall be available for a minimum of one day of site assistance at the start of installation, to assist the Contractor and the Engineer in the proper construction/installation techniques. Thereafter, the representative shall be available on an as needed basis, as requested by the Engineer, during the construction of the remainder of the project.

Foundation soil shall be excavated to the line and grades as shown on the drawings or as directed by the Engineer. Over-excavated areas shall be filled with compacted backfill material. As a minimum, foundation soil shall be proof rolled prior to backfill and geogrid placement.

Geogrid shall be laid at the proper elevation and orientation as shown on the construction drawing or as directed by the Engineer. Correct orientation (roll direction) of the geogrid shall be verified by the Contractor. Geogrid may be temporarily secured in-place with staples, pins, sand bags or backfill as required by fill properties, fill placement procedures, or weather conditions, or as directed by the Engineer.

Primary geogrid may be overlapped or connected mechanically to form splices in the primary strength direction. No overlapping is required between adjacent rolls.

Secondary geogrid shall be overlapped a minimum of six (6) inches along roll edges parallel to the reinforcement direction. Overlaps are not allowed for edges perpendicular to the reinforcement direction.

Backfill material shall be placed in lifts and compacted as directed under Section-Fill Placement. Backfill shall be placed, spread and compacted in such a manner that minimized the development of wrinkles in and/or movement of the geogrid. Tracked construction equipment shall not be operated directly upon the geogrid. A minimum fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Turning of tracked vehicles should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.

Rubber tired equipment may pass over the geogrid reinforcement at slow speeds, less than 10 mph. Sudden braking and sharp turning shall be avoided. The slope face shall be trimmed such that the geogrid extends to the slope surface.

Any geogrid damaged during installation shall be replaced by the Contractor at no additional cost to the Owner.

Fill Placement: Fill shall be compacted as specified by project specifications or to at least 95 percent of the maximum density determined in accordance with AASHTO T-99, whichever is greater. Backfill within three (3) feet of the slope face will typically be compacted with hand equipment.

Density testing shall be made every soil lift or as otherwise specified by the Owner's Engineer or contract documents. Compaction testing is the responsibility of the Contractor unless otherwise specified. Backfill shall be placed, spread, and compacted in such a manner to minimize the development of wrinkles and/or displacement of the geogrid.

Fill shall be placed in twelve (12) inch maximum lift thicknesses where heavy compaction equipment is to be used, and six (6) inch maximum uncompacted lift thickness where hand operated equipment is used.

Backfill shall be graded away from the slope crest and rolled at the end of each work day to prevent ponding of water on surface of the reinforced soil mass. Site shall be maintained to prevent the flow of water form overtopping slope crest during construction and after completion of slope. Slope face shall be trimmed such that geogrid reinforcement extends to surface.

Erosion Control System Installation (Where Applicable): See Erosion Control System Specification on construction plans for installation notes.

B. Segmental Modular Blocks

The excavation for segmental concrete retaining wall units shall be carried to the lines and grades shown on the contract drawings. Contractor shall be careful not to disturb base beyond the lines shown.

The wall subgrade shall be excavated as required for the placement of leveling pad as shown on the contract drawings, or as directed by the Engineer. Subgrade shall be examined by the Engineer to insure that the actual foundation conditions meet or exceed adopted design assumptions. As a minimum, soil shall be proof-rolled before construction proceeds. Subgrade conditions not meeting the required strength shall be removed and replaced with acceptable material. Over-excavated areas shall be replaced with compacted gravel fill to the lines and grade shown on the contract drawings.

Segmental Concrete Wall Unit Installation- The first course of Segmental Concrete Wall Units shall be placed on top of and in full contact with the leveling pad. The units shall be checked for proper elevation and alignment.

Units shall be placed side by side for the full length of the wall. Proper alignment may be achieved with the aid of a string line or offset from baseline. (Use pinholes or molded unit surfaces for string line, split face texture is variable).

Connecting pins shall be installed and the voids in and/or around the unit fill shall be placed behind the concrete units and compacted or tamped.

All excess material shall be swept from the top of the units prior to installing next course.

Units shall be laid in straight, convex, or concave manner such that adjoining unit pin holes are 12 inches on center or as otherwise shown on the contract drawings. Units shall be installed such that only front face of the units shall be visible.

Structural Geogrid (When required) - Shall be oriented with the highest strength axis perpendicular to the wall alignment. Geogrid shall be placed at the elevation(s) and to the extent(s) shown on the contract drawings or as directed by the Engineer.

The geogrid soil reinforcement shall be laid horizontally on compacted backfill. Place the next course of segmental concrete wall units over geogrid. The geogrid shall be pulled taut, and anchored prior to backfill placement on the geogrid.

Geogrid reinforcements shall be continuous throughout their embedment length(s). Spliced connections between shorter pieces of geogrid will not be allowed unless pre-approved by the Engineer prior to construction.

Reinforced Backfill Placement - shall be placed, spread, and compacted in such a manner that minimizes the development of slack in the geogrid. Reinforced backfill shall be placed

and compacted in lifts not to exceed 6 inches where hand compaction is used, or 10 inches where heavy compaction equipment is used.

Reinforced backfill shall be compacted to 95 percent of the maximum density as determined by AASHTO T-99. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be within two (2) percentage points dry optimum.

Only lightweight hand-operated compaction equipment shall be allowed within three (3) feet from the tail of the concrete units. Tracked construction equipment shall not be operated directly upon the geogrid reinforcement. A minimum fill thickness of six inches (6") is required prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.

Rubber tired equipment may pass over geogrid reinforcement at slow speeds, less than 10 MPH. Sudden breaking and sharp turning shall be avoided.

At the end of each day's operation, the Contractor shall slope the last lift of reinforced backfill away from the wall face. In addition, the Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

END OF SECTION 04 20 00

1228-61-m1016-spec-09 - 042000 - modular block retaining wall

SECTION 13 34 25 GRANDSTAND SEATING SYSTEM

Part 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Special Conditions, apply to this section.

1.2 SUMMARY

A. This section includes complete services to provide a permanent grandstand seating system of size and capacity, and with features indicated on the drawings.

B. Complete Scope of Work in this bid package includes the following:

1. AISC certified steel fabrication
2. Steel Understructure Designed with an L/200 Serviceability Criteria
3. Galvanized structural steel finish
4. Fully Closed Aluminum T&G Deck System
5. Anodized Aluminum Risers and Seat boards

1.3 REFERENCES

A. CT State Building Code
B. AISC Steel Manual Thirteenth Edition
C. ACI 318-05
D. Aluminum Association Aluminum Design Manual 2010
E. ASTM E985
F. AWS D1.2

1.4 PERFORMANCE REQUIREMENTS

A. Design Loads

Dead Load	10 psf
Live Load	100 psf
Wind Speed	Design per local wind speeds & building codes
Sway Load	24 plf per row parallel to seatboards
Sway Load	10 plf per row perpendicular to seatboards
Seismic Load	Design per local seismic conditions
Guardrail Loads	50 plf distributed or 100 lb concentrated load applied in any direction

B. Serviceability Requirements

Deflection shall be limited to 1/200 of the span for all structural members.

C. Foundation Design

Foundations shall be designed for bearing, overturning, and sliding for the following load cases as well as all applicable load cases in the building code using an allowable stress design.

1. 1.0 DL + 1.0 LL + SWAY
2. 0.6 DL + 1.0 WL
3. 1.0 DL + 0.75 WL + 0.75 LL

Soil bearing capacity to be verified by owner prior to placement of footings. Foundation sizes if shown on drawings will not be reduced under any circumstances.

1.5 SUBMITTALS

A. Post-Bid Submittals
   1. Full drawings including foundation plan, seating plan, section drawing, and details
   2. Structural Calculations
   3. Product Samples upon Request

   NOTE: Delays caused by required resubmittals due to noncompliance with the specification shall not extend any milestone date in the contract. The contractor is responsible for complying with all aspects of this specification.

1.6 SITE REPRESENTATION

A qualified representative of the grandstand manufacturer must be onsite at all times during installation of the grandstand.

1.7 QUALITY ASSURANCE

A. AISC Certification: All structural steel shall be fabricated in an American Institute of Steel Construction (AISC) certified plant that is certified "STD" at the time of the bid. The manufacturer shall be listed on AISC's website as a certified fabricator.
B. Experience: Manufacturer of grandstand system shall have a minimum of (5) years experience in fabrication of grandstand structures and shall, upon request, provide references to successful projects of similar size and project specific requirements.
C. Installation: Installation shall be performed by factory trained and certified representatives of the grandstand manufacturer. Installer shall have completed at least three installations of similar size. Documentation shall be provided upon request.

1.8 SUBMITTALS

A. Fabricator AISC Certificate of compliance with the Standard for Steel Building Structures
B. Product Certificate: Prepare written statement on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
C. Shop Drawings: Complete detailed drawings prepared, signed and sealed by a Registered Professional Engineer (P.E.) licensed in the State of Connecticut. Include:
   1. Detailed and dimensioned plans.
   2. Seating plan indicating aisles, walkways, seating sections and exits and showing exit calculations using appropriate tables and requirements of the Connecticut State Building Code.
   3. Sections and details showing complete methods of assembly and anchorage.
   4. Footings and foundation sizes and types and relationships to finish grade in compliance with construction documents. Exposed portions of foundations, pier height and top elevations shall be subject to customer approval.
   5. Engineering calculations.
   6. Minimum sizes for structural steel and foundations are shown on bid document drawings, in order to establish an equal bidding opportunity for all participants. Reduction in minimum sizes of concrete foundation and structural steel will not be allowed.
D. Qualifications of Professional Engineer who seals the shop drawings and calculations.

E. Samples for verification to include 3' section of deck assembly with interlocking riser in specified dimensions and finishes and 3' long seat board with mounting bracket.

1.9 WARRANTY

Product shall be guaranteed for (5) years on the structure and (3) years on the finishes together with labor. Damage resulting from abnormal use or vandalism is not covered.

PART 2 - PRODUCTS

2.1 MANUFACTURER

The basis of design is Dant Clayton Corporation, 1500 Bernheim Lane, Louisville, Kentucky 40210; (800) 626-2177. Other manufacturers requesting to bid shall be approved by written addendum at least seven (7) days prior to bid date. Listing as acceptable manufacturer does not remove responsibility to meet specifications.

2.2 PRODUCT COMPONENTS

A. Fully Closed Deck System
   1. The decking system has two components. The first component is a deck panel constructed by assembling multiple aluminum extensions together. The decking system is attached by concealed clips and galvanized hardware. The decking extrusions are 1 ¾" vertically with a .078" wall thickness and are interlocked horizontally using a tongue and groove connection.
   2. The second component is a one-piece aluminum riser extension that has a male-female connection at the top with the welded deck panel and a shingled overlap connection at the bottom with the welded deck panel. The riser is finished with a powder coated surface treatment, covering 100% of the riser surface.
   3. The decking system will run from raker beam to raker beam. There will be a ½" gap at joint of the welded deck panels to allow for expansion and contraction of the aluminum due to temperature variations.
   4. The joint of the deck panel is covered with a 4" wide aluminum extrusion joint cover.
   5. Riser height per row and tread depth per row is indicated on design drawings.
   6. The ends of decking system will be finished with a one-piece aluminum angle end cap.
B. Seating
   1. Seat Brackets shall bolt directly to the steel understructure. <u>Supporting seat brackets in the aluminum channels of the deck will not be permitted.</u>
   2. Seats shall be 6063-T6 extruded aluminum with a fluted surface and a minimum of 4 vertical legs. The exact size of seatboard is 2" x 10" x .080" wall thickened at the joints and weighing 1.9 lbs. per foot with 1" radius comfort curve front edge.
   3. Mounting brackets: 3/16" thick A36 steel plate, plasma cut, bent and galvanized.
C. Understructure shall consist of an open span I-Beam understructure.
   1. Longitudinal bays may include angle cross bracing provided that it does not interfere with building entrances or vomitories.
   2. All beams and columns may be made of either wide flange or tube shapes.
   3. All steel shall be sized to support the most conservative of the loads in the table above, and the loads in the local building code. If sizes are shown in the drawing, they shall not be reduced for any reason.

D. Railing
   1. Vertical guardrail structural supports shall be aluminum rectangular tube 2.8” x 2.0 x .1888" or aluminum angle of equivalent strength, and shall be 6061-T6 alloy. Guardrail shall have structural support on each leg of the fencing at all 90° turns. Tension bars do not meet this requirement.
   2. Guardrail horizontal and vertical framing members will be 1 5/8” O.D. aluminum pipe.
   3. Chain link fence shall be 2” mesh, 9 gauge galvanized fabric.
E. Stairs
   1. Stairs shall consist of L3x3x1/4" legs with a sloping steel channel supporting the treads. Each tread shall be supported by a clip angle bolted to the sloping channel. Minimum vertical leg spacing is 3 ft. Maximum spacing is 9 ft.
   2. Guardrail on the stairs shall match the guardrail on the stand.
   3. Material finishes shall match those on the grandstand.
F. Hand & Grab Rails
   1. Hand and Grab Rails shall be located in all areas required by building code.
   2. Hand and Grab Rails shall be 1-15/16" O.D. extruded aluminum pipe.
   3. Two-Line mid-aisle handrails shall be located in all interior aisles. All mid-aisle rails shall feature internal fittings for both lines of rail. External fittings are not permitted.

2.3 MATERIALS

A. Structural Steel
   1. All detailing, fabrication, and erection shall be completed in accordance with the AISC Steel Construction Manual 13th Edition. All fabrication shall be completed in an AISC certified facility as described in Para. 1.8 A.
   2. Structural Steel shall be ASTM A572 multi-certified grade 50. Miscellaneous steel shall be ASTM A36.
   3. Bolts & Nuts: All bolts 5/8" diameter and larger shall meet ASTM A325. All bolts 1/2" and small shall meet ASTM A307.
   4. All welds shall conform to ANSI/AWS D1.1. Electrodes shall be E70xx
B. Aluminum
   1. All footboards & seatboards shall consist of 6063-T6 aluminum alloy with minimum yield strength of 25 ksi.
   2. All straight grab & hand rails shall consist of 6061-T6 aluminum alloy with minimum yield strength of 35 ksi.
   3. All bent grab & hand rails shall consist of 6061-T4 aluminum alloy with minimum yield strength of 21 ksi.

2.4 FINISHES

A. Structural Steel
   1. Structural steel shall be coated with a minimum of 2 oz. hot dipped galvanized in accordance with ASTM 123-A with a minimum galvanized film thickness of 3.3 mils. Zinc shall be 98% purity, certified with written test results based on samples taken from the tank.
   2. All structural steel fasteners shall be galvanized.
B. Aluminum
   1. All aluminum footboards shall a mill finish.

2. All seat boards shall have a clear anodized finish.
3. All Riser boards shall have a clear anodized finish.
4. All hand and Grab Rails shall be clear anodized

Part 3 - EXECUTION

3.1 EXAMINATION

A. Examine all existing conditions with installer present for compliance with requirements for installation tolerances and other conditions affecting performance of the work.
B. Prepare written report, endorsed by installer, listing conditions detrimental to performance of the work.
C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Installation: Shall be handled directly by the manufacturer or by a factory certified installation subcontractor.
B. Erect per plans, shop drawings, and specifications.

3.3 CLEANING

A. Clean all surfaces according to manufacturer's recommendations.
B. Remove all packaging and construction debris.
C. Use cleaning solutions and methods that do not damage the finishes or the adjacent surfaces.
D. Remove all metal burrs, sharp edges or other cutting, unsafe conditions.
E. Touch up finishes as recommended by manufacturer to the satisfaction of the architect.

3.4 OWNER RESPONSIBILITY

A. SITE ACCESS

END OF SECTION 13 34 25

1228-61-m1016-spec-09 - 133425 - grandstand seating system

SECTION 11 68 33 ATHLETIC EQUIPMENT

Part 1 - GENERAL

1.1 SUMMARY

A. Work Included: Provide all equipment and materials, and do all work necessary to furnish and install the athletic equipment, as indicated on the drawings and as specified herein. Athletic equipment shall include, but not be limited to:

1. 20' Foul Pole
2. Cantilever Dugout
3. Portable Player Benches
4. Portable Pitching Mound (Field)
5. Portable Pitching Mound (Bullpen)
6. Bases (In ground)
7. Fence Padding (Corners)
8. Windscreens
9. Batting Cage

B. Related sections include the following:

1. Section 03 30 00 Cast-in-Place Concrete
2. Section 31 20 00 Earth Moving
3. Section 33 32 00 Synthetic Infilled Athletic Turf Surface

1.2 SUBMITTALS

A. Provide Shop Drawings: Contractor shall provide fully dimensioned manufacturer's shop drawings detailing specific product, conforming anchoring system, and recommended installation and foundation requirements.

B. Manufacturer shall certify that all equipment meets current NFHS and CIAC regulations and standards.

1.3 QUALITY ASSURANCE

A. All materials and construction methods shall conform to Form 816 - State of Connecticut Department of Transportation "Standard Specification for Road, Bridges, and Incidental Construction," 2004 edition including supplements, unless otherwise specified herein.

1.4 PRODUCT DELIVERY AND STORAGE

A. Materials delivered to the site shall be examined for damage or defects in shipping. Any defects shall be noted and reported to the Owners representative. Replacements, if necessary, shall be immediately re-ordered, to minimize any conflict with the construction schedule. Materials shall be stored above ground under protective cover or indoors to provide proper protection.

Part 2 - PRODUCTS

2.1 FOUL POLES

A. Model: LGFPW420 – 20’ Foul Pole with Wing
as manufactured by:

Sportsfield Specialties Inc.
P.O. Box 231
41155 State Highway 10
Delhi, NY 13753
p. 888-975-3343
f. 607-746-8481
www.sportsfieldspecialties.com

or Approved Equal

B. COMPONENTS: LGFPW420 20' Foul Pole Equipment and Accessories
   1. Foul Poles:
      a. Fabricated of 4" O.D. x 1/8" (0.125") Thick Wall 6061 Aluminum Tube, 3.5" Schedule 40 Aluminum Pipe (4" O.D.)
      b. 20'Above Finish Grade Height
      c. Powder Coated Yellow Finish
      d. Ground Sleeve Mount
      e. Upright Pole with Stamped Wing
      f. Mesh Wing is Fabricated of Stamped 1/8" (0.125") Thick Aluminum Panel with Double Reinforced Bends Welded at Corners, 1.5" Square Open Mesh Size, 18"W
      g. Stainless Steel Assembly Hardware
      h. Model Specific Hardware Kit and Installation Instructions
   2. Qty: 2

2.2 CANTILEVER DUGOUTS

A. Model: LG-CD-08X32-90-OFFSET08 Cantilever Modular Long Gone Baseball/Softball Dugout Equipment and Accessories
as manufactured by:

Sportsfield Specialties Inc.
P.O. Box 231
41155 State Highway 10
Delhi, NY 13753
p. 888-975-3343
f. 607-746-8481
www.sportsfieldspecialties.com

or Approved Equal.

B. CANTILEVER MODULAR DUGOUT DESIGN CRITERIA:
   1. Maximum Wind Speed Load: 90 mph
   2. Maximum Ground Snow Load: 50 psf
   3. Seismic = Ss=150%, S1=75%
   4. Optimum Roof Pitch: 3:12
   5. Rear Column Offset Overhang = 8" (90 mph and 120 mph)

C. COMPONENTS:
   1. LG-CD-08X32-90-OFFSET08 Cantilever Modular Dugouts:
      a. Overall Dimensions: Standard 8'-6"Wide x 32' Long,
      b. Structural Columns Fabricated of:

i. 10” x 4” x 3/8” (0.375”) Thick Steel Tube with Factory Pre-Drilled 13” x 15” x 1” Thick Steel Base Mounting Plates and 10” x 12” x 3/4” (0.75”) Thick Steel Roof and Column Cap Plates for 120 mph Wind Speed Loads and a 8” Rear Column Offset Overhang, Welded Construction

c. Maximum Allowable Spacing Between Structural Steel Columns is Eight Feet (8’) on Center

d. Roof Frame Fabricated of:

i. 8” x 2” x 1/8” (0.125”) Thick Steel Rectangular Perimeter Tube, 8” x 4” x 1/4” (0.25”) Thick Steel Rectangular Transverse Tubes and 3” x 2” x 14 Gauge Steel Rectangular Longitudinal Tubes for 120 mph Wind Speed Loads and a 8” Rear Column Offset Overhang, Welded Construction

e. Maximum Allowable Roof Frame Width is 8’-5”

f. Structural Steel Columns and Roof Frame Receive a Powder Coated Primer and Finish, Paint Color: Dark Green

g. Roofing Material is 29 Gauge, Classic Rib® Style Corrugated Metal with J-Channel Drip Cap Installed on Front and Sides, Various Standard Paint Finish Colors Available

h. Structural Columns Attached to Roof Structure with Galvanized Hardware

i. Includes Carbon Steel Anchoring Hardware, Epoxy and Lifting Eye Bolts

j. Model Specific Hardware Kit and Installation Instructions

k. Stamped and Sealed Drawings and Calculations by a Licensed Professional Engineer of Record in the State of Connecticut

D. MODULAR DUGOUT INSTALLATION REQUIREMENTS:

1. Anchoring Requirements

a. Carbon Anchors and Epoxy Supplied by Manufacturer to be Used in Conjunction with Factory Pre-Drilled Base Plates Mounted on Concrete Slab or Concrete Footings Determined by Others Based on Local Soil Conditions and Building Codes

b. Minimum Requirements for Anchoring Modular Dugouts: 5/8” Diameter Hilti HAS Rods Secured with Hilti HIT-HY 150 MAX Adhesive, Maintain 5” Embedment into 3000 psi Normal Weight Concrete with at Least 7” of Edge Distance to Anchor Each Base Plate

2. Poured Concrete Slab:

a. Overall Dimensions Vary with Dugout Dimensions and Structural Layout

b. Concrete Slab Should Extend Approximately Six Inches (6”) Beyond the Outside Perimeter Edge of the Modular Dugout on All Four (4) Sides

c. 3000 psi Normal Weight Concrete Slab with a Thickness of Approximately 6” to 8” with 18” Wide Thickened Edge on All Four (4) Sides

d. Concrete Slab and/or Concrete Footings to be Verified, Reinforced and/or Poured as Determined by a Licensed Professional Engineer of Record in the State of Project Location Based on Local Building Codes and Soil Conditions

3. QTY: 2

2.3 PORTABLE PLAYER BENCHES

A. Model(s):

1. BEPS15G - 15’ Player Bench with Shelf

2. BEPS08G - 7.5’ Player Bench with Shelf

B. Color: Forest Green (G)

C. Portable

D. Qty.:
   1. (2) BEPS15G
   2. (2) BEPS08G

   as manufactured by:

   Beam Clay Inc.
   Partac Peat Corporation
   One Kelsey Park,
   Great Meadows
   New Jersey, 07838
   p. 800-247-2326
   f. 908-637-8421
   www.beamclay.com

   or Approved Equal

2.4 PORTABLE PITCHING MOUND (FIELD)

A. Model: LGPRTPTCH-RC Porta-Pitch Portable Baseball Pitcher's Mound with clay center section.
   as manufactured by:

   Sportsfield Specialties Inc.
   P.O. Box 231
   41155 State Highway 10
   Delhi, NY 13753
   p. 888-975-3343
   f. 607-746-8481
   www.sportsfieldspecialties.com

   or Approved Equal

B. COMPONENTS: LGPRTPTCH-RC Porta-Pitch Portable Baseball Pitcher's Mound Equipment and Accessories
   1. LGPRTPTCH-RC Porta-Pitch Portable Baseball Pitching Mound:
      a. Welded Construction, Fabricated of Aluminum Plate, Structural Members and 1/8" (0.125") Thick Aluminum Panel Factory Covered with a 6mm Rubber Shock Absorption Impact Pad and Red Clay Colored Synthetic Turf with Thatch Layer Securely Attached with NORDOT® Urethane Adhesive #34G
      b. Official Size 18' Outside Diameter with a Domed Height of 10" Above Finished Grade and Sloped 1" Vertical Per 1' Horizontal Per Specifications, Rules and Requirements
      c. Seven (7) Interlocking Tapered Pitching Mound Sections Designed to Rest on the Athletic Surface, No Ground Anchors Required
      d. Center Section Includes Hilltopper® Polymer Enhanced Mound Clay with Flexible Gasket Seal Perimeter, One (1) Regulation Size 6"W x 24"L Professional Four (4) Sided Removable and Replaceable Pitching Rubber and a Retractable Internal Wheel Mechanism with Detachable Powder Coated Steel Tow Hitch for Portability and Transport Purposes

e. 5'W x 10'L x 17.5"H Aluminum Porta-Pitch Transport Cart for Stacking, Transporting and/or Storing Six (6) Perimeter Tapered Pitching Mound Sections, 12" Pneumatic Swivel Front and Rigid Rear Wheels and Tow Hitch for Portability and Transport Purposes
f. Easily Removed and Set-Up for Use with Minimal Labor in Under Fifteen (15) Minutes
g. Installation Instructions

2.5 PORTABLE PITCHING MOUND (BULLPEN)

A. Model: LGPRTPTCH-RC-BP
As manufactured by:

Sportsfield Specialties Inc.
P.O. Box 231
41155 State Highway 10
Delhi, NY 13753
p. 888-975-3343
f. 607-746-8481
www.sportsfieldspecialties.com

or Approved Equal

B. COMPONENTS: LGPRTPTCH-RC-BP Porta-Pitch Portable Baseball Pitcher's Bull Pen Mound
1. LGPRTPTCH-RC Porta-Pitch Portable Baseball Pitching Mound:
a. Welded Construction, Fabricated of Aluminum Plate, Structural Members and 1/8" (0.125") Thick Aluminum Panel Factory Covered with a 6mm Rubber Shock Absorption Impact Pad and Red Clay Colored Synthetic Turf with Thatch Layer Securely Attached with NORDOT® Urethane Adhesive #34G
b. Sized: 13' 5-7/8" Long and 6'4" Wide, 10" High
c. Interlocking Sections
d. Center Section Includes Hilltopper® Polymer Enhanced Mound Clay with Flexible Gasket Seal Perimeter, One (1) Regulation Size 6"W x 24"L Professional Four (4) Sided Removable and Replaceable Pitching Rubber and a Retractable Internal Wheel Mechanism with Detachable Powder Coated Steel Tow Hitch for Portability and Transport Purposes
e. Easily Removed and Set-Up for Use with Minimal Labor in Under Fifteen (15) Minutes
f. Installation Instructions

2.6 HOME PLATE, PITCHER'S RUBBER AND BASES

A. Manufacturer:

Schutt Sports
710 S. Industrial Dr.
Litchfield, IL 62056

or Approved Equal

B. Home Plate:

Hollywood MLB Pro Style Home Plate
Item #: 12807300 SHP – UM/ Universal Home Plate

C. Bases Model

Pro-Style Hollywood Impact Bases
Item #: 129030XX HIBPL/ Set of 3 Bases (bases only)
Item #: LGHIBD – Schutt Hollywood Impact Double First Base Set (1) one for softball first base only)

With 8" female ground anchors
Item #: 12916550 BBP – (2) Two sets of 3 Anchors

D. Anchor Plugs w/ Indicator

Item #: 12916590 BBP – (2) Two sets of 3 Base Plugs

All ground anchor plugs shall have synthetic turf carpet adhered to top. Turf shall be of a contrasting color to that of the surrounding turf surface. Color to be selected by owner. Color(s) shall be from the turf manufacturer/vendors standard color wheel.

2.7 CHAIN LINK FENCE POST PADDING (CORNERS)

A. Model: CLP Chain Link Post Padding
   1. Height: 8'
   2. Color: Dark Green
   3. Qty.: (5) Five
      as manufactured by:

      Sportsfield Specialties Inc.
      P.O. Box 231
      41155 State Highway 10
      Delhi, NY 13753
      p. 888-975-3343
      f. 607-746-8481
      www.sportsfieldspecialties.com

      or Approved Equal

2.8 WINDSCREENS – UNIT PRICE BID ITEM

A. Model: VCP6 6'H VINYL COATED POLYESTER MESH WINDSCREEN MATERIAL
   1. Color: Green
   2. Height: 6' Ht.
   3. No Graphic
      as manufactured by:

      Sportsfield Specialties Inc.
      P.O. Box 231

41155 State Highway 10
Delhi, NY 13753
p. 888-975-3343
f. 607-746-8481
www.sportsfieldspecialties.com

or Approved Equal

B. COMPONENTS:
   1. VCP6 – 6'H Windscreen Material and Accessories:
      a. Vinyl Coated Polyester Mesh (VCP/VCM) 9 x 12
      b. Base Fabric: 9 x 12 1000 Denier Polyester
      c. Weight (Test Method 5041): Eight Ounces (8 oz.) Per Square Yard, Plus or Minus One Ounce (1 oz.)
      d. Eighty Percent (80%) Closed Mesh, Twenty Percent (20%) Open
      e. Heights: Standard Six Feet (6'), Custom to Six Feet (≤6')
      f. Tensile Strength (Test Method 5100-Warp x Fill): 210 x 220lbs.
      g. Adhesion (Test Method 5970-Warp x Fill): 8 x 8 lbs./2"
      h. Tear Strength (Test Method 5134-Warp x Fill): 90 x 90 lbs.
      i. Double Stitched Perimeter Seam Using 6 lb. Bonded Polyester Black Thread, Heat Sealable
      j. #2 Brass Grommets Inserted in Perimeter Hem Every Twelve Inches (12") on Center and Corners for Attachment Purposes
      k. Weather, Ultraviolet (UV), Rot, Mildew and Flame Resistant
      l. Standard Three (3) Year Limited Product Warranty

2.9 BATTING CAGE
   A. Model: 66214
      1. Color: Black
      2. Length: 70'
   B. Components
      1. Heavy Duty 4" Square Steel Posts – Black Powder Coat
      2. 13 Gauge Steel Crossbars
      3. Include chain, cables, hooks, collars, ground sleeves and c-snaps
      4. Netting Model: #36035PP
         a. 12'h x 14'w x70'l
         b. HTTP Knotless High Tenacity Polyethylene Black Tunnel Netting
   C. Warranty:
      1. Cage shall come with 5-year (min.)
      2. Net shall come with 4-year (min.)
      as manufactured by:

      Beam Clay Inc.
      One Kelsey Park,
      Great Meadows
      New Jersey, 07838
      p. 800-247-2326
      f. 908-637-8421

www.beamclay.com

or Approved Equal

Part 3 - EXECUTION

3.1 INSTALLATION - GENERAL

A. All work shall be constructed as shown on the plans and as recommended per the manufacturers' specifications

B. Should rock or boulders be encountered in making the excavation, this material shall be removed so as to make a hole of sufficient size to set the posts to the normal depth as called for on the plan and in the details.

3.2 CLEANING

A. Clean up debris and unused material, and remove from the site.

END OF SECTION 11 68 33

1228-61-m1016-spec-10 - 116833 - athletic equipment

SECTION 11 68 43 MULTIPURPOSE SCOREBOARD

Part 1 - GENERAL

1.1 SECTION INCLUDES
- A. Single-sided LED multisport scoreboard

1.2 REFERENCES
- A. Standard for Electric Signs, UL-48, 14th Edition
- B. Standard for Control Centers for Changing Message Type Signs, UL-1433, 4th Edition
- C. Standard for CAN/CSA C22.2 No. 207-M89
- D. Federal Communications Commission Regulation Part 15
- E. National Electric Code

1.3 SUBMITTALS
- A. Product data: Submit manufacturer's product illustrations, data and literature that fully describe the scoreboards and accessories proposed for installation.
- B. Shop drawings: Submit mechanical and electrical drawings.
- C. Maintenance data: Submit manufacturer's installation, operation, and maintenance manuals.

1.4 DELIVERY, STORAGE, AND HANDLING
- A. Product delivered on site
- B. Scoreboard and equipment to be housed in a clean, dry environment

1.5 PROJECT CONDITIONS
- A. Environmental limitations: Do not install scoreboard equipment until mounting structure is secure and concrete has ample time to cure.
- B. Field measurements: Verify position and elevation of structure and its layout for scoreboard equipment. Verify dimensions by field measurements.
- C. Verify mounting structure is capable of supporting the scoreboard's weight and windload in addition to the auxiliary equipment.
- D. Installation may proceed within acceptable weather conditions.

1.6 QUALITY ASSURANCE
- A. For outdoor use
- B. Source Limitations: Obtain each type of scoring or related equipment through one source from a single manufacturer.
- C. ETL listed to UL Standards 48 and 1433
- D. NEC compliant
- E. FCC compliant
- F. ETLC listed to CAN/CSA 22.2

1.7 WARRANTY
- A. Provide 5 years of no cost parts exchange including standard shipping on electronics parts and radios due to manufacturing defects
- B. Provide 5 Year onsite labor warranty from local authorized service provider

C. Provide toll-free service coordination
D. Provide technical phone support during Daktronics business hours

Part 2 - PRODUCTS

1.1 MANUFACTURER

A. Daktronics, Inc., Scoreboard Enterprises, Inc – 274 Fruit St., Mansfield, MA 02048 – 508-339-8113 – mark@scoreboardenterprises.com

B. Or approved equal.

1.2 PRODUCT

A. Daktronics FB-2022 single-sided multisport scoreboard with electronic captions and electronic team name, displays period time to 99:59, HOME and GUEST scores to 99, PERIOD to nine, PLAYER number to 99 and PENALTY time to 9:59 for two players on both teams, and indicates team penalty. During the last minute of the period, the clock displays time to 1/10 of a second.

B. Or approved equal.

1.3 SCOREBOARD

A. General information
   1. Dimensions: 8'-0" (3.05 m) high, 25'-0" (7.62 m) wide, 0'-8" (203 mm) deep
   2. Base weight: 1,100 lb (431 kg) with electronic captions
   3. Base power requirement: 1,540 W with electronic captions
   4. Color: Forest Green with Yellow Boarder Stripe
B. Construction
   1. Alcoa aluminum alloy 5052 for excellent corrosion resistance
   2. Scoreboard back, face, and perimeter: 0.063" (1.60 mm) thick
   3. Scoreboard top and bottom: 0.125" (3.18 mm) thick
C. Digits
   1. LED color RED
   2. HOME, GUEST, and clock digits: 24" (610 mm) high
   3. PERIOD, PLAYER, and PENALTY digits: 18" (457 mm) high
   4. Seven bar segments per digit
   5. PanaView® LED digit technology
   6. All digits are sealed front and back with weather-tight silicone gel
D. Captions
   1. Digital displays
   2. HOME and GUEST captions: 15" (381 mm) high
   3. PERIOD, 1, and 2 captions: 10" (254 mm) high
   4. PLAYER and PENALTY captions: 9" (229 mm) high
   5. Color: Red Yellow LED
E. Accessory Equipment to be provided
   1. (1) 2’-0” H x 25’-0” W Advertising / Identification Panel
   2. Vinyl striping applied around the scoreboard face
   3. Custom team name caption in place of HOME

4. Electronic captions – add 160 lbs (73 kg) and 600 W
5. One 54.75" (1.39 m) high, 74.5" (1.89 m) wide vinyl logo/sponsor area on display face
6. Horn
7. Stand alone TOD

1.4 SCORING CONSOLE

A. Console is an All Sport® 5000 controller
B. Scores multiple sports using changeable keyboard inserts
C. Controls multiple scoreboards and displays, including other All Sport 5000 controlled displays currently owned by customer
D. Recalls clock, score, and period information if power is lost
E. Runs Time of Day and Segment Timer modes
F. Console includes:
   1. Rugged aluminum enclosure to house electronics
   2. Sealed membrane water-resistant keyboard
   3. 32-character LCD to verify entries and recall information currently displayed
   4. Power cord that plugs into a standard grounded outlet; 6 watts max
   5. Control cable to connect to the control receptacle junction box (wired system only)
   6. Hand-held switch for main clock start/stop and horn
   7. Soft-sided carrying case
G. Accessory Equipment – to be provided
   1. 2.4 GHz spread spectrum radio system with frequency hopping technology and 64 non-interfering channels; system includes a transmitter installed inside the console and a receiver installed inside the scoreboard(s)
   2. Battery pack

Part 3 - EXECUTION

1.1 EXAMINATION

A. Verify that mounting structure is ready to receive scoreboard. Verify that placement of conduit and junction boxes are as specified and indicated in plans and shop drawings. Verify concrete has cured adequately according to specifications.

1.2 INSTALLATION

A. All power and control cables to scoreboards and displays will be routed in conduit. Power to the scoreboards/displays as well as raceways shown on electrical plans by the Electrical Contractor. Scoreboard control wiring including conduit will be the responsibility of the contractor assigned the scoreboard equipment.
B. Install scoreboards and exterior displays to beams in location detailed and in accordance with manufacturer's instructions. Verify unit is plumb and level.

1.3 INSTALLATION—CONTROL CENTER

A. Provide boxes, cover plates and jacks in locations per plans.
B. Test connect control unit to all jacks and check for proper operation of control unit, scoreboard and all features. Leave control unit in carrying case and other loose accessories with owner's designated representative.
C. Verify earth ground does not exceed 15 ohms.

END OF SECTION 11 68 43

1228-59-5-m115-spec – 116843 Multipurpose Scoreboard

SECTION 11 68 45 SOFTBALL FIELD SCOREBOARD – BID ALTERNATE NO. 3

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Single-sided LED softball field scoreboard

1.2 REFERENCES

A. Standard for Electric Signs, UL-48, 14th Edition

B. Standard for Control Centers for Changing Message Type Signs, UL-1433, 4th Edition

C. Standard for CAN/CSA C22.2 No. 207-M89

D. Federal Communications Commission Regulation Part 15

E. National Electric Code

1.3 SUBMITTALS

A. Product data: Submit manufacturer's product illustrations, data and literature that fully describe the scoreboards and accessories proposed for installation.

B. Shop drawings: Submit mechanical and electrical drawings.

C. Maintenance data: Submit manufacturer's installation, operation, and maintenance manuals.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Product delivered on site

B. Scoreboard and equipment to be housed in a clean, dry environment

1.5 PROJECT CONDITIONS

A. Environmental limitations: Do not install scoreboard equipment until mounting structure is secure and concrete has ample time to cure.

B. Field measurements: Verify position and elevation of structure and its layout for scoreboard equipment. Verify dimensions by field measurements.

C. Verify mounting structure is capable of supporting the scoreboard's weight and windload in addition to the auxiliary equipment.

D. Installation may proceed within acceptable weather conditions.

1.6 QUALITY ASSURANCE

A. For outdoor use

B. Source Limitations: Obtain each type of scoring or related equipment through one source from a single manufacturer.

C. ETL listed to UL Standards 48 and 1433

D. NEC compliant

E. FCC compliant

F. ETLC listed to CAN/CSA 22.2

1.7 WARRANTY

A. Provide 5 years of no cost parts exchange including standard shipping on electronics parts and radios due to manufacturing defects

B. Provide 5 Year onsite labor warranty from local authorized service provider

C. Provide toll-free service coordination

D. Provide technical phone support during Daktronics business hours

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Daktronics, Inc., Scoreboard Enterprises, Inc. – 274 Fruit St., Mansfield, MA 02048 – 508-339-8113 – mark@scoreboardenterprises.com

B. Or approved equal.

2.2 PRODUCT

A. Daktronics BA-618 single-sided baseball scoreboard displays HOME and GUEST scores to 99 and INNING to 19 and indicates BALL, STRIKE, OUT, and H (hit) or E (error).

B. Or approved equal.

2.3 SCOREBOARD

A. General information
1. Dimensions: 5'-0" (1.52 m) high, 14'-0" (4.27 m) wide, 0'-8" (203 mm) deep
2. Weight: 200 lb (91 kg)
3. Power requirement: 150 W
4. Color: provide over 150 colors to choose from

B. Construction
1. Alcoa aluminum alloy 5052 for excellent corrosion resistance
2. Scoreboard back, face, and perimeter: 0.063" (1.60 mm) thick
3. Scoreboard top and bottom: 0.125" (3.18 mm) thick

C. Digits & Indicators
1. LED color Red
2. HOME, GUEST and INNING digits: 18" (457 mm) high
3. BALL, STRIKE, OUT, H, and E indicators: 2" (51 mm) diameter
4. Seven bar segments per digit
5. PanaView® LED digit technology
6. All digits and indicators are sealed front and back with weather-tight silicone gel

D. Captions
1. Vinyl applied directly to scoreboard face
2. HOME and GUEST captions: 12" (305 mm) high
3. INNING caption: 10" (254 mm) high
4. BALL, STRIKE, OUT, H, and E captions: 8" (203 mm) high
5. Color: standard white or others available upon request

E. Accessory Equipment to be provided
1. Vinyl striping applied around the scoreboard face
2. Custom team name caption in place of HOME
3. 2’ x 14’ Sponsor/ID Panel – Ad Copy Included

2.4 SCORING CONSOLE

A. Console is an RC-100 Hand Held Rechargeable Control Console to include the following:
1. Control Console Carrying Case
2. Sport Insert Kit

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that mounting structure is ready to receive scoreboard. Verify that placement of conduit and junction boxes are as specified and indicated in plans and shop drawings. Verify concrete has cured adequately according to specifications.

3.2 INSTALLATION

A. All power and control cables to scoreboards and displays will be routed in conduit. Power to the scoreboards/displays as well as raceways shown on electrical plans by the Electrical Contractor. Scoreboard control wiring including conduit will be the responsibility of the contractor assigned the scoreboard equipment.

B. Install scoreboards and exterior displays to beams in location detailed and in accordance with manufacturer's instructions. Verify unit is plumb and level.

3.3 INSTALLATION—CONTROL CENTER

A. Provide boxes, cover plates and jacks in locations per plans.

B. Test connect control unit to all jacks and check for proper operation of control unit, scoreboard and all features. Leave control unit in carrying case and other loose accessories with owner's designated representative.

C. Verify earth ground does not exceed 15 ohms.

END OF SECTION 11 68 45

SECTION 26 05 00 COMMON WORK RESULTS FOR ELECTRICAL

Part 1 - General

1.1 RELATED DOCUMENTS
- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY
- A. Section Includes:
  1. Electrical equipment coordination and installation.
  2. Sleeves for raceways and cables.
  3. Sleeve seals.
  4. Grout.
  5. Common electrical installation requirements.

1.3 DEFINITIONS
- A. EPDM: Ethylene-propylene-diene terpolymer rubber.
- B. NBR: Acrylonitrile-butadiene rubber.

1.4 SUBMITTALS
- A. Product Data: For sleeve seals.

1.5 COORDINATION
- A. Coordinate arrangement, mounting, and support of electrical equipment:
  1. To allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.
  2. To provide for ease of disconnecting the equipment with minimum interference to other installations.
  3. To allow right of way for piping and conduit installed at required slope.
  4. So connecting raceways, cables, wireways, cable trays, and busways will be clear of obstructions and of the working and access space of other equipment.
- B. Coordinate installation of required supporting devices and set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.
- C. Coordinate location of access panels and doors for electrical items that are behind finished surfaces or otherwise concealed.
- D. Coordinate sleeve selection and application with selection and application of firestopping.

Part 2 - PRODUCTS

2.1 SLEEVES FOR RACEWAYS AND CABLES
- A. Steel Pipe Sleeves: ASTM A 53, Type E, Grade B, Schedule 40, galvanized steel, plain ends.
- B. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.
- C. Sleeves for Rectangular Openings: Galvanized sheet steel.
  1. Minimum Metal Thickness:

a. For sleeve cross-section rectangle perimeter less than 50 inches and no side more than 16 inches, thickness shall be 0.052 inch.
b. For sleeve cross-section rectangle perimeter equal to, or more than, 50 inches and 1 or more sides equal to, or more than, 16 inches, thickness shall be 0.138 inch.

2.2 SLEEVE SEALS

A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.
1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
a. Advance Products & Systems, Inc.
b. Calpico, Inc.
c. Metraflex Co.
d. Pipeline Seal and Insulator, Inc.
2. Sealing Elements: EPDM and/or NBR interlocking links shaped to fit surface of cable or conduit. Include type and number required for material and size of raceway or cable.
3. Pressure Plates: Plastic, Carbon steel, Stainless steel. Include two (2) for each sealing element.
4. Connecting Bolts and Nuts: Carbon steel with corrosion-resistant coating, Stainless steel of length required to secure pressure plates to sealing elements. Include one (1) for each sealing element.

2.3 GROUT

A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a thirty (30) minute working time.

Part 3 - EXECUTION

3.1 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

A. Comply with NECA 1.
B. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.
C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.
D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.
E. Right of Way: Give to piping systems installed at a required slope.

3.2 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Electrical penetrations occur when raceways, cables, wireways, cable trays, or busways penetrate concrete slabs, concrete or masonry walls, or fire-rated floor and wall assemblies.
B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.

C. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
D. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.
E. Cut sleeves to length for mounting flush with both surfaces of walls.
F. Extend sleeves installed in floors 2 inches above finished floor level.
G. Size pipe sleeves to provide ½-inch annular clear space between sleeve and raceway or cable, unless indicated otherwise.
H. Seal space outside of sleeves with grout for penetrations of concrete and masonry
   1. Promptly pack grout solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect grout while curing.
I. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint. Comply with requirements in Section 079200 "Joint Sealants."
J. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at raceway and cable penetrations. Install sleeves and seal raceway and cable penetration sleeves with firestop materials.
K. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.
L. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.
M. Underground, Exterior-Wall Penetrations: Install cast-iron pipe sleeves. Size sleeves to allow for 1-inch annular clear space between raceway or cable and sleeve for installing mechanical sleeve seals.

3.3 SLEEVE-SEAL INSTALLATION
A. Install to seal exterior wall penetrations.
B. Use type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

3.4 FIRESTOPPING
A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for electrical installations to restore original fire-resistance rating of assembly.

END OF SECTION 26 05 00

1228-61-a2816-spec-07 260500 - common work results for electrical

SECTION 26 05 09 ELECTRICAL DEMOLITION REQUIREMENTS

Part 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Demolition involving electrical system as described in Contract Documents.

B. Related Sections:
   1. Section 26 05 00 “Common Work Results for Electrical”
   2. New and replacement work specified in appropriate specification sections.

1.3 SCHEDULING

A. Include on Construction Schedule sequence of individual electrical demolition operations.

B. Coordinate with Owner for equipment and materials to be removed by Owner.

Part 2 - PRODUCTS (Not Used)

Part 3 - EXECUTION

3.1 EXAMINATION

A. All relocations, reconnections and removals are not necessarily indicated on Drawings. All such work shall be included without additional cost to Owner.

3.2 PREPARATION

A. Disconnect equipment that is to be removed or relocated. Carefully remove, disassemble or dismantle as required, and store in approved location on site, existing items to be reused in completed work.

B. Where affected by demolition or new construction, relocate, extend or repair raceways, conductors, outlets and apparatus to allow continued use of electrical system. Use methods and materials as specified for new construction.

3.3 PERFORMANCE

A. Perform drilling, cutting, block-offs and demolition work required for removal of necessary portions of electrical system. Do not cut joists, beams, girders, trusses or columns without prior written permission from Architect.

B. Remove concealed wiring abandoned due to demolition or new construction. Remove circuits, conduits and conductors that are not to be re-used back to next active fixture, device or junction box.

C. Patch, repair and finish surfaces affected by electrical demolition work, unless work is specifically called for under other Sections of the specifications.

3.4 CLEANING

A. Remove obsolete raceways, conductors, apparatus and lighting fixtures promptly from site and dispose of legally.

END OF SECTION 26 05 09

1228-61-a2816-spec-08 260509 - electrical demolition requirements

SECTION 26 05 26 GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

Part 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

A. Section includes grounding systems and equipment, plus the following special applications:
   1. Underground distribution grounding.
   2. Ground bonding common with lightning protection system.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.
B. As-Built Data: Plans showing dimensioned as-built locations of grounding features specified in "Field Quality Control" Article, including the following:
   1. Test wells.
   2. Ground rods.
   3. Ground rings.
   4. Grounding arrangements and connections for separately derived systems.
   5. Grounding for sensitive electronic equipment.
C. Qualification Data: For qualified testing agency and testing agencies field supervisor.
D. Field quality-control reports.
E. Operation and Maintenance Data: For grounding to include in emergency, operation, and maintenance manuals. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:
   1. Instructions for periodic testing and inspection of grounding features at test wells, ground rings, and grounding connections for separately derived systems based on NETA MTS and NFPA 70B.
      a. Tests shall determine if ground-resistance or impedance values remain within specified maximums, and instructions shall recommend corrective action if values do not.
      b. Include recommended testing intervals.

1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: Member company of NETA or an NRTL.
   1. Testing Agency's Field Supervisor: Currently certified by NETA to supervise on-site testing.
B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
C. Comply with UL 467 for grounding and bonding materials and equipment.

Part 2 - PRODUCTS

2.1 CONDUCTORS

A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

B. Bare Copper Conductors:

1. Solid Conductors: ASTM B 3.
2. Stranded Conductors: ASTM B 8.
3. Tinned Conductors: ASTM B 33.
4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, ¼ inch in diameter.
5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
6. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.
7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.

C. Bare Grounding Conductor and Conductor Protector for Wood Poles:

1. No. 4 AWG minimum, soft-drawn copper.
2. Conductor Protector: Half-round PVC or wood molding; if wood, use pressure-treated fir, cypress, or cedar.

D. Grounding Bus: Predrilled rectangular bars of annealed copper, ¼ by 4 inches in cross section, with 9/32-inch holes spaced 1-1/8 inches apart. Stand-off insulators for mounting shall comply with UL 891 for use in switchboards, 600 V. Lexan or PVC, impulse tested at 5000 V.

2.2 CONNECTORS

A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.

B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, pressure type with at least two (2) bolts.

1. Pipe Connectors: Clamp type, sized for pipe.

C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

D. Bus-bar Connectors: Mechanical type, cast silicon bronze, solderless compression and exothermic-type wire terminals, and long-barrel, two-bolt connection to ground bus bar.

2.3 GROUNDING ELECTRODES

A. Ground Rods: Copper-clad, sectional type; ¾ inch by 10 feet and 5/8 by 96 inches in diameter.

B. Chemical-Enhanced Grounding Electrodes: Copper tube, straight or L-shaped, charged with nonhazardous electrolytic chemical salts.

1. Termination: Factory-attached No. 4/0 AWG bare conductor at least 48 inches long.
2. Backfill Material: Electrode manufacturer's recommended material.

Part 3 - EXECUTION

3.1 APPLICATIONS

A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.

B. Underground Grounding Conductors: Install bare tinned-copper conductor, No. 2/0 AWG minimum.

1. Bury at least 24 inches below grade.
2. Duct-Bank Grounding Conductor: Bury 12 inches above duct bank when indicated as part of duct-bank installation.

C. Isolated Grounding Conductors: Green-colored insulation with continuous yellow stripe. On feeders with isolated ground, identify grounding conductor where visible to normal inspection, with alternating bands of green and yellow tape, with at least three (3) bands of green and two (2) bands of yellow.

D. Grounding Bus: Install in electrical and telephone equipment rooms, in rooms housing service equipment, and elsewhere as indicated.

1. Install bus on insulated spacers 2 inches minimum from wall, 6 inches above finished floor unless otherwise indicated.
2. Where indicated on both sides of doorways, route bus up to top of door frame, across top of doorway, and down to specified height above floor; connect to horizontal bus.

E. Conductor Terminations and Connections:

1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
2. Underground Connections: Welded connectors except at test wells and as otherwise indicated.
3. Connections to Ground Rods at Test Wells: Bolted connectors.
4. Connections to Structural Steel: Welded connectors.

3.2 GROUNDING AT THE SERVICE

A. Equipment grounding conductors and grounding electrode conductors shall be connected to the ground bus. Install a main bonding jumper between the neutral and ground buses.

3.3 GROUNDING SEPARATELY DERIVED SYSTEMS

A. Generator: Install grounding electrode(s) at the generator location. The electrode shall be connected to the equipment grounding conductor and to the frame of the generator.

3.4 GROUNDING UNDERGROUND DISTRIBUTION SYSTEM COMPONENTS

A. Comply with IEEE C2 grounding requirements.

B. Grounding Manholes and Handholes: Install a driven ground rod through manhole or handhole floor, close to wall, and set rod depth so 4 inches will extend above finished floor. If necessary, install ground rod before manhole is placed and provide No. 1/0 AWG bare, tinned-copper conductor from ground rod into manhole through a waterproof sleeve in manhole wall. Protect ground rods passing through concrete floor with a double wrapping of pressure-sensitive insulating tape or heat-shrunk insulating sleeve from 2 inches above to 6 inches below concrete. Seal floor opening with waterproof, nonshrink grout.

C. Grounding Connections to Manhole Components: Bond exposed-metal parts such as inserts, cable racks, pulling irons, ladders, and cable shields within each manhole or handhole, to ground rod or grounding conductor. Make connections with No. 4 AWG minimum, stranded,

hard-drawn copper bonding conductor. Train conductors level or plumb around corners and fasten to manhole walls. Connect to cable armor and cable shields according to written instructions by manufacturer of splicing and termination kits.

D. Pad-Mounted Transformers and Switches: Install two ground rods and ground ring around the pad. Ground pad-mounted equipment and noncurrent-carrying metal items associated with substations by connecting them to underground cable and grounding electrodes. Install tinned-copper conductor not less than No. 2 AWG for ground ring and for taps to equipment grounding terminals. Bury ground ring not less than 6 inches from the foundation.

3.5 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:
   1. Feeders and branch circuits.
   2. Lighting circuits.
   3. Receptacle circuits.
   4. Single-phase motor and appliance branch circuits.
   5. Three-phase motor and appliance branch circuits.
   6. Flexible raceway runs.
   7. Armored and metal-clad cable runs.
   8. Busway Supply Circuits: Install insulated equipment grounding conductor from grounding bus in the switchgear, switchboard, or distribution panel to equipment grounding bar terminal on busway.
   9. Computer and Rack-Mounted Electronic Equipment Circuits: Install insulated equipment grounding conductor in branch-circuit runs from equipment-area power panels and power-distribution units.

B. Air-Duct Equipment Circuits: Install insulated equipment grounding conductor to duct-mounted electrical devices operating at 120 V and more, including air cleaners, heaters, dampers, humidifiers, and other duct electrical equipment. Bond conductor to each unit and to air duct and connected metallic piping.

C. Water Heater, Heat-Tracing, and Antifrost Heating Cables: Install a separate insulated equipment grounding conductor to each electric water heater and heat-tracing cable. Bond conductor to heater units, piping, connected equipment, and components.

D. Isolated Grounding Receptacle Circuits: Install an insulated equipment grounding conductor connected to the receptacle grounding terminal. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service unless otherwise indicated.

E. Isolated Equipment Enclosure Circuits: For designated equipment supplied by a branch circuit or feeder, isolate equipment enclosure from supply circuit raceway with a nonmetallic raceway fitting listed for the purpose. Install fitting where raceway enters enclosure, and install a separate insulated equipment grounding conductor. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service unless otherwise indicated.

F. Signal and Communication Equipment: In addition to grounding and bonding required by NFPA 70, provide a separate grounding system complying with requirements in TIA/ATIS J-STD-607-A.
   1. For telephone, alarm, voice and data, and other communication equipment, provide No. 4 AWG minimum insulated grounding conductor in raceway from grounding electrode

system to each service location, terminal cabinet, wiring closet, and central equipment location.
2. Service and Central Equipment Locations and Wiring Closets: Terminate grounding conductor on a ¼-by-4-by-12-inch grounding bus.
3. Terminal Cabinets: Terminate grounding conductor on cabinet grounding terminal.

G. Metal and Wood Poles Supporting Outdoor Lighting Fixtures: Install grounding electrode and a separate insulated equipment grounding conductor in addition to grounding conductor installed with branch-circuit conductors.

3.6 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Ground Bonding Common with Lightning Protection System: Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system. Bond electrical power system ground directly to lightning protection system grounding conductor at closest point to electrical service grounding electrode. Use bonding conductor sized same as system grounding electrode conductor, and install in conduit.

C. Ground Rods: Drive rods until tops are 2 inches below finished floor or final grade unless otherwise indicated.
1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating if any.
2. For grounding electrode system, install at least three (3) rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes, and connect to the service grounding electrode conductor.

D. Test Wells: Ground rod driven through drilled hole in bottom of handhole. Handholes are specified in Section 260543 "Underground Ducts and Raceways for Electrical Systems," and shall be at least 12 inches deep, with cover.
1. Test Wells: Install at least one (1) test well for each service unless otherwise indicated. Install at the ground rod electrically closest to service entrance. Set top of test well flush with finished grade or floor.

E. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.
1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.
3. Use exothermic-welded connectors for outdoor locations; if a disconnect-type connection is required, use a bolted clamp.

F. Grounding and Bonding for Piping:
1. Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes; use a bolted clamp connector or bolt a lug-type connector to a pipe flange by using one (1) of the lug bolts of the flange. Where a dielectric main water fitting is installed,

connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.

2. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a bolted connector.
3. Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.

G. Bonding Interior Metal Ducts: Bond metal air ducts to equipment grounding conductors of associated fans, blowers, electric heaters, and air cleaners. Install tinned bonding jumper to bond across flexible duct connections to achieve continuity.

H. Grounding for Steel Building Structure: Install a driven ground rod at base of each corner column and at intermediate exterior columns at distances not more than 60 feet apart.

I. Ground Ring: Install a grounding conductor, electrically connected to each building structure ground rod and to each steel column and/or indicated item, extending around the perimeter of building, area, and/or item indicated.

1. Install tinned-copper conductor not less than No. 2/0 AWG for ground ring and for taps to building steel.
2. Bury ground ring not less than 24 inches from building's foundation.

J. Ufer Ground (Concrete-Encased Grounding Electrode): Fabricate according to NFPA 70; use a minimum of 20 feet of bare copper conductor not smaller than No. 4 AWG.

1. If concrete foundation is less than 20 feet long, coil excess conductor within base of foundation.
2. Bond grounding conductor to reinforcing steel in at least four (4) locations and to anchor bolts. Extend grounding conductor below grade and connect to building's grounding grid or to grounding electrode external to concrete.

3.7 LABELING

A. Comply with requirements in Section 260553 "Identification for Electrical Systems" Article for instruction signs. The label or its text shall be green.

B. Install labels at the telecommunications bonding conductor and grounding equalizer and at the grounding electrode conductor where exposed.

1. Label Text: "If this connector or cable is loose or if it must be removed for any reason, notify the facility manager."

3.8 FIELD QUALITY CONTROL

A. Perform tests and inspections.

1. Manufacturer's Field Service: Contractor shall engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

B. Tests and Inspections:

1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.
3. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal**,** at ground test

wells, and at individual ground rods. Make tests at ground rods before any conductors are connected.

a. Measure ground resistance no fewer than two (2) full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
b. Perform tests by fall-of-potential method according to IEEE 81.

4. Prepare dimensioned Drawings locating each test well, ground rod and ground-rod assembly, and other grounding electrodes. Identify each by letter in alphabetical order, and key to the record of tests and observations. Include the number of rods driven and their depth at each location, and include observations of weather and other phenomena that may affect test results. Describe measures taken to improve test results.

C. Grounding system will be considered defective if it does not pass tests and inspections.
D. Prepare test and inspection reports.
E. Report measured ground resistances that exceed the following values:
1. Power and Lighting Equipment or System with Capacity of 500 kVA and Less: 10 ohms.
2. Power and Lighting Equipment or System with Capacity of 500 to 1000 kVA: 5 ohms.
3. Power and Lighting Equipment or System with Capacity More Than 1000 kVA: 3 ohms.
4. Power Distribution Units or Panelboards Serving Electronic Equipment: 1 ohm(s).
5. Substations and Pad-Mounted Equipment: 5 ohms.
6. Manhole Grounds: 10 ohms.

F. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

END OF SECTION 26 05 26

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SECTION 26 05 43 UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS

Part 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Conduit, ducts, and duct accessories for direct-buried and concrete-encased duct bank, and in single duct runs.
   2. Handholes and pull boxes.
   3. Manholes.

1.3 DEFINITION

A. RNC: Rigid nonmetallic conduit.
B. Trafficways: Locations where vehicular or pedestrian traffic is a normal course of events.

1.4 SUBMITTALS

A. Product Data: For the following:
   1. Duct-bank materials, including separators and miscellaneous components.
   2. Ducts and conduits and their accessories, including elbows, end bells, bends, fittings, and solvent cement.
   3. Accessories for manholes, handholes, pull boxes**,** and other utility structures.
   4. Warning tape.
   5. Warning planks.
B. Shop Drawings for Precast or Factory-Fabricated Underground Utility Structures: Include plans, elevations, sections, details, attachments to other work, and accessories, including the following:
   1. Duct entry provisions, including locations and duct sizes.
   2. Reinforcement details.
   3. Frame and cover design and manhole frame support rings.
   4. Ladder and/or step details.
   5. Grounding details.
   6. Dimensioned locations of cable rack inserts, pulling-in and lifting irons, and sumps.
   7. Joint details.
C. Shop Drawings for Factory-Fabricated Handholes and Pull Boxes Other Than Precast Concrete: Include dimensioned plans, sections, and elevations, and fabrication and installation details, including the following:
   1. Duct entry provisions, including locations and duct sizes.
   2. Cover design.
   3. Grounding details.
   4. Dimensioned locations of cable rack inserts, and pulling-in and lifting irons.
D. Duct-Bank Coordination Drawings: Show duct profiles and coordination with other utilities and underground structures.

1. Include plans and sections, drawn to scale, and show bends and locations of expansion fittings.
2. Drawings shall be signed and sealed by a qualified professional engineer.

E. Product Certificates: For concrete and steel used in precast concrete manholes, pull boxes, and handholes, comply with ASTM C 858.
F. Qualification Data: For qualified professional engineer and testing agency.
G. Source quality-control reports.
H. Field quality-control reports.

1.5 QUALITY ASSURANCE

A. Comply with IEEE C2.
B. Comply with NFPA 70.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver ducts to Project site with ends capped. Store nonmetallic ducts with supports to prevent bending, warping, and deforming.
B. Store precast concrete and other factory-fabricated underground utility structures at Project site as recommended by manufacturer to prevent physical damage. Arrange so identification markings are visible.
C. Lift and support precast concrete units only at designated lifting or supporting points.

1.7 PROJECT CONDITIONS

A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electrical service according to requirements indicated:
1. Notify Architect and Construction Manager no fewer than two (2) days in advance of proposed interruption of electrical service.
2. Do not proceed with interruption of electrical service without Architect's and Construction Manager's written permission.

1.8 COORDINATION

A. Coordinate layout and installation of ducts, manholes, handholes, and pull boxes with final arrangement of other utilities, site grading, and surface features as determined in the field.
B. Coordinate elevations of ducts and duct-bank entrances into manholes, handholes, and pull boxes with final locations and profiles of ducts and duct banks as determined by coordination with other utilities, underground obstructions, and surface features. Revise locations and elevations from those indicated as required to suit field conditions and to ensure that duct runs drain to manholes and handholes, and as approved by Architect.

1.9 EXTRA MATERIALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
B. Furnish cable-support stanchions, arms, insulators, and associated fasteners in quantities equal to five percent (5%) of quantity of each item installed.

Part 2 - PRODUCTS

2.1 CONDUIT

A. Rigid Steel Conduit: Galvanized. Comply with ANSI C80.1.

B. RNC: NEMA TC 2, Type EPC-40-PVC and Type EPC-80-PVC, UL 651, with matching fittings by same manufacturer as the conduit, complying with NEMA TC 3 and UL 514B.

2.2 NONMETALLIC DUCTS AND DUCT ACCESSORIES

A. Manufacturers: Subject to compliance with requirements, provide available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. AFC Cable Systems
   2. ARNCO Corporation
   3. Beck Manufacturing
   4. Cantex, Inc.
   5. CertainTeed Corp.
   6. Condux International, Inc.
   7. DCX-CHOL Enterprises, Inc.; ELECSYS Division
   8. Electri-Flex Company
   9. IPEX Inc.
   10. Lamson & Sessions; Carlon Electrical Products
   11. Manhattan Wire Products; a Belden company

B. Underground Plastic Utilities Duct: NEMA TC 6 & 8, Type EB-20-PVC, ASTM F 512, UL 651A, with matching fittings by the same manufacturer as the duct, complying with NEMA TC 9.

C. Underground Plastic Utilities Duct: NEMA TC 6 & 8, Type DB-60-PVC and Type DB-120-PVC, ASTM F 512, with matching fittings by the same manufacturer as the duct, complying with NEMA TC 9.

D. Duct Accessories:
   1. Duct Separators: Factory-fabricated rigid PVC interlocking spacers, sized for type and sizes of ducts with which used, and retained to provide minimum duct spacings indicated while supporting ducts during concreting or backfilling.
   2. Warning Tape: Underground-line warning tape specified in Section 260553 "Identification for Electrical Systems."
   3. Concrete Warning Planks: Nominal 12 by 24 by 3 inches in size, manufactured from 6000-psi concrete.
      a. Color: Red dye added to concrete during batching.
      b. Mark each plank with "ELECTRIC" in 2-inch-high, 3/8-inch-deep letters.

2.3 PRECAST CONCRETE HANDHOLES AND PULL BOXES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Christy Concrete Products
   2. Cretex Concrete Products West, Inc.; Riverton Division
   3. Elmhurst-Chicago Stone Co.
   4. Oldcastle Precast Group
   5. Oldcastle Precast Inc.; Utility Vault Division

6. Utility Concrete Products, LLC
7. Wausau Tile Inc.

B. Comply with ASTM C 858 for design and manufacturing processes.

C. Ferrous metal hardware shall be hot-dip galvanized in accordance with ASTM A 153 and ASTM A 123.

D. Description: Factory-fabricated, reinforced-concrete, monolithically poured walls and bottom unless open-bottom enclosures are indicated. Frame and cover shall form top of enclosure and shall have load rating consistent with that of handhole or pull box.
   1. Frame and Cover: Weatherproof steel frame, with hinged steel access door assembly with tamper-resistant, captive, cover-securing stainless-steel bolts.
      a. Cover Hinges: Concealed, with hold-open ratchet assembly.
      b. Cover Handle: Recessed.
   2. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
   3. Cover Legend: Molded lettering, "ELECTRIC.", "TELEPHONE.", and as indicated for each service.
   4. Configuration: Units shall be designed for flush burial and have integral closed bottom unless otherwise indicated.
   5. Extensions and Slabs: Designed to mate with bottom of enclosure. Same material as enclosure.
      a. Extension shall provide increased depth of 12 inches.
      b. Slab: Same dimensions as bottom of enclosure, and arranged to provide closure.
   6. Windows: Precast openings in walls, arranged to match dimensions and elevations of approaching ducts and duct banks plus an additional 12 inches vertically and horizontally to accommodate alignment variations.
      a. Windows shall be located no less than 6 inches from interior surfaces of walls, floors, or frames and covers of handholes, but close enough to corners to facilitate racking of cables on walls.
      b. Window opening shall have cast-in-place, welded wire fabric reinforcement for field cutting and bending to tie in to concrete envelopes of duct banks.
      c. Window openings shall be framed with at least two additional No. 4 steel reinforcing bars in concrete around each opening.
   7. Duct Entrances in Handhole Walls: Cast end-bell or duct-terminating fitting in wall for each entering duct.
      a. Type and size shall match fittings to duct or conduit to be terminated.
      b. Fittings shall align with elevations of approaching ducts and be located near interior corners of handholes to facilitate racking of cable.
   8. Handholes 12 inches wide by 24 inches long and larger shall have inserts for cable racks and pulling-in irons installed before concrete is poured.

2.4 HANDHOLES AND PULL BOXES OTHER THAN PRECAST CONCRETE

A. Description: Comply with SCTE 77.
   1. Color: Gray.
   2. Configuration: Units shall be designed for flush burial and have integral closed bottom unless otherwise indicated.
   3. Cover: Weatherproof, secured by tamper-resistant locking devices and having structural load rating consistent with enclosure.
   4. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.

5. Cover Legend: Molded lettering,
    a. "ELECTRIC.", "TELEPHONE.", and as indicated for each service.
    b. Tier level number, indicating that the unit complies with the structural load test for that tier according to SCTE 77.
6. Direct-Buried Wiring Entrance Provisions: Knockouts equipped with insulated bushings or end-bell fittings, retained to suit box material, sized for wiring indicated, and arranged for secure, fixed installation in enclosure wall.
7. Duct Entrance Provisions: Duct-terminating fittings shall mate with entering ducts for secure, fixed installation in enclosure wall.
8. Handholes 12 inches wide by 24 inches long and larger shall have factory-installed inserts for cable racks and pulling-in irons.

B. Polymer Concrete Handholes and Pull Boxes with Polymer Concrete Cover: Molded of sand and aggregate, bound together with a polymer resin, and reinforced with steel or fiberglass or a combination of the two (2). Handholes and pull boxes shall comply with the requirements of SCTE 77 Tier 8 and Tier 15 loading.
    1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
        a. Armorcast Products Company
        b. Carson Industries LLC
        c. CDR Systems Corporation
        d. Hubbell Power Systems; Lenoir City Division
        e. NewBasis

C. Fiberglass Handholes and Pull Boxes with Polymer Concrete Frame and Cover: Complying with SCTE 77 Tier 8 and Tier 15 loading. Sheet-molded, fiberglass-reinforced, polyester resin enclosure joined to polymer concrete top ring or frame.
    1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
        a. Armorcast Products Company
        b. Carson Industries LLC
        c. Christy Concrete Products
        d. Synertech Moulded Products, Inc.; a division of Oldcastle Precast

D. Fiberglass Handholes and Pull Boxes: Molded of fiberglass-reinforced polyester resin, with covers of polymer concrete, complying with SCTE 77 Tier 8 and Tier 5 loading.
    1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
        a. Carson Industries LLC
        b. Christy Concrete Products
        c. Nordic Fiberglass, Inc.

E. High-Density Plastic Pull Boxes: Injection molded of high-density polyethylene or copolymer-polypropylene, complying with SCTE 77 Light Duty loading. Cover shall be polymer concrete.
    1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Carson Industries LLC
b. Nordic Fiberglass, Inc.
c. Pencell Plastics

2.5 PRECAST MANHOLES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Christy Concrete Products
   2. Cretex Concrete Products West, Inc.; Riverton Division
   3. Elmhurst-Chicago Stone Co.
   4. Oldcastle Precast Group
   5. Oldcastle Precast Inc.; Utility Vault Division
   6. Utility Concrete Products, LLC
   7. Wausau Tile Inc.
B. Comply with ASTM C 858, with structural design loading as specified in "Underground Enclosure Application" Article, and with interlocking mating sections, complete with accessories, hardware, and features.
   1. Windows: Precast openings in walls, arranged to match dimensions and elevations of approaching ducts and duct banks plus an additional 12 inches vertically and horizontally to accommodate alignment variations.
      a. Windows shall be located no less than 6 inches from interior surfaces of walls, floors, or roofs of manholes, but close enough to corners to facilitate racking of cables on walls.
      b. Window opening shall have cast-in-place, welded wire fabric reinforcement for field cutting and bending to tie in to concrete envelopes of duct banks.
      c. Window openings shall be framed with at least two (2) additional No. 4 steel reinforcing bars in concrete around each opening.
   2. Duct Entrances in Manhole Walls: Cast end-bell or duct-terminating fitting in wall for each entering duct.
      a. Type and size shall match fittings to duct or conduit to be terminated.
      b. Fittings shall align with elevations of approaching ducts and be located near interior corners of manholes to facilitate racking of cable.
C. Concrete Knockout Panels: 1½ to 2 inches thick, for future conduit entrance and sleeve for ground rod.
D. Joint Sealant: Asphaltic-butyl material with adhesion, cohesion, flexibility, and durability properties necessary to withstand maximum hydrostatic pressures at the installation location with the ground-water level at grade.

2.6 CAST-IN-PLACE MANHOLES

A. Description: Underground utility structures, constructed in place, complete with accessories, hardware, and features. Include concrete knockout panels for conduit entrance and sleeve for ground rod.
B. Materials: Comply with ASTM C 858 and with Section 033000 "Cast-in-Place Concrete."
   1. Concrete shall have a minimum compressive strength of 3000 psi.
C. Structural Design Loading: As specified in "Underground Enclosure Application" Article.

2.7 UTILITY STRUCTURE ACCESSORIES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Bilco Company (The)
   2. Campbell Foundry Company
   3. Christy Concrete Products
   4. Cretex Concrete Products West, Inc.; Riverton Division
   5. East Jordan Iron Works
   6. Elmhurst-Chicago Stone Co.
   7. Hubbell Power Systems; Lenoir City Division
   8. McKinley Iron Works
   9. Neenah Foundry Company
   10. NewBasis
   11. Oldcastle Precast Group
   12. Oldcastle Precast Inc.; Utility Vault Division
   13. Osburn Associates, Inc.
   14. Pennsylvania Insert Corporation
   15. Underground Devices, Inc.
   16. Utility Concrete Products, LLC
   17. Wausau Tile Inc.

B. Ferrous metal hardware, where indicated, shall be hot-dip galvanized complying with ASTM A 153 and A 123.

C. Manhole Frames, Covers, and Chimney Components: Comply with structural design loading specified for manhole.
   1. Frame and Cover: Weatherproof, gray cast iron complying with ASTM A 48, Class 30B with milled cover-to-frame bearing surfaces; diameter, 26 inches.
      a. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
      b. Special Covers: Recess in face of cover designed to accept finish material in paved areas.
   2. Cover Legend: Cast in. Retained to suit system.
      a. Legend: "ELECTRIC-LV" for duct systems with power wires and cables for systems operating at 600 V and less.
      b. Legend: "ELECTRIC-HV" for duct systems with medium-voltage cables.
      c. Legend: "SIGNAL" for communications, data, and telephone duct systems.
   3. Manhole Chimney Components: Precast concrete rings with dimensions matched to those of roof opening.
      a. Mortar for Chimney Ring and Frame and Cover Joints: Comply with ASTM C 270, Type M, except for quantities less than 2.0 cu. ft. where packaged mix complying with ASTM C 387, Type M, may be used.

D. Manhole Sump Frame and Grate: ASTM A 48, Class 30B, gray cast iron.

E. Pulling Eyes in Concrete Walls: Eyebolt with reinforcing-bar fastening insert, 2-inch-diameter eye, and 1-by-4-inch bolt.
   1. Working Load Embedded in 6-Inch, 4000-psi Concrete: 13,000-lbf minimum tension.

F. Pulling Eyes in Nonconcrete Walls: Eyebolt with reinforced fastening, 1¼-inch-diameter eye, rated 2500-lbf minimum tension.

G. Pulling-In and Lifting Irons in Concrete Floors: 7/8-inch-diameter, hot-dip galvanized, bent steel rod; stress relieved after forming; and fastened to reinforcing rod. Exposed triangular opening.
   1. Ultimate Yield Strength: 40,000-lbf shear and 60,000-lbf tension.
H. Bolting Inserts for Concrete Utility Structure Cable Racks and Other Attachments: Flared, threaded inserts of noncorrosive, chemical-resistant, nonconductive thermoplastic material; ½-inch ID by 2¾ inches deep, flared to 1¼ inches minimum at base.
   1. Tested Ultimate Pullout Strength: 12,000 lbf minimum.
I. Expansion Anchors for Installation after Concrete Is Cast: Zinc-plated, carbon-steel-wedge type with stainless-steel expander clip with ½-inch bolt, 5300-lbf rated pullout strength, and minimum 6800-lbf rated shear strength.
J. Cable Rack Assembly: Steel, hot-dip galvanized except insulators.
   1. Stanchions: T-section or channel; 2¼-inch nominal size; punched with 14 holes on 1½-inch centers for cable-arm attachment.
   2. Arms: 1½ inches wide, lengths ranging from 3 inches with 450-lb minimum capacity to 18 inches with 250-lb minimum capacity. Arms shall have slots along full length for cable ties and be arranged for secure mounting in horizontal position at any vertical location on stanchions.
   3. Insulators: High-glaze, wet-process porcelain arranged for mounting on cable arms.
K. Cable Rack Assembly: Nonmetallic. Components fabricated from nonconductive, fiberglass-reinforced polymer.
   1. Stanchions: Nominal 36 inches high by 4 inches wide, with minimum of nine (9) holes for arm attachment.
   2. Arms: Arranged for secure, drop-in attachment in horizontal position at any location on cable stanchions, and capable of being locked in position. Arms shall be available in lengths ranging from 3 inches with 450-lb minimum capacity to 20 inches with 250-lb minimum capacity. Top of arm shall be nominally 4 inches wide, and arm shall have slots along full length for cable ties.
L. Duct-Sealing Compound: Nonhardening, safe for contact with human skin, not deleterious to cable insulation, and workable at temperatures as low as 35 deg F (2 deg C). Capable of withstanding temperature of 300 deg F (150 deg C) without slump and adhering to clean surfaces of plastic ducts, metallic conduits, conduit coatings, concrete, masonry, lead, cable sheaths, cable jackets, insulation materials, and common metals.
M. Fixed Manhole Ladders: Arranged for attachment to wall of manhole. Ladder and mounting brackets and braces shall be fabricated from nonconductive, structural-grade, fiberglass-reinforced resin.
N. Portable Manhole Ladders: UL-listed, heavy-duty fiberglass specifically designed for portable use for access to electrical manholes. Minimum length equal to distance from deepest manhole floor to grade plus 36 inches. One (1) required.
O. Cover Hooks: Heavy duty, designed for lifts 60 lbf and greater. Two (2) required.

2.8 SOURCE QUALITY CONTROL

A. Test and inspect precast concrete utility structures according to ASTM C 1037.
B. Nonconcrete Handhole and Pull Box Prototype Test: Test prototypes of manholes and pull boxes for compliance with SCTE 77. Strength tests shall be for specified Tier ratings of products supplied.

1. Testing Agency: Owner will engage a qualified testing agency to evaluate nonconcrete handholes and pull boxes.
2. Testing machine pressure gages shall have current calibration certification complying with ISO 9000 and ISO 10012, and traceable to NIST standards.

Part 3 - EXECUTION

3.1 PREPARATION

A. Coordinate layout and installation of ducts, manholes, handholes, and boxes with final arrangement of other utilities, site grading, and surface features as determined in the field. Notify Architect if there is a conflict between areas of excavation and existing structures or archaeological sites to remain.
B. Coordinate elevations of ducts and duct-bank entrances into manholes, handholes, and boxes with final locations and profiles of ducts and duct banks, as determined by coordination with other utilities, underground obstructions, and surface features. Revise locations and elevations as required to suit field conditions and to ensure that duct runs drain to manholes and handholes, and as approved by Architect.
C. Clear and grub vegetation to be removed, and protect vegetation to remain according to Section 311000 "Site Clearing." Remove and stockpile topsoil for reapplication according to Section 311000 "Site Clearing."

3.2 CORROSION PROTECTION

A. Aluminum shall not be installed in contact with earth or concrete.

3.3 UNDERGROUND DUCT APPLICATION

A. Ducts for Electrical Cables over 600 V: RNC, NEMA Type EPC-40-PVC, in concrete-encased duct bank unless otherwise indicated.
B. Ducts for Electrical Feeders 600 V and Less: RNC, NEMA Type EPC-40 PVC, in direct-buried duct bank unless otherwise indicated.
C. Ducts for Electrical Branch Circuits: RNC, NEMA Type EPC-40-PVC, in direct-buried duct bank unless otherwise indicated.
D. Underground Ducts for Telephone, Communications, or Data Circuits: RNC, NEMA Type EPC-40-PVC, in direct-buried duct bank unless otherwise indicated.
E. Underground Ducts Crossing Driveways, Roadways, and Railroads: RNC, NEMA Type EPC-40-PVC, encased in reinforced concrete.

3.4 UNDERGROUND ENCLOSURE APPLICATION

A. Handholes and Pull Boxes for 600 V and Less, Including Telephone, Communications, and Data Wiring:
   1. Units in Roadways and Other Deliberate Traffic Paths: Precast concrete. AASHTO HB 17, H-20 structural load rating.
   2. Units in Driveway, Parking Lot, and Off-Roadway Locations, Subject to Occasional, Nondeliberate Loading by Heavy Vehicles: Polymer concrete, SCTE 77, Tier 15 or Tier 22 structural load rating.
   3. Units in Sidewalk and Similar Applications with a Safety Factor for Nondeliberate Loading by Vehicles: structural load rating.

4. Units Subject to Light-Duty Pedestrian Traffic Only: Fiberglass-reinforced polyester resin, structurally tested according to SCTE 77 with 3000-lbf "Light-Duty" vertical loading.

B. Manholes: Precast concrete.
   1. Units Located in Roadways and Other Deliberate Traffic Paths by Heavy or Medium Vehicles: H-20 structural load rating according to AASHTO HB 17.
   2. Units Not Located in Deliberate Traffic Paths by Heavy or Medium Vehicles: H-10 load rating according to AASHTO HB 17.

3.5 EARTHWORK

A. Excavation and Backfill: Comply with Section 312000 "Earth Moving," but do not use heavy-duty, hydraulic-operated, compaction equipment.

B. Restore surface features at areas disturbed by excavation and reestablish original grades unless otherwise indicated. Replace removed sod immediately after backfilling is completed.

C. Restore areas disturbed by trenching, storing of dirt, cable laying, and other work. Restore vegetation and include necessary top soiling, fertilizing, liming, seeding, sodding, sprigging, and mulching. Cut and patch existing pavement in the path of underground ducts and utility structures.

3.6 DUCT INSTALLATION

A. Slope: Pitch ducts a minimum slope of 1:300 down toward manholes and handholes and away from buildings and equipment. Slope ducts from a high point in runs between two (2) manholes to drain in both directions.

B. Curves and Bends: Use 5-degree angle couplings for small changes in direction. Use manufactured long sweep bends with a minimum radius of 25 ft. both horizontally and vertically, at other locations unless otherwise indicated.

C. Joints: Use solvent-cemented joints in ducts and fittings and make watertight according to manufacturer's written instructions. Stagger couplings so those of adjacent ducts do not lie in same plane.

D. Duct Entrances to Manholes and Concrete and Polymer Concrete Handholes: Use end bells, spaced approximately 10 inches o.c. for 5-inch ducts, and vary proportionately for other duct sizes.
   1. Begin change from regular spacing to end-bell spacing 10 ft. from the end bell without reducing duct line slope and without forming a trap in the line.
   2. Direct-Buried Duct Banks: Install an expansion and deflection fitting in each conduit in the area of disturbed earth adjacent to manhole or handhole.
   3. Grout end bells into structure walls from both sides to provide watertight entrances.

E. Building Wall Penetrations: Make a transition from underground duct to rigid steel conduit at least 10 ft. outside the building wall without reducing duct line slope away from the building and without forming a trap in the line. Use fittings manufactured for duct-to-conduit transition. Install conduit penetrations of building walls as specified in Section 260500 "Common Work Results for Electrical."

F. Sealing: Provide temporary closure at terminations of ducts that have cables pulled. Seal spare ducts at terminations. Use sealing compound and plugs to withstand at least 15-psig hydrostatic pressure.

G. Pulling Cord: Install 100-lbf-test nylon cord in ducts, including spares.

H. Concrete-Encased Ducts: Support ducts on duct separators.
   1. Separator Installation: Space separators close enough to prevent sagging and deforming of ducts, with not less than five (5) spacers per 20 ft. of duct. Secure separators to earth and to ducts to prevent floating during concreting. Stagger separators approximately 6 inches between tiers. Tie entire assembly together using fabric straps; do not use tie wires or reinforcing steel that may form conductive or magnetic loops around ducts or duct groups.
   2. Concreting Sequence: Pour each run of envelope between manholes or other terminations in one continuous operation.
      a. Start at one end and finish at the other, allowing for expansion and contraction of ducts as their temperature changes during and after the pour. Use expansion fittings installed according to manufacturer's written recommendations, or use other specific measures to prevent expansion-contraction damage.
      b. If more than one (1) pour is necessary, terminate each pour in a vertical plane and install ¾-inch reinforcing rod dowels extending 18 inches into concrete on both sides of joint near corners of envelope.
   3. Pouring Concrete: Spade concrete carefully during pours to prevent voids under and between conduits and at exterior surface of envelope. Do not allow a heavy mass of concrete to fall directly onto ducts. Use a plank to direct concrete down sides of bank assembly to trench bottom. Allow concrete to flow to center of bank and rise up in middle, uniformly filling all open spaces. Do not use power-driven agitating equipment unless specifically designed for duct-bank application.
   4. Reinforcement: Reinforce concrete-encased duct banks where they cross disturbed earth and where indicated. Arrange reinforcing rods and ties without forming conductive or magnetic loops around ducts or duct groups.
   5. Forms: Use walls of trench to form side walls of duct bank where soil is self-supporting and concrete envelope can be poured without soil inclusions; otherwise, use forms.
   6. Minimum Space between Ducts: 3 inches between ducts and exterior envelope wall, 2 inches between ducts for like services, and 4 inches between power and signal ducts.
   7. Depth: Install top of duct bank at least 24 inches below finished grade in areas not subject to deliberate traffic, and at least 30 inches below finished grade in deliberate traffic paths for vehicles unless otherwise indicated.
   8. Stub-Ups: Use manufactured duct elbows for stub-ups at poles and equipment and at building entrances through the floor unless otherwise indicated. Extend concrete encasement throughout the length of the elbow.
   9. Stub-Ups: Use manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances through the floor.
      a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches of concrete.
      b. Stub-Ups to Equipment: For equipment mounted on outdoor concrete bases, extend steel conduit horizontally a minimum of 60 inches from edge of base. Install insulated grounding bushings on terminations at equipment.
   10. Warning Tape: Bury warning tape approximately 12 inches above all concrete-encased ducts and duct banks. Align tape parallel to and within 3 inches of the centerline of duct bank. Provide an additional warning tape for each 12-inch increment of duct bank width over a nominal 18 inches. Space additional tapes 12 inches apart, horizontally.

I. Direct-Buried Duct Banks:

1. Support ducts on duct separators coordinated with duct size, duct spacing, and outdoor temperature.
2. Space separators close enough to prevent sagging and deforming of ducts, with not less than five (5) spacers per 20 ft. of duct. Secure separators to earth and to ducts to prevent displacement during backfill and yet permit linear duct movement due to expansion and contraction as temperature changes. Stagger spacers approximately 6 inches between tiers.
3. Excavate trench bottom to provide firm and uniform support for duct bank. Prepare trench bottoms as specified in Section 312000 "Earth Moving" for pipes less than 6 inches in nominal diameter.
4. Install backfill as specified in Section 312000 "Earth Moving."
5. After installing first tier of ducts, backfill and compact. Start at tie-in point and work toward end of duct run, leaving ducts at end of run free to move with expansion and contraction as temperature changes during this process. Repeat procedure after placing each tier. After placing last tier, hand-place backfill to 4 inches over ducts and hand tamp. Firmly tamp backfill around ducts to provide maximum supporting strength. Use hand tamper only. After placing controlled backfill over final tier, make final duct connections at end of run and complete backfilling with normal compaction as specified in Section 312000 "Earth Moving."
6. Install ducts with a minimum of 3 inches between ducts for like services and 6 inches between power and signal ducts.
7. Depth: Install top of duct bank at least 36 inches below finished grade unless otherwise indicated.
8. Set elevation of bottom of duct bank below the frost line.
9. Install manufactured duct elbows for stub-ups at poles and equipment and at building entrances through the floor unless otherwise indicated. Encase elbows for stub-up ducts throughout the length of the elbow.
10. Install manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances through the floor.
    a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches of concrete.
    b. For equipment mounted on outdoor concrete bases, extend steel conduit horizontally a minimum of 60 inches from edge of equipment pad or foundation. Install insulated grounding bushings on terminations at equipment.
11. Warning Planks: Bury warning planks approximately 12 inches above direct-buried ducts and duct banks, placing them 24 inches o.c. Align planks along the width and along the centerline of duct bank. Provide an additional plank for each 12-inch increment of duct bank width over a nominal 18 inches. Space additional planks 12 inches apart, horizontally.

3.7 INSTALLATION OF CONCRETE MANHOLES, HANDHOLES, AND PULL BOXES

A. Cast-in-Place Manhole Installation:
1. Finish interior surfaces with a smooth-troweled finish.
2. Windows for Future Duct Connections: Form and pour concrete knockout panels 1½- to 2- inches-thick, arranged as indicated.
3. Cast-in-place concrete, formwork, and reinforcement are specified in Section 033000 "Cast-in-Place Concrete."

B. Precast Concrete Handhole and Manhole Installation:
   1. Comply with ASTM C 891 unless otherwise indicated.
   2. Install units level and plumb and with orientation and depth coordinated with connecting ducts to minimize bends and deflections required for proper entrances.
   3. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1-inch sieve to No. 4 sieve and compacted to same density as adjacent undisturbed earth.
C. Elevations:
   1. Manhole Roof: Install with rooftop at least 15 inches below finished grade.
   2. Manhole Frame: In paved areas and trafficways, set frames flush with finished grade. Set other manhole frames 1 inch above finished grade.
   3. Install handholes with bottom below the frost line, below grade.
   4. Handhole Covers: In paved areas and trafficways, set surface flush with finished grade. Set covers of other handholes 1 inch above finished grade.
   5. Where indicated, cast handhole cover frame integrally with handhole structure.
D. Drainage: Install drains in bottom of manholes where indicated. Coordinate with drainage provisions indicated.
E. Manhole Access: Circular opening in manhole roof; sized to match cover size.
   1. Manholes with Fixed Ladders: Offset access opening from manhole centerlines to align with ladder.
   2. Install chimney, constructed of precast concrete collars and rings to support frame and cover and to connect cover with manhole roof opening. Provide moisture-tight masonry joints and waterproof grouting for cast-iron frame to chimney.
F. Waterproofing: Apply waterproofing to exterior surfaces of manholes and handholes after concrete has cured at least three (3) days. Waterproofing materials and installation are specified in Division 07. After ducts have been connected and grouted, and before backfilling, waterproof joints and connections and touch up abrasions and scars. Waterproof exterior of manhole chimneys after mortar has cured at least three (3) days.
G. Hardware: Install removable hardware, including pulling eyes, cable stanchions, cable arms, and insulators, as required for installation and support of cables and conductors and as indicated.
H. Fixed Manhole Ladders: Arrange to provide for safe entry with maximum clearance from cables and other items in manholes.
I. Field-Installed Bolting Anchors in Manholes and Concrete Handholes: Do not drill deeper than 3-7/8 inches for manholes and 2 inches for handholes, for anchor bolts installed in the field. Use a minimum of two (2) anchors for each cable stanchion.
J. Warning Sign: Install "Confined Space Hazard" warning sign on the inside surface of each manhole cover.

3.8 INSTALLATION OF HANDHOLES AND PULL BOXES OTHER THAN PRECAST CONCRETE

A. Install handholes and pull boxes level and plumb and with orientation and depth coordinated with connecting ducts to minimize bends and deflections required for proper entrances. Use pull box extension if required to match depths of ducts, and seal joint between box and extension as recommended by the manufacturer.
B. Unless otherwise indicated, support units on a level 6-inch-thick bed of crushed stone or gravel, graded from ½-inch sieve to No. 4 sieve and compacted to same density as adjacent undisturbed earth.

C. Elevation: Set so cover surface will be flush with finished grade.
D. Install handholes and pull boxes with bottom below the frost line, below grade.
E. Install removable hardware, including pulling eyes, cable stanchions, cable arms, and insulators, as required for installation and support of cables and conductors and as indicated. Retain arm lengths to be long enough to provide spare space for future cables, but short enough to preserve adequate working clearances in the enclosure.
F. Field-cut openings for ducts and conduits according to enclosure manufacturer's written instructions. Cut wall of enclosure with a tool designed for material to be cut. Size holes for terminating fittings to be used, and seal around penetrations after fittings are installed.
G. For enclosures installed in asphalt paving and subject to occasional, nondeliberate, heavy-vehicle loading, form and pour a concrete ring encircling, and in contact with, enclosure and with top surface screeded to top of box cover frame. Bottom of ring shall rest on compacted earth.
   1. Concrete: 3000 psi, twenty-eight (28) day strength, complying with Section 033000 "Cast-in-Place Concrete," with a troweled finish.
   2. Dimensions: 10 inches wide by 12 inches deep.

3.9 GROUNDING
A. Ground underground ducts and utility structures according to Section 260526 "Grounding and Bonding for Electrical Systems."

3.10 FIELD QUALITY CONTROL
A. Perform the following tests and inspections:
   1. Demonstrate capability and compliance with requirements on completion of installation of underground ducts and utility structures.
   2. Pull aluminum or wood test mandrel through duct to prove joint integrity and test for out-of-round duct. Provide mandrel equal to eighty percent (80%) fill of duct. If obstructions are indicated, remove obstructions and retest.
   3. Test manhole and handhole grounding to ensure electrical continuity of grounding and bonding connections. Measure and report ground resistance as specified in Division 26 Section "Grounding and Bonding for Electrical Systems."
B. Correct deficiencies and retest as specified above to demonstrate compliance.
C. Prepare test and inspection reports.

3.11 CLEANING
A. Pull leather-washer-type duct cleaner, with graduated washer sizes, through full length of ducts. Follow with rubber duct swab for final cleaning and to assist in spreading lubricant throughout ducts.
B. Clean internal surfaces of manholes, including sump. Remove foreign material.

END OF SECTION 26 05 43

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SECTION 26 05 53 IDENTIFICATION FOR ELECTRICAL SYSTEMS

Part 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Identification for raceways.
   2. Identification of power and control cables.
   3. Identification for conductors.
   4. Underground-line warning tape.
   5. Warning labels and signs.
   6. Instruction signs.
   7. Equipment identification labels.
   8. Miscellaneous identification products.

1.3 SUBMITTALS

A. Product Data: For each electrical identification product indicated.
B. Samples: For each type of label and sign to illustrate size, colors, lettering style, mounting provisions, and graphic features of identification products.
C. Identification Schedule: An index of nomenclature of electrical equipment and system components used in identification signs and labels.

1.4 QUALITY ASSURANCE

A. Comply with ANSI A13.1 and IEEE C2.
B. Comply with NFPA 70.
C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.
D. Comply with ANSI Z535.4 for safety signs and labels.
E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

1.5 COORDINATION

A. Coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual; and with those required by codes, standards, and 29 CFR 1910.145. Use consistent designations throughout Project.
B. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
C. Coordinate installation of identifying devices with location of access panels and doors.
D. Install identifying devices before installing acoustical ceilings and similar concealment.

Part 2 - PRODUCTS

2.1 POWER RACEWAY IDENTIFICATION MATERIALS

A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway size.

B. Colors for Raceways Carrying Circuits at 600 V or Less:
   1. Black letters on an orange field.
   2. Legend: Indicate voltage and system or service type.

C. Colors for Raceways Carrying Circuits at More Than 600 V:
   1. Black letters on an orange field.
   2. Legend: "DANGER CONCEALED HIGH VOLTAGE WIRING" with 3-inch-high letters on 20-inch centers.

D. Self-Adhesive Vinyl Labels for Raceways Carrying Circuits at 600 V or Less: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.

E. Snap-Around Labels for Raceways Carrying Circuits at 600 V or Less: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.

F. Snap-Around, Color-Coding Bands for Raceways Carrying Circuits at 600 V or Less: Slit, pretensioned, flexible, solid-colored acrylic sleeve, 2 inches long, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.

G. Tape and Stencil for Raceways Carrying Circuits More Than 600 V: 4-inch-wide black stripes on 10-inch centers diagonally over orange background that extends full length of raceway or duct and is 12 inches wide. Stop stripes at legends.

H. Metal Tags: Brass or aluminum, 2 by 2 by 0.05 inch, with stamped legend, punched for use with self-locking cable tie fastener.

I. Write-On Tags: Polyester tag, 0.015 inch thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.
   1. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

2.2 POWER AND CONTROL CABLE IDENTIFICATION MATERIALS

A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.

B. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.

C. Metal Tags: Brass or aluminum, 2 by 2 by 0.05 inch, with stamped legend, punched for use with self-locking cable tie fastener.

D. Write-On Tags: Polyester tag, 0.015 inch thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.
   1. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

E. Snap-Around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.

F. Snap-Around, Color-Coding Bands: Slit, pretensioned, flexible, solid-colored acrylic sleeve, 2 inches long, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.

2.3 CONDUCTOR IDENTIFICATION MATERIALS

A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils thick by 1 to 2 inches wide.

B. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.

C. Snap-Around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.

D. Snap-Around, Color-Coding Bands: Slit, pretensioned, flexible, solid-colored acrylic sleeve, 2 inches long, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.

E. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.

F. Write-On Tags: Polyester tag, 0.015 inch thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.

1. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

2.4 UNDERGROUND-LINE WARNING TAPE

A. Tape:

1. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical and communications utility lines.
2. Printing on tape shall be permanent and shall not be damaged by burial operations.
3. Tape material and ink shall be chemically inert, and not subject to degrading when exposed to acids, alkalis, and other destructive substances commonly found in soils.

B. Color and Printing:

1. Comply with ANSI Z535.1 through ANSI Z535.5.
2. Inscriptions for Red-Colored Tapes: ELECTRIC LINE, HIGH VOLTAGE.
3. Inscriptions for Orange-Colored Tapes: TELEPHONE CABLE, CATV CABLE, COMMUNICATIONS CABLE, OPTICAL FIBER CABLE.

C. Tag: Type ID:

1. Detectable three-layer laminate, consisting of a printed pigmented polyolefin film, a solid aluminum-foil core, and a clear protective film that allows inspection of the continuity of the conductive core, bright-colored, continuous-printed on one side with the inscription of the utility, compounded for direct-burial service.
2. Overall Thickness: 5 mils.
3. Foil Core Thickness: 0.35 mil.
4. Weight: 28 lb/1000 sq. ft.
5. 3-Inch Tensile According to ASTM D 882: 70 lbf, and 4600 psi.

2.5 WARNING LABELS AND SIGNS

A. Comply with NFPA 70 and 29 CFR 1910.145.

B. Self-Adhesive Warning Labels: Factory-printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment unless otherwise indicated.
C. Baked-Enamel Warning Signs:
   1. Preprinted aluminum signs, punched or drilled for fasteners, with colors, legend, and size required for application.
   2. ¼-inch grommets in corners for mounting.
   3. Nominal size, 7 by 10 inches.
D. Metal-Backed, Butyrate Warning Signs:
   1. Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch galvanized-steel backing; and with colors, legend, and size required for application.
   2. ¼-inch grommets in corners for mounting.
   3. Nominal size, 10 by 14 inches.
E. Warning label and sign shall include, but are not limited to, the following legends:
   1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
   2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES."

2.6 INSTRUCTION SIGNS
A. Engraved, laminated acrylic or melamine plastic, minimum 1/16 inch thick for signs up to 20 sq. inches and 1/8 inch thick for larger sizes.
   1. Engraved legend with black letters on white face.
   2. Punched or drilled for mechanical fasteners.
   3. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.
B. Adhesive Film Label: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch.
C. Adhesive Film Label with Clear Protective Overlay: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch. Overlay shall provide a weatherproof and UV-resistant seal for label.

2.7 EQUIPMENT IDENTIFICATION LABELS
A. Adhesive Film Label: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch.
B. Adhesive Film Label with Clear Protective Overlay: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch. Overlay shall provide a weatherproof and UV-resistant seal for label.
C. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed, with white letters on a dark-gray background. Minimum letter height shall be 3/8 inch.
D. Engraved, Laminated Acrylic or Melamine Label: Punched or drilled for screw mounting. White letters on a dark-gray background. Minimum letter height shall be 3/8 inch.
E. Stenciled Legend: In nonfading, waterproof, black ink or paint. Minimum letter height shall be 1 inch.

2.8 CABLE TIES

A. General-Purpose Cable Ties: Fungus inert, self extinguishing, one piece, self locking, Type 6/6 nylon.
   1. Minimum Width: 3/16 inch.
   2. Tensile Strength at 73 deg F (23 deg C), According to ASTM D 638: 12,000 psi.
   3. Temperature Range: Minus 40 to plus 185 deg F (Minus 40 to plus 85 deg C).
   4. Color: Black except where used for color-coding.

B. UV-Stabilized Cable Ties: Fungus inert, designed for continuous exposure to exterior sunlight, self extinguishing, one piece, self locking, Type 6/6 nylon.
   1. Minimum Width: 3/16 inch.
   2. Tensile Strength at 73 deg F (23 deg C), According to ASTM D 638: 12,000 psi.
   3. Temperature Range: Minus 40 to plus 185 deg F (Minus 40 to plus 85 deg C).
   4. Color: Black.

C. Plenum-Rated Cable Ties: Self extinguishing, UV stabilized, one piece, self locking.
   1. Minimum Width: 3/16 inch.
   2. Tensile Strength at 73 deg F (23 deg C), According to ASTM D 638: 7000 psi.
   3. UL 94 Flame Rating: 94V-0.
   4. Temperature Range: Minus 50 to plus 284 deg F (Minus 46 to plus 140 deg C).
   5. Color: Black.

2.9 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

Part 3 - EXECUTION

3.1 INSTALLATION

A. Verify identity of each item before installing identification products.

B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.

C. Apply identification devices to surfaces that require finish after completing finish work.

D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.

E. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.

F. System Identification Color-Coding Bands for Raceways and Cables: Each color-coding band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in contact, side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.

G. Aluminum Wraparound Marker Labels and Metal Tags: Secure tight to surface of conductor or cable at a location with high visibility and accessibility.

H. Cable Ties: For attaching tags. Use general-purpose type, except as listed below:
   1. Outdoors: UV-stabilized nylon.
   2. In Spaces Handling Environmental Air: Plenum rated.

I. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 6 to 8 inches below finished grade.

Use multiple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 16 inches overall.

3.2 IDENTIFICATION SCHEDULE

A. Concealed Raceways, Duct Banks, More Than 600 V, within Buildings: Tape and stencil 4-inch-wide black stripes on 10-inch centers over orange background that extends full length of raceway or duct and is 12 inches wide. Stencil legend "DANGER CONCEALED HIGH VOLTAGE WIRING" with 3-inch-high black letters on 20-inch centers. Stop stripes at legends. Apply to the following finished surfaces:
   1. Floor surface directly above conduits running beneath and within 12 inches of a floor that is in contact with earth or is framed above unexcavated space.
   2. Wall surfaces directly external to raceways concealed within wall.
   3. Accessible surfaces of concrete envelope around raceways in vertical shafts, exposed in the building, or concealed above suspended ceilings.

B. Accessible Raceways, Armored and Metal-Clad Cables, More Than 600 V: Self-adhesive vinyl labels. Install labels at 30-foot maximum intervals.

C. Accessible Raceways and Metal-Clad Cables, 600 V or Less, for Service, Feeder, and Branch Circuits More Than 30 A, and 120 V to ground: Identify with self-adhesive vinyl label. Install labels at 30-foot maximum intervals.

D. Accessible Raceways and Cables within Buildings: Identify the covers of each junction and pull box of the following systems with self-adhesive vinyl labels with the wiring system legend and system voltage. System legends shall be as follows:
   1. Emergency Power.
   2. Power.
   3. UPS.

E. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.
   1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for ungrounded service, feeder, and branch-circuit conductors.
      a. Color shall be factory applied or field applied for sizes larger than No. 8 AWG, if authorities having jurisdiction permit.
      b. Colors for 208/120-V Circuits:
         1) Phase A: Black.
         2) Phase B: Red.
         3) Phase C: Blue.
      c. Colors for 480/277-V Circuits:
         1) Phase A: Brown.
         2) Phase B: Orange.
         3) Phase C: Yellow.
      d. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches from terminal points and in boxes where splices or taps are made. Apply last two (2) turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.

F. Power-Circuit Conductor Identification, More than 600 V: For conductors in vaults, pull and junction boxes, manholes, and handholes, use write-on tags, nonmetallic plastic tag holder with adhesive-backed phase tags, and a separate tag with the circuit designation.

G. Install instructional sign including the color-code for grounded and ungrounded conductors using adhesive-film-type labels.
H. Conductors to Be Extended in the Future: Attach marker tape to conductors and list source.
I. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.
   1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.
   2. Use system of marker tape designations that is uniform and consistent with system used by manufacturer for factory-installed connections.
   3. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual.
J. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring and optical fiber cable.
   1. Limit use of underground-line warning tape to direct-buried cables.
   2. Install underground-line warning tape for both direct-buried cables and cables in raceway.
K. Workspace Indication: Install floor marking tape to show working clearances in the direction of access to live parts. Workspace shall be as required by NFPA 70 and 29 CFR 1926.403 unless otherwise indicated. Do not install at flush-mounted panelboards and similar equipment in finished spaces.
L. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Self-adhesive warning labels.
   1. Comply with 29 CFR 1910.145.
   2. Identify system voltage with black letters on an orange background.
   3. Apply to exterior of door, cover, or other access.
   4. For equipment with multiple power or control sources, apply to door or cover of equipment including, but not limited to, the following:
      a. Power transfer switches.
      b. Controls with external control power connections.
M. Operating Instruction Signs: Install instruction signs to facilitate proper operation and maintenance of electrical systems and items to which they connect. Install instruction signs with approved legend where instructions are needed for system or equipment operation.
N. Emergency Operating Instruction Signs: Install instruction signs with white legend on a red background with minimum 3/8-inch-high letters for emergency instructions at equipment used for power transfer and load shedding.
O. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.
   1. Labeling Instructions:
      a. Indoor Equipment: Adhesive film label. Unless otherwise indicated, provide a single line of text with ½-inch-high letters on 1½-inch-high label; where two (2) lines of text are required, use labels 2 inches (high.
      b. Outdoor Equipment: Engraved, laminated acrylic or melamine label. Stenciled legend 4 inches high.

c. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.
d. Unless provided with self-adhesive means of attachment, fasten labels with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.

2. Equipment to Be Labeled:
   a. Panelboards: Typewritten directory of circuits in the location provided by panelboard manufacturer. Panelboard identification shall be self-adhesive and engraved laminated acrylic or melamine label.
   b. Enclosures and electrical cabinets.
   c. Access doors and panels for concealed electrical items.
   d. Switchgear.
   e. Switchboards.
   f. Transformers: Label that includes tag designation shown on Drawings for the transformer, feeder, and panelboards or equipment supplied by the secondary.
   g. Substations.
   h. Emergency system boxes and enclosures.
   i. Motor-control centers.
   j. Enclosed switches.
   k. Enclosed circuit breakers.
   l. Enclosed controllers.
   m. Variable-speed controllers.
   n. Push-button stations.
   o. Power transfer equipment.
   p. Contactors.
   q. Remote-controlled switches, dimmer modules, and control devices.
   r. Battery-inverter units.
   s. Battery racks.
   t. Power-generating units.
   u. Monitoring and control equipment.
   v. UPS equipment.

END OF SECTION 26 05 53

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Pole / Fixture Summary

Pole ID	Pole Height	Fixture Qty	Lamp Type	Group
A1	70'	5	1500W MZ	A
A2	70'	5	1500W MZ	B
B1	80'	8	1500W MZ	B
B2	80'	10	1500W MZ	B
C1	70'	5	1500W MZ	B
C2	70'	4	1500W MZ	A
D1	70'	7	1500W MZ	B
D2	70'	4	1500W MZ	B
8		***48***		

Calculation Grid Summary

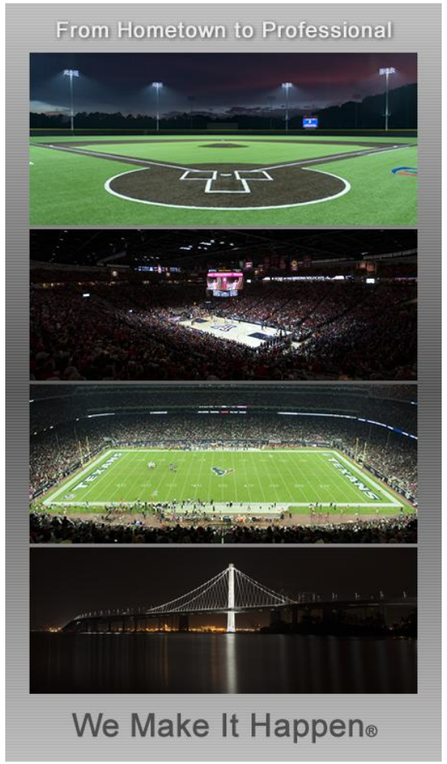
Grid Name	Calculation Metric	Light Level				Uniformity		Groups	Fixture Qty
		Type	Ave	Min	Max	Max/Min	Ave/Min		
Baseball (Infield)	Horizontal Illuminance	Constant	50.2	37	60	1.64	1.37	A,B	48
Baseball (Outfield)	Horizontal Illuminance	Constant	36.9	24	47	1.95	1.53	A,B	48
Soccer	Horizontal Illuminance	Constant	32.2	25	45	1.81	1.30	B	39
Zero Grid	Horizontal	Constant	0.30	0	15	161423.10	3697.26	A,B	48

Group Summary

Group	Description	Load	Fixture Qty
A	Baseball	14.08 kW	9
B	Baseball/Soccer	61.0 kW	39

MY PROJECT

Name: **Hamden High School Baseball Field**
Location: Hamden,CT



ENGINEERED DESIGN

By: **Jared Brown**
File # / Date: 175703F 27-Apr-16

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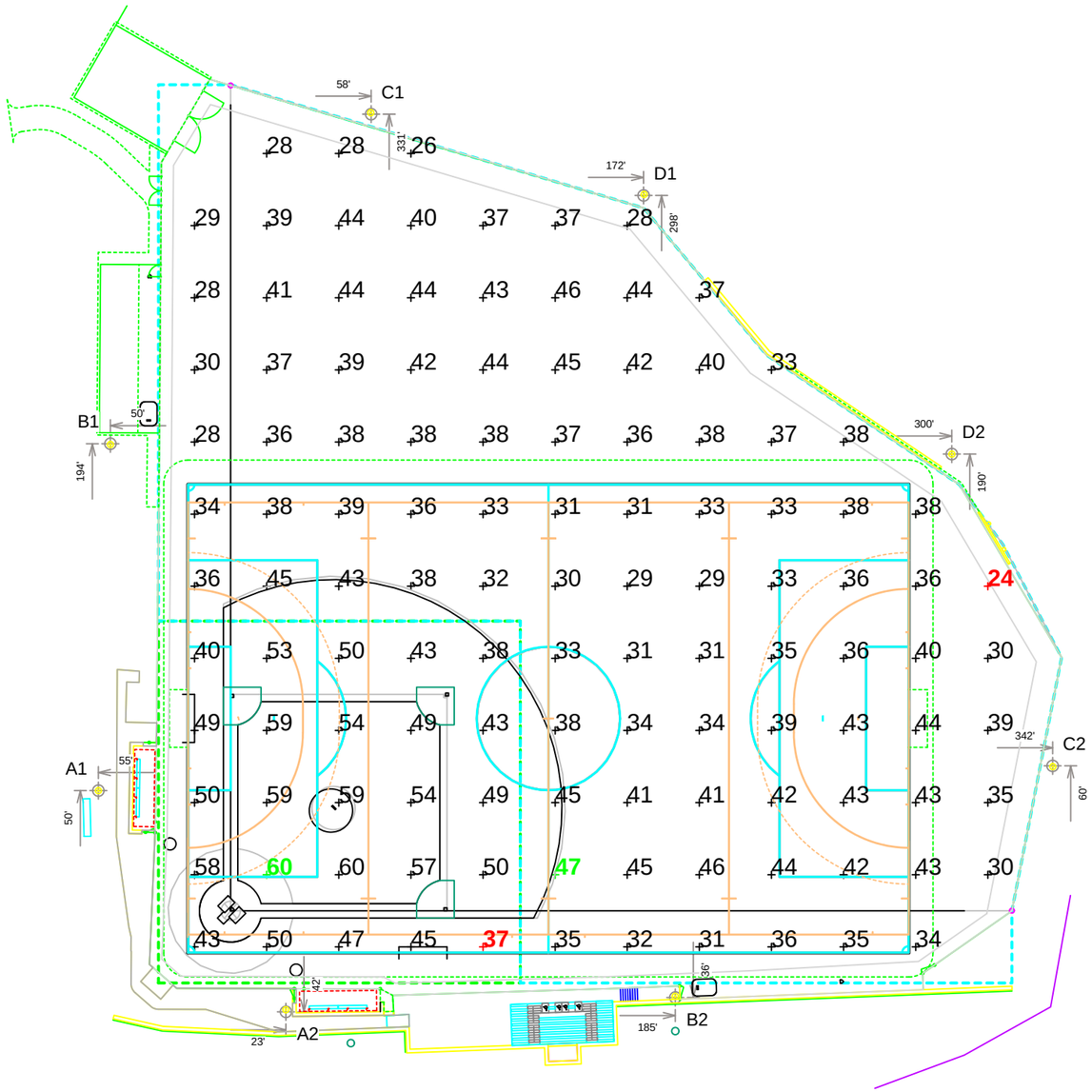
EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	-	70'	1500W MZ	5	5	0
1	B1	80'	-	80'	1500W MZ	8	8	0
1	B2	80'	-	80'	1500W MZ	10	10	0
1	C1	70'	-1'	69'	1500W MZ	5	5	0
2	C2, D2	70'	-1'	69'	1500W MZ	4	4	0
1	D1	70'	-1'	69'	1500W MZ	7	7	0
8	TOTALS					48	48	0



SCALE IN FEET 1 : 60

0' 60' 120'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

MY PROJECT

Name: **Hamden High School Baseball Field**
Location: Hamden,CT

GRID SUMMARY

Name: **Baseball**
Size: Irregular 344' / 322' / 325'
Spacing: 30.0' x 30.0'
Height: 3.0' above grade

CONSTANT ILLUMINATION

SUMMARY	HORIZONTAL FOOTCANDLES	
	Infield	Outfield
Guaranteed Average:	**50**	**30**
Scan Average:	50.2	36.9
Maximum:	60	47
Minimum:	37	24
Avg / Min:	1.37	1.53
Guaranteed Max / Min:	**2**	**2.5**
Max / Min:	1.64	1.95
UG (adjacent pts):	1.36	1.59
CU:	0.66	
No. of Points:	25	94

LUMINAIRE INFORMATION	
Luminaire Type:	Green Generation
Design Usage Hours:	5,000 hours
Design Lumens:	134,000
Avg Lamp Tilt Factor:	1.000
No. of Luminaires:	48
Avg KW:	75.07 (81.6 max)

Guaranteed Performance: The Guaranteed Average CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA RP-6-15 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

ENGINEERED DESIGN

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File # / Date: 175703F 27-Apr-16

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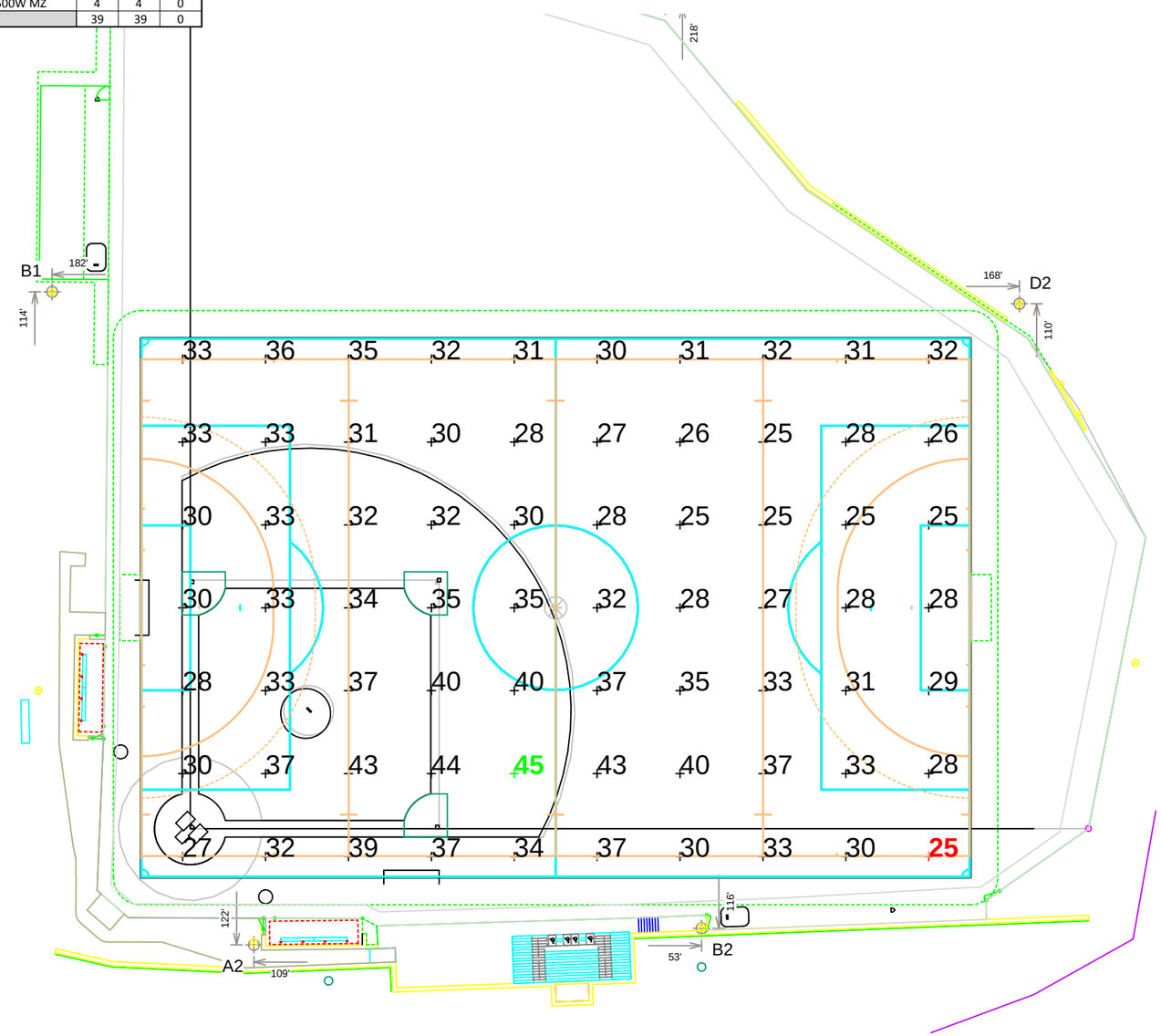
ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A2	70'	-	70'	1500W MZ	5	5	0
1	B1	80'	-	80'	1500W MZ	8	8	0
1	B2	80'	-	80'	1500W MZ	10	10	0
1	C1	70'	-1'	69'	1500W MZ	5	5	0
1	D1	70'	-1'	69'	1500W MZ	7	7	0
1	D2	70'	-1'	69'	1500W MZ	4	4	0
6	TOTALS					39	39	0



MY PROJECT

Name: **Hamden High School Baseball Field**
Location: Hamden,CT

GRID SUMMARY

Name: **Soccer**
Size: 300' x 195'
Spacing: 30.0' x 30.0'
Height: 3.0' above grade

CONSTANT ILLUMINATION

SUMMARY	HORIZONTAL FOOTCANDLES
	Entire Grid
Guaranteed Average:	**30**
Scan Average:	32.2
Maximum:	45
Minimum:	25
Avg / Min:	1.30
Guaranteed Max / Min:	**2**
Max / Min:	1.81
UG (adjacent pts):	1.32
CU:	0.39
No. of Points:	70
LUMINAIRE INFORMATION	
Luminaire Type:	Green Generation
Design Usage Hours:	5,000 hours
Design Lumens:	134,000
Avg Lamp Tilt Factor:	1.000
No. of Luminaires:	39
Avg KW:	61.0 (66.3 max)

Guaranteed Performance: The Guaranteed Average CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA RP-6-15 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "**Musco Control System Summary**" for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 50
0' 50' 100'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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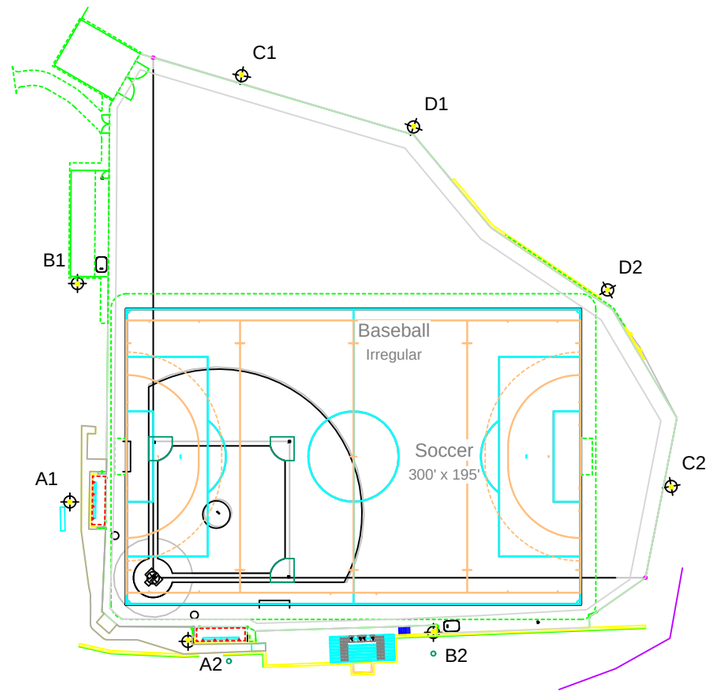
ILLUMINATION SUMMARY



MY PROJECT

Name: **Hamden High School Baseball Field**
Location: Hamden,CT

EQUIPMENT LAYOUT

INCLUDES:
· Baseball
· Soccer

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE
2	A1-A2	70'	-	70'	1500W MZ	5
1	B1	80'	-	80'	1500W MZ	8
1	B2	80'	-	80'	1500W MZ	10
1	C1	70'	-1'	69'	1500W MZ	5
2	C2, D2	70'	-1'	69'	1500W MZ	4
1	D1	70'	-1'	69'	1500W MZ	7
8	TOTALS					48

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)						
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
1500 watt MZ	8.6	8.3	7.5	6.5	5.1	4.7	3.7

SCALE IN FEET 1 : 100
0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN

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EQUIPMENT LAYOUT

SECTION 27 51 16 PUBLIC ADDRESS SYSTEM

Part 1 - GENERAL

1.1 SUMMARY

A. Work Included: design, engineering, labor, material and products, equipment warranty and system warranty, training and services for:
   1. Outdoor Public Address (PA) System

B. Related sections include the following:
   1. NA

1.2 SUBMITTALS

A. Provide Shop Drawings: Contractor shall provide manufacturer's shop drawings detailing specific product and conforming mounting system.

1.3 QUALITY ASSURANCE

A. All materials and construction methods shall conform to Form 816 - State of Connecticut Department of Transportation "Standard Specification for Road, Bridges, and Incidental Construction", 2004 edition including supplements, unless otherwise specified herein.

Part 2 - PRODUCTS

2.1 PUBLIC ADDRESS SYSTEM

A. The public address system shall include:
   1. Qty: 4 – COMMUNITY R.5-94z – Community Speaker 2-Way Horn, weather resistant full-range loud speaker.
   2. Qty: 1 – WEST PENN C210-2000 – West Penn 10GA twisted speaker cable, 2000 lf, 400’ per speaker – Approved for direct burial and outdoor use. Spool.
   3. Qty: 1 – QSC CXD 4.5 – QSC professional power amplifier
   4. Qty: 1 – BIAMP RED-1F – Biamp remote Ethernet device flush mount
   5. Qty: 1 – BIAMP NEXIA CS – Biamp digital signal processor. All wiring to Biamp Nexia shall be professionally prepared with shrink tube and labeling on a phoenix 3 pole connector (utilizing strain relief wire tie system).
   6. Qty: 1 – 8 PORT NETGEAR GIGABIT POE SWITCH – installer must provide panel mounted Ethernet “service” port in rack
   7. Qty: 1 – MIDDLE ATLANTIC PRODUCT DWR-16-17 – Wall mounted gear rack with vented front door.
   8. Qty: 1 – MIDDLE ATLANTIC PRODUCTS PD-920R – Rackmount, 9 outlet, 20A, basic surge
   9. Qty: 2 – SHURE SM58 – Sure cardioid dynamic microphone with on/off switch with table stands.
   10. QTY: 2 – CBI or LIVE WIRE microphone cables – 20’ length, suitable for use outdoors.
   11. QTY: AS REQUIRED – BELDIN 9451 – For all device to device cabling utilize Beldin 9451 flexible shielded installation cable using only neutrick solder on connectors.
   12. Provide appropriate mounting brackets for (4) speakers mounted to new athletic field lighting light poles. Coordinate design and installation with athletic lighting manufacuterer/installer.

B. Provided by:

DNR Laboratories
76 Westbury Park Road
Watertown, CT 06795
(203)-263-0003

Or Approved Equal.

Part 3 - EXECUTION

3.1 INSTALLATION - GENERAL

A. All work shall be constructed as shown on the plans and as recommended per the manufacturers' specifications

3.2 CLEANING

A. Clean up debris and unused material, and remove from the site.

END OF SECTION 27 51 16

1228-61-a2816-spec-13 275116 public address system

SECTION 31 10 00 SITE PREPARATION

Part 1 - GENERAL

1.1 SUMMARY

A. Work shall include all materials, labor, and equipment to prepare the site for construction including but not limited to the following:
   1. Protecting existing trees, plants, and grass to remain
   2. Mobilization
   3. Construction staking/survey
   4. Stripping and stockpiling topsoil
   5. Removing above- and below-grade site improvements
   6. Disconnecting and capping or sealing site utilities
   7. Construction fencing
   8. Temporary utility service
   9. Repair of damaged items to remain.
   10. Tree Protection

1.2 MATERIAL OWNERSHIP

A. Except for materials indicated to remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site in a legal manner.

1.3 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
   1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
   2. Existing access driveway to be maintained during construction. Alternate access drive to be provided during construction of primary access road.
   3. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.

B. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.

C. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.

D. Do not commence site clearing operations until temporary erosion and sedimentation control measures are in place.

Part 2 - PRODUCTS

Not used.

Part 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.
B. Locate and clearly flag trees and vegetation to remain or to be relocated.
C. Protect existing site improvements to remain from damage during construction.
   1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 CONSTRUCTION STAKING

A. Provide all necessary construction staking for the proper layout and satisfactory completion of all the work on the project.

3.3 TREE PROTECTION

A. Erect and maintain temporary fencing around tree protection zones before starting site clearing. Remove fence when construction is complete.
B. Do not excavate within tree protection zones, unless otherwise indicated.
C. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, in a manner approved by Engineer.

3.4 UTILITIES

A. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed.
   1. Arrange with utility companies to shut off indicated utilities.
B. 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 Engineer not less than two days in advance of proposed utility interruptions.
   2. Do not proceed with utility interruptions without Engineer's written permission.

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.
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.

3.6 SITE IMPROVEMENTS

A. Remove existing above- and below-grade improvements as indicated and as necessary to facilitate new construction.

3.7 EXISTING IRRIGATION SYSTEM

A. The Contractor shall coordinate with the Town prior to the removal of the existing irrigation system within the contract limits. Removal shall be done in such a manner that the existing irrigation system to remain in areas outside the limits of proposed improvements may remain fully functional throughout the duration of the project.

3.8 DISPOSAL

A. Disposal: Remove surplus soil material, topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

END OF SECTION 31 10 00

1228-61-a2816-spec-14 - 311000 - site preparation

SECTION 31 20 00 EARTH MOVING

Part 1 - GENERAL

1.1 SUMMARY

A. Work shall include all materials, labor and equipment to complete all earth moving operations including but not limited to the following::
   1. Preparing subgrade for base stone placement, walks, pavements, lawns and grasses
   2. Excavating and backfilling for structures
   3.
   4. Processed aggregate base for bituminous concrete pavements, pads, etc.
   5. Subbase for bituminous concrete pavement, curbing
   6. Excavating and backfilling for utility trenches and storm drainage structures

B. Related Sections
   1. Section 32 12 16 Asphalt Paving
   2. Section 32 13 13 Concrete Paving and Curbing
   3. Section 33 41 00 Storm Utility Drainage Piping

1.2 DEFINITIONS

A. Fill: General term for soil materials used to raise existing grades.

B. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
   1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect.
   2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.

C. Backfill: General term used for soil material used to fill an excavation.
   1. Initial Backfill: Backfill placed over excavated subgrade, 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.

D. Base Course: Course placed between the subbase course and hot-mix asphalt paving.

E. Bedding Course: Initial Backfill placed over the excavated subgrade in a trench before laying pipe.

F. Sand and Gravel: Fill placed over the excavated subgrade before placing crushed stone slab-on-grade base course.

G. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

H. Ordinary Fill: General fill and backfill placed outside the limits of Structural Fill, Sand and Gravel, and Crushed Stone.

I. Subbase Course: Course placed between the subgrade and base course for hot-mix asphalt pavement, or course placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.

J. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.

K. Proof-roll: The application of compactive energy to subgrade for the geotechnical engineer's evaluation of suitability of subgrade for bearing.

L. 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.
M. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.3 PROJECT CONDITIONS
A. Visit the site to review all details of the work and working conditions and to verify dimensions in the field including headroom and interferences from adjacent structures. Notify the Architect in writing of any discrepancy before performing any work.
B. Consult official records of existing utilities, both surface and subsurface, and their connection to be fully informed on all existing conditions and limitations as they apply to this work and its relation to other construction work.
C. 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.
D. Verify that survey benchmark and intended elevations for work are as indicated.

1.4 QUALITY ASSURANCE
A. Workmen: all workmen shall be thoroughly trained and experienced in the necessary crafts, and completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.
B. Form 816 - State of Connecticut Department of Transportation "Standard Specification for Road, Bridges, and Incidental Construction" 2004 edition with supplements shall be used for material compliance and execution of the work in this section.
C. Testing and Inspection: Owner shall employ and pay for a qualified independent laboratory to perform testing and inspection service required by these specifications and in compliance with the specifications outlined in the Form 816 - State of Connecticut Department of Transportation "Standard Specification for Road, Bridges, and Incidental Construction" 2004.
D. 2005 Connecticut State Building Code with amendments.

1.5 SUBMITTALS
A. Product data including but not limited to sieve test, abrasion, hardness, proctor, percentage of recycled content, source of material for all materials.

Part 2 - PRODUCTS

2.1 SOIL MATERIALS
A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations. Materials shall be free from ice, snow, roots, sod, rubbish or other deleterious or organic matter and shall conform to the gradations specified for each soil material.
B. Base Course: Course placed between the subbase and hot mix asphalt per CT DOT Form 816 M.05.01 modified as follows:
1. Under Section M.05, 2. Coarse Aggregate, delete the phrase "the coarse aggregate shall not have a loss of more than 50%" and substitute the phrase "the coarse aggregate shall not have a loss of more than 40%".

2. Maximum aggregate size shall not exceed 1-1/2 inches.

C. Aggregated Leveling Course: Course placed between the Base Course and geotextile fabric below polypropylene shock pad/drainage mat shall be Dynamic Stone – Top Course (See Section 33 46 23 – Synthetic Field Subsurface Drainage for specification) or Screenings per CT DOT Form 816 M.01.01.

D. Subbase Course: Course placed between the subgrade and base course per CT DOT Form 816 M.02.02 Grading "A" and section M.02.06.04 Soundness.

E. Ordinary Fill: General fill and backfill placed outside the limits of Structural Fill, Sand-Gravel, and Crushed Stone. Ordinary Fill shall be friable soil, free of rubbish, ice, snow, tree stumps, roots, and other organic matter; no stone greater than two thirds loose lift thickness.

F. Bedding Course: Course placed over the excavated subgrade in a trench before laying pipe. Bedding Course shall consist of Sand free of silt, clay, loam, and organic matter. Bedding material shall pass a 3/8" sieve, with not more than 10% passing a No. 200 sieve.

G. Crushed Stone:

Sieve Size	Percent Passing by Weight
1-inch	100
3/4-inch	90 - 100
1/2-inch	10 - 50
3/8-inch	0 - 20
No. 4	0 - 5

H. Sand and Gravel:

Sieve Size	Percent Passing by Weight
4"	100
No. 4	50 – 85
No. 10	40 – 75
No. 40	10 – 35
No. 200	0 – 8

I. Structural Fill:

Sieve Size	Percent Passing by Weight
2/3 of loose lift thickness (8" maximum)	100
No. 10	30 – 95
No. 40	10 – 70
No. 200	0 – 15

G. Dynamic Stone: See Section 33 46 23 – Synthetic Field Subsurface Drainage for specification.

2.2 ACCESSORIES

A. Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility.

Part 3 - EXECUTION

3.1 PREPARATION

A. Identify and flag structures, utilities, sidewalks, pavements, and other facilities and protect from damage caused by settlement, lateral movement, undermining, washout, and other

hazards created by earthwork operations. Maintain and protect existing utilities remaining which pass through work area.

B. Preparation of subgrade for earthwork operations including removal of vegetation, topsoil, debris, obstructions, and deleterious materials from ground surface.

C. Protect and maintain erosion and sedimentation controls.

3.2 EXCAVATION FOR SITE

A. Classified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered within a tolerance of plus or minus 1 inch. Classified excavated materials may include rock and obstructions. Classified surface and subsurface conditions when encountered, and as defined in Section 12000 Contract Considerations, Part 1.5, shall be measured and compensated as described therein.

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

B. Rock excavation shall be my mechanical means only.

3.3 EXCAVATION FOR STRUCTURES

A. Unclassified Excavation: Excavate to required elevations and dimensions regardless of the character of surface and subsurface conditions encountered within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.

3.4 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.5 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

B. 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.

3.6 SUBGRADE EVALUATION

A. Proof-roll subgrade with 10 passes of a vibratory drum roller weighing at least 10,000 pounds at the drum or other approved equipment to identify soft pockets and areas of excess yielding. Soft pockets and zones of yielding shall be excavated and proof-rolled again. Do not proof-roll wet or saturated subgrades.

B. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation or change in Contract Time.

C. Athletic field areas are to be constructed in areas currently paved for parking and in areas utilized during construction for construction access and material storage. These areas are

not considered suitable for athletic field construction until subgrade conditions are properly decompacted.

D. For subgrade areas beneath athletic fields designated to receive a layer of free draining material above the subgrade, the subgrade slopes are to match the proposed slopes for finish grade after decompaction operations are complete. The Contractor shall provide a survey by a licensed surveyor of as built subgrade elevations at 50' on center each way for approval by the Engineer prior to placement of free draining material. Preparation of subgrade operations is to be performed in conditions free of mud, frost, snow and ice.

E. Prior to the commencement of subgrade preparation, the Engineer shall be notified of any potential unsuitable soil conditions and a determination made as to the acceptable nature of the subgrade soils.

3.7 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, with 28-day compressive strength of 2500 psi, may be used when approved by Architect, without additional compensation or change in Contract Time.

B. Fill unauthorized excavations under other construction or utility pipe as directed by Architect, without additional compensation or change in Contract Time.

3.8 STORAGE OF SOIL MATERIALS AND PROTECTION OF SUBGRADE

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust and for protection from precipitation

B. Dewater to maintain water at least two feet below bottom of all excavations.

C. Protect all subgrade soils. Excavate disturbed subgrade and backfill in accordance with specifications at Contractor's expense.

D. Excavate soil and all other materials required to accommodate building foundations, slabs, paving and site structures, and construction operations.

E. Do not excavate to full depth when freezing temperatures may be expected unless subgrade is protected from freezing or footings or slabs can be placed immediately after excavation is completed and are protected from freezing.

F. Maintain safe and stable banks.

G. Excavate in a manner that will not disturb existing foundations. Plans for excavating near existing foundations shall be submitted to the Architect for approval prior to beginning such excavation.

H. Correct unauthorized excavations at no additional cost to the Owner or change in Contract Time.

I. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.9 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud, frost, snow, or ice.

B. 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.

C. Place and compact initial backfill of subbase material, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the utility pipe or conduit.
   1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.
D. Place and compact final backfill of satisfactory soil to final subgrade elevation.
E. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

3.10 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

3.11 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
   1. Do not place backfill or fill soil 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.

3.12 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials as indicated on the plans and as specified in Form 816. Compaction shall be performed in accordance with the following:

   Minimum compaction for fill and backfill, based on percentage of maximum dry density (as determined by ASTM D1557 or AASHTO T-180 (Modified Proctor)), is:

Below Structures	-	95%
Behind Retaining Walls	-	92%
Pavement Base/Subbase	-	95%
Below Pavement Subbase	-	95%
Areas of General Landscaping	-	90%

   Loose lift thickness for Fill and Backfill and the minimum number of passes of compaction equipment are summarized on the following table:

Compaction Method	Maximum Stone Size	Maximum Loose Lift Thickness		Minimum Number of Passes	
		Below Structures and Pavement	Less Critical Areas	Below Structures and Pavement	Less Critical Areas
Hand-operated vibratory plate or light roller in confined areas	4"	6"	8"	6	4

Hand-operated vibratory drum rollers weighing at least 1,000#	6"	8"	10"	6	4
Light vibratory drum roller, minimum dynamic force 3,000# per ft. of drum width	6"	10"	14"	6	4
Medium vibratory drum roller, minimum dynamic force 5,000# per ft. of drum width	8"	12"	18"	6	4
Large vibratory drum roller, minimum dynamic force 8,000# per ft. of drum width	10"	16"	24"	6	4

B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure. Uneven backfill outside foundation walls are permitted after slabs or suitable bracing are installed at the tops of the walls.

3.13 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding.

3.14 SUBBASE AND BASE COURSES

A. Place subbase and base course on subgrades free of mud, frost, snow, or ice.

B. On prepared subgrade, place subbase and base course under pavements and walks as follows:

1. Shape subbase and base course to required crown elevations and cross-slope grades.
2. Compact subbase and base course as specified in Form 816 Section 3.12.

3.15 DRAINAGE COURSE

A. Place free draining course on subgrades free of mud, frost, snow, or ice.

1. On prepared subgrade, place and compact drainage course under cast-in-place concrete slabs-on-grade as specified.

3.16 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent geotechnical engineer and/or testing agency to perform field quality-control testing.

B. Allow geotechnical engineer and/or 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: Footing subgrades shall be evaluated by the geotechnical engineer for suitability for foundation bearing.

D. When geotechnical engineer and/or testing agency reports show 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; re-compact and retest until specified compaction is obtained.

3.17 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 at no additional compensation or change in Contract Time.

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 greatest extent possible.

3.18 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.

END OF SECTION 31 20 00

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SECTION 31 22 00 SEDIMENTATION AND EROSION CONTROL MEASURES

Part 1 - GENERAL

1.1 SUMMARY

A. Work shall include the furnishing of all materials, labor and equipment to place and maintain erosion controls including but not limited to construction entrance pad, filter fence, erosion control blanket, sediment traps, diversion berms, inlet protection and/or hay bales to control surface water.

B. Compliance with permit requirements of the CT DEEP Stormwater general permit for Construction Activities.

1.2 RELATED WORK SPECIFIED IN OTHER SECTIONS

A. Section 31 20 00 – Site Preparation

1.3 QUALITY ASSURANCE

A. Codes and Standards: All materials and construction methods shall conform to Form 816 - State of Connecticut Department of Transportation "Standard Specification for Road, Bridges, and Incidental Construction" 2004 edition including supplements, unless otherwise specified herein and the "2002 Connecticut Guidelines for Soil Erosion and Sediment Control."

B. Workmen: all workmen shall be thoroughly trained and experienced in the necessary crafts, and completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

Part 2 - PRODUCTS

2.1 MATERIALS

A. Filter fabric fencing shall be a non-woven filter fabric having a weight of at least 2-1/2 ounces per square yard, a thickness of at least 17 mills, a co-efficient of not less than .0009 centimeters per second.

B. Hay bales shall be made of hay with forty pounds minimum weight and one hundred twenty pounds maximum weight. Wood stakes shall be a minimum of 1 inch by 1 inch normal size by a minimum of 3 feet long.

C. Broken stone for construction entrance shall be 1 inch to 2 inch broken stone.

Part 3 – EXECUTION

A. Filter fabric fencing and hay bales shall be placed by the Contractor in locations shown on the plans, in accordance with the details shown on the plans.

B. Maintain/ replace filter fabric fencing and hay bales as necessary and/ or as directed by the Owner.

C. Filter fabric fencing shall be installed by the Contractor in locations shown on the plans, in accordance with the details shown on the plans.

D. Contractor shall inspect erosion controls weekly and after storm events. Inspection reports shall be prepared and kept on-site.

END OF SECTION 31 22 00

1228-61-a2816-spec-16 - 312200 - se control measures

SECTION 32 13 13 – CONCRETE PAVING AND CURBING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

A. This Section includes exterior cement concrete pavement for the following:

1. All concrete curbing.

B. Related Section

1. Section 31 20 00 Earth Moving
2. Section 32 13 73 Concrete Paving Joint Sealants

1.3 SUBMITTALS

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

B. Design Mixtures: For each concrete pavement mixture.

C. Shop Drawings: For reinforcing steel and splicing materials.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products who complies with ASTM C 94/C 94M requirements for production facilities and equipment.

B. ACI Publications: Comply with ACI 301, "Specification for Structural Concrete," unless modified by requirements in the Contract Documents.

C. Form 816 - State of Connecticut Department of Transportation "Standard Specification for Road, Bridges, and Incidental Construction" 2004 edition shall be used for material compliance and execution of the work in this section.

D. Workmen: All workmen shall be thoroughly trained and experienced in the necessary crafts, and completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

E. Testing and Inspection: Contractor shall employ and pay for a qualified independent laboratory to perform testing and inspection service required by these specifications and in compliance

with the specifications outlined in the Form 816 - State of Connecticut Department of Transportation "Standard Specification for Road, Bridges, and Incidental Construction" 2004.

PART 2 - PRODUCTS

2.1 STEEL REINFORCEMENT

A. Plain-Steel Welded Wire Reinforcement: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.

B. Deformed-Steel Welded Wire Reinforcement: ASTM A 497, flat sheet.

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

D. Plain Steel Wire: ASTM A 82, as drawn.

E. Deformed-Steel Wire: ASTM A 496.

2.2 CONCRETE MATERIALS

A. Concrete shall be Class "C" conforming to Article M.03.01 of the Standard Specifications where indicated on the Contract Drawings.

B. Concrete shall be Class "F" conforming to Article M.03.01 of the Standard Specifications where indicated on the Contract Drawings.

C. Water: Potable

D. Air-Entraining Admixture shall conform to Article M.03.01 of the Standard Specifications.

2.3 CONCRETE SEALER FOR SALT PROTECTION

A. Concrete sealer for salt protection shall be applied on the concrete finish. The product shall be specifically manufactured for this type of application. The Contractor shall submit product information for Engineer approval. The rate of application shall be as recommended by manufacturer. Sealer shall dry clear on concrete surfaces.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Proof-roll prepared aggregate base course below concrete pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excessive yielding.

3.2 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.3 STEEL REINFORCEMENT

A. General: Comply with Article 6.02 of the Standard Specifications.

3.4 JOINTS

A. General: Form 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.

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.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting buildings, concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.

D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to that shown on the Contract Drawings.

3.5 CONCRETE PLACEMENT

A. Comply with Article 9.21 of the Standard Specifications.

1. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating float-finished concrete surface 1/16 to 1/8 inch deep with a stiff-bristled broom, perpendicular to line of traffic.

B. The Contractor is responsible for removing any material spatters or debris and repairing any damage to the existing sidewalk arising from the installation of the tile.

3.6 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

B. Comply with ACI 306.1 for cold-weather protection.

C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

D. Concrete sealer for salt protection shall be applied on the concrete finish at the rate of application as recommended by the manufacturer.

3.7 REPAIRS AND PROTECTION

A. Remove and replace concrete pavement that is broken, damaged, or defective or that does not comply with requirements in this Section.

B. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement.

C. 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 32 13 13

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SECTION 32 13 73 – CONCRETE PAVING JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Expansion and contraction joints within cement concrete pavement.
2. Joints between cement concrete and asphalt pavement.

B. Related Sections

1. Section 32 12 16 Asphalt Paving
2. Section 32 13 13 Concrete Paving

1.3 SUBMITTALS

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

B. Samples: For each type and color of joint sealant required.

C. Product certificates and test reports.

D. Compatibility and Adhesion Test Reports: From sealant manufacturer.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backing materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer based on testing and field experience.

1. Primers: Product recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Colors of Exposed Joint Sealants: As selected by Engineer.

2.2 COLD-APPLIED JOINT SEALANTS

A. Multicomponent Jet-Fuel-Resistant Sealant for Concrete: Pourable, chemically curing elastomeric formulation complying with the following requirements for formulation and with ASTM C 920 for type, grade, class, and uses indicated:

1. Urethane Formulation: Type M; Grade P; Class 12-1/2; Uses T, M, and, as applicable to joint substrates indicated.
2. Coal-Tar-Modified Polymer Formulation: Type M; Grade P; Class 25; Uses T and, as applicable to joint substrates indicated.
3. Bitumen-Modified Urethane Formulation: Type M; Grade P; Class 25; Uses T, M, and, as applicable to joint substrates indicated.

B. Single-Component Jet-Fuel-Resistant Urethane Sealant for Concrete: Single-component, pourable, coal-tar-modified, urethane formulation complying with ASTM C 920 for Type S; Grade P; Class 25; Uses T, M, and, as applicable to joint substrates indicated.

C. Type NS Silicone Sealant for Concrete: Single-component, low-modulus, neutral-curing, nonsag silicone sealant complying with ASTM D 5893 for Type NS.

D. Type SL Silicone Sealant for Concrete and Asphalt: Single-component, low-modulus, neutral-curing, self-leveling silicone sealant complying with ASTM D 5893 for Type SL.

E. Multicomponent Low-Modulus Sealant for Concrete and Asphalt: Proprietary formulation consisting of reactive petropolymer and activator components producing a pourable, self-leveling sealant.

2.3 HOT-APPLIED JOINT SEALANTS

A. Jet-Fuel-Resistant Elastomeric Sealant for Concrete: Single-component formulation complying with ASTM D 3569.

B. Jet-Fuel-Resistant Sealant for Concrete and Tar Concrete: Single-component formulation complying with ASTM D 3581.

C. Elastomeric Sealant for Concrete: Single-component formulation complying with ASTM D 3406.

D. Sealant for Concrete and Asphalt: Single-component formulation complying with ASTM D 3405.

2.4 JOINT-SEALANT BACKER MATERIALS

A. General: Provide joint-sealant backer materials that are non-staining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by joint-sealant manufacturer based on field experience and laboratory testing.

B. Round Backer Rods for Cold- and Hot-Applied Sealants: ASTM D 5249, Type 1, of diameter and density required to control sealant depth and prevent bottom-side adhesion of sealant.

C. Backer Strips for Cold- and Hot-Applied Sealants: ASTM D 5249; Type 2; of thickness and width required to control sealant depth, prevent bottom-side adhesion of sealant, and fill remainder of joint opening under sealant.

D. Round Backer Rods for Cold-Applied Sealants: ASTM D 5249, Type 3, of diameter and density required to control sealant depth and prevent bottom-side adhesion of sealant.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.

B. Joint Priming: Prime joint substrates where indicated or where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience.

C. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

D. Install backer materials to support sealants during application and at position required to produce optimum sealant movement capability. Do not leave gaps between ends of backer materials. Do not stretch, twist, puncture, or tear backer materials. Remove absorbent backer materials that have become wet before sealant application and replace them with dry materials.

E. Install sealants at the same time backings are installed to completely fill recesses provided for each joint configuration and to produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. Tooling of Non-sag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

G. Clean off excess sealants or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.

END OF SECTION 32 13 73

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SECTION 32 12 16 ASPHALT PAVING

Part 1 - GENERAL

1.1 WORK INCLUDED

A. Provide all materials, 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. Permanent pavement repair
   2. Bituminous concrete sidewalk

1.2 RELATED SECTIONS

A. Section 31 10 00 – Site Preparation
B. Section 31 20 00 – Earth Moving

1.3 QUALITY ASSURANCE

A. Codes and Standards: All materials and construction methods shall conform to the Town standards and Form 816 - State of Connecticut Department of Transportation "Standard Specification for Road, Bridges, and Incidental Construction" 2004 edition and supplements, unless otherwise specified herein.
B. Workmen: All workmen shall be thoroughly trained and experienced in the necessary crafts, and completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.
C. Testing and Inspection: Contractor shall employ and pay for a qualified independent laboratory to perform testing and inspection service required to confirm compliance with these specifications.

1.4 SUBMITTALS

A. In accordance with the General Requirements, submit samples, materials certifications, manufacturer's product data and test reports as hereinafter required.
B. Bituminous concrete design mix. Source of material, and percentage of recycled material.

1.5 JOB CONDITIONS

A. Weather Limitations: Apply prime and tack coats when ambient temperature is above 50°F (10°C) and when temperature has not been below 35°F (1°C) for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess of moisture.
B. Construct hot-mixed asphalt surface course when atmospheric temperature is above 40°F (4°C) and when base is dry. Base course may be placed when air temperature is above 30°F (minim 1°C) and rising.
C. Grade Control: Establish and maintain required lines and elevations.

Part 2 - PRODUCTS

2.1 MATERIALS

A. General: Use locally available materials and graduations that exhibit a satisfactory record or previous installations.

B. Bituminous Pavement and Curbing: Shall contain a minimum of 25% (combined) pre-consumer/post-consumer recycled content (the percentage of recycled content is based on the weight of the component materials). Certification and submittal of recycled content shall be in accordance with Section 01450 1.5A.

C. Subbase Material: See Section 312000.

D. Base Material: See Section 312000.

E. Hot Mixed Asphalt Paving: Bituminous concrete material conforming to Form 816 - State of Connecticut Department of Transportation "Standards for Roads, Bridges, and Incidental Construction", 1995 edition including supplements, Section M.04.

1. Wearing surface shall be Class 2.
2. Binder course shall be Class 1.

Part 3 - EXECUTION

3.1 SURFACE PREPARATION

A. General: Remove loose material from compacted subbase surface immediately before applying herbicide treatment or prime coat.

B. Proof-roll prepared subbase surface to check for unstable areas and areas requiring additional compaction.

C. Notify Contractor of unsatisfactory conditions. Do not begin paving work until deficient subbase areas have been corrected and are ready to receive paving.

D. Exercise care in applying bituminous materials to avoid smearing of adjoining concrete surfaces. Remove and clean damaged surfaces.

3.2 PLACING MIX

A. General: Place hot-mixed asphalt mixture on prepared surface, spread, and strike off. Spread mixture at minimum temperature of 225°F (107°C). Place areas inaccessible to equipment by hand. Place each course to required grade, cross-section, and compacted thickness.

B. Paver Placing: Place in strips not less than 10 feet wide, unless otherwise acceptable to Engineer. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete base course for a section before placing surface course.

C. Immediately correct surface irregularities in finish course behind paver. Remove excess material forming high spots with shovel or lute.

D. Joints: Make joints between old and new pavements, or between successive days' work, to ensure continuous bond between adjoining work. Construct joints to have same texture, density, and smoothness as other sections of hot-mixed asphalt course. Clean contact surfaces and apply tack coat.

3.3 ROLLING

A. General: Begin rolling when mixture will bear roller weight without excessive displacement.

B. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.
C. Breakdown Rolling: Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge. Check surface after breakdown rolling and repair displaced areas by loosening and filling, if required, with hot material.
D. Second Rolling: Follow breakdown rolling as soon as possible, while mixture is hot. Continue second rolling until mixture has been evenly compacted.
E. Finish Rolling: Perform finish rolling while mixture is still warm enough for removal of roller marks. Continue rolling until roller marks are eliminated and course has attained 95 percent laboratory density.
F. Patching: Remove and replace paving areas mixed with foreign materials and defective areas. Cut out such areas and fill with fresh, hot hot-mixed asphalt. Compact by rolling to specified surface density and smoothness.
G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.4 FIELD QUALITY CONTROL

A. General: Testing in-place hot-mixed asphalt courses for compliance with requirements for thickness and surface smoothness will be done by an independent testing laboratory. See Section 6 for testing responsibility and test payments. Repair or remove and replace unacceptable paving as directed by Engineer.
B. Thickness: In-place compacted thickness tested in accordance with ASTM D 3549 will not be acceptable if exceeding following allowable variations:
   1. Base Course: Plus or minus 1/2 inch.
   2. Surface Course: Plus or minus 1/4 inch.
C. Surface Smoothness: Test finished surface of each hot-mixed asphalt course for smoothness, using 10-foot straightedge applied parallel with and at right angles to centerline of paved area. Surfaces will not be acceptable if exceeding the following tolerances for smoothness:
   1. Base Course Surface: 1/4 inch.
   2. Wearing Course Surface: 3/16 inch.
D. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.
E. Check surface areas at intervals as directed by Engineer.

END OF SECTION 32 12 16

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SECTION 32 12 19 STONE DUST SURFACES

Part 1 - GENERAL

1.1 SUMMARY
- A. This work shall consist of the construction of stone screening pavement at the locations and to the dimensions shown on the plans, including earthwork and processed aggregate base.
- B. Related sections include the following:
  1. Section 31 20 00 Earth Moving

1.2 SUBMITTALS
- A. Product Data: For each type of product indicated. Include technical data and tested physical and performance properties.
  1. Processed Aggregate Base
  2. Screenings
  3. Geotextile fabric

1.3 QUALITY ASSURANCE
- A. Codes and Standards: All materials and construction methods shall conform to Form 816 - State of Connecticut Department of Transportation "Standard Specification for Road, Bridges, and Incidental Construction" 2004 edition and supplements, unless otherwise specified herein.
- B. Installer Qualifications: all workmen shall be thoroughly trained and experienced in the necessary crafts, and completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

1.4 PROJECT CONDITIONS
- A. Grade Control: Establish and maintain required lines and elevations.

Part 2 - PRODUCTS

2.1 AGGREGATES
- A. Processed Aggregate Base: See Section 31 20 00
- B. Screenings: shall conform to the gradation in Section M.01.01 of the Standard Specifications.

2.2 AUXILIARY MATERIALS
- A. Geotextile: AASHTO M 288, nonwoven polypropylene; resistant to chemical attack, rot, and mildew; and specifically designed for paving applications.

Part 3 - EXECUTION

3.1 STONE DUST SURFACE
- A. Clean existing subbase of loose and deleterious material immediately before placing stone dust surface.
  1. Grade the existing subbase material to the line and grade shown on the plans.

2. Processed aggregate base shall be placed and compacted in accordance with applicable portions of Section 3.04.03 of the Standard Specifications.
3. Screenings shall be placed in one layer. Prior to placing, the prepared crushed stone shall be maintained true to line and grade, at all times. The screenings shall be placed to a depth that will result in the proper depth after compaction.
4. After the screenings are spread, they shall be thoroughly compacted and bound by the use of a vibratory roller. Water may be used during compaction. The direction and intensity of the stream shall be such that it will not disturb the surface and shall be approved by the Engineer.
5. The compactive effort shall be as directed by the Engineer but in no case shall it be less than four complete passes.
6. Any surface irregularities which develop during, or after the work, shall be corrected by loosening material already in place and removing or adding material as required, after which the entire area, including the surrounding surface, shall be re-compacted and rebound until it is brought to a firm and uniform surface satisfactory to the Engineer.

3.2 INSTALLATION TOLERANCES

A. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:
   1. Stone Dust Surface: Plus or minus 1/2 inch (13 mm).

3.3 DISPOSAL

A. Except for material indicated to be recycled, remove excavated materials from Project site and legally dispose of them in conformance with local and federal regulations.

END OF SECTION 32 12 19

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SECTION 32 31 13 – GALVANIZED CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Chain-link fences.
2. Gates: Swing

B. Related Sections:

1. Division 03 Section 03 30 00 "Cast-in-Place Concrete" for cast-in-place concrete post footings.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for chain-link fences and gates.

1. Fence and gateposts, rails, and fittings.
1. Chain-link fabric, reinforcements, and attachments.
2. Gates and hardware.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work. Show accessories, hardware.

C. Product Certificates: For each type of chain-link fence and gate, from manufacturer.

D. Product Test Reports: For framing strength according to ASTM F 1043.

E. Warranty: Sample of special warranty.

1.4 QUALITY ASSURANCE

A. Form 816 - State of Connecticut Department of Transportation "Standard Specification for Road, Bridges, and Incidental Construction" 2004 edition shall be used for material compliance and execution of the work in this section and Chain Link Fence Manufacturer's Institute.

B. Workmen: All workmen shall be thoroughly trained and experienced in the necessary crafts, and completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

1.5 PROJECT CONDITIONS

A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

1.6 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer or Installer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:
   a. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Warranty Period: (10) Ten years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CHAIN-LINK FENCE FABRIC

A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist. Comply with CLFMI Product Manual and with requirements indicated below:

1. Fabric Height: As indicated on Drawings.
2. Steel Wire Fabric: Wire with a diameter of 0.148 inch (9 gauge).

   a. Mesh Size: 2 inches
   b. Zinc-Coated Fabric: ASTM A 392, Type II, Class 1, 1.2 oz./sq. ft. with zinc coating applied after weaving.

3. Selvage: Knuckled at both selvages

2.2 FENCE FRAMING

A. Posts and Rails: Comply with ASTM F 1043 for framing, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F 1083 based on the following:

1. Fence Height: As indicated on Drawings

2. Heavy Industrial Strength: Material Group IA, round steel pipe, Schedule 40.

   a. Line Post: As indicated on Drawings
   b. End, Corner and Pull Post: As indicated on Drawings

3. Horizontal Framework Members: Intermediate, top and bottom rails complying with ASTM F 1043.

   a. Top Rail: As indicated on Drawings

4. Brace Rails: Comply with ASTM F 1043.

5. Metallic Coating for Steel Framing:

   a. Type A, consisting of not less than minimum 2.0-oz./sq. ft. average zinc coating per ASTM A 123/A 123M or 4.0-oz./sq. ft. coating per ASTM A 653/A 653M.
   b. Type B, zinc with organic overcoat, consisting of a minimum of 0.9 oz./sq. ft. of zinc after welding, a chromate conversion coating, and a clear, verifiable polymer film.
   c. External, Type B, zinc with organic overcoat, consisting of a minimum of 0.9 oz./sq. ft. of zinc after welding, a chromate conversion coating, and a clear, verifiable polymer film. Internal, Type D, consisting of 81 percent, not less than 0.3-mil- thick, zinc-pigmented coating.
   d. Type C, Zn-5-Al-MM alloy, consisting of not less than 1.8-oz./sq. ft. coating.
   e. Coatings: Any coating above.

2.3 SWING GATES

A. General: Comply with ASTM F 900 for gateposts and single or double swing gate types.

1. Gate Leaf Width: As indicated.
2. Gate Fabric Height: As indicated.

B. Pipe and Tubing:

1. Zinc-Coated Steel: Comply with ASTM F 1043 and ASTM F 1083; protective coating and finish to match fence framing

C. Frame Corner Construction: Welded

D. Hardware:

1. Hinges: 180-degree outward swing.
2. Latches permitting operation from both sides of gate.
3. Closer: Manufacturer's standard
2. Wheel: 8” (min.) diameter inflatable wheel with industrial strength rim.

2.4 FITTINGS

A. General: Comply with ASTM F 626.

B. Post Caps: Provide for each post.

C. Rail and Brace Ends: For each gate, corner, pull, and end post.

D. Rail Fittings: Provide the following:

1. Top Rail Sleeves: Pressed-steel or round-steel tubing not less than 6 inches long.
2. Rail Clamps: Line and corner boulevard clamps for connecting intermediate and bottom rails in the fence line-to-line posts.

E. Tension and Brace Bands: Pressed steel

F. Tension Bars: Steel length not less than 2 inches shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post.

G. Tie Wires, Clips, and Fasteners: According to ASTM F 626.

1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, complying with the following:

a. Hot-Dip Galvanized Steel: galvanized coating thickness matching coating thickness of chain-link fence fabric.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.

1. Do not begin installation before final grading is completed unless otherwise permitted by Engineer.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 INSTALLATION, GENERAL

A. Install chain-link fencing to comply with ASTM F 567 and more stringent requirements indicated.

3.4 CHAIN-LINK FENCE INSTALLATION

A. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.

B. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.

1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.

C. Terminal Posts: Locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of as indicated on Drawings.

D. Line Posts: Space line posts uniformly at 10 feet o.c. max.

E. Post Bracing and Intermediate Rails: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gate posts and at both sides of corner and pull posts.

1. Locate horizontal braces at midheight of fabric 96 inches or higher, on fences with top rail and at two-third fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.

F. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.

G. Intermediate and Bottom Rails: Install and secure to posts with fittings.

H. Chain-Link Fabric: Apply fabric to inside of enclosing framework. Leave 2 inch between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.

I. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not more than 15 inches o.c.

J. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric per ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.

1. Maximum Spacing: Tie fabric to line posts at 12 inches o.c. and to braces at 18 inches o.c.

K. Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

3.5 GATE INSTALLATION

A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.6 ADJUSTING

A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

END OF SECTION 32 31 13

SECTION 32 31 14 – COLOR CHAIN LINK FENCES AND GATES – BID ALTERNATE NO.4

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Color Coated Chain-link fences.
2. Color Coated Gates: Swing

B. Related Sections:

1. Division 03 Section 03 30 00 "Cast-in-Place Concrete" for cast-in-place concrete post footings.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for chain-link fences and gates.

1. Fence and gateposts, rails, and fittings.
1. Chain-link fabric, reinforcements, and attachments.
2. Gates and hardware.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work. Show accessories, hardware.

C. Product Certificates: For each type of chain-link fence and gate, from manufacturer.

D. Product Test Reports: For framing strength according to ASTM F 1043.

E. Warranty: Sample of special warranty.

1.4 QUALITY ASSURANCE

A. Form 816 - State of Connecticut Department of Transportation "Standard Specification for Road, Bridges, and Incidental Construction" 2004 edition shall be used for material compliance and execution of the work in this section and Chain Link Fence Manufacturer's Institute.

B. Workmen: All workmen shall be thoroughly trained and experienced in the necessary crafts, and completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

1.5 PROJECT CONDITIONS

A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

1.6 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer or Installer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:
   a. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Warranty Period: (10) Ten years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CHAIN-LINK FENCE FABRIC

A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist. Comply with CLFMI Product Manual and with requirements indicated below:

1. Fabric Height: As indicated on Drawings.
2. Steel Wire Fabric: Wire with a diameter of 0.148 inch (9 gauge).

   a. Mesh Size: 2 inches
   a. Polymer-Coated Fabric: ASTM F 668, Class 2b over zinc-coated steel wire.

      1) Color: Dark green, complying with ASTM F 934.

3. Selvage: Knuckled at both selvages

2.2 FENCE FRAMING

A. Posts and Rails: Comply with ASTM F 1043 for framing, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F 1083 based on the following:

1. Fence Height: As indicated on Drawings

2. Heavy Industrial Strength: Material Group IA, round steel pipe, Schedule 40.

   a. Line Post: As indicated on Drawings
   b. End, Corner and Pull Post: As indicated on Drawings

3. Horizontal Framework Members: Intermediate, top and bottom rails complying with ASTM F 1043.

   a. Top Rail: As indicated on Drawings

4. Brace Rails: Comply with ASTM F 1043.

5. Metallic Coating for Steel Framing:

   a. Type A, consisting of not less than minimum 2.0-oz./sq. ft. average zinc coating per ASTM A 123/A 123M or 4.0-oz./sq. ft. coating per ASTM A 653/A 653M.
   b. Type B, zinc with organic overcoat, consisting of a minimum of 0.9 oz./sq. ft. of zinc after welding, a chromate conversion coating, and a clear, verifiable polymer film.
   c. External, Type B, zinc with organic overcoat, consisting of a minimum of 0.9 oz./sq. ft. of zinc after welding, a chromate conversion coating, and a clear, verifiable polymer film. Internal, Type D, consisting of 81 percent, not less than 0.3-mil- thick, zinc-pigmented coating.
   d. Type C, Zn-5-Al-MM alloy, consisting of not less than 1.8-oz./sq. ft. coating.
   e. Coatings: Any coating above.

6. Polymer coating over metallic coating.

   a. Color: Match chain-link fabric, complying with ASTM F 934.

2.3 SWING GATES

A. General: Comply with ASTM F 900 for gateposts and single or double swing gate types.

1. Gate Leaf Width: As indicated.
2. Gate Fabric Height: As indicated.

B. Pipe and Tubing:

1. Zinc-Coated Steel: Comply with ASTM F 1043 and ASTM F 1083; protective coating and finish to match fence framing

C. Frame Corner Construction: Welded

D. Hardware:

1. Hinges: 180-degree outward swing.
2. Latches permitting operation from both sides of gate.
3. Closer: Manufacturer's standard
2. Wheel: 8” (min.) diameter inflatable wheel with industrial strength rim.

2.4 FITTINGS

A. General: Comply with ASTM F 626.

B. Finish:
1. Metallic Coating for Pressed Steel or Cast Iron: Not less than 1.2 oz. /sq. ft. zinc.
a. Polymer coating over metallic coating.

C. Post Caps: Provide for each post.

D. Rail and Brace Ends: For each gate, corner, pull, and end post.

E. Rail Fittings: Provide the following:

1. Top Rail Sleeves: Pressed-steel or round-steel tubing not less than 6 inches long.
2. Rail Clamps: Line and corner boulevard clamps for connecting intermediate and bottom rails in the fence line-to-line posts.

F. Tension and Brace Bands: Pressed steel

G. Tension Bars: Steel length not less than 2 inches shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post.

H. Tie Wires, Clips, and Fasteners: According to ASTM F 626.

1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, complying with the following:

a. Hot-Dip Galvanized Steel: galvanized coating thickness matching coating thickness of chain-link fence fabric.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.

1. Do not begin installation before final grading is completed unless otherwise permitted by Engineer.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 INSTALLATION, GENERAL

A. Install chain-link fencing to comply with ASTM F 567 and more stringent requirements indicated.

3.4 CHAIN-LINK FENCE INSTALLATION

A. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.

B. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.

1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.

C. Terminal Posts: Locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of as indicated on Drawings.

D. Line Posts: Space line posts uniformly at 10 feet o.c. max.

E. Post Bracing and Intermediate Rails: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gate posts and at both sides of corner and pull posts.

1. Locate horizontal braces at midheight of fabric 96 inches or higher, on fences with top rail and at two-third fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.

F. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.

G. Intermediate and Bottom Rails: Install and secure to posts with fittings.

H. Chain-Link Fabric: Apply fabric to inside of enclosing framework. Leave 2 inch between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.

I. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not more than 15 inches o.c.

J. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric per ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.

1. Maximum Spacing: Tie fabric to line posts at 12 inches o.c. and to braces at 18 inches o.c.

K. Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

3.5 GATE INSTALLATION

A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.6 ADJUSTING

A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

END OF SECTION 32 31 14

SECTION 32 92 00 TOPSOILING AND SEEDING

Part 1 - GENERAL

1.1 SUMMARY

A. Furnishing, grading and treatment of topsoil to finish grade elevations, including mulching and fertilization.
B. Seeding of lawn areas.
C. Maintain cultivation of lawn areas, but not limited to: fertilization, reseeding, watering, weeding, and correcting the grade in areas of settlement.

1.2 RELATED WORK

A. Section 31 10 00 – Site Preparation
B. Section 31 20 00 – Earth Moving

1.3 SUBMITTALS

A. Product data sheets, specifications, performance data, physical properties for the following:
   1. Seed mixture
   2. Fertilizer
B. Manufacturer's Certificates or labels from containers certifying that the product meets the specified requirements for the following:
   1. Seed mixture, if pre-mixed, also show compliance with State and federal seed laws
   2. Fertilizers
C. Samples (and test report), in the following quantities:

   Topsoil, five gallon pail – Provide representative testing to indicate percent organic content for both on-site and off-site source material. Only topsoil meeting organic content specification (6% min. – 20% max.) is acceptable.

1.4 QUALITY ASSURANCE

A. The Owner reserves the right to test and reject for cause any material not meeting material specifications by tests in accordance with methods adopted by the Association of Official Agricultural Chemists. Costs for these tests shall be borne by the Contractor [subcontractor].
B. Acceptance of the lawn areas shall be established by the Landscape Architect in writing, following the completion of all maintenance work requirements as specified herein, and following the correction of all punch list deficiencies by the Contractor.
C. Do not make substitutions. If specified landscape material is not obtainable, submit proof of non-availability to Landscape Architect, together with proposal for use of equivalent material.
D. Analysis and standards – Package standard products with manufacturer's certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agricultural Chemists, wherever applicable.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver grass seed mixture in new, sealed, containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging. Seed in damaged packaging is not acceptable.
B. Deliver fertilizer in sealed waterproof bags showing weight, chemical analysis and name of manufacturer.

1.6 JOB CONDITIONS
A. Seeding shall be performed when weather and soil conditions are suitable in accordance with locally accepted practice, as specified herein.
B. Seeding dates are as follows:

April 15 - May 30
August 20 - September 30
Do not install grass seed when wind velocity exceeds 5 mph.

1.7 SEQUENCING AND SCHEDULING
A. Coordinate the work of this Section with the respective trades responsible for installing interfacing work to ensure that the work performed thereunder is scheduled to minimize damage to lawn areas.

1.8 MAINTENANCE SERVICE
A. Furnish maintenance of seeded [sodded] areas immediately after placement until grass is well established and exhibits a vigorous growing condition.

1.9 SPECIAL PRODUCT WARRANTY
A. Warranty lawns until final acceptance.
B. Warranty trees and shrubs for a period of one year after date of substantial completion, against defects including death and unsatisfactory growth, except for defects resulting from neglect by Owner, abuse or damage by others, or unusual phenomena or incidents which are beyond Landscape Installer's control.
C. Remove and replace trees, shrubs, or other plants found to be dead or in unhealthy condition during warranty period. Make replacements during growth season following end of warranty period. Replace trees and shrubs which are in doubtful condition at end of warranty period, unless in the opinion of Landscape Architect, it is advisable to extend warranty period for a full growing season.
D. Another warranty inspection will be conducted at end of extended warranty period, if any, to determine acceptance or rejection. Only one replacement (per tree, shrub or plant) will be required at end of warranty period, except for losses or replacements due to failure to comply with specific requirements.

Part 2 - PRODUCTS

2.1 MATERIALS

A. Grass Seed: Seed mixture shall be fresh, clean, new crop seed. Grass shall be of the previous year's crop with a weed seed content of less than 0.5 [1] percent, by weight. All seed shall comply with State and federal seed laws. Seed, which has become wet, moldy or otherwise damaged shall not be acceptable.

B. Seed may be mixed on-site by an approved method or pre-mixed by a dealer. If the seed is to be mixed on-site, seed shall be delivered to the site in separate containers for each variety of seed.

C. General Lawn Seed Mix

	Percent by Weight	Min. Purity	Min. Germination
American Kentucky bluegrass	10	98	98
Victory II chewing fescue	20	98	85
Jasper II creeping red fescue	20	98	85
Spartan hard fescue	20	96	85
Cutter perennial ryegrass	30	97	90

Seeding rate - 260 pounds per acre

Or approved equal

D. Low Maintenance Lawn Seed Mix

A blend of bunch-forming and Creeping fescues, including:

Hard fescue
Sheep fescue
Chewing fescue
Red fescue
Creeping Red fescue

Seeding rate - 220 pounds per acre

Or approved equal

E. Soil Materials: Use existing topsoil stockpiled by Section 31 20 00– Earthwork, if it satisfies organic content specification.

F. Additional loam, if required, shall be fertile, friable, agricultural soil, typical for locality, pH value compatible, capable of sustaining vigorous plant growth, taken from drained site; free of subsoil, clay lumps, stones, and other objects over 2 inches in diameter, and free from other impurities, plants, weeds and roots.

G. Soil Additives: Ground agricultural limestone containing not less that 85 percent total carbonates by weight. Limestone shall be graded per the following:

100 percent passing a Number 10 sieve.
90 percent passing a Number 20 sieve.
60 percent passing a Number 100 sieve.

H. Fertilizer: 10-10-10 recommended for grass, with 50 percent of the elements derived from organic sources, of proportion necessary to eliminate any deficiencies of topsoil as indicated in analysis.
I. Straw Mulch: Oat or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry. Hay or chopped cornstalks are not acceptable.
J. Peat Moss: Shredded, loose, sphagnum moss; free of lumps, roots, inorganic material or acidic materials. According to the methods of AOAC methods of testing, the acidity range shall be approximately 3.5 to 5.5 pH and a maximum moisture content of 30 percent. Organic matter content shall be not less than 90 percent, and ash content shall not be more than 10 percent, by weight on an oven-dry basis.
K. Accessories: Water - Clean, fresh and free of substances or matter, which could inhibit vigorous growth of vegetation.

Part 3 - EXECUTION

3.1 EXAMINATION
A. Verify prepared soil base is properly rough graded and ready to receive the work of this Section.
B. Verify substrate base has been contoured and compacted.
C. Beginning of landscaping work means acceptance of existing soil base, and site conditions.

3.2 PREPARATION
A. Prepare subsoil to eliminate uneven areas and low spots. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes in level areas.
B. Remove foreign materials, debris, weeds, undesirable plants, roots, branches, stones in excess of 1/2 inch in size. Remove subsoil contaminated with petroleum products, or other materials, which would inhibit healthy plant growth.
C. Scarify subgrade to depth of 3 inches where topsoil is scheduled. Scarify in areas where equipment is used for hauling and spreading topsoil and has compacted subsoil.
D. Saturate soil with water to test drainage.

3.3 LAYOUT OF LAWN AREAS
A. Outlines of lawn areas shall be staked by the Contractor [subcontractor] in ample time to permit review and acceptance by Landscape Architect.

3.4 PLACING AND TREATING TOPSOIL
A. Place both stockpiled topsoil and additional loam during dry weather; place to a minimum compacted depth of 6 inches on dry unfrozen subgrade. Treat additional loam with ground limestone.
B. Fine grade topsoil, making changes in grade gradual, eliminating rough or low areas. Blend slopes into level areas. Manually spread topsoil close to trees, plants, and building to prevent damage. Roll, fill depressions to ensure positive drainage.
C. Remove roots, weeds, rocks and foreign material while spreading.

D. Remove surplus subsoil and topsoil from site. Leave stockpile areas and site clean and raked ready to receive grass.
E. Apply fertilizer in accordance with manufacturer's instructions, or testing agency recommendations (if tests are made), within 10 days of seeding, after smooth raking of topsoil and prior to roller compaction.
F. Do not apply fertilizer at same time or with same machine as will be used to apply seed.
G. Mix thoroughly into upper 6 inches of topsoil.
H. Lightly water to aid the dissipation of fertilizer.
I. After incorporation of fertilizer and limestone into the soil, fine grade seed bed to remove all ridges and depressions, and the surface cleared of all stones one inch or more in diameter and all other debris.
J. Smooth rake again and clear surface of all stones one inch or more in diameter and all other debris.

3.5 SEEDING

A. Apply seed by mechanical spreader at a rate 5 pounds per 1000 square feet evenly in two uniform applications. Direction of the second application shall be perpendicular to the first application. Rake in lightly.
B. Do not seed areas in excess of that which can be mulched on same day.
C. Do not sow immediately following rain or snow, when ground is too dry, or during windy periods.
D. After seeding, lightly rake areas to mix 1/8 to 1/4 inch depth of soil with seed.
E. Roll seeded area with roller of 24 inch diameter and not exceeding 90 pounds per 24 inch roller width.
F. Immediately following seeding and compacting, apply approved straw mulch to a thickness of 1/8 inch, keeping clear of shrubs and trees.
G. Apply water with a fine spray immediately after each area has been mulched. Saturate to 4 inches of soil.

3.6 SITE CLEANING AND REPAIR

A. Absolutely no debris may be left on the site. Excavated material shall be removed as directed. Repair any damage to site or structures to restore them to their original condition.

3.7 PROTECTION OF LAWNS

A. Identify lawn seeded areas with stakes and string around area periphery.
B. Cover seed slopes where grade is 4 inches per foot or greater with erosion fabric. Roll fabric onto slopes without stretching or pulling. Lay fabric smoothly on surface, bury top end of each section in 6 inch deep excavated topsoil trench. Provide 12 inch overlap of adjacent rolls. Backfill trench and rake smooth, level with adjacent soil. Secure
C. Outside edges and overlaps at 36 inch intervals with stakes. Lightly dress slopes with topsoil to ensure close contact between fabric and soil.
D. At sides of ditches, lay fabric laps in direction of water flow; lap ends and edges minimum 6 inches.

3.8 CLEANUP AND PROTECTION

A. During landscape work, keep pavements clean and work area in an orderly condition.

B. Protect landscape work and materials from damage due to landscape operations, operations by other contractors and trades, and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged landscape work as directed.

3.9 INSPECTION AND ACCEPTANCE

A. When landscape work is completed, including maintenance, Landscape Architect will, upon request, make an inspection to determine acceptability.
B. When inspected landscape work does not comply with requirements, replace rejected work and continue specified maintenance until re-inspected by Landscape Architect and found to be acceptable.
C. Final acceptance of seeded lawns is based on an established turf thickly uniform and well developed over 95% of the bed and ready for the Owner to use and occupy. The Contractor is responsible for all mowing until final acceptance.
D. Substantial completion for installation of trees and shrubs is the date the landscape contractor has complied with the punch list items developed by the Landscape Architect. This date shall be defined and noted by the Landscape Architect in a memorandum issued to the Owner.

END OF SECTION 32 92 00

1228-61-a2816-spec-22 - 329200 - topsoiling and seeding

SECTION 33 32 00 SYNTHETIC INFILLED ATHLETIC TURF SURFACE

PART 1 – GENERAL

1.1 SUMMARY

A. Furnish all labor, materials, tools and equipment necessary to install slit-film artificial grass field turf as indicated on the plans and as specified herein. The installation of all new materials shall be performed in strict accordance with the Manufacturer's* installation instructions and in accordance with the Contract Documents. The work will include, without limitation, the survey layout for the placement of the resilient polypropylene base (TURF SYSTEM B, if applicable); synthetic turf fabric; the placement of the fabric and the sewing of seams; fastening the fabric to the concrete edge (provided by the General Contractor); installing lines and marks for each sport; installing the sand-rubber (TURF SYSTEM A) or sand-alternate infill (TURF SYSTEM B); final grooming; and training of school personnel on maintenance procedures.

B. Provide written acceptance from the turf manufacturer of the dynamic stone base installed including without limitation the compaction, permeability, and planarity of base material. If the alternate infill system over shock pad/drainage mat is selected by the town then provide written acceptance from the turf manufacturer of the stone base installed including without limitation the compaction, and planarity of base material. It is the responsibility of the Contractor to repair any deficiencies in the stone base.

C. Provide written acceptance from the turf manufacturer that the perimeter edge detail meets the requirements for the installation of the synthetic turf. It is the responsibility of the Contractor to install the perimeter edge details required for the system in strict accordance with the Manufacturer's requirements and as approved by the Owner.

*For the purpose of this specification, the term Turf Manufacturer may be interpreted as meaning Turf Vendor since it is understood that some, but not all, suppliers of synthetic turf purchase the carpet (fabric) from an independent carpet mill.

1.2 RELATED SECTIONS

A. Section 33 46 00 – Athletic Field Subsurface Drainage System

1.3 REFERENCES

A. FM P7825 - Approval Guide; Factory Mutual Research Corporation; current edition

B. American Society for Testing and Materials (ASTM) Standard Test Methods, International Standards Organization (ISO), and European Committee for Standardization (EN) :

D1577 - Standard Test Method for Linear Density of Textile Fiber
D5848 - Standard Test Method for Mass Per Unit Area of Pile Yarn Floor Covering

ASTM D418 - Standard Test Method for Testing Pile Yarn Floor Covering Construction
ASTM D1338 - Standard Test Method for Tuft Bind of Pile Yarn Floor Coverings
ASTM D1682 - Standard Method of Test for Breaking Load and Elongation of Textile Fabrics
ASTM D5034 - Standard Test Method of Breaking Strength and Elongation of Textile Fabrics (Grab Test)
ASTM F1015 - Standard Test Method for Relative Abrasiveness of Synthetic Turf Playing Surfaces
ASTM D4491 - Standard Test Methods for Water Permeability of Geotextile by Permittivity
ASTM D2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials
ASTM F355 - Standard Test Method for Shock-Absorbing Properties of Playing Surface Systems and Materials.
ASTM F1936 - Standard Test Method for Shock-Absorbing Properties of North American Football Field Playing Systems as Measured in the Field
ASTM D1557 - Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.
ISO 8295 – Plastic Film and Sheet – Determination of Coefficient of Friction
ISO 4897 - Cellular plastics - Determination of coefficient of linear thermal expansion.
ISO 8301 – Thermal resistance.
ISO 1798 – Standard Specification for Flexible Materials – Tensile Strength.
ISO 1856 – Flexible cellular polymeric materials – Determination of compression set.
EN 12616 – Water Infiltration Rate
EN 14809 - Surfaces for sports areas – Determination of vertical deformation.

C. Current NFHS and CIAC Rules and Interpretations

D. Current "Suggested Guidelines for the Essential Elements of Synthetic Turf Systems" of the Synthetic Turf Council (STC).

1.4 SUBMITTALS – TURF (TURF SYSTEM A AND B)

A. Prior to the Engineer/Landscape Architect's approval of a specified artificial turf system, the Turf Manufacturer/Vendor shall provide a notarized affidavit that its turf system does not violate any other manufacturer's patents, patents allowed, or patents pending.

B. Prior to the Engineer/Landscape Architect's approval of the specified turf system, the Turf Manufacturer/Vendor shall provide a notarized affidavit that its turf system, including the fiber, and infill after installation will meet or exceed the requirements related to discharges into surface or ground water and emissions in effect at the time of installation established by the U.S. Environmental Protection Agency, the State of Connecticut Departments of Energy and Environmental Protection and Public Health, and any other agency of competent jurisdiction .

C. **Submit the following with the Proposal (FOR REFERENCE ONLY, MATERIALS ALREADY SUBMITTED):**
   1. One rag sample for each Option (TURF SYSTEM A & B), 12x12 inch in size, illustrating details of finished product.
   2. One boxed sample for each Option (TURF SYSTEM A & B), including infill representative of the finished synthetic turf system.
   3. A bagged sample of the crumb rubber infill (TURF SYSTEM A).
   4. A bagged or jarred sample of the coated sand infill (TURF SYSTEM B).
   5. A letter and specification sheet certifying that the products of this section meet or exceed specified requirements.
   6. Certified copies of independent (third-party) laboratory reports on ASTM tests specified in Section 2.1.B below.
   7. List of existing recent installations using slit film fiber with a sand-rubber or alternative infill system in the United States, including Owner representative and telephone number.
   8. The Turf Manufacturer/Vendor shall provide a sample copy of insured, non-prorated warranty and insurance policy information.

D. Prior to ordering of materials:
   1. The Turf Manufacturer/Vendor shall submit through the General Site Contractor Shop Drawings indicating:
      a. Field Layout, as directed by the Owner.
      b. Field Marking Plan and details for the specified sports meeting the requirements of NFHS and CIAC
      c. Roll/Seaming Layout.
      d. Methods of attachment to anchor curbs.
   2. The Turf Manufacturer/Vendor shall submit:
      a. The fiber manufacturer's name, type of fiber, and composition of the fiber
      b. Crumb rubber manufacturer's name, composition of material, and MSDS and other related environmental test data.
      c. A list of the chemical composition of all components of the turf system, including but not limited to infill material(s), turf fiber, and backing material(s)
      d. Test results that certifies the infill meets the requirements established by Underwriters Laboratories Environmental (ULE for certifications under its GreenGuard Program, per reference Standard GGPS.006. (See Appendix A)
         (1) The turf vendor/manufacturer shall submit a statement indicating that the crumb rubber supplier and/or source will provide a product that meets the following standards:
            (a) Heavy metals content of EN 71. Limits are based on the ASTM F963-08 and the European Standard “Safety of toys,” EN71: Part 3: 1994, Amendments – AC: 2000/AC:2002.
            (b) Lead requirement of CPSIA for children’s products. Total lead content requirement of 90pmm in surface coatings (per Consumer Product Safety Improvement Act (CPSIA) of 2008)
            (c) VOC emissions requirements of CDPH Standard Method v1.1. (CA 01350) Predicted exposure concentration of specific VOCs less than ½

Chronic Reference Exposure Levels (CRELs) with results modeled in an office and classroom environment.

(2) The turf vendor/manufacturer shall be required to obtain a representative sample of the crumb rubber upon delivery of the crumb rubber to the project site and demonstrate, by means of providing actual laboratory reports and statements, that the crumb rubber that has been delivered to the project meets the following standards listed below. The turf vendor/manufacturer is advised that the entire volume of crumb rubber necessary for the construction of the field must be delivered to the site prior to collecting the representative sample:

(a) Heavy metals content of EN 71. Limits are based on the ASTM F963-08 and the European Standard "Safety of toys," EN71: Part 3: 1994, Amendments – AC: 2000/AC:2002.

(b) Lead requirement of CPSIA for children's products. Total lead content requirement of 90pmm in surface coatings (per Consumer Product Safety Improvement Act (CPSIA) of 2008)

(c) VOC emissions requirements of CDPH Standard Method v1.1. (CA 01350) Predicted exposure concentration of specific VOCs less than ½ Chronic Reference Exposure Levels (CRELs) with results modeled in an office and classroom environment.

(3) Any crumb rubber that does not meet the standards above shall not be incorporated into the project and must be removed from the site and replaced with acceptable material at the selected turf vendor/manufacturer sole cost. Any replacement supply of crumb rubber shall also undergo the testing specified in 2.d.2.

(4) Turf vendor/manufacturer shall coordinate delivery of crumb rubber infill material to the site prior to installation to allow sufficient time for the material to be tested (anticipated to take approximately six weeks)

e. Certifications that crumb rubber (TURF SYSTEM A ONLY) contains no truck tires.

f. Certification that turf fiber is comprised of 100% polyethylene fiber.

E. Prior to Final Acceptance, the Contractor shall submit to the Owner:

1. Five (5) printed copies and one (1) electronic copy (pdf) of Maintenance Manuals, which will include all necessary instructions for the proper care and preventative maintenance of the synthetic turf system, including painting and markings.
2. The testing data and certification from an approved independent testing laboratory that the finished field meets and/or exceeds the required impact attenuation G-max, as per ASTM F355 and these specifications.
3. Project Record Documents: Record actual locations of seams, drains, or other pertinent information.
4. Warranty: Submit Manufacturer Warranty and ensure that forms have been completed in Owner's name and registered with Manufacturer.
5. **Attic Stock**: Provide an additional 15 feet by 20 feet of green turf and 15 feet by 40 feet of tan turf. Provided one sack (minimum one ton) of surplus rubber (TURF SYSTEM A) or coated sand infill material (TURF SYSTEM B), separated into manageable plastic containers for storage at a location specified by the Owner. Plastic containers shall be

Rubbermaid BRUTE Rollout Container(s), maximum 65 gallon size, constructed from HDPE, with heavy duty wheel and attached lid, or approved equal.

1.6 SUBMITTALS – RESILIENT POLYPROPYLENE BASE/SHOCK PAD/DRAINAGE MAT (TURF SYSTEM B)

A. General: Bidding contractor must identify performance base system with bid package. If a non-compliant product is identified, the proposed alternate product must be submitted and pre-approved by the design architect/engineer 5 days prior to the bid opening. If bidding contractor does not identify a manufacturer, the Town will assume that the specified product is included in the bid package and will not consider substitutions.

B. Shop Drawings: Submit cross-sectional view showing product installation in relation to sub-base and synthetic turf (including edge attachment).

C. Test Data: Submit listing of all applicable test data for compliance to specifications. All testing to be performed by independent sources following applicable ASTM or other internationally recognized standards and procedures.

D. Installation: Submit copy of product installation instructions. Submit copy turf installation recommendations.

E. Warranty: Submit copy of product warranty coverage. (25 year warranty required)

1.7 QUALITY ASSURANCE – TURF (TURF SYSTEM A & B)

A. Manufacturer/Vendor Qualifications: Company whose primary business specializes in manufacturing and installing synthetic infill athletic turf products specified in this section. The turf manufacturer/vendor and its installation personnel:
   1. Must be experienced in the manufacture and self-installation of this specific type of synthetic sand-rubber or 100% coated sand infill slit film grass system for at least five years.
   2. Must have experience with NCAA, FIFA or NFHS baseball, football, soccer, lacrosse or field hockey fields installed with the product specified in these Contract Documents.
   3. Must have fields of 75,000 sq. ft. or more of the specified material in play for at least three years. Note any alternate infill filled fields in play.

B. Installer Qualifications: Company specializing in performing the work of this section.
   1. The manufacturer must provide competent workmen skilled in this specific type of synthetic turf installation. Such employees shall be directly employed by the turf manufacturer/vendor or by a licensee of the Manufacturer installing the Manufacturer's products as the principal turf product. Independent subcontractors shall not be permitted. Evidence of such employment shall be submitted to the Owner prior to the installation of the turf.
   2. The designated supervisory personnel on the project must have five years of experience and be certified, in writing by the Turf Manufacturer/Vendor, as competent in the installation of this slit-film material, including sewing seams and proper installation of the infill mixture.

1.8 QUALITY ASSURANCE – RESILIENT POLYPROPYLENE BASE/SHOCK PAD/DRAINAGE MAT (TURF SYSTEM B)

A. The sub-base (underlayment) material is to be manufactured in an ISO-9000 certified facility.

B. Company must demonstrate successful installations in the United States for at least 2 million square feet of manufacturer's material.

C. Use only new materials manufactured and shipped for the specific installation. No used, recycled or refurbished materials are to be installed. Manufacturer must provide documentation of material content and MSDS sheet for submittal package

D. Product to be shipped as flat panels on prepackaged pallets. Pallets to be wrapped with heavy-duty barrier for protection from moisture and UV exposure.

E. Material must be installed using manufacturers guidelines, without exception.

F. Manufacturer must provide written procedures to selected turf supplier for the Installation of turf on top of underlayment.

1.9 PRE-INSTALLATION MEETING

A. Convene one week before starting work of this section.

1.10 DELIVERY, STORAGE, AND PROTECTION

A. Deliver products to project site in wrapped condition.

B. Store products under cover and elevated above grade.

1.11 WARRANTIES

A. The Turf Manufacturer/Vendor shall provide a warranty to the Owner that covers defects in materials, installation, and workmanship of the turf for a period of eight years from the date of Substantial Completion. The Turf Manufacturer/Vendor shall verify in writing to the Owner that their on-site representative has inspected the installation and that the work conforms to the Manufacturer's requirements. The artificial grass field turf must maintain an ASTM F355/ASTM F1936 measured G-max of between 95-165 for the life of the warranty (TURF SYSTEM A). The artificial grass field turf must maintain an ASTM F355/ASTM F1936 measured G-max of between 80-120 for the life of the warranty (TURF SYSTEM B).

B. The Turf Manufacturer/Vendor's warranty shall include general wear and damage caused from UV degradation.

C. The Turf Manufacturer/Vendor's warranty must be supported by a third party prepaid, non-cancelable insurance policy for the full eight (8) year period from an insurance company with an AM Best rating of A- or better, no maximum limit on a single claim, no

deductible or retention amount per claim. The insurance policy shall be in favor of the Owner and shall be specific to the project site.

A draft copy of the full policy shall be submitted by each bidder with their bid and shall indicate that such coverage is now in effect or will be in effect at the time of the execution of the contract with the Owner. The synthetic Turf Manufacturer/Vendor shall also submit a signed affidavit affirming the warranty requirements of these specifications. The effective date of the policy shall begin at the time of substantial completion of the field and shall terminate eight (8) years thereafter.

1.9 MAINTENANCE SERVICE

A. The Turf Manufacturer/Vendor will train the Owner's facility maintenance staff in the use of the Turf Manufacturer's/Vendor's recommended groomer and other appropriate maintenance practices. Up to eight hours of training are included in this specification.

B. **The turf vendor shall, at no additional cost to the Owner, replace the turf in the baseball base areas, including home plate, after the first four (4) seasons of field use.** It shall be the responsibility of the Owner to contact the Vendor to schedule this replacement work.

PART 2 – PRODUCTS

2.1 TURF MATERIALS - **TURF SYSTEM A**

A. The component materials of the synthetic turf consist of:

1. A carpet made of UV-resistant polyethylene slit-film fibers tufted a fibrous, either perforated or non-perforated, porous multi-layer backing.
2. Glue, thread, paint, seaming fabric, and other materials used to install and mark the artificial turf.

B. The installed artificial turf shall have the following properties:

Standard	Property	Specification
ASTM D1577	Fiber Denier – Slit Film	8,000 nominal minimum
ASTM D418/D5848	Pile Height	2.5" nominal minimum
ASTM D418/D5848	Pile Weight	46 oz./sq. yd. minimum
ASTM D1335	Tuft Bind	9 lbs. (without infill) minimum
ASTM D1682/D5034	Grab Tear (width)	>200 lbs/force minimum
ASTM D1682/D5034	Grab Tear (length)	>200 lbs/force minimum
ASTM D5793	Stitch Gauge	3/8" minimum, 3/4" maximum
ASTM D4491	Carpet Permeability	>40 inches/hour
ASTM F1936	Impact Attenuation, Gmax	≥95-115 (+/-10) @ installation
		≤165 over field life

C. The carpet shall consist of polyethylene slit film fibers tufted into a primary backing with a

secondary backing.

1. The carpet shall be furnished in 15' wide rolls. Rolls shall be long enough to go from sideline to sideline without splicing.
2. The carpet's primary backing shall be a double-layered polypropylene fabric treated with UV inhibitors. The secondary backing shall consist of an application of porous, heat-activated urethane to permanently lock the fiber tufts in place.
3. The fiber shall be low friction, UV-resistant fiber measuring not less than 2.5-inches high nominal. Systems with less than a 2.5-inches (nominal) fiber will not be permitted

E. Thread for sewing seams of turf shall be as recommended by the synthetic Turf Manufacturer/Vendor.

F. Glue and seaming fabric for inlaying lines and markings shall be as recommended by the synthetic Turf Manufacturer/Vendor.

2.1 TURF MATERIALS – **TURF SYSTEM B**

A. The component materials of the synthetic turf consist of:

1. A carpet made of UV-resistant polyethylene slit-film fibers tufted a fibrous, either perforated or non-perforated, porous multi-layer backing.
2. Glue, thread, paint, seaming fabric, and other materials used to install and mark the artificial turf.

B. The installed artificial turf shall have at a **minimum** the following properties:

Standard	Property	Specification
ASTM D1577	Fiber Denier – Slit Film	8,000 nominal minimum
ASTM D418/D5848	Pile Height	1.75" nominal*
ASTM D418/D5848	Pile Weight	50 oz./sq. yd. minimum
ASTM D1335	Tuft Bind	9 lbs. (without infill) minimum
ASTM D1682/D5034	Grab Tear (width)	>200 lbs/force minimum
ASTM D1682/D5034	Grab Tear (length)	>200 lbs/force minimum
ASTM D5793	Stitch Gauge	3/8"*
ASTM D4491	Carpet Permeability	>40 inches/hour
ASTM F1936	Impact Attenuation, Gmax	≥85-100 (+/-10) @ installation
		≤120 over field life**

*TURF SYSTEM B shall have a 1.75" pile height and 3/8" stich guage. No exceptions.

**TURF SYSTEM B will be installed over a Brock YSR shock pad, or approved equal. This system will not require additional Gmax testing after the one time test upon completion of installation per the requirements of this specification.

C. The carpet shall consist of polyethylene slit film fibers tufted into a primary backing with a secondary backing, at a minimum.

1. The carpet shall be furnished in 15' wide rolls. Rolls shall be long enough to go from sideline to sideline without splicing.
2. The carpet's primary backing shall be a double-layered polypropylene fabric treated with UV inhibitors. The secondary backing shall consist of an application of porous, heat-activated urethane to permanently lock the fiber tufts in place.
3. The fiber shall be low friction, UV-resistant fiber measuring 1.75-inches high nominal. Systems other than 1.75-inches (nominal) fiber will not be permitted

E. Thread for sewing seams of turf shall be as recommended by the synthetic Turf Manufacturer/Vendor.

F. Glue and seaming fabric for inlaying lines and markings shall be as recommended by the synthetic Turf Manufacturer/Vendor.

2.2 INFILL MATERIALS – **TURF SYSTEM A**

A. The infill shall consist of a resilient layered granular system comprised of selected and graded dust-free silica sand and crumb rubber granules free of foreign material.

B. The infill mix shall contain at least 50% silica sand by weight.

C. The infill mix shall weigh a minimum of 7 lbs per square foot.

D. **Product submittals shall clearly identify infill composition and weight per square foot.**

E. Refer to Section 1.4, Item D of this specification for unique submittal requirements.

2.3 INFILL MATERIALS – **TURF SYSTEM B**

A. An infill that is comprised of 100% Envirofill® high performance infill.

B. The synthetic turf infill shall be specifically designed and manufactured for athletic use. It shall be a rounded and highly uniform quartz sand pigmented and sealed with an acrylic polymer and have the following properties:
   a. The silica sand shall have a Coefficient of Uniformity of ≤ 1.3.
   b. 98% of the particles retained on US standard sieves 12 through 20.
   c. The coated particles shall be smooth to resist mounding and compaction and have angle of repose of 30° or less.
   d. The finished product shall be 100% coated, shall repel water, be non-flammable and have <.001% dust content.
   e. When placed in synthetic turf, the system shall have an Abrasion Index of 26±2.
   f. Color: Green

C. Product to be Envirofill® manufactured by US Greentech, L.L.C. (1-800-548-0402) or approved equal.

D. The infill shall weigh a minimum of 7 lbs per square foot and be installed to the depth as shown on the plans.

2.4 RESILIENT POLYPROPYLENE BASE/SHOCK PAD/DRAINAGE MAT – **TURF SYSTEM B**

A. Description: Resilient Polypropylene Base Material, Model: PowerBase YSR

a. Vertical drainage - 50" per hour minimum (EN12616)

b. Friction coefficient- movement of artificial turf over 50mm distance 2.0 lbs maximum force ISO 8295

c. Coefficient of linear thermal expansion < 0.15 mm /m /° C, ISO 4897. Thermal Resistance (R Value) minimum 3.0 per ASTM D3575

d. Provide maximum average g-max of field of 100 upon initial testing (ASTM F355; System test under infilled turf).

e. Guarantee maximum average G-Max of field of 120 during warranty period of the turf. (ASTM F355; System test under infilled turf)

f. Field must meet critical fall height minimum of 1.6 meters for the warranty period of the turf. Examples of a minimum of 5 fields in the USA at least 5 years old must be provided.

g. Supplier must provide documentation that product meets human health screening levels and total threshold limit concentration using EPA Method 3052 and Title 22 (CAM 17) metals using EPA Method 6020/7471A and for hexavalent chromium using EPA Method 7196A.

h. Product must be Cradle to Cradle Certified.

i. Product must be made in United States of America.

j. Manufacturer must prove absence of heavy metals in production material, and a controlled chain of custody for all materials used.

k. Product shall have 25 year warranty (minimum)

l. Product: Brock Powerbase YSR or preapproved equal

m. Manufacturer: Brock International or pre-approved equal

B. Contact Information:

Brock International
2840 Wilderness Place
Boulder, CO 80301
Telephone: (303) 544-5800 Fax: 866-850-9421
www.brock-international.com

C. Product format:

a. Size: approximately 61.1 x 42.0 inches interlocking panels. (1551.5 x 1067.25 mm) overall dimensions

b. Area: Net coverage per panel 16.89 ft2 (1.55 m2)

c. Thickness: 0.90" (23mm) +/- .18"
d. Panel Weight: approximately 3.5 lbs / panel

D. Product Substitutions:

Bidding contractor must identify performance base system with bid package. If a non-specified product is identified, the proposed alternate product must be submitted and pre-approved by the Town/design engineer 5 days prior to the bid opening. If bidding contractor does not identify a manufacturer, the Town will assume that the specified product is included in the bid package and will not consider substitutions. No product substitutions will be accepted after award.

E. Project Completion:
a. Upon completion of installation, a walk-through will be conducted to inspect the quality of work and ensure all details meet specifications.
b. A punch list of unacceptable or incomplete items will be documented and agreed upon for completion prior to final project closeout and acceptance.

F. Approvals
a. Finished synthetic base installation workmanship must be approved in advance by the turf manufacturer. Approvals to be based on a physical inspection performed at the site prior to installation of any synthetic turf material.
b. Any approvals sought after turf installation will be declined. Any associated repair or replacement costs associated with rework of the synthetic base will be the responsibility of the turf supplier/installer.

2.5 MAINTENANCE EQUIPMENT

A. N/A – No maintenance equipment required.

PART 3 – EXECUTION

3.1 GENERAL

A. The installation shall be performed in full compliance with the Contract Documents, approved Shop Drawings, and the instructions of the Manufacturer.

B. Only trained technicians, skilled in the installation of athletic caliber synthetic turf systems working under the direct supervision of the approved installer supervisors, shall undertake any cutting, sewing, gluing, shearing, and topdressing or brushing operations.

C. All designs, markings, layouts, and materials shall conform to all currently applicable NFHS and CIAC rules and/or any other rules or standards that may apply to this type of synthetic grass installation. All designs, markings, and layouts must first be approved by the Engineer or Owner in the form of approved shop drawings. All markings will be installed in full compliance with those drawings. Prior to the beginning of installation, the Turf Manufacturer/Vendor for the synthetic turf shall inspect and accept the sub-

base for planarity. The Turf Manufacturer/ Vendor shall also accept in writing that the dynamic stone base is in compliance with the synthetic Turf Manufacturer's/Vendor's specifications for permeability, compaction, and gradation after the Owner provides him with all test results. The Turf Manufacturer/Vendor shall have the dimensions of the field and locations for markings measured by a registered surveyor to verify conformity to the specifications and applicable standards. A record of the finished field as-built measurements shall be made.

D. The installed base material will be tested by the General Contractor for permeability (TURF SYSTEM A) prior to the installation of the synthetic turf using the non-confined area flood test or a double ring infiltrometer testing equipment. Should the installed base not meet the requirements of the Turf Manufacturer/Vendor, the General Contractor shall be required to take all necessary corrective actions to meet the desired permeability. The General Contractor shall be responsible for the costs of all subsequent permeability tests.

E. The Turf Manufacturer/Vendor shall provide the necessary testing data to the owner that the finished field exceeds the required shock attenuation as per ASTM F355-A.

3.1 GENERAL – RESILIENT POLYPROPYLENE BASE/SHOCK PAD/DRAINAGE MAT

A. Installation
   a. Per manufacturer's recommendation - obtain written and/or video installation instructions and procedures from the manufacturer.

3.2 EXAMINATION

A. Verify that all sub-base leveling is complete prior to installation.

B. The surface to receive the synthetic turf shall be inspected by the Turf Manufacturer/Vendor and, prior to the beginning of installation, the Manufacturer must accept the sub-base planarity in writing. The acceptance will be based on the Owner providing the Manufacturer with test results indicating that compaction and planarity are in compliance with the synthetic Turf Manufacturer's/Vendor's specifications. The surface must be perfectly clean as installation commences and shall be maintained in that condition throughout the process.

C. The compaction of the base material shall be 95%, ±1.5% according to the Modified Proctor procedure (ASTM D1557), and the surface tolerance shall not exceed 0-1/4" over 10 feet and 0-½" from design grade.

3.3 INSTALLATION

A. Install in accordance with Turf Manufacturer's/Vendor's instructions. The Turf Manufacturer/Vendor shall strictly adhere to the installation procedures outlined under this section. Any variance from these requirements must be accepted in writing by the Manufacturer's on-site representative and submitted to the Architect/Owner, verifying

that the changes do not in any way affect the warranty. Infill materials shall be approved by the Manufacturer and installed in accordance with the Manufacturer's standard procedures.

B. The carpet rolls are to be installed directly over the properly prepared aggregate base and fastened to the concrete curb or edge drain as shown on the plans. Extreme care should be taken to avoid disturbing the aggregate base, both in regard to compaction and planarity. A two- to five-ton static roller shall be on site and available to repair and properly compact any disturbed areas of the aggregate base.

C. The full width rolls shall be laid out across the field. Turf shall be of sufficient length to permit full cross-field installation from sideline to sideline. No head or cross seams will be allowed in the main playing area between the sidelines. Utilizing standard state of the art sewing procedures, each roll shall be attached to the next. When all of the rolls of the playing surface have been installed, the sideline areas shall be installed at right angles to the playing field turf.

D. This is a 99% sewn installation. Gluing of rolls shall not be acceptable. Gluing will only be permitted to repair problem areas, corner completions, and to cut in any logos or inlaid lines as required by the specifications. All seams shall be sewn using double bagger stitches and polyester thread or, in the case of inlays only, adhered using seaming tape and high grade adhesive (per the Manufacturer's standard procedures). Seams shall be flat, tight, and permanent with no separation or fraying.

E. Infill materials shall be applied in numerous thin lifts. The turf shall be brushed as the mixture is applied. The infill material shall be installed to a depth indicated on the drawings.

F. Infill materials shall be installed to fill the voids between the fibers and allow the fibers to remain vertical and non-directional. The infill shall be placed to expose the fibers to the depth indicated on the Contract Drawings.

G. Synthetic turf shall be attached to the perimeter edge detail in accordance with the Manufacturer's standard procedures.

3.4 FIELD MARKINGS

A. All markings are to be installed in accordance with the Contract Drawings and approved shop drawings.

3.5 CLEANING

A. Protect installed field turf from subsequent construction operations.

B. Do not permit traffic over unprotected field surface.

C. Contractor shall provide the labor, supplies, and equipment as necessary for final

cleaning of surfaces and installed items.

D. All usable remnants of new material shall become the property of the Owner.

E. The Contractor shall keep the area clean throughout the project and clear of debris.

F. Surfaces, recesses, enclosures, etc. shall be cleaned as necessary to leave the work area in a clean, immaculate condition ready for immediate occupancy and use by the Owner.

3.6 ANNUAL INSPECTION, TESTING AND REPORTING BY TURF MANUFACTURER/ VENDOR

A. On or before the annual anniversary date of acceptance of the synthetic turf by the Owner **for the term of the warranty**, the Turf Manufacturer/Vendor or its authorized representative, including any successor to the company, at no cost to the Owner shall inspect the field to identify deficiencies that may be apparent and that could have an effect on the terms and conditions of the warranty. The findings of such inspection shall be provided to the Owner within one week of such inspection. Any remedial actions that are deemed by the Owner to be the responsibility of the Turf Manufacturer/Vendor and not related to the Owner's maintenance practices shall be undertaken within 15 days of the submission of the inspection report to the Owner.

B. TURF SYSTEM A (only), on or before the annual anniversary date of acceptance of the synthetic turf by the Owner **for the term of the warranty** (**8 years**), the Turf Manufacturer/Vendor or its authorized representative, including any successor to the company, at no cost to the Owner shall engage the services of an independent testing laboratory to test the impact attenuation G-max, per ASTM F355-A of the field and advise the Owner of measures to be taken to maintain the G-max within the specified limits.

END OF SECTION 33 32 00

SECTION 33 41 00 STORM UTILITY DRAINAGE

Part 1 - GENERAL

1.1 SUMMARY

A. This Section includes gravity-flow, non-pressure storm drainage outside the building, with the following components:
   1. Storm drainage pipe
   2. Precast concrete structures.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.
B. Shop Drawings: For manholes and yard drains, Include plans, elevations, sections, details, and frames and covers.
C. Coordination Drawings: Show pipe sizes, locations, and elevations.
D. Field quality-control test reports. Product Data: For each type of product indicated.

1.3 QUALITY ASSURANCE

A. Workmen: all workmen shall be thoroughly trained and experienced in the necessary crafts, and completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.
B. Form 816 - State of Connecticut Department of Transportation "Standard Specification for Road, Bridges, and Incidental Construction" 2004 edition with supplements shall be used for material compliance and execution of the work in this section.

Part 2 - PRODUCTS

2.1 PIPING MATERIALS

A. All materials shall conform to the applicable sections of the Standard Specifications. Storm drainage pipe shall be as indicated on the drawings and with conforming to Article M.08. Bedding shall be No. 6 crushed stone conforming to Article M.01.01 of the Standard Specifications. Joint sealant and materials, culvert ends, and elbows or specials, shall conform to the requirements of Articles M.08 of the Standard Specifications.

2.2 MANHOLES, OUTLET STRUCTURE, CATCH BASINS AND YARD DRAINS

A. Precast Concrete Manholes: The materials to be used for the work under this Item shall be those indicated on the Contract Drawings or ordered by the Engineer and shall conform to Article M.08 of the Standard Specifications. Protective compound material shall conform to Article M.03.01.11 of the Standard Specifications. Mortar shall conform to article M.11.04 of the Standard Specifications. Bedding shall be No. 6 crushed stone conforming to Article M.01.01 of the Standard Specifications.

Part 3 - EXECUTION

3.1 PIPING APPLICATIONS

A. Pipe couplings and fittings with pressure ratings at least equal to piping rating may be used in applications below, unless otherwise indicated.
   1. Use nonpressure-type flexible couplings where required to join gravity-flow, nonpressure sewer piping, unless otherwise indicated.
      a. Flexible couplings for same or minor difference OD pipes.
      b. Unshielded, increaser/reducer-pattern, flexible couplings for pipes with different OD.
      c. Ring-type flexible couplings for piping of different sizes where annular space between smaller piping's OD and larger piping's ID permits installation.
B. Gravity-Flow, Nonpressure Sewer Piping: As indicated on the drawings.

3.2 PIPING INSTALLATION

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. Where specific installation is not indicated, follow piping manufacturer's written instructions.
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 using lubricants, cements, and other installation requirements.
C. Install manholes for changes in direction unless fittings are indicated. Use fittings for branch connections unless direct tap into existing sewer is indicated.
D. Install 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.
E. Clear interior of piping and manholes of dirt and superfluous material as work progresses.
F. Join gravity-flow, nonpressure drainage piping according to the following:
   1. Join PVC sewer piping according to ASTM D 2321 and ASTM D 3034 for elastomeric-gasket joints.
   2. Join dissimilar pipe materials with nonpressure-type flexible couplings.

3.3 DRAINAGE STRUCTURE INSTALLATION

A. General: Install drainage structure and galleries, complete with appurtenances and accessories indicated.
B. Install precast concrete drainage structures sections with sealants according to ASTM C 891.

3.4 CONNECTIONS

A. Make connections to existing piping and underground manholes.
   1. Use commercially manufactured wye fittings for piping branch connections. Remove section of existing pipe; install wye fitting into existing piping; and encase entire wye fitting, plus 6-inch overlap, with not less than 6 inches of concrete with 28-day compressive strength of 3000 psi.

3.5 FIELD QUALITY CONTROL

A. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches of backfill is in place, and again at completion of Project.
   1. Submit separate report for each system inspection.
   2. Defects requiring correction include the following:
      a. Alignment: Less than full diameter of inside of pipe is visible between structures.
      b. Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less than 92.5 percent of piping diameter.
      c. Crushed, broken, cracked, or otherwise damaged piping.
      d. Infiltration: Water leakage into piping.
      e. Exfiltration: Water leakage from or around piping.
   3. Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.
   4. Re-inspect and repeat procedure until results are satisfactory.
B. 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 requirements of authorities having jurisdiction.
   3. Schedule tests and inspections by authorities having jurisdiction with at least 24 hours' advance notice.
   4. Submit separate report for each test.
   5. Air Tests: Test storm drainage according to requirements of authorities having jurisdiction, UNI-B-6, and the following:
      a. Option: Test plastic gravity sewer piping according to ASTM F 1417.
C. Leaks and loss in test pressure constitute defects that must be repaired.
D. Replace leaking piping using new materials, and repeat testing until leakage is within allowances specified.

END OF SECTION 33 41 00

1228-61-a2816-spec-24 - 334100 - storm utility drainage piping

SECTION 33 42 00 EDGE DRAIN SYSTEM

Part 1 - GENERAL

1.1 SUMMARY

A. Furnish and install an edge drain system ("trench drain") in accordance with the dimensions and details shown on the plans or as ordered and in conformity with these specifications.

1.2 RELATED SECTIONS

A. Section 03 30 00 Cast-in-Place Concrete
B. Section 31 20 00 Earth Moving
C. Section 33 41 00 Storm Utility Drainage Piping
D. Section 33 46 00 Athletic Field Subsurface Drainage

1.3 SUBMITTALS

A. Shop drawing for trench drain
B. Concrete mix design

1.4 QUALITY ASSURANCE

A. Workmen: all workmen shall be thoroughly trained and experienced in the necessary crafts, and completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.
B. Form 816 - State of Connecticut Department of Transportation "Standard Specification for Road, Bridges, and Incidental Construction" 2004 edition with supplements shall be used for material compliance and execution of the work in this section.

Part 2 - PRODUCTS

2.1 MATERIALS

A. ACO 4000 Polymer Concrete Drain System, or approved equal – System of one-meter long channels of polymer concrete and drop drainage basins or approved equal.
B. Concrete – As specified in Section 6.01 of the Standard Specifications Form 816 and Section 03 30 00.
C. Gravel Subbase – As specified in Section 31 20 00.

Part 3 - EXECUTION

3.1 CONSTRUCTION METHODS

A. The edge drain system shall be installed at the location indicated on the plans or as directed by the Engineer. The system shall be placed on a prepared concrete bed and shall be installed straight to line and grade and in accordance to the details shown on the plans and per recommendation of the manufacturer.
B. The concrete backfilling shall be placed with care to prevent any movement of the drain system.
C. The catch basins shall be installed at the locations and in accordance to the details shown on the plans and per recommendation of the manufacturer.

END OF SECTION 33 42 00

1228-61-a2816-spec-25 - 334200 - edge drain system

SECTION 33 46 23 SYNTHETIC FIELD SUBSURFACE DRAINAGE

PART 1 – GENERAL

1.1 SUMMARY

A. Furnish all labor, equipment, and materials to install the Athletic Field Subsurface Drainage System, consisting of perimeter underdrain/collector pipe, geotextile, composite flat drains, and bottom and top layer stone bases all as indicated on the Contract Drawings and as specified herein.

B. Related Sections:
1. Section 33 32 00 Synthetic Infilled Athletic Turf Surface

1.2 REFERENCES

A. Comply with applicable requirements of the following standards. Should the standards conflict with other specified requirements, the most restrictive requirement shall govern.
1. American Association of State Highway and Transportation Officials (AASHTO).
2. American Society for Testing and Materials (ASTM):
F 405 Corrugated Polyethylene (PE) Tubing and Fittings
F 449 Subsurface Installation of Corrugated Thermoplastic Tubing for Agricultural Drainage or Water Table Control
F 667 8-, 10-, 12-, and 15-inch Corrugated Polyethylene Tubing and Fittings
3. State of Connecticut Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction – Form 816 dated 2004, with latest Supplements, herein referred to as the Standard Specifications.
4. Occupational Safety and Health Administration (OSHA)

1.3 SUBMITTALS

A. Provide Shop Drawings for all material to be supplied.

B. Provide bag samples of the dynamic stone top and bottom material (TURF SYSTEM A)

C. Provide certifications stating that the materials used to comprise the system comply with the requirements.

D. Provide laboratory test results for sieve analysis, resistance to abrasion, and soundness for all stone materials.

E. Record Drawings: Submit as-builts of the subgrade prior to installation of the stone base. The record drawing of the subgrade must be accepted by the engineer/landscape architect prior to work in section being considered complete.

F. Record Drawings: Submit as-builts of the stone base prior to installation of the synthetic turf system. The record drawing of the stone base must be accepted by the synthetic turf vendor/installer prior to work in section being considered complete.

1.4 QUALITY ASSURANCE

A. Workmen: all workmen shall be thoroughly trained and experienced in the necessary crafts, and completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

B. Codes and Standards: All materials and construction methods shall conform to the Town of Hamden standards and Form 816 - State of Connecticut Department of Transportation "Standard Specification for Road, Bridges, and Incidental Construction" 2004 edition with supplements shall be used for material compliance and execution of the work in this section.

C. All piping and appurtenances shall be new, clean, and in accordance with material specifications, unless specifically noted on the plans.

D. Pipe size and classification shall be as shown on the plans or as specified herein.

E. Stone base material gradations shall be submitted for review prior to delivery of any material.

1.5 PRODUCT DELIVERY

A. Take all required measures to ensure that all piping and related appurtenances are protected from damage.

B. Special care shall be exercised during delivery and storage to avoid damage or contamination to the products.

C. All materials shall be delivered and stored within the Contractor's work limits or in an area approved by the Owner.

D. Products that are damaged will be removed and replaced unless the product can be repaired in a manner acceptable to the Owner

E. Protect aggregates and base materials from soil contamination.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Perimeter Underdrain/ Collector Pipe:

1. All specific pipe sizes are noted on the Contract Drawings.

2. 4" through 10" solid wall and perforated drain pipe shall be smooth interior wall conforming to AASHTO M 252, Hi-Q, as manufactured by Hancor, Inc., Findlay, Ohio or an approved equal.
3. 12" through 36" solid wall and perforated drain pipe shall be smooth interior wall conforming to AASHTO M 294 Type S, Hi-Q, as manufactured by Hancor, Inc., Findlay, Ohio or an approved equal.
4. Fittings and couplers shall be split couplings or snap couplings manufactured by the same manufacturer as the corrugated polyethylene pipe.
5. Approved Equal - ADS N-12 as manufactured by Advanced Drainage Systems.
6. Underdrain/Collector Pipe bedding shall conform to #8 stone of the requirements of Article M01.01 of the Standard Specifications.

B. Nonwoven geotextile and shall be a nonwoven needle-punched construction and consist of long-chain polymeric fibers composed of polypropylene, polyethylene, or polyamide. The fibers shall be oriented into a multidirectional stable network whereby they retain their positions relative with each other and allow the passage of water as specified. The fabric shall be free of any chemical treatment or coating that reduces permeability and shall be inert to chemicals commonly found in soil. The geotextile shall conform to the following minimum average roll values:

Weight	ASTM D-3776	4.0
Tensile Strength	ASTM D-4632	100
Elongation %	ASTM D-4632	50
Puncture, lb	ASTM D-751	50
Mullen Burst, psi	ASTM D-3786	200
Trapezoidal Tear, lb	ASTM D-4533	42
Coefficient of Permeability	ASTM D-4491	.1 cm/sec
Flow Rate, gpm/ft2	ASTM D-4491	100
Permittivity, 1/sec	ASTM D-4491	1.8
Apparent Opening Size	ASTM D-4751	70 Max. US Std Sieve Opening
Seam Strength, lb/ft	ASTM D-4595	100
Fungus	ASTM G-21	No growth

C. The composite flat drain (TURF SYSTEM A) shall be made of a high-density polyethylene. The core shall be constructed of polyethylene to provide flow channels and structural integrity of the drain. The geotextile shall function only as a filter. The core of the drain shall conform to the following physical property requirements:

Thickness	ASTM D-1777	1.0 to 1.5 inches
Flow Rate*	ASTM D-4716	20 gpm/ft
Compressive Strength	ASTM D-1621 (modified sand method)	6,000 psf

* At gradient = 0.1, pressure = 10 psi for 100 hours

Manufactured by ADS or approved equal.

D. The fittings used with the collection system shall be of a "snap together" design. In no case shall any product be joined without the use of the Manufacturer's connector designed specifically for the purpose.

E. Dynamic Stone Base-Bottom Layer and Dynamic Stone Base-Top Layer (TURF SYSTEM A) shall conform to the following:

1. Per Town of Hamden Planning & Zoning Commission's Conditions of Approval for this project the material shall consist of clean, **washed** durable broken or crushed **basalt** and shall be the product resulting from the artificial crushing of rocks, boulders, or large cobblestones, substantially all faces of which have resulted from the crushing operation. Broken or crushed stone shall consist of sound, tough, durable basalt, reasonably free from soft, thin, elongated, laminated, friable, micaceous or disintegrated pieces, mud, dirt, or other deleterious material and shall be sized to meet the requirements of the gradations below for each layer of stone base. The use of reclaimed miscellaneous aggregate will not be allowed for any part of the mixture for these materials**. Stone material other than basalt will not be acceptable for use as Dynamic Stone per Hamden Planning & Zoning Conditions of Approval.**

2. Test for Resistance to Abrasion. Gravel materials shall show a loss on abrasion of not more than 30% using AASHTO Method T 96.

3. Soundness: When tested with magnesium sulfate solution for soundness using AASHTO Method T 104, coarse aggregate shall not have a loss of more than 12% at the end of five cycles.

4. Gradations:

Dynamic Stone Base – Bottom Layer

Sieve Size	Percent Passing By Weight
1"	100
3/4"	95-100
1/2"	50-95
3/8"	25-60
#4	15-40
#8	10-25
#16	0-16
#30	0-12
#60	0-10
#100	0-8

#200	0-2

Dynamic Stone Base – Top Layer

Sieve Size	Percent Passing by Weight
½"	100
3/8"	85-100
#4	60-90
#8	35-75
#16	10-55
#30	0-40
#60	0-15
#100	0-8
#200	0-2

PART 3 – EXECUTION

3.1 PREPARATION

A. Examine the areas and conditions under which the subsurface drainage system work is to be installed. Correct any and all conditions detrimental to the proper completion of the work. Do not proceed with the work until satisfactory conditions have been achieved.

B. Provide a survey of the finished subgrade prior to installation of the stone base for review and approval by the engineer. The as-built shall indicate spot elevations 50 feet on center, including elevations at the crown along the entire length of the subgrade. Correct all deficiencies as necessary.

C. Do not proceed with any installations before receiving written approval from the Owner for the material.

3.2 PERIMETER UNDERDRAIN/COLLECTOR PIPE

A. Install pipe and bedding in conformance with the Storm Drainage requirements of these specifications and as recommended by the pipe manufacturer.

B. Excavation for installation of pipes shall be in trenches to the lines, grades and widths as per the Contract Drawings and in accordance with Safety and Health Regulations (OSHA).

C. After installation of pipe, inspect to determine whether line displacement or other damage has occurred.

D. Make inspections after lines have been installed prior to backfilling and during the backfilling process and again at the completion of backfilling. Backfill material shall conform to the material as specified on the contract drawings.

E. Backfilling shall be installed and compacted in lifts no greater than 8".

F. If inspection indicates poor alignment, debris, displaced pipe, infiltration or other defects, take whatever steps are necessary to correct such defects.

3.3 GEOTEXTILE

A. TURF SYSTEM A - The geotextile fabric shall be installed as per Manufacturer's recommendations on the entire surface of the finished subgrade.

B. TURF SYSTEM B - The geotextile fabric shall be installed as per Manufacturer's recommendations on the entire surface of the finished stone base beneath the Resilient Polypropylene Base/Shock Pad/Drainage Mat.

3.4 COMPOSITE FLAT DRAIN (TURF SYSTEM A ONLY)

A. The composite flat drain system shall be installed true to line and grade in accordance with the Manufacturer's recommendations and in conformance with the Contract Drawings.

3.5 STONE BASES – TURF SYSTEM A

A. Upon the completion of constructing an approved field subgrade, the Contractor shall install both the bottom and top dynamic stone base layers within a 20'x20' test area for the purpose of determining that the Contractor means and methods of placing the material conforms to the following requirements:

1. Compaction of both layers: The dry density after compaction shall be 95%, ±1.5% of the dry density for the material being tested in accordance with Modified Proctor procedure according to ASTM 1557.
2. Permeability of base bottom layer shall be greater than 50 in. /hr (3.5×10^{-2} cm/ sec.)
3. Permeability of base top layer shall be greater than 15 in. /hr (7.0×10^{-3} cm/ sec.)
4. Porosity of both layers shall be greater than 25% (when base is saturated and compacted to 95% proctor).

B. The above testing and any subsequent retesting shall be pre-formed by an independent testing laboratory with the cost borne by the Contractor.

C. When the results of the above testing requirements are not satisfactory to the Engineer, the Contractor shall adjust his procedure as required to attain the necessary results.

D. Upon desired test results and approval from the Engineer, the Contractor may proceed with the complete installation of bottom layer stone base and then the top layer stone base following the approved installation procedure.

E. The surface of the stone base layer shall be formed to meet the design elevations to within 1/2", and the surface shall not deviate more than 1/4" over 10' in any direction.

F. Check surface tolerance prior to installation of synthetic athletic surface.

G. Provide a survey of the finished dynamic stone surface prior to installation of the synthetic turf for review and approval by the engineer and synthetic turf vendor/installer. The as-built shall indicate spot elevations 25 feet on center, including elevations at the crown along the entire length of the dynamic stone. Correct all deficiencies as necessary

3.5 STONE BASES – TURF SYSTEM B

A. Upon the completion of constructing an approved field subgrade, the Contractor shall install both stone base layers within a 20'x20' test area for the purpose of determining that the Contractor means and methods of placing the material conforms to the following requirements:

   a. Compaction of both layers: The dry density after compaction shall be 95%, ±1.5% of the dry density for the material being tested in accordance with Modified Proctor procedure according to ASTM 1557.

B. The above testing and any subsequent retesting shall be pre-formed by an independent testing laboratory with the cost borne by the Contractor.

C. When the results of the above testing requirements are not satisfactory to the Engineer, the Contractor shall adjust his procedure as required to attain the necessary results.

D. Upon desired test results and approval from the Engineer, the Contractor may proceed with the complete installation of bottom layer stone base and then the top layer stone base following the approved installation procedure.

E. The surface of the stone base layer shall be formed to meet the design elevations to within 1/2", and the surface shall not deviate more than 1/4" over 10' in any direction.

F. Check surface tolerance prior to installation of synthetic athletic surface.

G. Provide a survey of the finished stone surface prior to installation of the geotextile and Resilient Polypropylene Base/Shock Pad/Drainage Mat for review and approval by the engineer and synthetic turf vendor/installer. The as-built shall indicate spot elevations 25 feet on center, including elevations at the crown along the entire length of the stone. Correct all deficiencies as necessary

END OF SECTION 33 46 23

GENERAL INFORMATION SPECIFICATIONS

TOWN OF HAMDEN

GENERAL **R**EQUEST **F**OR **P**ROPOSAL SPECIFICATIONS -- PART A

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

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

RFP SECURITY: If a security of a certified check or bid bond for 5% of the total is requested, such Security will be returned upon signing of the contract. Checks or bonds must be made to the order of the "Town of Hamden". Security may be held by the Town of Hamden for a period not to exceed 90 days from the date of the opening of the proposals for the purpose of reviewing the proposals. A separate Security must accompany each proposal presented. This is only when a Security is requested in the Proposal Specifications

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

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

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

Revised October 1, 2015

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

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

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

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

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

WITHDRAWAL OF PROPOSALS: Proposals may be withdrawn prior to the time fixed for opening by submitting written notification of withdrawal to the Town prior to the RFP opening deadline.

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

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

Revised October 1, 2015

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

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

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

Applicable if checked

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

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

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

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

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

☒ I. WORKERS COMPENSATION

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

Revised October 1, 2015

☒ II. COMMERCIAL GENERAL LIABILITY

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

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

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

Liability (Combined Single Limit) $1,000,000

(If hazardous material or potential pollutants are transported, MCS90 – Accidental Pollution coverage is required)

☒ IV. UMBRELLA/EXCESS LIABILITY (If Required)

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

☐ V. POLLUTION LIABILITY (If Required)

Bodily Injury and Property Damage $1,000,000 Each Occurrence
$1,000,000 Aggregate

☐ VI. PROFESSIONAL LIABILITY (If Required)

$3,000,000 Each Occurrence
$3,000,000 Aggregate

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

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

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

Revised October 1, 2015

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

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

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

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

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

LICENSURE: At the time of the Proposal submissions, Responders shall possess the necessary license(s) to perform the work that is the subject of this Request for Proposal.

Revised October 1, 2015

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

Non-Discrimination and Affirmative Action: The successful Responder, in performing under this contract, shall not discriminate against any worker, employee or applicant, or any member of the public, because of race, creed, color, age, marital status, sexual orientation, national origin, ancestry, sex, mental retardation or physical disability, including but not limited to blindness, unless it is shown by the contractor that such disability prevents performance of the work involved in any manner prohibited by the laws of the United States or the State of Connecticut, nor otherwise commit an unfair employment practice. The successful Responder further agrees that this article, (and any additional provisions required by law), will be incorporated by such contractor in all contracts entered into in connection with this contract. The following principles and requirements of Equal Opportunity and Affirmative Action, as incorporated herein, will be incorporated into "Equal Opportunity - Non-Discrimination Clause" to be included in all RFP documents, purchase orders, leases and contracts. The principles of Affirmative Action are addressed in the 13th, 14th and 15th Amendments of the United States Constitution, Civil Rights Act of 1964, Equal Pay Act of 1963, Title VI and VII of the 1964 United States Civil Rights Act, Presidential Executive Orders 11246, 11375, 11478 (nondiscrimination under federal contracts), Act 1, Section 1 and 20 of the Connecticut Constitution, Governor Grasso's Executive Order Number 11, Governor O'Neill's Executive Order Number 9, the Connecticut Fair Employment Practices Law (Sec. 46a-60-69) of the Connecticut General Statutes, Connecticut Code of Fair Practices (46a-70-81), Deprivation of Civil Rights (46a-58 (a)(d)), Public Accommodations Law (46a-63-64), Discrimination against Criminal Offenders (46a-80), definition of blind (46a-51(1)), definition of Physically Disabled (46a-51 (15)), definition of Mentally Retarded (46a-51-13), cooperation with the Commission on Human Rights and Opportunities (46a-77), Sexual Harassment (46a-60 (a)-8), Connecticut Credit Discrimination Law (360436 through 439), Title 1 of the State and the Local Fiscal Assistance Act 1 1972. Every contract to which the State is party must contain the nondiscrimination and affirmative action provisions provided in the Connecticut General Statutes Section 4a-60a. The successful Responder also agrees to comply with all provisions of the Town's Charter and Code of Ordinances –"Town of Hamden, Chapter 110, Business Transactions with Town". The contractor shall cooperate fully with the Connecticut Commission on Human Rights and Opportunities ("the Commission") and shall submit periodic reports of employment and subcontracting practices to the Commission in such a form, in such a manner, and at such time as may be prescribed by the Commission.

Set Asides: If this Project is funded in whole or in part by State of Connecticut funds, Public Act 15-5 (§§58-71 and 88) requires that, effective with all contracts executed after October 1, 2015, all solicitations for municipal public works contracts funded in whole or in part with State funds state in the notice of solicitation that the contract must comply with the set asides mandated by Public Act 15-5. The set aside requirements include a requirement that 25% of the total value of contracts in excess of $50,000.00 be set aside for exclusive bidding for "small contractors," as defined by Section 58 (a) (1), and 25% of such amount (that is, 6.25% of the total value), be set aside for "minority business enterprises," as defined by Section 58(a) (4).
Revised October 1, 2015

For contracts in excess of $50,000.00, Responders must have obtained Commission approval of their Affirmative Action Plan prior to contract execution. RESPONDERS ARE EXPRESSLY DIRECTED TO REVIEW PUBLIC ACT 15-5, SECTIONS 58-71 AND 88, TO FAMILIARIZE THEMSELVES WITH THE REQUIREMENTS OF SUCH LAWS. RESPONDERS SHALL BE DIRECTLY AND SOLELY RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF P.A. 15-5, SECTIONS 58 THROUGH 71 AND 88. THE TOWN ALSO DIRECT RESPONDERS' ATTENTION TO THE SECTIONS 63 AND 64 (NON-DISCRIMINATION REQUIREMENTS) AND 66-68 (AFFIRMATIVE ACTION REQUIREMENTS).

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

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

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

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

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

WAGE RATES: Workers employed in the various occupations on this named project shall be required to receive the minimum rates established by the State of Connecticut Labor Department Division of Regulations of Wages.
Revised October 1, 2015

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

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

Responders must include Federal ID number or Social Security number to be considered for RFP approval.

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

AS PER THE TOWN OF HAMDEN AFFIRMATIVE ACTION RESOLUTION:
It is in the best interest of the Town to encourage minority and/or female business enterprise. Where two substantially similar Hamden Proposals are submitted, preference may be given to the minority and/or female contractor.

RESERVED RIGHTS OF TOWN:
The Town of Hamden reserves the right to accept or reject any or all RFPs or Proposals; to waive any technicality in a RFP or Proposal or part thereof submitted, and to accept the RFP deemed to be in the best interest of the Town of Hamden. Further, the Town reserves the right to split RFPs and quotations among two or more Responders. The Town reserves the right to reject any Proposal submitted by a joint venture if the Town determines that any entity to the joint venture fails to satisfy the Town's requirements (i.e., bonding, insurance, qualifications, responsibility).

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

☒ **TIME OF COMPLETION AND LIQUIDATED DAMAGES**
Responders understand and acknowledge that timely completion of the Project is essential. Failure of the Contractor to achieve substantial completion of the Project within the calendar days stated herein will result in the Owner and the public incurring

damages, additional costs and inconveniences that would be impossible or extremely difficult to accurately quantify at the time.
Therefore, the Responder and the Town agree that, if the Contractor fails to satisfactorily complete the Project hereunder within the time specified or within any extension of time that may have been allowed, there shall be deducted from any monies due or that may become due the Responder,

the sum of **$500.00** for each and every calendar day, including Saturdays, Sundays and legal holidays, that the Project remains incomplete. This sum shall not be imposed as a penalty, but as liquidated damages due Owner from Contractor by reason of the damages incurred, inconvenience and additional costs and expenses to the public together with other problems suffered as a result of any such delay thereby occasioned.

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

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

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

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

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

TOWN OF HAMDEN
LEGISLATIVE COUNCIL

PRESENTED BY:_____

ORDINANCE AMENDING CONSTRUCTION CONTRACTS ORDINANCE

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

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

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

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

CONSTRUCTION CONTRACTS

97.35: WAGES TO BE STATED IN CONTRACT.

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

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

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

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

MISCELLANEOUS REQUIREMENTS:

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

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

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

Deliveries: All deliveries are inside deliveries.

Provision of RFP Packets, Submission of RFPs: proposed packets will be mailed upon request.

RFP packets will not be faxed.

RFP proposals must be mailed back or delivered to:

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

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

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

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

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

Timing and Sequence – Timing and sequence of events resulting from this Request for Proposal will ultimately be determined by the Town.

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

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

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

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

Thank you.

Philip Goodwin
Purchasing Agent

Revised October 1, 2015

TOWN OF HAMDEN

GENERAL **R**EQUEST **F**OR **P**ROPOSAL SPECIFICATIONS -- PART B

1. **Nondiscrimination under Title VI of the Civil Rights Act of 1964**. Contractor shall comply with the requirements of Title VI of the Civil Rights Acts of 1964 (PL 88-352), 42 U.S.C. Sec. 2000d et. Seq. and the Fair Housing Act (42 U.S.C. 3601-20) and Executive Order 11063 and the HUD regulations with respect thereto including the regulations under 24 CFR Part I. In the sale, lease, or other transfer of land acquired, cleared or improved with assistance provided under the Agreement, the CONTRACTOR shall cause or require a covenant running with the land to be inserted in the deed or lease or other instrument a restriction prohibiting discrimination with respect to race, color, creed, sex, or national origin, in the sale, lease or rental, or in the use or occupancy of such land or any improvements erected or to be erected thereon and providing that the CONTRACTOR and the United States are beneficiaries of and entitled to enforce such covenant. The CONTRACTOR in undertaking its obligation in carrying out the program assisted hereunder, agrees to take such measures as are necessary to enforce such covenant and will not itself so discriminate.

2. **Fair Housing Opportunities Under Title VIII of the Civil Rights Act of 1968 and Fair Housing Act (42 U.S.C. 3601-20)**. Contractor shall comply with the requirements of Title VIII of the Fair Housing Act as amended (PL 90-284). The CONTRACTOR shall provide for fair housing opportunities where possible. The CONTRACTOR is prohibited from discriminating in the sale or rental of housing, the financing of housing, or the provision of brokerage services, including in any way making unavailable or denying a dwelling to any person, because of race, color, religion, sex or national origin. Title VIII further requires programs and activities relating to housing and community development to be administered to affirmatively further fair housing.

3. **Prohibition Against Payments of Bonus or Commission**. The funds paid to Contractor shall not be used in the payment of any bonus or commission for the purpose of obtaining HUD approval of the application for such assistance, or HUD approval of applications for additional assistance, or any other approval or concurrence of HUD required under this AGREEMENT, Title I of the Housing and Community Development Act of 1974, as amended, or HUD regulations with respect thereto; it being understood, however, that reasonable fees or bona fide technical, consultant, managerial or other such services, are not hereby prohibited if otherwise eligible as program costs.

4. "**Section 3" Compliance in the Provision of Training Employment and Business Opportunities**. Every application, recipient, contracting party, contractor, and subcontractor shall incorporate, or cause to be incorporated, in all contracts, the following clause (referred to as a Section 3 clause):

   a) The work to be performed under this contract is on a project assisted under a program providing direct Federal financial assistance from the Department of Housing and Urban Development and is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 170lu. Section 3 requires that to the greatest extent feasible opportunities for training and employment be given

lower income residents of the project area and contracts for work in connection with the project area and contracts for work in connection with the project be awarded to business concerns which are located in or owned in substantial part by persons residing in the area of the project.

b) The parties to this contract will comply with the provisions of said Section 3 and the regulations issued pursuant thereto by the Secretary of Housing and Urban Development set forth in 24 CFR Part 135, and all applicable rules and orders of the Department issued thereunder prior to the execution of this Contract. The parties to this contract certify and agree that they are under no contractual or other disability, which would prevent them from complying with these requirements.

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

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

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

5. **Prevailing Salaries**. The CONTRACTOR shall be solely responsible for the determination of staff classifications and employ staff in relation to its personnel practices and salary ranges, including fringe benefits, in accordance with the Agreement.

6. **Anti-Kickback Rules**. Salaries of architects, draftsmen, technical engineers, technicians, laborers and mechanics performing work under this Agreement shall be paid unconditionally, and not less often than once a week, without deductions as are mandatory by law or permitted by the applicable regulations issued by the Secretary of Labor pursuant to the Copeland "Anti-Kickback Act" (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR, Part 3). The CONTRACTOR shall comply with all applicable regulations of said "Anti-Kickback Act" and shall insert appropriate

provisions in all subcontracts relative to the work under this Agreement; and CONTRACTOR shall take steps to insure compliance by subcontractors with such regulations at all times. CONTRACTOR shall be responsible for the obtaining and submission of the affidavits of subcontractors required thereunder, except that the Secretary of Labor may specifically provide for variations of, or exemptions from, the requirements thereof.

7. **Non-Discrimination in Employment**. During the performance of this Contract, the CONTRACTOR agrees as follows:

a) The CONTRACTOR shall not discriminate against any employee or applicant for employment because of race, creed, color, sex or national origin. The CONTRACTOR shall take affirmative action to insure that applicants are employed and that employees are treated during employment without regard to their race, creed, color, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, transfer, recruiting or recruitment advertising, layoff, termination, rates of pay or other forms of compensation, and selection for training including apprenticeship. The CONTRACTOR agrees to post in conspicuous places available to employees and applicants for employment notices to be provided, setting forth the provisions of this Non-Discrimination in Employment Clause.

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

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

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

e) In the event the CONTRACTOR’S noncompliance with the non-discrimination sections of the contract or with any of such rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the CONTRACTOR may be declared ineligible for further Government contracts or federally assisted construction contract procedures authorized in Executive Order 11246 of September 4,

1965, or by rule, regulations, or order of the Secretary of Labor, or as otherwise provided by law.

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

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

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

8. **Employment of Certain Persons Prohibited**. No person under the age of sixteen years and no person who at the time is serving sentence in a penal or correctional institution shall be employed on the work covered by this Contract.

9. **Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970 and Federal Implementing Regulations**. Contractor and Owners shall to the greatest extent practicable under state law comply with Sections 301 and 302 of Title III, (Uniform Real Property Acquisition Policy) of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and will comply with Sections 303 and 304 of Title III and HUD implementing instructions in 24 CFR Part 42 and 570.602 (b), comply with Title II (Uniform Relocation Assistance) of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and HUD implementing regulations at 24 CFR Part 42 and 570.602 (a).

10. **Political Activity Hatch Act and Section 109 of HCD Act.** CONTRACTOR shall comply with the provisions of the Hatch Act and Section 109 of the Housing and Community Development Act of 1974, as amended, and the regulations pursuant thereto (24 CFR 570.601). Under no circumstances shall the CONTRACTOR and/or other recipients, subcontractors, and sub recipients use TOWN funds or persons employed in administering TOWN programs for the purposes of conducting any political activity.

11. **Executive Orders 11063, 12259, and Title VIII**. CONTRACTOR will comply with Executive Order 11063 as amended by Executive Order 12259 and the implementing regulations in 24 CFR Part 107 and Title VIII of the Civil Rights Act of 1968 (Pub. L.90-284) as amended.

12. **Historic Preservation**. CONTRACTOR will comply with the National Historic Preservation Act of 1966 (PL 89-665), Preservation of Historic and Archaeological Data Act of 1974 (PL 93-291), Procedures for Protection of Historic and Cultural Properties, Advisory Council on Historic Preservation (36 CFR 800), and the HUD regulations with respect thereto.

13. CONTRACTOR will comply with HUD Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794 et. seq.) provides:

    No otherwise qualified individual with handicaps . . . shall, solely by reason of his or her handicap be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financing assistance.

14. **No Conflict of Interest:** Responder certifies, by submitting a Proposal, that no owner, employee or family member (defined for purposes of this Request for Proposal as a spouse, parent, sibling or child) of an owner or employee of Responder is a current or former employee of the Town or its Board of Education.

    Responder further certifies that no owner or employee of Responder has any interest, direct or indirect, which is incompatible with the proper discharge of the proposed duties in the public interest or that would tend to impair Responder's independent judgment or action in the performance of the proposed duties.

    Responder certifies that it does not have any past, present or currently planned interests which are an actual or potential organizational conflict of interest with respect to performing the work for Town under this invitation to RFP.
    Responder hereby covenants and agrees that no employee, elected official or appointed official of the Town or its Board of Education has any interest in this Agreement or will directly or indirectly benefit therefrom.

15. Compliance with Town Regulations

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

16. Confidential Information

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

COMPLETE AND RETURN (Separate Sealed Envelope)

RFP #: 16-14
RFP TITLE Baseball/ Multipurpose Field Improvements Hamden High School

RFP FORM

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

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

I have received Addenda dated as follows:
_____

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

In submitting this Proposal, I agree:

1. To hold my Proposal open until 60 days after the date on which RFPs are due.

2 To enter into and execute a contract provided by the Town, without alteration by me, if awarded on the basis of this Proposal, according to the contract form provided by the Town of Hamden.

3 To accomplish the work in accord with the RFP Specifications and Contract Documents and to the extent that there is a conflict between the provisions of any RFP documents, the order of precedence shall require me to provide the item or service that is of the greater value or benefit to the Town of Hamden.

4. To begin the work in strict accordance with the project schedule or the Notice to Proceed issued by the Town and to complete the work within _____calendar days following Owner's date of Notice to Proceed.

5. The undersigned submits a RFP bond in the sum of _____ _____ dollars ($ _____) 5% of Base Proposal, which sum is agreed shall become the sole and exclusive property of the Owner as liquidated damages to the Owner if the undersigned fails to execute a contract in conformity with the RFP Form and to furnish surety bonds and insurance policies in accordance with the General Conditions after due notification has been given.

6. I acknowledge that the Town of Hamden reserves the right to accept or reject any or all RFPs, alternates, options, or Proposals; to waive any technical defect in a RFP or part thereof submitted, and to accept the RFP deemed by the Town to be in the best interest of the Town of Hamden.

_____ _____
Name: Dated
Title**:**

_____ _____
Contractor Tax ID# Contractor License #

Revised October 1, 2015

COMPLETE AND RETURN (Separate Sealed Envelope)

RFP #: 16-14
RFP TITLE: Baseball/ Multipurpose Field Improvements Hamden High School

NON-COLLUSIVE RFP STATEMENT

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

(1) The Proposal has been arrived at by the Responder independently and has been submitted without collusion with, and without any agreement, understanding, or planned common course of action with, any other vendor or Responder of materials, supplies, equipment, or services described in the invitation to RFP, designed to limit independent proposing or completion, and

(2) The contents of the proposal have not been communicated by the Responder or its employees or agents to any person not any employee or agent of the Responder or its surety on any bonds furnished with the Proposal and will not be communicated to any such person prior to the official opening of the Proposal.

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

_____
Legal Name of Responder

_____
Business Address

_____
Signature and Title of Person
Authorized to Sign

_____
Printed Name

_____
Date

Revised October 1, 2015

COMPLETE AND RETURN (Separate Sealed Envelope)

RFP #16-14

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

Name and address of Company _____
(Print or type)

_____

_____

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

Signature: _____ Date: _____

Telephone: _____ Email: _____

Fax: _____ Federal I.D. Number: _____

Lump sum price for equipment, material, and labor: $_____

$_____
WRITTEN AMOUNT

Revised October 1, 2015

HAMDEN HIGH SCHOOL
ATHLETIC FIELD IMPROVEMENTS
HAMDEN, CONNECTICUT

PROPOSAL FORM

FROM: _____
Prime Contractor Company Name

TO: Town of Hamden
Hamden Government Center
2750 Dixwell Avenue
Hamden, Connecticut 06518

Ladies and Gentlemen:

The undersigned, having carefully examined the Request for Proposal requirements, Drawings, and Project Specifications prepared by Milone & MacBroom, Inc., hereby offers and agrees as follows:

To provide all labor, materials, equipment, and all else necessary to complete the work associated with the baseball/multipurpose field improvements at Hamden High School in accordance with the Proposal Documents.

TOTAL LUMP SUM PROPOSAL BASE PRICE *

WRITTEN IN WORDS _____

_____**DOLLARS**

WRITTEN IN FIGURES $_____

*Include total cost for Turf System A or Turf System B, which ever is the lowest total cost, in the Total Lump Sum Proposal Base Price.

Turf Sytem Included in Total Lump Sum Proposal Base Price _____
(Bidder to fill in)

Construction is expected to begin July 7, 2016. Bidders will be expected to hold their prices in accordance with this schedule.

LUMP SUM BASE BID PRICES:

Refer to Special Provision **SECTION 00 00 02 NOTICE TO CONTRACTOR-SCHEDULE OF VALUES** sheets (page SP 3 – SP 7) for descriptions of lump sum bid items.

A. Site Preparation
Lump Sum Price of:

_____ _____
Written Figures and No/100 Cents Dollars

B. Site Removals
Lump Sum Price of:

_____ _____
Written Figures and No/100 Cents Dollars

C. Sediment and Erosion Controls
Lump Sum Price of:

_____ _____
Written Figures and No/100 Cents Dollars

D. Earthwork and Grading
Lump Sum Price of:

_____ _____
Written Figures and No/100 Cents Dollars

E. Storm Drainage System
Lump Sum Price of:

_____ _____
Written Figures and No/100 Cents Dollars

H. Wall Systems
Lump Sum Price of:

_____ _____
Written Figures and No/100 Cents Dollars

I. Grandstand
Lump Sum Price of:

_____ _____
Written Figures and No/100 Cents Dollars

J. Press Box

Lump Sum Price of:

_____ _____

Written Figures and No/100 Cents Dollars

K. Fencing

Lump Sum Price of:

_____ _____

Written Figures and No/100 Cents Dollars

L. Baseball 30' Backstop

Lump Sum Price of:

_____ _____

Written Figures and No/100 Cents Dollars

M. Miscellaneous Site Improvements

Lump Sum Price of:

_____ _____

Written Figures and No/100 Cents Dollars

O. Electrical Work

Lump Sum Price of:

_____ _____

Written Figures and No/100 Cents Dollars

P. Multipurpose Scoreboard

Lump Sum Price of:

_____ _____

Written Figures and No/100 Cents Dollars

Q. Field Lighting

Lump Sum Price of:

_____ _____

Written Figures and No/100 Cents Dollars

R. Public Address/Audio System

Lump Sum Price of:

_____ _____

Written Figures and No/100 Cents Dollars

S. Project Closeout

Lump Sum Price of:

_____ _____

Written Figures and No/100 Cents Dollars

SYNTHETIC TURF SYSTEM A:

A. Turf Subsurface Drainage - System A

Lump Sum Price of:

_____ _____

Written Figures and No/100 Cents Dollars

B. Synthetic Infilled Turf - System A

Lump Sum Price of:

COST TO BE PROVIDED VIA ADDENDUM _____

Written Figures and No/100 Cents Dollars

SYNTHETIC TURF SYSTEM B:

A. Turf Subsurface Drainage - System B

Lump Sum Price of:

_____ _____

Written Figures and No/100 Cents Dollars

B. Synthetic Infilled Turf - System B

Lump Sum Price of:

COST TO BE PROVIDED VIA ADDENDUM _____

Written Figures and No/100 Cents Dollars

BID ALTERNATES:

NO 1. Ball Safety Netting

Lump Sum Price of:

_____ _____

Written Figures and No/100 Cents Dollars

NO 2. Batting Cage Synthetic Turf

Lump Sum Price of:

_____ _____

Written Figures and No/100 Cents Dollars

NO 3. Remove and Replace Softball Field Scoreboard
Lump Sum Price of:

_____ _____
Written Figures and No/100 Cents Dollars

NO 4. Color Chain Link Fencing and Gates at Ice Rink
Lump Sum Price of:

_____ _____
Written Figures and No/100 Cents Dollars

NO 5. Galvanized Chain Link Fencing and Gates at Ice Rink
Lump Sum Price of:

_____ _____
Written Figures and No/100 Cents Dollars

UNIT PRICE BID ITEMS

The undersigned agrees that the following supplemental Unit Prices shall be the basis of compensation for the addition in the Work. These Unit Prices shall include all overhead and profit. (note: Bidder shall fill in).

A. Bituminous Concrete Patching and Repair of Walks
Unit Price of:

_____ _____
Written Figures and No/100 Cents Dollars
Per Square Foot

B. Windscreens
Unit Price of:

_____ _____
Written Figures and No/100 Cents Dollars
Per Square Foot

C. Rock Excavation
Unit Price of:

_____ _____
Written Figures and No/100 Cents Dollars
Per Cubic Yard

SUBMITTED BY:

_____ _____

Company Name Address

_____ _____

City and State Authorized Agent Title

Date:_____ Phone:_____ Fax:_____

Enclosures:

REQUIRED DISCLOSURES

1. Exceptions to the solicitation

_____ This bid does not take exception to any requirement of the solicitation, including but not only any of the items included in the Standard Instructions to Bidders.

OR

_____ This bid takes exception(s) to certain of the solicitation requirements. **Attached is a sheet fully describing each such exception(s).**

2. State Debarment List

Is the proposer on the State of Connecticut's Debarment List?

_____ Yes
_____ No

3. Occupational Safety and Health Law Violations

Has the bidder or any firm, corporation, partnership or association in which it has an interest (1) been cited for three (3) or more willful or serious violations of any occupational safety and health act or of any standard, order or regulation promulgated pursuant to such act, during the three-year period preceding the bid (provided such violations were cited in accordance with the provisions of any state occupational safety and health act or the Occupational Safety and Health Act of 1970, and not abated within the time fixed by the citation and such citation has not been set aside following appeal to the appropriate agency or court having jurisdiction) or (2) received one or more criminal convictions related to the injury or death of any employee in the three-year period preceding the bid?

_____ Yes
_____ No

If "yes," attach a sheet fully describing each such matter.

4. Claims

Has any claim been made against the bidder or any of its affiliated companies or predecessors in the past three (3) years for any alleged or actual product defect(s)? Claim includes but is not limited to any warranty claim, litigation, arbitration, mediation, other dispute resolution proceeding or formal demand for damages.

_____ Yes
_____ No

If "yes," attach a sheet fully describing each such matter.

5. Criminal Proceedings

Has the bidder or any of its principals (regardless of place of employment) ever been the subject of any criminal proceedings?

_____ Yes
_____ No

If "yes," attach a sheet fully describing each such matter.

6. Ethics and Offenses in Public Projects or Contracts

Has either the bidder or any of its principals (regardless of place of employment) ever been found to have violated any state or local ethics law, regulation, ordinance, code, policy or standard, or to have committed any other offense arising out of the submission of proposals or bids or the performance of work on public works projects or contracts?

_____ Yes
_____ No

If "yes," attach a sheet fully describing each such matter.

Included with this proposal are:

1. Letter of interest
2. Experience of the company
3. List of completed fields
4. Statement of Bidder's Qualifications
5. Required Disclosures Form

STATEMENT OF BIDDER'S QUALIFICATIONS

All questions shall be answered and information given shall be clear and comprehensive. This statement shall be notarized. If additional room is required to answer questions, please attach additional sheet(s) with the supplemental information. The bidder's name shall appear on the top of the supplemental sheets to avoid confusion. The bidder may submit additional information as it deems necessary to enable the Town to judge the bidder's ability to perform the proposed Contract.

A complete statement of Bidders Qualifications shall be submitted for any Subcontractor that will be utilized to satisfy Item 13 of this Statement of Bidders Qualifications.

1. Bidder's full legal name:

2. Permanent main office address:

3. Contact person for this Invitation:

4. Phone and fax numbers and e-mail address of the contact person during normal business hours:

5. Date of organization:

6. Date of incorporation, if applicable:

7. Number of years bidder has been engaged in business under present firm or trade name:

8. Contracts on hand (dollar value, anticipated completion date):

9. General character or type of work performed by the bidder:

10. Has the bidder ever failed to complete any work awarded to it? If so, please explain in detail the circumstances:

11. Has the bidder ever defaulted on a contract? If so, please explain in detail the circumstances:

12. List contracts of a similar nature (size, type, and complexity) completed successfully by the bidder within the last five (5) years. List the other contracting party, the value of the contract, and the year completed.

13. List of at least five (5) synthetic field installations in the last five years. List the other contracting party, the value of the contract, the year completed and a contact person with phone number.

14. List the equipment that will be available for the work described in this Invitation.

15. How many years of experience does the bidder have in work of similar size, type, and complexity to the Work of this Invitation?

16. Describe the background and experience of each individual person listed in the Bidder's Legal Status Disclosure:

17. Provide the name of the bidder's bank or other financial institution, contact person, phone number, address, and state the bidder's available credit:

18. If necessary for the Town to determine an award of contract, will the bidder provide a detailed financial statement?

19. List all legal disputes (mediation, arbitration or litigation) that the bidder or any predecessor in interest has been involved with in the last five (5) years, the nature of the dispute, the adverse party and the result.

1228-61-a816-spec 45 bidders qualifications

PREVAILING WAGE RATES

Project: Hamden High School Baseball/Multipurpose Field Improvements

Minimum Rates and Classifications
for Heavy/Highway Construction

ID#: **H** 22025

Connecticut Department of Labor
Wage and Workplace Standards Division

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

Project Number:

Project Town: Hamden

FAP Number:

State Number:

Project: Hamden High School Baseball/Multipurpose Field Improvements

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**		
1) Boilermaker	33.79	34% + 8.96
1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons	33.48	28.76
2) Carpenters, Piledrivermen	31.45	23.54

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2a) Diver Tenders	31.45	23.54
3) Divers	39.91	23.54
03a) Millwrights	31.84	23.99
4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	45.95	19.35
4a) Painters: Brush and Roller	31.52	19.35
4b) Painters: Spray Only	34.52	19.35
4c) Painters: Steel Only	33.02	18.55

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4d) Painters: Blast and Spray	34.52	19.35
4e) Painters: Tanks, Tower and Swing	33.52	19.35
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)	37.50	23.91 + 3% of gross wage
6) Ironworkers: Ornamental, Reinforcing, Structural, and Precast Concrete Erection	34.47	31.09 + a
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	28.91
----LABORERS---- -		
8) Group 1: Laborer (Unskilled), Common or General, acetylene burner, concrete specialist	28.55	18.90 + a

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Project: Hamden High School Baseball/Multipurpose Field Improvements

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

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Project: Hamden High School Baseball/Multipurpose Field Improvements

Group 9: Hydraulic Drills	29.30	18.90 + a

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

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

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

14) Concrete Workers, Form Movers, and Strippers	31.28	18.90 + a
15) Form Erectors	31.60	18.90 + a

Project: Hamden High School Baseball/Multipurpose Field Improvements

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

16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	31.28	18.90 + a
17) Laborers Topside, Cage Tenders, Bellman	31.17	18.90 + a
18) Miners	32.22	18.90 + a

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

18a) Blaster	38.53	18.90 + a
19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	38.34	18.90 + a

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Project: Hamden High School Baseball/Multipurpose Field Improvements

20) Change House Attendants, Powder Watchmen, Top on Iron Bolts	36.41	18.90 + a
21) Mucking Machine Operator	39.11	18.90 + a
----TRUCK DRIVERS----(*see note below)		
Two axle trucks	28.83	21.39 + a
Three axle trucks; two axle ready mix	28.93	21.39 + a
Three axle ready mix	28.98	21.39 + a
Four axle trucks, heavy duty trailer (up to 40 tons)	29.03	21.39 + a

As of: Tuesday, April 19, 2016

Project: Hamden High School Baseball/Multipurpose Field Improvements

Four axle ready-mix	29.08	21.39 + a
Heavy duty trailer (40 tons and over)	29.28	21.39 + a
Specialized earth moving equipment other than conventional type on-the road trucks and semi-trailer (including Euclids)	29.08	21.39 + a
----POWER EQUIPMENT OPERATORS----		
Group 1: Crane handling or erecting structural steel or stone, hoisting engineer (2 drums or over), front end loader (7 cubic yards or over), Work Boat 26 ft. & Over, Tunnel Boring Machines. (Trade License Required)	38.55	23.55 + a
Group 2: Cranes (100 ton rate capacity and over); Excavator over 2 cubic yards; Piledriver ($3.00 premium when operator controls hammer); Bauer Drill/Caisson. (Trade License Required)	38.23	23.55 + a
Group 3: Excavator/Backhoe under 2 cubic yards; Cranes (under 100 ton rated capacity), Gradall; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar);Grader Operator; Bulldozer Fine Grade (slopes, shaping, laser or GPS, etc.). (Trade License Required)	37.49	23.55 + a

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Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper)	37.10	23.55 + a
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
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.	36.51	23.55 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	36.20	23.55 + a
Group 7: Asphalt Roller; Concrete Saws and Cutters (ride on types); Vermeer Concrete Cutter; Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and Under Mandrel).	35.86	23.55 + a
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
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: Hamden High School Baseball/Multipurpose Field Improvements

Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc.	32.99	23.55 + a
Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment.	32.99	23.55 + a
Group 12: Wellpoint Operator.	32.93	23.55 + a
Group 13: Compressor Battery Operator.	32.35	23.55 + a
Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain).	31.21	23.55 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	30.80	23.55 + a
Group 16: Maintenance Engineer/Oiler	30.15	23.55 + a

As of: Tuesday, April 19, 2016

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

**NOTE: SEE BELOW

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

20) Lineman, Cable Splicer, Technician	45.43	6.25%+19.20
21) Heavy Equipment Operator	40.89	6.25%+17.18
22) Equipment Operator, Tractor Trailer Driver, Material Men	38.62	6.25%+16.68

As of: Tuesday, April 19, 2016

Project: Hamden High School Baseball/Multipurpose Field Improvements

23) Driver Groundmen	24.99	6.25%+10.87
23a) Truck Driver	34.07	6.25%+15.41
----LINE CONSTRUCTION----		
24) Driver Groundmen	30.92	6.5% + 9.70
25) Groundmen	22.67	6.5% + 6.20
26) Heavy Equipment Operators	37.10	6.5% + 10.70
27) Linemen, Cable Splicers, Dynamite Men	41.22	6.5% + 12.20

As of: Tuesday, April 19, 2016

Project: Hamden High School Baseball/Multipurpose Field Improvements

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

As of: Tuesday, April 19, 2016

Project: Hamden High School Baseball/Multipurpose Field Improvements

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 journeyperson instructing and supervising the work of each apprentice in a specific trade.

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

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

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

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

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

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

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

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

As of: Tuesday, April 19, 2016

Project: Hamden High School Baseball/Multipurpose Field Improvements

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

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

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

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

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

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

As of: Tuesday, April 19, 2016

Opportunity ★ Guidance ★ Support

CONNECTICUT DEPARTMENT OF LABOR

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;

(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 ULTMATELY ARISE CONCERNIG 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.

STATUTE 31-55a

- 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. 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.

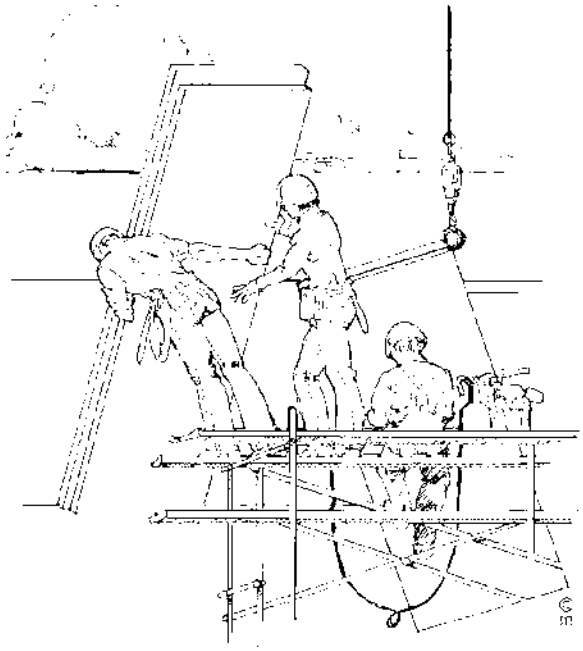
~NOTICE~

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): _____

[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.

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

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

WEEKLY PAYROLL

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

CONTRACTOR NAME AND ADDRESS:

SUBCONTRACTOR NAME & ADDRESS

WORKER'S COMPENSATION INSURANCE CARRIER

POLICY #

EFFECTIVE DATE:
EXPIRATION DATE:

PAYROLL NUMBER	Week-Ending Date	PROJECT NAME & ADDRESS

PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/ FEMALE AND RACE*	WORK CLASSIFICATION / Trade License Type & Number - OSHA 10 Certification Number	DAY AND DATE S	M	T	W	TH	F	S	Total ST Hours / Total O/T Hours	BASE HOURLY RATE / TOTAL FRINGE BENEFIT PLAN CASH	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS FICA	FEDERAL WITH-HOLDING	STATE WITH-HOLDING	LIST OTHER	GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY
				HOURS WORKED EACH DAY																
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							

12/9/2013 *IF REQUIRED
WWS-CP1

*SEE REVERSE SIDE

PAGE NUMBER _____OF

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 _____ 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*****

Weekly Payroll Certification For Public Works Projects (Continued)

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

Week-Ending Date:
Contractor or Subcontractor Business Name:

WEEKLY PAYROLL

PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/ FEMALE AND RACE*	WORK CLASSIFICATION Trade License Type & Number - OSHA 10 Certification Number	DAY AND DATE S	M	T	W	TH	F	S	Total ST Hours Total O/T Hours	BASE HOURLY RATE TOTAL FRINGE BENEFIT PLAN CASH	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS FICA	FEDERAL WITH-HOLDING	STATE WITH-HOLDING	LIST OTHER	GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY
				HOURS WORKED EACH DAY																
												$ Base Rate	1. $							
													2. $							
													3. $							
												$ Cash Fringe	4. $							
													5. $							
													6. $							
												$ Base Rate	1. $							
													2. $							
													3. $							
												$ Cash Fringe	4. $							
													5. $							
													6. $							
												$ Base Rate	1. $							
													2. $							
													3. $							
												$ Cash Fringe	4. $							
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													6. $							
												$ Base Rate	1. $							
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												$ Cash Fringe	4. $							
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													6. $							
												$ Base Rate	1. $							
													2. $							
													3. $							
												$ Cash Fringe	4. $							
													5. $							
													6. $							

*IF REQUIRED

12/9/2013
WWS-CP2

NOTICE: THIS PAGE MUST BE ACCOMPANIED BY A COVER PAGE (FORM # WWS-CP1)

[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.

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

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

WEEKLY PAYROLL

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

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
1	9/26/09	DOT 105-296, Route 82

PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/ FEMALE AND RACE*	WORK CLASSIFICATION / Trade License Type & Number - OSHA 10 Certification Number	DAY AND DATE S 20	M 21	T 22	W 23	TH 24	F 25	S 26	Total ST Hours / Total O/T Hours	BASE HOURLY RATE / TOTAL FRINGE BENEFIT PLAN CASH	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS FICA	FEDERAL WITH-HOLDING	STATE WITH-HOLDING	LIST OTHER	GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY
				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. $	$1,582.80				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. $	$1,464.80	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. $	$1,500.00	xx.xx	xx.xx	xx.xx	M-xx.x		#125 xxx.xx
											S-TIME O-TIME	$ Base Rate $ Cash Fringe	1. $ 2. $ 3. $ 4. $ 5. $ 6. $							

7/13/2009
WWS-CP1

*IF REQUIRED

*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*****

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 4th, 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.

APPENDIX A

GEOTECHNICAL REPORT

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

GEOTECHNICAL ENGINEERING

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

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

December 7, 2015

Mr. Chris Hulk, EIT
Milone & MacBroom
99 Realty Drive
Cheshire, CT 06410

Re: **Geotechnical Study for Proposed Baseball Field Light Poles at Hamden High School**
2040 Dixwell Avenue, Hamden, CT

Dear Mr. Hulk:

1.0 Herewith are the data from the test borings taken at the above site. One boring was drilled within 20± feet of each of the proposed eight light poles. The borings were taken inside the existing outfield fence line. The borings were drilled to a maximum depth of 21.5 feet below the existing grades or to auger refusal where above that depth. Two of the borings were cored into bedrock. The boring locations are shown on the attached plan. *The borings were drilled and sampling was conducted by this firm solely to obtain indications of subsurface conditions as part of a geotechnical exploration program. No services were performed to evaluate subsurface environmental conditions.*

2.0 The **Subject Project** will include the construction of 8 light poles at the Hamden High School baseball field. It is presumed that the light poles will have heights ranging from 70 to 90 feet.

3.0 The **Soils Cross Sections** from the test borings is generally as follows:

Topsoil to 1" to 6"

East Side of Field (see borings B-1 thru B-4) FILL; fine to coarse SAND, some Silt, little Gravel, few Cobbles, trace Asphalt, Wood, Roots to 13 to 19 feet, loose to dense

At borings B-1 & B-3; fine to medium SAND, little to some Silt to 21+ feet, medium compact to dense
Note: The initial attempt at boring B-2 encountered a buried storm pipe. The second attempt, after moving 5 feet, was terminated after encountering an obstruction at 10 feet below the existing grade.

At borings B-4 & B-8, Moraine; fine to coarse SAND, some Silt and Gravel, few Cobbles to auger refusal at 18.5 to 21+ feet, dense to very dense

West Side of Field (see borings B-5 thru B-7); Weathered Rock at 1.4 to 3 feet, to auger refusal on hard bedrock at 5 to 10 feet

Bedrock; Sandstone
Note: Cored bedrock at borings B-5 and B-7 with recovery of 75% sand 100% and RQD values of % and % respectively

3.2 The **Water Table** was not evident at borings B-3 thru B-8 at the completion of those borings. The water table at borings B-1 and B-2 was at 20 and 6 feet below the existing grades, respectively, at the completion of those borings.

4.0 In general the criteria for light pole support is that the foundation capacity would exceed the loads, which might collapse the tower. **Movements from strains in the soils should be limited to differential settlement (or lateral movements of less than ½").**

5.0 The light pole foundation type could be one of the following:

1. Mat (spread footing) acting with it own mass to provide the required resistance to overturning

2. Caisson or Drilled Pier type foundation

3. Direct burial type pole installed in cased hole

5.1 In **alternate (1)** the weight of the mat would provide the required resistance to over turning . The foundations can be placed on the natural inorganic soils at least 3.5 feet below the finished grades, on the bedrock or on a controlled fill placed after the removal of any existing fills, disturbed soils and buried subsoils. The controlled fill should conform to section 6.0 below and should extend outside of foundations for a distance equal to at least the depth of fill beneath foundations. The allowable bearing pressure on the natural inorganic soils or on the controlled fill can be 2 Tsf. The allowable bearing on the weathered or hard rock can be 4 Tsf. There should be a minimum 6" layer of 3/8" crushed stone beneath mat foundations on the natural soils and as an initial layer beneath controlled fills where on a wet sub grade.

5.2 The following is a **Summary of Foundation Design Parameters for a Spread Footing/Mat Type foundations**:

Parameter	Value

Allowable Bearing Pressure on crushed stone atop the natural soils or on controlled fill	2 Tsf
Allowable Bearing Pressure on Weathered or Hard Bedrock	4 Tsf
Backfill Unit Weight *	125 pcf
Angle of Internal Friction, ö *	34°
At-Rest Coefficient	0.45
Active Pressure Coefficient	0.28
Sliding Coefficient concrete /crushed stone	0.55
IBC Seismic Site Soil Profile Classification	"D"
Mapped MCE Seismic Response Acceleration for one second period, S_1	0.062
Mapped MCE Seismic Response Acceleration for short period, S_S	0.243
Frost Protection Depth	3.5 feet

Note: * material specified in section 6.0 below

5.3 Alternate 2 would be a caisson foundation. The caisson shall have a minimum embedment depth of 12 feet. The actual depth is to be determined by the designer to provide the required resistance to overturning forces as well as maintaining the allowable lateral deflection*.The following is a summary of design parameters which can be used to evaluate lateral deflections with the L Pile computer program**:

stratum depth	Total Unit Weight (pcf)	Effective (submerged) Unit Weight (pcf)	Friction Angle degrees	Soil Modulus Parameter, k - above groundwater (pci)	Soil Modulus Parameter, k - below groundwater (pci)
Borings Number B-1 - bottom of boring at 21.5', groundwater at 20' at completion of boring					
0 to 13' FILL - fine to coarse SAND, some Silt, little Gravel	120	58	30	60	40
13'to 20.5' Possible FILL - fine to medium SAND and SILT	120	58	30	60	40
20.5' to 21.5'+ fine to medium SAND, little Silt	120	58	34	225	150
Boring Number B-2 - bottom of boring at 10.25'(terminated borings after hitting storm pipe), groundwater at 6' at completion of boring					

0 to 10'+ FILL, fine to medium SAND, some Silt, little Gravel	120	58	30	60	40
Boring Number B-3 - bottom of boring at 21.5', no groundwater at completion of boring					
0 to 19.0' FILL, fine to medium SAND, some Silt, little Gravel, few Cobbles	125	62	32	90	60
19.0' to 21.5'+ fine to medium SAND, little Silt	125	62	32	225	150
Boring Number B-4 - bottom of boring at 21.5', no groundwater at completion of boring					
0 to 15.0' FILL, fine to coarse SAND, some Silt, little Gravel, trace Roots	120	58	30	60	40
15.0' to 21.5'+ fine to medium SAND, some Silt, little Gravel, few Cobbles	125	63	34	225	150
Boring Number B-5 - bottom of boring at 15.0', no groundwater at completion of boring					
0 to 1.5' fine to medium SAND, some Gravel, little Silt	125	58	32	90	60
1.5' to 10.0' Weathered Rock	130	68	38	225	150
10.0' to 15.0' Bedrock - Sandstone	160	98	-	-	
Boring Number B-6 - bottom of boring at 21.5', groundwater at 6.0' at completion of boring					
0 to 7.0' FILL, fine to coarse SAND, little Silt, Gravel & Concrete	125	63	32	90	60
7.0' to 17.0' Fine to medium SAND, some Silt, trace Gravel; or fine to coarse SAND, little Gravel, trace Silt	120	58	30	-	40
17.0' to 21.5'+ fine to coarse SAND, some Gravel, little Silt	130	63	34	-	150
Boring Number B-7 - bottom of boring at 21.5', groundwater at 7.0' at completion of boring					
0 to 2.0' FILL, fine to medium SAND, some Silt, little Gravel	120	58	30	25	20
2.0' to 12.0' fine to coarse SAND, some Gravel, few Cobbles, trace Silt	125	63	36	225	150
12.0' to 21.5'+ fine SAND, some Silt	125	63	34	-	60
Boring Number B-8 - bottom of boring at 21.5', groundwater at 6.0' at completion of boring					
0 to 17.0' FILL, fine to coarse SAND, little to some Gravel, trace to little Silt	120	58	30	60	40
17.0' to 21.5+' fine SAND, little Silt	120	58	34	-	60

* Typically this value would be about ½"

** The soils to about 3 feet below the finished grades should be ignored in the calculating the lateral resistance.

5.4 Alternate 3, the direct burial poles, can be designed using the parameters in the table in section 5.3 above. It is assumed that buried section of the pole would have a diameter of about 24" and will be installed in a minimum 36" diameter hole. The required minimum burial depth in soils to maintain lateral movements within the above criteria would be in the range of 12 to 16 feet below grade. ***The required size and depths of the drilled shafts and direct burial poles must be determined from a lateral analysis based on the design loading and performance criteria.*** The annular space between the pole and the casing should be filled with concrete. A permanent casing may be required to place the direct burial pole.

5.5 A temporary casing or drilling mud will be required to keep the drill holes open.

6.0 Backfill or controlled fill beneath the mat type foundation should be with 3/8" crushed stone or material which conforms to the following gradation:

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

The fraction, passing the No.4 sieve, shall have less than 15%, passing the No. 200 sieve. All backfill and fill must be placed and compacted to at least 95% of modified optimum density (ASTM 1557-D).

The 3/8"crushed stone could be placed in lifts up to 1 feet thick. It should be compacted with a minimum of 4 passes with a 750 lb compactor.

7.0 The natural soils at the subject site are generally in OSHA Class C which would require excavations that are in excess of 5 feet to have slopes which are less than 34º (i.e., 1.5H :1V).

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

The analyses and recommendations submitted in this report are based in part upon data obtained from referenced explorations. The extent of variations between explorations may not become evident until construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations of this report.

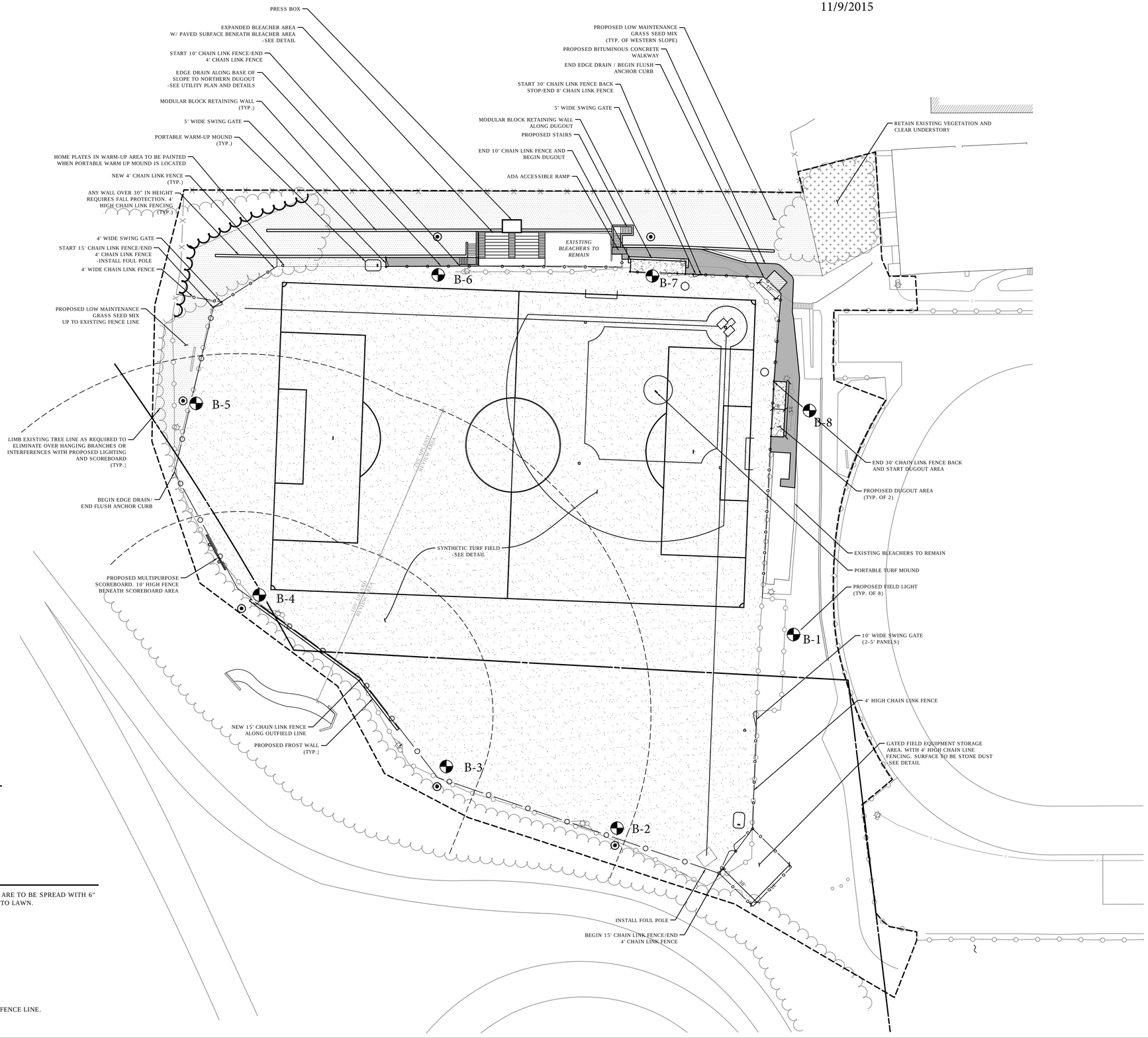
Dr. Clarence Welti, P.E., P.C., should perform a general review of the final design and specifications in order that geotechnical design recommendations may be properly interpreted and implemented as they were intended.

If you have any questions please call me.

Very truly yours,

Max Welti, P.E.

TEST BORING LOCATIONS
CLARENCE WELTI ASSOCIATES, INC.
11/9/2015



LEGEND

- NEW BITUMINOUS CONCRETE WALKWAY
- SLOPE WITH LOW MAINTENANCE GRASS SEED MIX
- SYNTHETIC TURF

LAYOUT NOTES

1. ALL AREAS OF DISTURBANCE OUTSIDE OF THE PROPOSED FENCE LINE ARE TO BE SPREAD WITH 6" MIN. OF TOPSOIL, FERTILIZED AND LIMED AS REQUIRED AND SEEDED TO LAWN.

SYNTHETIC FIELD NOTES

1. PROPOSED SYNTHETIC FIELD SIZE = Ñ110,000 S.F.
2. FIELD MARKINGS TO INCLUDE:
   - TUFTED/INLAID BASEBALL STRIPING - COLOR - WHITE
   - TUFTED/INLAID BASEBALL BASE AREA - COLOR - BROWN
   - TUFTED/INLAID SOCCER STRIPING - COLOR - YELLOW
   - TUFTED/INLAID FIELD HOCKEY STRIPING - COLOR: RED
3. ALL PROPOSED LIGHT POLE BASES ARE TO BE OUTSIDE OF THE FIELD FENCE LINE.

MILONE & MACBROOM®
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Cheshire, Connecticut 06410
(203) 271-1773 Fax (203) 272-9733
www.miloneandmacbroom.com

DESCRIPTION	DATE	BY

SITE PLAN - LAYOUT

HAMDEN HIGH SCHOOL BASEBALL / MULTIPURPOSE FIELD IMPROVEMENTS

2040 DIXWELL AVENUE HAMDEN, CONNECTICUT

KCF	CEH	DJK
DESIGNED	DRAWN	CHECKED

SCALE: 1"=30'

DATE: OCTOBER 15, 2015

PROJECT NO.: 1228-59

SHEET NAME: 03

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CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MILONE & MAcBROOM, INC.	PROJECT NAME HAMDEN HIGH SCHOOL BASEBALL FIELD LIGHT POLES LOCATION 2040 DIXWELL AVE., HAMDEN, CT.

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140 lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV.
HOLE NO. **B-1**

GROUND WATER OBSERVATIONS
AT 20.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 11/6/15
FINISH DATE 11/6/15

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	7-60	0.00'-1.83'		TOPSOIL	0.25	
					RED/BR. FINE-CRS. SAND, SOME SILT, LITTLE GRAVEL, FEW COBBLES - FILL		
	2	3-5-3-5	3.00'-5.00'				
5	3	5-3-3-3	5.00'-7.00'				
	4	20-27-60	7.00'-8.42'				
10							
					GREY FINE-MED. SAND AND SILT	13.0	
15	5	3-5-8	15.00'-16.50'				
20	6	16-19-20	20.00'-21.50'		BR. FINE-MED. SAND, LITTLE SILT	20.5	
					BOTTOM OF BORING @ 21.5'	21.5	
25							
30							
35							

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: T. CZMYR
INSPECTOR:

SHEET 1 OF 1 HOLE NO. **B-1**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MILONE & MAcBROOM, INC.	PROJECT NAME HAMDEN HIGH SCHOOL BASEBALL FIELD LIGHT POLES LOCATION 2040 DIXWELL AVE., HAMDEN, CT.

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140 lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV.
HOLE NO. **B-2**

GROUND WATER OBSERVATIONS
AT 6.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 11/9/15
FINISH DATE 11/9/15

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
0	1	4-7-6-5	0.00'-2.00'		TOPSOIL 0.25 RED/BR. FINE-MED. SAND, SOME SILT, LITTLE GRAVEL - FILL	
	2	4-5-4-8	2.00'-4.00'			
	3	5-5-3-40	4.00'-6.00'			
5					5.0 GREY/BR. FINE-MED. SAND, SOME SILT, TRACE GRAVEL, ASPHALT & PLASTIC - FILL	
	4	60	6.00'-6.33'			
10	5	60	10.00'-10.25'		10.25 BOTTOM OF BORING @ 10.25'	
15						
20						
25						
30						
35						

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: T. CZMYR
INSPECTOR:

SHEET 1 OF 1 HOLE NO. **B-2**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MILONE & MAcBROOM, INC.	PROJECT NAME HAMDEN HIGH SCHOOL BASEBALL FIELD LIGHT POLES LOCATION 2040 DIXWELL AVE., HAMDEN, CT.

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140 lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV.
HOLE NO. **B-3**

GROUND WATER OBSERVATIONS
AT none FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 11/9/15
FINISH DATE 11/9/15

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	5-8-9-10	0.00'-2.00'		TOPSOIL	0.25	
					RED/BR. FINE-MED. SAND, SOME SILT, LITTLE GRAVEL, FEW COBBLES - FILL		
	2	8-14-15-18	2.00'-4.00'				
	3	21-22-24-40	4.00'-6.00'				
5							
10	4	15-60	10.00'-10.92'				
15							
					BR. FINE-MED. SAND, LITTLE SILT	19.0	
20	5	9-13-34	20.00'-21.50'				
					BOTTOM OF BORING @ 21.5'	21.5	
					NOTE: SOILS WERE SATURATED BELOW 19.0'		
25							
30							
35							

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: T. CZMYR
INSPECTOR:

SHEET 1 OF 1 HOLE NO. **B-3**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MILONE & MAcBROOM, INC.	PROJECT NAME HAMDEN HIGH SCHOOL BASEBALL FIELD LIGHT POLES LOCATION 2040 DIXWELL AVE., HAMDEN, CT.

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140 lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV.
HOLE NO. **B-4**

GROUND WATER OBSERVATIONS
AT none FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 11/9/15
FINISH DATE 11/9/15

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
0	1	5-4-4-6	0.00'-2.00'		TOPSOIL 0.17 BR./RED FINE-MED. SAND, SOME SILT, LITTLE GRAVEL, TRACE WOOD & ROOTS - FILL	
	2	9-10-7-6	2.00'-4.00'			
	3	11-60	4.00'-5.00'			
5						
10	4	5-4-4	10.00'-11.50'			
15	5	11-60	15.00'-16.00'		RED/BR. FINE-MED. SAND, SOME SILT & GRAVEL, FEW COBBLES 15.0	
20	6	22-39-55	20.00'-21.50'			
					BOTTOM OF BORING @ 21.5'	
25						
30						
35						

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: T. CZMYR
INSPECTOR:

SHEET 1 OF 1 HOLE NO. **B-4**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MILONE & MAcBROOM, INC.	PROJECT NAME HAMDEN HIGH SCHOOL BASEBALL FIELD LIGHT POLES LOCATION 2040 DIXWELL AVE., HAMDEN, CT.

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	NQ
SIZE I.D.	3.75"		1.375"	2.0"
HAMMER WT.			140 lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV.
HOLE NO. **B-5**

GROUND WATER OBSERVATIONS
AT none FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 11/9/15
FINISH DATE 11/9/15

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	5-12-16-31	0.00'-2.00'		TOPSOIL	0.25	
					RED/BR. FINE-MED. SAND, SOME GRAVEL, LITTLE SILT		
					WEATHERED ROCK	1.5	
	2	30-60	2.00'-2.75'				
5							
10					CORED BEDROCK - SANDSTONE	10.0	
					RUN #1 10.0' - 15.0' RECOVERED 48" RQD=35%		
15					BOTTOM OF BORING @ 15.0'	15.0	
20							
25							
30							
35							

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: T. CZMYR
INSPECTOR:

SHEET 1 OF 1 HOLE NO. **B-5**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MILONE & MAcBROOM, INC.	PROJECT NAME HAMDEN HIGH SCHOOL BASEBALL FIELD LIGHT POLES LOCATION 2040 DIXWELL AVE., HAMDEN, CT.

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140 lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV.
HOLE NO. **B-6**

GROUND WATER OBSERVATIONS
AT none FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 11/9/15
FINISH DATE 11/9/15

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	5-15-14-15	0.00'-2.00'		TOPSOIL	0.67	
					RED/BR. FINE-CRS. SAND, LITTLE SILT & GRAVEL, FEW COBBLES		
	2	16-60	2.00'-2.92'				
					WEATHERED ROCK	3.0	
5					AUGER REFUSAL @ 5.0'	5.0	
10							
15							
20							
25							
30							
35							

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: T. CZMYR
INSPECTOR:

SHEET 1 OF 1 HOLE NO. **B-6**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MILONE & MAcBROOM, INC.	PROJECT NAME HAMDEN HIGH SCHOOL BASEBALL FIELD LIGHT POLES LOCATION 2040 DIXWELL AVE., HAMDEN, CT.

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	NQ
SIZE I.D.	3.75"		1.375"	2.0"
HAMMER WT.			140 lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV.
HOLE NO. **B-7**

GROUND WATER OBSERVATIONS
AT none FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 11/6/15
FINISH DATE 11/6/15

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	2-7-60	0.00'-1.42'		TOPSOIL	.08	
					RED/BR. FINE-CRS. SAND, LITTLE SILT, LITTLE GRAVEL		
					WEATHERED ROCK	1.42	
5					CORED BEDROCK - SANDSTONE	5.0	
					RUN #1 5.0' - 10.0' RECOVERED 60" RQD=58%		
10					BOTTOM OF BORING @ 10.0'	10.0	
15							
20							
25							
30							
35							

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: T. CZMYR
INSPECTOR:

SHEET 1 OF 1 HOLE NO. **B-7**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MILONE & MAcBROOM, INC.	PROJECT NAME HAMDEN HIGH SCHOOL BASEBALL FIELD LIGHT POLES LOCATION 2040 DIXWELL AVE., HAMDEN, CT.

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140 lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV.
HOLE NO. **B-8**

GROUND WATER OBSERVATIONS
AT none FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 11/6/15
FINISH DATE 11/6/15

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
0					BITUMINOUS CONCRETE 0.17	
	1	4-9-8-8	1.00'-3.00'		BR./RED FINE-CRS. SAND, SOME SILT, LITTLE GRAVEL & COBBLES	
	2	10-8-10-11	3.00'-5.00'			
5	4	7-18-14-11	5.00'-7.00'			
10	5	21-12-21	10.00'-11.50'			
					RED/BR. FINE-MED. SAND, SOME SILT, LITTLE GRAVEL & COBBLES 13.0	
15	6	33-22-19	15.00'-16.50'			
					AUGER REFUSAL @ 18.5' 18.5	
					NOTE: SOILS WERE SATURATED BELOW 15.0'	
20						
25						
30						
35						

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: T. CZMYR
INSPECTOR:

SHEET 1 OF 1 HOLE NO. **B-8**

APPENDIX B

LOCAL APPROVALS

BK: 4296 PG: 217
INST: 1383

NOTICE OF DECISION
TOWN OF HAMDEN
INLAND WETLANDS COMMISSION
APPLICATION NO. 15-1214

ADDRESS: **2040 Dixwell Avenue**

The Hamden Inland Wetlands Commission hereby gives Notice of the following decision in accordance with the Inland Wetlands & Watercourses Regulations of the Town of Hamden:

Applicant: Hamden Board of Education, 60 Putnam Avenue, Hamden CT 06514

Owner: Town of Hamden, 2750 Dixwell Avenue, Hamden CT 06518

Application Number 15-1214 for the conversion of the Hamden High School grass baseball field into a multi-purpose synthetic turf field was approved by the Commission on January 6, 2016 with the following conditions:

(1) The splash pad and erosion control measures to be installed at the discharge pipe leading to the watercourse as well as the outflow from the watercourse to the connecting 36-inch pipe shall be cleaned.
(2) All recommendations made by the RWA shall be incorporated into the plan.
(3) Final site plans shall be signed off by the Commission Chair.
(4) On completion of the enhancement work in the watercourse, the wetlands enforcement officer shall conduct an inspection and issue final approval.

Any terms and conditions included on the approved plans and/or on this Notice are binding on the property and shall run with the land unless modified by subsequent Inland Wetland Agency actions(s).

Notice prepared by:
Thomas L. Vocelli
Inland Wetlands Enforcement Officer
Town of Hamden

Signature: Thom L Vocelli

RECEIVED FOR RECORD
Mar 09,2016 12:34:15P
VERA A. MORRISON
TOWN CLERK
HAMDEN, CT

TOWN OF HAMDEN
PLANNING AND ZONING COMMISSION

SPECIAL PERMIT & SITE PLAN NO. 15-1271

The Hamden Planning and Zoning Commission hereby give notice of a Special Permit & Site Plan Approval in accordance with the Hamden Zoning Regulations to permit the following use:

Baseball Field

At the following location: 2040 Dixwell Avenue

Property owned by: Town of Hamden, Applicant

This Special Permit & Site Plan was granted at its meeting of February 23, 2016. The permit is approved by the following conditions:

1. The applicant must obtain a Zoning Permit.
2. Prior to the Issuance of a Zoning Permit, the applicant must submit a revised site plan for approval by the Town Planner and Town Engineer, containing:
    A. Use of basaltic gravel in the dynamic stone base.
    B. Extension of the silt fencing along the east side along the Route 15 ramp, as recommended by Mr. Brinton.
    C. Installation of a splash pad and erosion control measures at the storm water discharge pipe.
    D. Movement of any light pole in conflict with the 60" storm pipe.
    E. Placement of a dedicated refueling station located as far as possible from any storm water catch basins, on a paved surface, if a refueling station is needed.
    F. All Conditions of Approval.
3. Selection of the synthetic turf product must include a review of its chemical composition. The turf selected must meet the following requirements:
    A. Include a list of all the chemicals.
    B. Undergo testing that certifies the infill meets the requirements established by Underwriters Laboratories Environmental (ULE) for certification under its GreenGuard Program, per Reference Standard GGPS.006.
    C. Contain no truck tires.
    D. Use only Polyethylene fibers.
    E. Employ no painted lines containing lead-chromate.
4. The project work and subsequent maintenance must be carried out in strict compliance with the Demolition Phase and Construction Phase Notes as well as the Operation and Maintenance Plan on the title sheet.
5. The artificial turf should be installed during cooler months.
4. All work must be completed by February 23, 2021.
5. After the completion of the project:

A. Retest the certified turf material to confirm that it still meets the requirements of the Underwriters Laboratories Environmental (ULE) for certification under its GreenGuard Program, per Reference Standard GGPS.006. Any levels not meeting those requirements or exceeding EPA guidelines regarding toxic substances must be reviewed with State Department of Public Health officials.
B. Prohibit use of the playing field for three months.
C. At the end of the three month period, prior to use of the field, conduct a second retest of the turf material to confirm that it still meets the requirements of the Underwriters Laboratories Environmental (ULE) for certification under its GreenGuard Program, per Reference Standard GGPS.006. Any levels not meeting those requirements or exceeding EPA guidelines regarding toxic substances must be reviewed with State Department of Public Health officials.
D. Conduct annual air and storm water retesting of the new all-purpose field and the existing football field prior to fall sports, to confirm that the turf still meets the requirements of the Underwriters Laboratories Environmental (ULE) for certification under its GreenGuard Program, per Reference Standard GGPS.006. The retesting may be discontinued after three years if there are no exceedances. Any levels not meeting those requirements or exceeding EPA guidelines regarding toxic substances must be reviewed with State Department of Public Health officials.
E. Continue to follow the scientific discussion about crumb rubber turf and ask for annual updates from the State Department of Public Health.
F. Monitor activity closely during hot weather to ensure that athletes are not at risk of exhaustion. Use of the field in summer months should be discouraged. The applicant must follow the guidelines established by the Connecticut Interscholastic Athletic Conference for safe play at various heat index values.
G. If necessary, the lighting should be adjusted so that the lights do not shine in the windows of the apartment buildings to the west.
H. The catch-basins should be cleaned of sediment and debris at least once a year and whenever the sumps are more than half full.
I. The RWA must be given access to inspect the property on an annual basis.

Dated this 4th day of March 2016

Planning and Zoning Commission
Town of Hamden

By: _____
Acting Town Planner

RegionalWaterAuthority

South Central Connecticut Regional Water Authority
90 Sargent Drive, New Haven, Connecticut 06511-5966 203.562.4020
http://www.rwater.com

November 16, 2015

Mr. Daniel Kops
Assistant Town Planner
Hamden Government Center
2750 Dixwell Avenue
Hamden, CT 06518

Dear Mr. Kops:

Re: 2040 Dixwell Avenue, baseball/multipurpose field replacement
Date of Site Plan: 10/15/15

The Town of Hamden is proposing to replace the existing grass field with a synthetic turf field, replace the lighting and make additional minor improvements. The project will require a variance for lighting, an inland wetlands permit and site plan approval. Based on the information submitted, we have the following comments related to the variance and site plan approval:

1. We have no objection to the variances required for the lighting upgrade.

2. Eosion and sedimentation controls should be installed prior to any site work. Controls should be inspected weekly and after each rainfall. Additional controls should be stored on-site for any necessary repairs. Excavated material stored on-site for any length of time should be stabilized.

3. During construction, all oil, paint, or other hazardous materials should be stored in a secondary container and removed to a locked indoor area with an impervious floor during non-work hours.

4. A dedicated refueling site should be established. It should be located as far away from stormwater catchbasins as possible. If possible it should be located on a paved impervious surface.

Thank you for the opportunity to comment on this application. If you have any questions, please contact me at (203) 401-2741.

Sincerely,

REGIONAL WATER AUTHORITY

Ronald Walters
Senior Environmental Analyst

cc Mr. Chris Hulk

RegionalWaterAuthority

South Central Connecticut Regional Water Authority
90 Sargent Drive, New Haven, Connecticut 06511-5966 203.562.4020
http://www.rwater.com

November 18, 2015

Ms. Joan Lakin, Chair
Hamden Inalnd Wetland Commission
Hamden Government Center
2750 Dixwell Avenue
Hamden, CT 06518

Dear Mr. Kops:

Re: 2040 Dixwell Avenue, baseball/multipurpose field replacement
Date of Site Plan: 10/15/15

The Town of Hamden is proposing to replace the existing grass field with a synthetic turf field, replace the lighting and make additional minor improvements. Stormwater draing from the field will be directed to the existing stormwater drainage piping. Based on the information submitted, we have the following comments:

1. Eosion and sedimentation controls should be installed prior to any site work. Controls should be inspected weekly and after each rainfall. Additional controls should be stored on-site for any necessary repairs. Excavated material stored on-site for any length of time should be stabilized.

2. During construction, all oil, paint, or other hazardous materials should be stored in a secondary container and removed to a locked indoor area with an impervious floor during non-work hours.

3. A dedicated refueling site should be established. It should be located as far away from stormwater catchbasins as possible. If possible it should be located on a paved impervious surface.

Thank you for the opportunity to comment on this application. If you have any questions, please contact me at (203) 401-2741.

Sincerely,

REGIONAL WATER AUTHORITY

Ronald Walters
Senior Environmental Analyst

cc Mr. Chris Hulk

STATE OF CONNECTICUT

DEPARTMENT OF TRANSPORTATION

DISTRICT III
140 Pond Lily Avenue
New Haven, Connecticut 06515
Phone:

December 11, 2015

Mr. Chris Hulk, EIT
Milone & MacBroom
99 Reality Drive
Cheshire, CT 06410

Dear Mr. Hulk:

Subject: Baseball Field Re-do
Lease #185-023-085B
Exit 60 on Ramp, Hamden

This office has reviewed your plans for the aforementioned subject last revised December 8, 2015 and has no further comments:

THE PROPOSED PROJECT SHALL NOT START WITHIN THE DEPARTMENT OF TRANSPORTATION'S RIGHT OF WAY UNTIL AN ENCROACHMENT PERMIT HAS BEEN SECURED. TO OBTAIN AN ENCROACHMENT PERMIT PLEASE COMPLETE THE FOLLOWING STEPS.

1. Documentation of city/town approval.
2. A completed PMT-1 application for permit.
3. A certificate of insurance (Form CON-32 rev. 11/07) requiring Bodily Injury Liability and Property Damage Liability of $1,000,000.00 each Accident or Occurrence and Aggregate of $2,000,000.00.
4. A bond (CLA-5 Rev. 8/00) in the amount of ten thousand dollars ($10,000.00) in the owner's name.

If you have any questions concerning this matter, please contact me at (203) 389-3002.

Very truly yours,

Michael Kanios

Michael Kanios
Transp. Supervising Service Agent
Bureau of Highway Operations

cc: Ms. Leslie Creane, Hamden P&Z

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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY OPERATIONS AND MAINTENANCE

Date: _____ Fee: (for DOT use)	PMT-1 Rev. 10/13 State of Connecticut Department of Transportation **APPLICATION FOR PERMIT**	Application form must be filled in completely and mailed or delivered to the corresponding District Office for the subject town.

LOCATION OF PROPOSED WORK:

(a) Town _____ (b) Route _____ (c) Street Name & No. _____

(d) (Circle One) N. S. E. W. side of Highway (e) Located Between Utility Poles No. _____ & No. _____

(f) Distance and direction from nearest intersecting road _____ Miles (N. S. E. W.) of _____ (St/Rd)

Application is hereby made to:(Describe fully & include sketch or attach plans) _____

_____

_____

_____

PERMIT FEE can be paid only by check or money order payable to Treasurer- State of Conn.

Name of Surety Company & amount of Bond _____ _____

Party whom Bond is issued:

Print Name _____

Signed _____ Phone _____

Party to whom Insurance is issued:

Print Name _____

Signed _____

Approximate Time Required _____ Desired Starting Date _____

Complete Plans and Specifications must be submitted for major encroachment permits. On other work a careful sketch shall be shown on space above or on back side of application.

Permit to be issued to:

Name _____

& _____

Address _____

Town _____ ZIP _____

The owner of the property for whom this work is being performed agrees to accept all future maintenance responsibility for the work specified in the permit.

Print Owner's Name _____

Address _____

Signed _____ Phone _____

APPENDIX C

TURF RFP – FOR REFERENCE ONLY

REQUEST FOR PROPOSAL

RFP 16-11
FOR
SYNTHETIC IN-FILLED ATHLETIC TURF
AT
HAMDEN HIGH SCHOOL
HAMDEN, CONNECTICUT

April 26, 2016

MMI #1228-61-08

INFORMATION ONLY

Prepared for:

The Town of Hamden
Hamden, Connecticut

Prepared by:

MILONE & MACBROOM, INC.
99 Realty Drive
Cheshire, Connecticut 06410
(203) 271-1773
www.miloneandmacbroom.com

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INFORMATION ONLY

PROPOSAL REQUIREMENTS

INFORMATION ONLY

REQUEST FOR PROPOSAL

SYNTHETIC IN-FILLED ATHLETIC TURF

HAMDEN HIGH SCHOOL
HAMDEN, CONNECTICUT

Process

Upon receipt of the responses to this solicitation, the Town of Hamden may, but shall not be required to, invite one or more synthetic turf manufacturers responding to this solicitation to present their qualifications to the town project committee. The final selection will be based on both the qualifications of the manufacturer and the cost of the product that best meets the needs of the Town of Hamden. The successful company's name and cost will then be included in the final plans and specifications for the construction of the project, which is expected to be solicited for bid and constructed during the present construction season. **Note that the successful turf manufacturer will be a subcontractor to the prime contractor**.

Project Description

The existing natural grass baseball field will be reconstructed at Hamden High School. The existing grass baseball field will be replaced with a synthetic athletic turf multipurpose field having a sand-rubber in-fill, or 100% coated sand infill, to be used for a variety of sports including baseball, soccer, and field hockey. A channel edge drain will be installed along a portion of the field and will be integrated with a turf nailer. Chain link fencing will be installed around the remainder of the field, and its foundation will incorporate a flush concrete curb nailer. Two alternate turf systems are proposed for this project. The first will be a sand and crumb rubber infilled turf placed over a traditional dynamic stone base and drainage system. The alternate design will be for a shorter pile height turf system which utilizes 100% coated sand infill which will be installed over a resilient polypropylene shock pad/drainage mat. The turf system will be selected at the time of award of the prime contractor.

The Town of Hamden, through this Request for Proposal (RFP), will select one synthetic turf manufacturer to supply and install a synthetic turf product at the cost established by this RFP, which cost shall remain in effect until November 2016. The selected turf product(s) will be specified in the Construction Documents as the only source for synthetic turf. The synthetic turf manufacturer will furnish and install its product as a subcontractor to the site contractor having the lowest qualified bid.

Submittals

Synthetic turf manufacturing firms wishing to be considered shall submit five (5) copies of their concisely worded submittal package, consisting of (1) a letter of interest, together with general information on the company and proposed subcontractors; (2) experience of the company; (3) a list of successfully completed fields that demonstrates compliance with Section 33 32 00, 1.5 Quality Assurance (below). The list of successfully completed fields shall clearly identify the product installed, including any model, style, pile height, and/or other distinguishing characteristics; (4) two box samples (one for each system)

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of the manufacturer's synthetic turf and infill to be installed that meets or exceeds the attached specification requirements; (5) two 12"x12" minimum rag samples (no infill, one for each system) of the manufacturer's synthetic turf to be installed that meets or exceeds the attached specification requirements. Only one sample (not five) of the manufacturer's synthetic turf for each system should be submitted; (6) one 12”x12” sample of the resilient polypropylene shock/drainage pad with manufacturer’s literature demonstrating compliance with the technical specifications and (7) a draft copy of the full warranty policy and forms.

The Proposal Form included at the end of this RFP shall be submitted in a clearly marked separate envelope. Pricing shall be for the same model, style, quality, etc. as the sample of synthetic turf submitted. If more than one sample is provided, pricing for each sample shall be submitted on separate Proposal Forms that clearly identify which sample and product model is being priced.

Submittals shall be based on the format and requirements set forth in this RFP. These shall be addressed to:

Finance Department
Town of Hamden
Hamden Government Center
2750 Dixwell Avenue
Hamden, CT 06518

Submittals shall be accepted until 11:00 a.m. on Friday, May 13, 2016. All submittals shall be clearly labeled "RFP, Synthetic In-Filled Athletic Turf."

Contact

Respondents with questions regarding the submission requirements may contact Mr. Phil Goodwin, Purchasing Agent, Town of Hamden, Hamden Government Center, 2750 Dixwell Avenue, Hamden, CT 06518, email: Purchasing@hamden.com. All questions shall be presented at least 72 hours prior to the response deadline to allow for sufficient time to draft and post addenda, if required.

INFORMATION ONLY

TECHNICAL SPECIFICATIONS

INFORMATION ONLY

SECTION 33 32 00 SYNTHETIC INFILLED ATHLETIC TURF SURFACE

PART 1 – GENERAL

1.1 SUMMARY

A. Furnish all labor, materials, tools and equipment necessary to install slit-film artificial grass field turf as indicated on the plans and as specified herein. The installation of all new materials shall be performed in strict accordance with the Manufacturer's* installation instructions and in accordance with the Contract Documents. The work will include, without limitation, the survey layout for the placement of the resilient polypropylene base (TURF SYSTEM B, if applicable); synthetic turf fabric; the placement of the fabric and the sewing of seams; fastening the fabric to the concrete edge (provided by the General Contractor); installing lines and marks for each sport; installing the sand-rubber (TURF SYSTEM A) or sand-alternate infill (TURF SYSTEM B); final grooming; and training of school personnel on maintenance procedures.

B. Provide written acceptance from the turf manufacturer of the dynamic stone base installed including without limitation the compaction, permeability, and planarity of base material. If the alternate infill system over shock pad/drainage mat is selected by the town then provide written acceptance from the turf manufacturer of the stone base installed including without limitation the compaction, and planarity of base material. It is the responsibility of the Contractor to repair any deficiencies in the stone base.

C. Provide written acceptance from the turf manufacturer that the perimeter edge detail meets the requirements for the installation of the synthetic turf. It is the responsibility of the Contractor to install the perimeter edge details required for the system in strict accordance with the Manufacturer's requirements and as approved by the Owner.

*For the purpose of this specification, the term Turf Manufacturer may be interpreted as meaning Turf Vendor since it is understood that some, but not all, suppliers of synthetic turf purchase the carpet (fabric) from an independent carpet mill.

1.2 RELATED SECTIONS

A. Section 334600 – Athletic Field Subsurface Drainage System (For Reference Only)

1.3 REFERENCES

A. FM P7825 - Approval Guide; Factory Mutual Research Corporation; current edition

B. American Society for Testing and Materials (ASTM) Standard Test Methods, International Standards Organization (ISO), and European Committee for Standardization (EN) :

D1577 - Standard Test Method for Linear Density of Textile Fiber
D5848 - Standard Test Method for Mass Per Unit Area of Pile Yarn Floor

INFORMATION ONLY

Covering

ASTM D418 - Standard Test Method for Testing Pile Yarn Floor Covering Construction

ASTM D1338 - Standard Test Method for Tuft Bind of Pile Yarn Floor Coverings

ASTM D1682 - Standard Method of Test for Breaking Load and Elongation of Textile Fabrics

ASTM D5034 - Standard Test Method of Breaking Strength and Elongation of Textile Fabrics (Grab Test)

ASTM F1015 - Standard Test Method for Relative Abrasiveness of Synthetic Turf Playing Surfaces

ASTM D4491 - Standard Test Methods for Water Permeability of Geotextile by Permittivity

ASTM D2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials

ASTM F355 - Standard Test Method for Shock-Absorbing Properties of Playing Surface Systems and Materials.

ASTM F1936 - Standard Test Method for Shock-Absorbing Properties of North American Football Field Playing Systems as Measured in the Field

ASTM D1557 - Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.

ISO 8295 – Plastic Film and Sheet – Determination of Coefficient of Friction

ISO 4897 - Cellular plastics - Determination of coefficient of linear thermal expansion.

ISO 8301 – Thermal resistance.

ISO 1798 – Standard Specification for Flexible Materials – Tensile Strength.

ISO 1856 – Flexible cellular polymeric materials – Determination of compression set.

EN 12616 – Water Infiltration Rate

EN 14809 - Surfaces for sports areas – Determination of vertical deformation.

C. Current NFHS and CIAC Rules and Interpretations

D. Current "Suggested Guidelines for the Essential Elements of Synthetic Turf Systems" of the Synthetic Turf Council (STC).

1.4 SUBMITTALS – TURF (TURF SYSTEM A AND B)

A. Prior to the Engineer/Landscape Architect's approval of a specified artificial turf system, the Turf Manufacturer/Vendor shall provide a notarized affidavit that its turf system does not violate any other manufacturer's patents, patents allowed, or patents pending.

B. Prior to the Engineer/Landscape Architect's approval of the specified turf system, the Turf Manufacturer/Vendor shall provide a notarized affidavit that its turf system, including the fiber, and infill after installation will meet or exceed the requirements related to discharges into surface or ground water and emissions in effect at the time of installation established by the U.S. Environmental Protection Agency, the State of Connecticut Departments of

INFORMATION ONLY

Energy and Environmental Protection and Public Health, and any other agency of competent jurisdiction .

C. **Submit the following with the Proposal:**
   1. One rag sample for each Option (TURF SYSTEM A & B), 12x12 inch in size, illustrating details of finished product.
   2. One boxed sample for each Option (TURF SYSTEM A & B), including infill representative of the finished synthetic turf system.
   3. A bagged sample of the crumb rubber infill (TURF SYSTEM A).
   4. A bagged or jarred sample of the coated sand infill (TURF SYSTEM B).
   5. A letter and specification sheet certifying that the products of this section meet or exceed specified requirements.
   6. Certified copies of independent (third-party) laboratory reports on ASTM tests specified in Section 2.1.B below.
   7. List of existing recent installations using slit film fiber with a sand-rubber or alternative infill system in the United States, including Owner representative and telephone number.
   8. The Turf Manufacturer/Vendor shall provide a sample copy of insured, non-prorated warranty and insurance policy information.

D. Prior to ordering of materials:
   1. The Turf Manufacturer/Vendor shall submit through the General Site Contractor Shop Drawings indicating:
      a. Field Layout, as directed by the Owner.
      b. Field Marking Plan and details for the specified sports meeting the requirements of NFHS and CIAC
      c. Roll/Seaming Layout.
      d. Methods of attachment to anchor curbs.
   2. The Turf Manufacturer/Vendor shall submit:
      a. The fiber manufacturer's name, type of fiber, and composition of the fiber
      b. Crumb rubber manufacturer's name, composition of material, and MSDS and other related environmental test data.
      c. A list of the chemical composition of all components of the turf system, including but not limited to infill material(s), turf fiber, and backing material(s)
      d. Test results that certifies the infill meets the requirements established by Underwriters Laboratories Environmental (ULE for certifications under its GreenGuard Program, per reference Standard GGPS.006. (See Appendix A)
      e. Certifications that crumb rubber (TURF SYSTEM A ONLY) contains no truck tires.
      f. Certification that turf fiber is comprised of 100% polyethylene fiber.

E. Prior to Final Acceptance, the Contractor shall submit to the Owner:
   1. Five (5) printed copies and one (1) electronic copy (pdf) of Maintenance Manuals, which will include all necessary instructions for the proper care and preventative maintenance of the synthetic turf system, including painting and markings.

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2. The testing data and certification from an approved independent testing laboratory that the finished field meets and/or exceeds the required impact attenuation G-max, as per ASTM F355 and these specifications.
3. Project Record Documents: Record actual locations of seams, drains, or other pertinent information.
4. Warranty: Submit Manufacturer Warranty and ensure that forms have been completed in Owner's name and registered with Manufacturer.
5. **Attic Stock**: Provide an additional 15 feet by 20 feet of green turf and 15 feet by 40 feet of tan turf. Provided one sack (minimum one ton) of surplus rubber (TURF SYSTEM A) or coated sand infill material (TURF SYSTEM B), separated into manageable plastic containers for storage at a location specified by the Owner. Plastic containers shall be Rubbermaid BRUTE Rollout Container(s), maximum 65 gallon size, constructed from HDPE, with heavy duty wheel and attached lid, or approved equal.

1.6 SUBMITTALS – RESILIENT POLYPROPYLENE BASE/SHOCK PAD/DRAINAGE MAT (TURF SYSTEM B)

A. General: Bidding contractor must identify performance base system with bid package. If a non-compliant product is identified, the proposed alternate product must be submitted and pre-approved by the design architect/engineer 5 days prior to the bid opening. If bidding contractor does not identify a manufacturer, the Town will assume that the specified product is included in the bid package and will not consider substitutions.

B. Shop Drawings: Submit cross-sectional view showing product installation in relation to sub-base and synthetic turf (including edge attachment).

C. Test Data: Submit listing of all applicable test data for compliance to specifications. All testing to be performed by independent sources following applicable ASTM or other internationally recognized standards and procedures.

D. Installation: Submit copy of product installation instructions. Submit copy turf installation recommendations.

E. Warranty: Submit copy of product warranty coverage. (25 year warranty required)

1.7 QUALITY ASSURANCE – TURF (TURF SYSTEM A & B)

A. Manufacturer/Vendor Qualifications: Company whose primary business specializes in manufacturing and installing synthetic infill athletic turf products specified in this section. The turf manufacturer/vendor and its installation personnel:
   1. Must be experienced in the manufacture and self-installation of this specific type of synthetic sand-rubber or 100% coated sand infill slit film grass system for at least five years.
   2. Must have experience with NCAA, FIFA or NFHS baseball, football, soccer, lacrosse or field hockey fields installed with the product specified in these Contract Documents.
   3. Must have fields of 75,000 sq. ft. or more of the specified material in play for at least three years. Note any alternate infill filled fields in play.

INFORMATION ONLY

B. Installer Qualifications: Company specializing in performing the work of this section.
   1. The manufacturer must provide competent workmen skilled in this specific type of synthetic turf installation. Such employees shall be directly employed by the turf manufacturer/vendor or by a licensee of the Manufacturer installing the Manufacturer's products as the principal turf product. Independent subcontractors shall not be permitted. Evidence of such employment shall be submitted to the Owner prior to the installation of the turf.
   2. The designated supervisory personnel on the project must have five years of experience and be certified, in writing by the Turf Manufacturer/Vendor, as competent in the installation of this slit-film material, including sewing seams and proper installation of the infill mixture.

1.8 QUALITY ASSURANCE – RESILIENT POLYPROPYLENE BASE/SHOCK PAD/DRAINAGE MAT (TURF SYSTEM B)

A. The sub-base (underlayment) material is to be manufactured in an ISO-9000 certified facility.

B. Company must demonstrate successful installations in the United States for at least 2 million square feet of manufacturer's material.

C. Use only new materials manufactured and shipped for the specific installation. No used, recycled or refurbished materials are to be installed. Manufacturer must provide documentation of material content and MSDS sheet for submittal package

D. Product to be shipped as flat panels on prepackaged pallets. Pallets to be wrapped with heavy-duty barrier for protection from moisture and UV exposure.

E. Material must be installed using manufacturers guidelines, without exception.

F. Manufacturer must provide written procedures to selected turf supplier for the Installation of turf on top of underlayment.

1.9 PRE-INSTALLATION MEETING

A. Convene one week before starting work of this section.

1.10 DELIVERY, STORAGE, AND PROTECTION

A. Deliver products to project site in wrapped condition.

B. Store products under cover and elevated above grade.

1.11 WARRANTIES

A. The Turf Manufacturer/Vendor shall provide a warranty to the Owner that covers defects in materials, installation, and workmanship of the turf for a period of eight years from the date of Substantial Completion. The Turf Manufacturer/Vendor shall verify in writing to

INFORMATION ONLY

the Owner that their on-site representative has inspected the installation and that the work conforms to the Manufacturer's requirements. The artificial grass field turf must maintain an ASTM F355/ASTM F1936 measured G-max of between 95-165 for the life of the warranty (TURF SYSTEM A). The artificial grass field turf must maintain an ASTM F355/ASTM F1936 measured G-max of between 80-120 for the life of the warranty (TURF SYSTEM B).

B. The Turf Manufacturer/Vendor's warranty shall include general wear and damage caused from UV degradation.

C. The Turf Manufacturer/Vendor's warranty must be supported by a third party prepaid, non-cancelable insurance policy for the full eight (8) year period from an insurance company with an AM Best rating of A- or better, no maximum limit on a single claim, no deductible or retention amount per claim. The insurance policy shall be in favor of the Owner and shall be specific to the project site.

A draft copy of the full policy shall be submitted by each bidder with their bid and shall indicate that such coverage is now in effect or will be in effect at the time of the execution of the contract with the Owner. The synthetic Turf Manufacturer/Vendor shall also submit a signed affidavit affirming the warranty requirements of these specifications. The effective date of the policy shall begin at the time of substantial completion of the field and shall terminate eight (8) years thereafter.

1.9 MAINTENANCE SERVICE

A. The Turf Manufacturer/Vendor will train the Owner's facility maintenance staff in the use of the Turf Manufacturer's/Vendor's recommended groomer and other appropriate maintenance practices. Up to eight hours of training are included in this specification.

B. **The turf vendor shall, at no additional cost to the Owner, replace the turf in the baseball base areas, including home plate, after the first four (4) seasons of field use.** It shall be the responsibility of the Owner to contact the Vendor to schedule this replacement work.

PART 2 – PRODUCTS

2.1 TURF MATERIALS - **TURF SYSTEM A**

A. The component materials of the synthetic turf consist of:

1. A carpet made of UV-resistant polyethylene slit-film fibers tufted a fibrous, either perforated or non-perforated, porous multi-layer backing.
2. Glue, thread, paint, seaming fabric, and other materials used to install and mark the artificial turf.

INFORMATION ONLY

B. The installed artificial turf shall have the following properties:

Standard	Property	Specification
ASTM D1577	Fiber Denier – Slit Film	8,000 nominal minimum
ASTM D418/D5848	Pile Height	2.5" nominal minimum
ASTM D418/D5848	Pile Weight	46 oz./sq. yd. minimum
ASTM D1335	Tuft Bind	9 lbs. (without infill) minimum
ASTM D1682/D5034	Grab Tear (width)	>200 lbs/force minimum
ASTM D1682/D5034	Grab Tear (length)	>200 lbs/force minimum
ASTM D5793	Stitch Gauge	3/8" minimum, 3/4" maximum
ASTM D4491	Carpet Permeability	>40 inches/hour
ASTM F1936	Impact Attenuation, Gmax	≥95-115 (+/-10) @ installation
		≤165 over field life

C. The carpet shall consist of polyethylene slit film and monofilament fibers tufted into a primary backing with a secondary backing.

1. The carpet shall be furnished in 15' wide rolls. Rolls shall be long enough to go from sideline to sideline without splicing.
2. The carpet's primary backing shall be a double layered polypropylene fabric treated with UV inhibitors. The secondary backing shall consist of an application of porous, heat-activated urethane to permanently lock the fiber tufts in place.
3. The fiber shall be low friction, UV-resistant fiber measuring not less than 2.5-inches high nominal. Systems with less than a 2.5-inches (nominal) fiber will not be permitted

E. Thread for sewing seams of turf shall be as recommended by the synthetic Turf Manufacturer/Vendor.

F. Glue and seaming fabric for inlaying lines and markings shall be as recommended by the synthetic Turf Manufacturer/Vendor.

2.1 TURF MATERIALS - **TURF SYSTEM B**

A. The component materials of the synthetic turf consist of:

1. A carpet made of UV-resistant polyethylene slit-film fibers tufted a fibrous, either perforated or non-perforated, porous multi-layer backing.
2. Glue, thread, paint, seaming fabric, and other materials used to install and mark the artificial turf.

INFORMATION ONLY

B. The installed artificial turf shall have at a **minimum** the following properties:

Standard	Property	Specification
ASTM D1577	Fiber Denier – Slit Film	8,000 nominal minimum
ASTM D418/D5848	Pile Height	1.75" nominal*
ASTM D418/D5848	Pile Weight	50 oz./sq. yd. minimum
ASTM D1335	Tuft Bind	9 lbs. (without infill) minimum
ASTM D1682/D5034	Grab Tear (width)	>200 lbs/force minimum
ASTM D1682/D5034	Grab Tear (length)	>200 lbs/force minimum
ASTM D5793	Stitch Gauge	3/8"*
ASTM D4491	Carpet Permeability	>40 inches/hour
ASTM F1936	Impact Attenuation, Gmax	≥85-100 (+/-10) @ installation
		≤120 over field life**

*TURF SYSTEM B shall have a 1.75" pile height and 3/8" stich guage. No exceptions.

**TURF SYSTEM B will be installed over a Brock YSR shock pad or approved equal. This system will not require additional Gmax testing after the one time test upon completion of installation per the requirements of this specification.

C. The carpet shall consist of polyethylene slit film fibers tufted into a primary backing with a secondary backing, at a minimum.

1. The carpet shall be furnished in 15' wide rolls. Rolls shall be long enough to go from sideline to sideline without splicing.
2. The carpet's primary backing shall be a double-layered polypropylene fabric treated with UV inhibitors. The secondary backing shall consist of an application of porous, heat-activated urethane to permanently lock the fiber tufts in place.
3. The fiber shall be low friction, UV-resistant fiber measuring 1.75-inches high nominal. Systems other than 1.75-inches (nominal) fiber will not be permitted

E. Thread for sewing seams of turf shall be as recommended by the synthetic Turf Manufacturer/Vendor.

F. Glue and seaming fabric for inlaying lines and markings shall be as recommended by the synthetic Turf Manufacturer/Vendor.

2.2 INFILL MATERIALS – **TURF SYSTEM A**

A. The infill shall consist of a resilient layered granular system comprised of selected and graded dust-free silica sand and crumb rubber granules free of foreign material.

B. The infill mix shall contain at least 50% silica sand by weight.

C. The infill mix shall weigh a minimum of 7 lbs per square foot.

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D. **Product submittals shall clearly identify infill composition and weight per square foot.**

E. Refer to Section 1.4, Item D of this specification for unique submittal requirements.

2.3 INFILL MATERIALS – **TURF SYSTEM B**

A. An infill that is comprised of 100% Envirofill® high performance infill.

B. The synthetic turf infill shall be specifically designed and manufactured for athletic use. It shall be a rounded and highly uniform quartz sand pigmented and sealed with an acrylic polymer and have the following properties:
   a. The silica sand shall have a Coefficient of Uniformity of ≤ 1.3.
   b. 98% of the particles retained on US standard sieves 12 through 20.
   c. The coated particles shall be smooth to resist mounding and compaction and have angle of repose of 30° or less.
   d. The finished product shall be 100% coated, shall repel water, be non-flammable and have <.001% dust content.
   e. When placed in synthetic turf, the system shall have an Abrasion Index of 26±2.
   f. Color: Green

C. Product to be Envirofill® manufactured by US Greentech, L.L.C. (1-800-548-0402) or approved equal.

D. The infill shall weigh a minimum of 7 lbs per square foot and be installed to the depth as shown on the plans.

2.4 RESILIENT POLYPROPYLENE BASE/SHOCK PAD/DRAINAGE MAT – **TURF SYSTEM B**

A. Description: Resilient Polypropylene Base Material, Model: PowerBase YSR

   a. Vertical drainage - 50" per hour minimum (EN12616)

   b. Friction coefficient- movement of artificial turf over 50mm distance 2.0 lbs maximum force ISO 8295

   c. Coefficient of linear thermal expansion < 0.15 mm /m /° C, ISO 4897. Thermal Resistance (R Value) minimum 3.0 per ASTM D3575

   d. Provide maximum average g-max of field of 100 upon initial testing (ASTM F355; System test under infilled turf).

   e. Guarantee maximum average G-Max of field of 120 during warranty period of the turf. (ASTM F355; System test under infilled turf)

   f. Field must meet critical fall height minimum of 1.6 meters for the warranty period of the turf. Examples of a minimum of 5 fields in the USA at least 5 years old must be provided.

   g. Supplier must provide documentation that product meets human health screening levels and total threshold limit concentration using EPA Method 3052 and Title 22 (CAM

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17) metals using EPA Method 6020/7471A and for hexavalent chromium using EPA Method 7196A.

h. Product must be Cradle to Cradle Certified.

i. Product must be made in United States of America.

j. Manufacturer must prove absence of heavy metals in production material, and a controlled chain of custody for all materials used.

k. Product shall have 25 year warranty (minimum)

l. Product: Brock Powerbase YSR or preapproved equal

m. Manufacturer: Brock International or pre-approved equal

B. Contact Information:

Brock International
2840 Wilderness Place
Boulder, CO 80301
Telephone: (303) 544-5800 Fax: 866-850-9421
www.brock-international.com

C. Product format:

a. Size: approximately 61.1 x 42.0 inches interlocking panels. (1551.5 x 1067.25 mm) overall dimensions
b. Area: Net coverage per panel 16.89 ft2 (1.55 m2)
c. Thickness: 0.90" (23mm) +/- 1/8"
d. Panel Weight: approximately 2.5 lbs / panel

D. Product Substitutions:

Bidding contractor must identify performance base system with bid package. If a non-specified product is identified, the proposed alternate product must be submitted and pre-approved by the Town/design engineer 5 days prior to the bid opening. If bidding contractor does not identify a manufacturer, the Town will assume that the specified product is included in the bid package and will not consider substitutions. No product substitutions will be accepted after award.

E. Project Completion:

a. Upon completion of installation, a walk-through will be conducted to inspect the quality of work and ensure all details meet specifications.
b. A punch list of unacceptable or incomplete items will be documented and agreed upon for completion prior to final project closeout and acceptance.

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F. Approvals
   a. Finished synthetic base installation workmanship must be approved in advance by the turf manufacturer. Approvals to be based on a physical inspection performed at the site prior to installation of any synthetic turf material.
   b. Any approvals sought after turf installation will be declined. Any associated repair or replacement costs associated with rework of the synthetic base will be the responsibility of the turf supplier/installer.

2.5 MAINTENANCE EQUIPMENT

A. N/A – No maintenance equipment required.

PART 3 – EXECUTION

3.1 GENERAL

A. The installation shall be performed in full compliance with the Contract Documents, approved Shop Drawings, and the instructions of the Manufacturer.

B. Only trained technicians, skilled in the installation of athletic caliber synthetic turf systems working under the direct supervision of the approved installer supervisors, shall undertake any cutting, sewing, gluing, shearing, and topdressing or brushing operations.

C. All designs, markings, layouts, and materials shall conform to all currently applicable NFHS and CIAC rules and/or any other rules or standards that may apply to this type of synthetic grass installation. All designs, markings, and layouts must first be approved by the Engineer or Owner in the form of approved shop drawings. All markings will be installed in full compliance with those drawings. Prior to the beginning of installation, the Turf Manufacturer/Vendor for the synthetic turf shall inspect and accept the sub-base for planarity. The Turf Manufacturer/ Vendor shall also accept in writing that the dynamic stone base is in compliance with the synthetic Turf Manufacturer's/Vendor's specifications for permeability, compaction, and gradation after the Owner provides him with all test results. The Turf Manufacturer/Vendor shall have the dimensions of the field and locations for markings measured by a registered surveyor to verify conformity to the specifications and applicable standards. A record of the finished field as-built measurements shall be made.

D. The installed base material will be tested by the General Contractor for permeability (TURF SYSTEM A) prior to the installation of the synthetic turf using the non-confined area flood test or a double ring infiltrometer testing equipment. Should the installed base not meet the requirements of the Turf Manufacturer/Vendor, the General Contractor shall be required to take all necessary corrective actions to meet the desired permeability. The General Contractor shall be responsible for the costs of all subsequent permeability tests.

E. The Turf Manufacturer/Vendor shall provide the necessary testing data to the owner

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that the finished field exceeds the required shock attenuation as per ASTM F355-A.

3.1 GENERAL – RESILIENT POLYPROPYLENE BASE/SHOCK PAD/DRAINAGE MAT

A. Installation
   a. Per manufacturer's recommendation - obtain written and/or video installation instructions and procedures from the manufacturer.

3.2 EXAMINATION

A. Verify that all sub-base leveling is complete prior to installation.

B. The surface to receive the synthetic turf shall be inspected by the Turf Manufacturer/Vendor and, prior to the beginning of installation, the Manufacturer must accept the sub-base planarity in writing. The acceptance will be based on the Owner providing the Manufacturer with test results indicating that compaction and planarity are in compliance with the synthetic Turf Manufacturer's/Vendor's specifications. The surface must be perfectly clean as installation commences and shall be maintained in that condition throughout the process.

C. The compaction of the base material shall be 95%, ±1.5% according to the Modified Proctor procedure (ASTM D1557), and the surface tolerance shall not exceed 0-1/4" over 10 feet and 0-½" from design grade.

3.3 INSTALLATION

A. Install in accordance with Turf Manufacturer's/Vendor's instructions. The Turf Manufacturer/Vendor shall strictly adhere to the installation procedures outlined under this section. Any variance from these requirements must be accepted in writing by the Manufacturer's on-site representative and submitted to the Architect/Owner, verifying that the changes do not in any way affect the warranty. Infill materials shall be approved by the Manufacturer and installed in accordance with the Manufacturer's standard procedures.

B. The carpet rolls are to be installed directly over the properly prepared aggregate base and fastened to the concrete curb or edge drain as shown on the plans. Extreme care should be taken to avoid disturbing the aggregate base, both in regard to compaction and planarity. A two- to five-ton static roller shall be on site and available to repair and properly compact any disturbed areas of the aggregate base.

C. The full width rolls shall be laid out across the field. Turf shall be of sufficient length to permit full cross-field installation from sideline to sideline. No head or cross seams will be allowed in the main playing area between the sidelines. Utilizing standard state of the art sewing procedures, each roll shall be attached to the next. When all of the rolls of the playing surface have been installed, the sideline areas shall be installed at right angles to the playing field turf.

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D. This is a 99% sewn installation. Gluing of rolls shall not be acceptable. Gluing will only be permitted to repair problem areas, corner completions, and to cut in any logos or inlaid lines as required by the specifications. All seams shall be sewn using double bagger stitches and polyester thread or, in the case of inlays only, adhered using seaming tape and high grade adhesive (per the Manufacturer's standard procedures). Seams shall be flat, tight, and permanent with no separation or fraying.

E. Infill materials shall be applied in numerous thin lifts. The turf shall be brushed as the mixture is applied. The infill material shall be installed to a depth indicated on the drawings.

F. Infill materials shall be installed to fill the voids between the fibers and allow the fibers to remain vertical and non-directional. The infill shall be placed to expose the fibers to the depth indicated on the Contract Drawings.

G. Synthetic turf shall be attached to the perimeter edge detail in accordance with the Manufacturer's standard procedures.

3.4 FIELD MARKINGS

A. All markings are to be installed in accordance with the Contract Drawings and approved shop drawings.

3.5 CLEANING

A. Protect installed field turf from subsequent construction operations.

B. Do not permit traffic over unprotected field surface.

C. Contractor shall provide the labor, supplies, and equipment as necessary for final cleaning of surfaces and installed items.

D. All usable remnants of new material shall become the property of the Owner.

E. The Contractor shall keep the area clean throughout the project and clear of debris.

F. Surfaces, recesses, enclosures, etc. shall be cleaned as necessary to leave the work area in a clean, immaculate condition ready for immediate occupancy and use by the Owner.

3.6 ANNUAL INSPECTION, TESTING AND REPORTING BY TURF MANUFACTURER/ VENDOR

A. On or before the annual anniversary date of acceptance of the synthetic turf by the Owner **for the term of the warranty**, the Turf Manufacturer/Vendor or its authorized representative, including any successor to the company, at no cost to the Owner shall inspect the field to identify deficiencies that may be apparent and that could have an

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effect on the terms and conditions of the warranty. The findings of such inspection shall be provided to the Owner within one week of such inspection. Any remedial actions that are deemed by the Owner to be the responsibility of the Turf Manufacturer/Vendor and not related to the Owner's maintenance practices shall be undertaken within 15 days of the submission of the inspection report to the Owner.

B. TURF SYSTEM A (only), on or before the annual anniversary date of acceptance of the synthetic turf by the Owner **for the term of the warranty** (**8 years**), the Turf Manufacturer/Vendor or its authorized representative, including any successor to the company, at no cost to the Owner shall engage the services of an independent testing laboratory to test the impact attenuation G-max, per ASTM F355-A of the field and advise the Owner of measures to be taken to maintain the G-max within the specified limits.

END OF SECTION 33 32 00

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GENERAL INFORMATION SPECIFICATIONS

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TOWN OF HAMDEN

SCHEDULE 0 - GENERAL INFORMATION SPECIFICATIONS

FOR REQUESTS FOR PROPOSAL (RFP) SUBMITTALS

Requests for Proposals must be submitted and forwarded to the Town of Hamden, 2750 Dixwell Avenue, Hamden, CT 06518 with a RFP number and title of Proposal written on the packaging and contain the date of opening.

Proposals received after the time set will be considered informal and may be rejected. Faxed proposals are not allowed.

SECURITY: If a security of a certified check or bid bond for 5% of the total is requested, such Security will be returned upon signing of the contract. Checks or bonds must be made to the order of the "Town of Hamden". Security may be held by the Town of Hamden for a period not to exceed 90 days from the date of the opening of the proposals for the purpose of reviewing the proposals. A separate Security must accompany each proposal presented. This is only when a Security is requested in the Proposal Specifications.

LIQUIDATED DAMAGES: The successful responder upon his/her failure or refusal to sign the contract shall forfeit to the Town as liquidated damages for such failure or refusal an amount equal to the security deposited with his/her proposal. A successful responder shall forfeit the proposal deposit if within five days after notice that the contract has been awarded to him/her, shall refuse or neglect to execute the same, the proposal deposit shall be forfeited to and retained by the Town as liquidated damages for such refusal or neglect.

The Town may make such investigations as deemed necessary to determine the ability of the responder to perform the work and the responder shall furnish to the Town all such data for this purpose. The Town reserves the right to reject a proposal if the evidence submitted by, or investigation of, such responder fails to satisfy the Town that such responder properly qualified to carry out the obligations of the contract and to complete the work contained therein. Conditional proposals will not be accepted.

SUBRESPONDERS: The responder is specifically advised that any person, firm or other party to whom it is proposed to award a subcontract under this contract must be acceptable to the Town and that approval of the proposed subcontract award cannot be given to the Town unless and until the successful responder submits all information and evidence to the Town regarding the proposed sub responder. Although the responder is not required to attach such information to the proposal, the responder is hereby advised of this requirement so that appropriate action can be taken to prevent delays.

MODIFICATION: Any responder may modify his/her proposal prior to the scheduled closing time for receipt of the proposal. See paragraph one above. Use same steps. The package must be clearly marked "**MODIFICATION**".

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ERRORS: The Town reserves the right to correct an award erroneously made as a result of a clerical error on the part of the Town of Hamden.

PERMIT: All applicable permits obtained at the cost to the vendors. No permits waived unless otherwise stated.

OBLIGATION OF PROPOSER: At the time of the opening of proposals each responder will be presumed to have read and to be thoroughly familiar with the specifications. The failure of any responder to receive or examine any form or the failure of the responder to familiarize themselves with the conditions relating to the specifications shall in no way relieve any responder from any obligation in respect to the proposal.
Furthermore, the responder is responsible for conforming to all existing Federal, State of Connecticut, and Town of Hamden Statutes, Ordinances, and Regulations and all environmental and OSHA requirements where applicable.

WITHDRAWAL OF PROPOSALS: Proposals may be withdrawn personally or on written or e-mailed request dispatched by the responder in time for delivery in the normal course of business, prior to the time fixed for opening, provided that written confirmation is placed in the mail and postmarked prior to the time set for the proposal's opening.

Negligence on the part of the responder in preparing the proposals confers no right of withdrawal or modification of the proposal after such proposal has been opened.

"OR EQUAL" CLAUSE: Whenever a material, article or piece of equipment is identified in the proposal document by reference to manufacturers' or vendors' names, trade names, catalog numbers, etc., it is intended merely to establish a standard; any material, article, or equipment of other manufacturers and vendors which will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article, or equipment so proposed is, in the opinion of the Purchasing Agent and recommendation from the using agency, to be of equal substance and function.

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

CONFLICT OF INTEREST: Bidders looking to do business with the Town of Hamden or any of its agencies should list and describe, if any, the firm's personal or professional relationships involving the Town of Hamden. The bidder should be able to provide information that there is no conflict of interest with regard to work being performed by the company, its employees or agents for the Town of Hamden.

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In addition, the bidder shall give the Town of Hamden written notice of any personal or professional relationships that occur during the period of its relationship.

NON-COLLUSIVE STATEMENT: Some responders may be required to sign a non-collusive statement prepared within the specifications.

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

Applicable if checked

☐ **PERFORMANCE AND** ☐ **PAYMENT BONDS**: To ensure the delivery of goods and services in conformity with the specifications provided. The vendor receiving proposal award will be required to give at his/her own expense to the Town of Hamden surety company performance and payment bonds, each for the full amount of the contract awarded to him. Said bond(s) will be held by the Town and is to be written by a company authorized to write business in the State of Connecticut and subject to approval by the Town.

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

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

These requirements if checked also apply to any sub responder or common carrier used by the Vendor.

☒ I. WORKERS COMPENSATION

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

☒ II. COMMERCIAL GENERAL LIABILITY

Bodily Injury and Property Damage	$1,000,000
General Aggregate	$3,000,000
Products & Completed Operations Aggregate	$1,000,000
Personal Injury/Advertising	$1,000,000
Each Occurrence	$1,000,000
Fire Damage	$ 50,000
Medical Expense	$ 5,000

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

☒ III. BUSINESS AUTOMOBILE LIABILITY (including owned, hired & non-owned vehicles)
Liability (Combined Single Limit) $1,000,000

(If hazardous material or potential pollutants are transported, MCS90 – Accidental Pollution coverage is required)

☒ IV. UMBRELLA/EXCESS LIABILITY (If Required)
Liability Limit – Each Occurrence over primary $ 5,000,00
Self-Insured retention $10,000

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

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

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

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

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

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

CERTIFICATE OF INSURANCE: The Responder prior to the start of any work under this contract will provide the Purchasing Office with a certificate of insurance to conform to the following:

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

Under no circumstances shall the awarded responder begin the project specifications until the contract for same shall have been signed by all parties, the required bond furnished and approved, and the required certificates of insurance filed with and approved by the Purchasing Department, shall the awarded responder be duly instructed in writing to proceed with the work. The penalty for commencement of the work before the provisions referred to in this paragraph are fulfilled shall be the cancellation of the contract.

DISCRIMINATION: The responder agrees and warrants that in the performance of this contract he/she 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 origins, sex, mental retardation or physical disability including, but not limited to, blindness, unless it is shown by the responder that said disability prevents the performance of the work involved in any manner prohibited by the laws of the United States or of the State of Connecticut and further agrees to provide the Town of Hamden with such information requested by the Town concerning the employment practices and procedures of the responder as related to the provisions of this section. Also agrees to comply with all provisions of Charter and Code of Ordinances-Town of Hamden, Chapter 120, "Business Transactions with Town". The responder shall cooperate fully with the Connecticut Commission on Human Rights and Opportunities ("the Commission") and to submit periodic reports of employment and subcontracting practices to the Commission in such a form, in such a manner and at such time as may be prescribed by the Commission.

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

The awarded responder shall maintain full and accurate data, such as contract monitoring reports, for a period of two (2) years from the date the record is made or the date the contract compliance form is submitted to the Commission, whichever is later, provided that this provision shall not excuse compliance with any other applicable record retention statute, regulation or policy providing for a period of retention in excess of two (2) years. The responder shall not discharge, discipline, or

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otherwise discriminate against any person who has filed a complaint, testified, or assisted in any proceeding with the Commission.

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

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

The Town of Hamden reserves the right to award the work to a responder other than the one which submitted the lowest price if it deems such action to be in the best interest of the Town of Hamden. In such an event, all unsuccessful responders relinquish their right to challenge the award.

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

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

Town of Hamden reserves the right to award separate items to separate responders. Responders may indicate exceptions to this.

At the time of award, responders must provide their Federal ID number or Social Security number to be considered for project approval.

PART 2 - DAVIS-BACON ACT - PREVAILING RATES OF WAGES
The Town of Hamden shall require the payment of prevailing rates of wages in accordance with the wage section of the Davis-Bacon Act, Town of Hamden, Hamden Code, S 97.35 and State Statute 31-53, Part III. State Contracts, and shall institute such investigations and periodic monitoring procedures as deemed necessary to determine compliance with labor standard provisions and the Federal requirements of the Act as amended.

AS PER THE TOWN OF HAMDEN AFFIRMATIVE ACTION RESOLUTION:
It is in the best interest of the Town to encourage minority and/or female business enterprise. Where two substantially similar Hamden proposals are submitted, preference may be given to the minority and/or female responder.

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RESERVED RIGHTS OF TOWN:
The Town of Hamden reserves the right to accept or reject any or all options, modifications, or proposals; to waive any technicality in a proposal or part thereof submitted, and to accept the proposal deemed to be in the best interest of the Town of Hamden. Further, we reserve the right to split proposals and quotations among two or more responders.

TIME OF COMPLETION AND LIQUIDATED DAMAGES
The number of calendar days stated shall be allowed for completion of the work on this project from the date of the award. If not completed within that time, liquidated damages shall be due to the Town and subtracted from the bond held by the Town. ( ) DAYS ( ) AMOUNT OF LIQUIDATED DAMAGES PER DAY. (Applicable only when filled in.)

DISCREPANCY:
In the event of any discrepancy between the amounts written in numerical figures, the amount written in words will be controlling.

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TOWN OF HAMDEN
LEGISLATIVE COUNCIL

PRESENTED BY:_____

ORDINANCE AMENDING CONSTRUCTION CONTRACTS ORDINANCE

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

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

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

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

CONSTRUCTION CONTRACTS

97.35: WAGES TO BE STATED IN CONTRACT.

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

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

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

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

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NOTES:

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All questions must be in writing and e-mailed to purchasing@hamden.com. Questions must be received 72 hours prior to the bid opening. Questions received after this time will not be answered.

All Projects to meet ADA regulations.

All RFP's with mandatory meetings must be attended or your proposal will not be accepted. No exceptions.

Proposals must be mailed back or delivered to:

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

Pricing Proposal must be in a separate sealed envelope and must be submitted with the original.

ALL VENDORS MUST SEND ONE ORIGINAL AND FIVE (5) COPIES OF THEIR PROPOSAL WHEN SUBMITTING.

ALL PACKAGES MUST BE MARKED PROPERLY WITH RFP #, RFP DATE, AND RFP TITLE.

Thank you.

Philip W. Goodwin
Purchasing Agent

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GENERAL BID SPECIFICATIONS - PART B

1. **Nondiscrimination Under Title VI of the Civil Rights Act of 1964**. This AGREEMENT is subject to the requirements of Title VI of the Civil Rights Acts of 1964 (PL 88-352), 42 U.S.C. Sec. 2000d et. Seq. and the Fair Housing Act (42 U.S.C. 3601-20) and Executive Order 11063 and the HUD regulations with respect thereto including the regulations under 24 CFR Part I. In the sale, lease, or other transfer of land acquired, cleared or improved with assistance provided under the Agreement, the RESPONDER shall cause or require a covenant running with the land to be inserted in the deed or lease or other instrument a restriction prohibiting discrimination with respect to race, color, creed, sex, or national origin, in the sale, lease or rental, or in the use or occupancy of such land or any improvements erected or to be erected thereon and providing that the RESPONDER and the United States are beneficiaries of and entitled to enforce such covenant. The RESPONDER in undertaking its obligation in carrying out the program assisted hereunder, agrees to take such measures as are necessary to enforce such covenant and will not itself so discriminate.

2. **Fair Housing Opportunities Under Title VIII of the Civil Rights Act of 1968 and Fair Housing Act (42 U.S.C. 3601-20)**. This AGREEMENT is subject to the requirements of Title VIII of the Fair Housing Act as amended (PL 90-284). The RESPONDER shall provide for fair housing opportunities where possible. The RESPONDER is prohibited from discriminating in the sale or rental of housing, the financing of housing, or the provision of brokerage services, including in any way making unavailable or denying a dwelling to any person, because of race, color, religion, sex or national origin. Title VIII further requires programs and activities relating to housing and community development to be administered to affirmatively further fair housing.

3. **Prohibition Against Payments of Bonus or Commission**. The assistance provided under the AGREEMENT shall not be used in the payment of any bonus or commission for the purpose of obtaining HUD approval of the application for such assistance, or HUD approval of applications for additional assistance, or any other approval or concurrence of HUD required under this AGREEMENT, Title I of the Housing and Community Development Act of 1974, as amended, or HUD regulations with respect thereto; it being understood, however, that reasonable fees or bona fide technical, consultant, managerial or other such services, are not hereby prohibited if otherwise eligible as program costs.

4. "**Section 3" Compliance in the Provision of Training Employment and Business Opportunities**. Every application, recipient, contracting party, responder, and sub responder shall incorporate, or cause to be incorporated, in all contracts, the following clause (referred to as a Section 3 clause):

a) The work to be performed under this contract is on a project assisted under a program providing direct Federal financial assistance from the Department of Housing and Urban Development and is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 170lu. Section 3 requires that to the greatest extent feasible opportunities for training and employment be given lower income residents of the project area and contracts for work in

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connection with the project area and contracts for work in connection with the project be awarded to business concerns which are located in or owned in substantial part by persons residing in the area of the project.

b) The parties to this contract will comply with the provisions of said Section 3 and the regulations issued pursuant thereto by the Secretary of Housing and Urban Development set forth in 24 CFR Part 135, and all applicable rules and orders of the Department issued thereunder prior to the execution of this Contract. The parties to this contract certify and agree that they are under no contractual or other disability, which would prevent them from complying with these requirements.

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

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

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

5. **Prevailing Salaries**. The RESPONDER will determine staff classifications and employ staff in relation to its personnel practices and salary ranges including fringe benefits in accordance with the Agreement.

6. **Anti-Kickback Rules**. Salaries of architects, draftsmen, technical engineers, technicians, laborers and mechanics performing work under this Agreement shall be paid unconditionally, and not less often than once a week, without deductions as are mandatory by law or permitted by the applicable regulations issued by the Secretary of Labor pursuant to the Copeland "Anti-Kickback Act" (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR, Part 3). The RESPONDER shall comply with all applicable regulations of said "Anti-Kickback Act" and shall insert appropriate provisions in all subcontracts relative to the work under this Agreement; and RESPONDER shall take steps to insure compliance by sub responders with such regulations at all

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times. RESPONDER shall be responsible for the obtaining and submission of the affidavits of sub responders required thereunder, except that the Secretary of Labor may specifically provide for variations of, or exemptions from, the requirements thereof.

7. **Non-Discrimination in Employment**. During the performance of this Contract, the RESPONDER agrees as follows:

a) The RESPONDER shall not discriminate against any employee or applicant for employment because of race, creed, color, sex or national origin. The RESPONDER shall take affirmative action to insure that applicants are employed and that employees are treated during employment without regard to their race, creed, color, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, transfer, recruiting or recruitment advertising, layoff, termination, rates of pay or other forms of compensation, and selection for training including apprenticeship. The RESPONDER agrees to post in conspicuous places available to employees and applicants for employment notices to be provided, setting forth the provisions of this Non-Discrimination in Employment Clause.

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

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

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

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

f) The Responder will include the portion of the sentence immediately preceding paragraph (a) and the provisions of paragraph (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 25, 1965, as amended by Executive Order 11375 and 12086, so that such provisions will be

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binding upon each sub responder or vendor. The RESPONDER will take such action with respect to any sub responder or purchase order as the Department may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided, however, that in the event a responder becomes involved in, or is threatened with, litigation with a sub responder or vendor as a result of such direction by the Department, the responder may request the United States to enter into such litigation to protect the interest of the United States.

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

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

8. **Employment of Certain Persons Prohibited**. No person under the age of sixteen years and no person who at the time is serving sentence in a penal or correctional institution shall be employed on the work covered by this Contract.

9. **Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970 and Federal Implementing Regulations**. Responder and Owners shall to the greatest extent practicable under state law comply with Sections 301 and 302 of Title III, (Uniform Real Property Acquisition Policy) of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and will comply with Sections 303 and 304 of Title III and HUD implementing instructions in 24 CFR Part 42 and 570.602 (b), comply with Title II (Uniform Relocation Assistance) of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and HUD implementing regulations at 24 CFR Part 42 and 570.602 (a).

10. **Political Activity Hatch Act and Section 109 of HCD Act.** RESPONDER shall comply with the provisions of the Hatch Act and Section 109 of the Housing and Community Development Act of 1974, as amended, and the regulations pursuant thereto (24 CFR 570.601). Under no circumstances shall the RESPONDER and/or other recipients, sub responders, and sub recipients use TOWN funds or persons employed in administering TOWN programs for the purposes of conducting any political activity.

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11. **Executive Orders 11063, 12259, and Title VIII**. RESPONDER will comply with Executive Order 11063 as amended by Executive Order 12259 and the implementing regulations in 24 CFR Part 107 and Title VIII of the Civil Rights Act of 1968 (Pub. L.90-284) as amended.

12. **Historic Preservation**. RESPONDER will comply with the National Historic Preservation Act of 1966 (PL 89-665), Preservation of Historic and Archaeological Data Act of 1974 (PL 93-291), Procedures for Protection of Historic and Cultural Properties, Advisory Council on Historic Preservation (36 CFR 800), and the HUD regulations with respect thereto.

13. RESPONDER will comply with HUD Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794 et. seq.) provides:

    No otherwise qualified individual with handicaps . . . shall, solely by reason of his or her handicap be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financing assistance.

HUD's Section 504 regulations (24 CFR Par 8) were effective as of July 11, 1988. These regulations cover program

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COMPLETE AND RETURN

RFP #: 16-11
RFP TITLE: Synthetic In-Filled Athletic Turf at Hamden High School

SCHEDULE 0 - BID FORM – TURF SYSTEM A

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

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

I have received Addenda dated as follows:
_____
_____

I have included the provisions of the bid documents noted above in my bid. I have examined the bid documents and I submit the bid as shown on the Proposal Form on sheet GIS-19 of this document:

In submitting this bid, I agree:

1. To hold my bid open until 60 days after the date on which bids are due.

2. To enter into and execute a contract, (if required) awarded on the basis of this bid, according to the contract form provided by the Town of Hamden.

3. To accomplish the work in accord with the Bid Specifications and Contract Documents.

4. To begin the work within a reasonable time and to complete the work within _____calendar days following Owner's date of Notice to Proceed.

5. The undersigned submits bid bond in the sum of _____ _____ dollars ($ _____) 5% of Base Bid, which sum is agreed shall become the sole and exclusive property of the Owner as liquidated damages to the Owner if the undersigned fails to execute a contract in conformity with the Bid Form and to furnish surety bonds and insurance policies in accordance with the General Conditions after due notification has been given.

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

_____ _____
Signed Dated

Revised January 28, 2015

INFORMATION ONLY

COMPLETE AND RETURN

RFP #: 16-11
RFP TITLE: Synthetic In-Filled Athletic Turf at Hamden High School

SCHEDULE 0 - BID FORM – TURF SYSTEM B

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

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

I have received Addenda dated as follows:
_____
_____

I have included the provisions of the bid documents noted above in my bid. I have examined the bid documents and I submit the bid as shown on the Proposal Form on sheet GIS-19 of this document:

In submitting this bid, I agree:

1. To hold my bid open until 60 days after the date on which bids are due.

2. To enter into and execute a contract, (if required) awarded on the basis of this bid, according to the contract form provided by the Town of Hamden.

3. To accomplish the work in accord with the Bid Specifications and Contract Documents.

4. To begin the work within a reasonable time and to complete the work within _____calendar days following Owner's date of Notice to Proceed.

5. The undersigned submits bid bond in the sum of _____ _____ dollars ($ _____) 5% of Base Bid, which sum is agreed shall become the sole and exclusive property of the Owner as liquidated damages to the Owner if the undersigned fails to execute a contract in conformity with the Bid Form and to furnish surety bonds and insurance policies in accordance with the General Conditions after due notification has been given.

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

_____ _____
Signed Dated

Revised January 28, 2015

INFORMATION ONLY

COMPLETE AND RETURN

RFP #: 16-11
RFP TITLE: Synthetic In-Filled Athletic Turf at Hamden High School

SCHEDULE 1 - NON-COLLUSIVE RFP STATEMENT

The undersigned responder having fully informed themselves regarding the accuracy of the statements herein certifies that:

(1) The RFP has been arrived at by the responder independently and has been submitted without collusion with and without any agreement, understanding, or planned common course of action with any other vendor of materials, supplies, equipment, or services described in the invitation for RFP designed to limit independent responding or completion, and

(2) The contents of the RFP have not been communicated by the responders or its employees or agents to any person not any employee or agent of the responder or its surety on any bonds furnished with the RFP and will not be communicated to any such person prior to the official opening of the RFP.

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

_____
Legal Name of Bidder

_____
Business Address

_____
Signature and Title of Person
Authorized to Sign

_____
Date

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Revised January 28, 2015

HAMDEN HIGH SCHOOL
SYNTHETIC IN-FILLED ATHLETIC TURF
HAMDEN, CONNECTICUT

PROPOSAL FORM

FROM: _____
Synthetic Turf Manufacturer

_____
Product Name

TO: Town of Hamden
Hamden Government Center
2750 Dixwell Avenue
Hamden, Connecticut 06518

Ladies and Gentlemen:

The undersigned, having carefully examined the Request for Proposal requirements, Drawings, and Project Specifications prepared by Milone & MacBroom, Inc., hereby offers and agrees as follows:

To provide all labor, materials, equipment, and all else necessary to supply and install synthetic athletic turf (to include inlaid baseball, field hockey, soccer striping, inlaid tick marks for girls' softball as described) at Hamden High School in accordance with the Proposal Documents.

TOTAL LUMP SUM PROPOSAL BASE PRICE - TURF SYSTEM A

WRITTEN IN WORDS _____

_____**DOLLARS**

WRITTEN IN FIGURES $_____

TOTAL LUMP SUM PROPOSAL BASE PRICE - TURF SYSTEM B

WRITTEN IN WORDS _____

_____**DOLLARS**

WRITTEN IN FIGURES $_____

INFORMATION ONLY

Construction is expected to begin in June 2016 with the installation of turf anticipated in September 2016. Bidders will be expected to hold their prices in accordance with this schedule.

SUBMITTED BY:

_____	_____
Synthetic Turf Manufacturer	Address
_____	_____
City and State	Authorized Agent Title

Date:_____ Phone:_____ Fax:_____

Enclosures:

Included with this proposal are:

1. Letter of interest
2. Experience of the company
3. List of completed fields
4. Samples of synthetic turf and infill materials
5. A draft copy of the full warranty policy and forms

INFORMATION ONLY

1228-61-08-a1916-spec-hamden front end

PREVAILING WAGES

INFORMATION ONLY

Project: Hamden High School Baseball/Multipurpose Field Improvements

Minimum Rates and Classifications
for Heavy/Highway Construction

ID#: **H** 22025

Connecticut Department of Labor
Wage and Workplace Standards Division

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

Project Number:

Project Town: Hamden

FAP Number:

State Number:

Project: Hamden High School Baseball/Multipurpose Field Improvements

INFORMATION ONLY

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**		
1) Boilermaker	33.79	34% + 8.96
1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons	33.48	28.76
2) Carpenters, Piledrivermen	31.45	23.54

As of: Tuesday, April 19, 2016

Project: Hamden High School Baseball/Multipurpose Field Improvements

2a) Diver Tenders	31.45	23.54
3) Divers	39.91	23.54
03a) Millwrights	31.84	23.99
4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	45.95	19.35
4a) Painters: Brush and Roller	31.52	19.35
4b) Painters: Spray Only	34.52	19.35
4c) Painters: Steel Only	33.02	18.55

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Project: Hamden High School Baseball/Multipurpose Field Improvements

4d) Painters: Blast and Spray	34.52	19.35
4e) Painters: Tanks, Tower and Swing	33.52	19.35
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)	37.50	23.91 + 3% of gross wage
6) Ironworkers: Ornamental, Reinforcing, Structural, and Precast Concrete Erection	34.47	31.09 + a
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	28.91
----LABORERS---- -		
8) Group 1: Laborer (Unskilled), Common or General, acetylene burner, concrete specialist	28.55	18.90 + a

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Project: Hamden High School Baseball/Multipurpose Field Improvements

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

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Project: Hamden High School Baseball/Multipurpose Field Improvements

Group 9: Hydraulic Drills	29.30	18.90 + a

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

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

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

14) Concrete Workers, Form Movers, and Strippers	31.28	18.90 + a
15) Form Erectors	31.60	18.90 + a

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Project: Hamden High School Baseball/Multipurpose Field Improvements

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

16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	31.28	18.90 + a
17) Laborers Topside, Cage Tenders, Bellman	31.17	18.90 + a
18) Miners	32.22	18.90 + a

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

18a) Blaster	38.53	18.90 + a
19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	38.34	18.90 + a

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Project: Hamden High School Baseball/Multipurpose Field Improvements

20) Change House Attendants, Powder Watchmen, Top on Iron Bolts	36.41	18.90 + a
21) Mucking Machine Operator	39.11	18.90 + a
----TRUCK DRIVERS----(*see note below)		
Two axle trucks	28.83	21.39 + a
Three axle trucks; two axle ready mix	28.93	21.39 + a
Three axle ready mix	28.98	21.39 + a
Four axle trucks, heavy duty trailer (up to 40 tons)	29.03	21.39 + a

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Four axle ready-mix	29.08	21.39 + a
Heavy duty trailer (40 tons and over)	29.28	21.39 + a
Specialized earth moving equipment other than conventional type on-the road trucks and semi-trailer (including Euclids)	29.08	21.39 + a
----POWER EQUIPMENT OPERATORS----		
Group 1: Crane handling or erecting structural steel or stone, hoisting engineer (2 drums or over), front end loader (7 cubic yards or over), Work Boat 26 ft. & Over, Tunnel Boring Machines. (Trade License Required)	38.55	23.55 + a
Group 2: Cranes (100 ton rate capacity and over); Excavator over 2 cubic yards; Piledriver ($3.00 premium when operator controls hammer); Bauer Drill/Caisson. (Trade License Required)	38.23	23.55 + a
Group 3: Excavator/Backhoe under 2 cubic yards; Cranes (under 100 ton rated capacity), Gradall; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar);Grader Operator; Bulldozer Fine Grade (slopes, shaping, laser or GPS, etc.). (Trade License Required)	37.49	23.55 + a

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Project: Hamden High School Baseball/Multipurpose Field Improvements

Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper)	37.10	23.55 + a
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
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.	36.51	23.55 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	36.20	23.55 + a
Group 7: Asphalt Roller; Concrete Saws and Cutters (ride on types); Vermeer Concrete Cutter; Stump Grinder; Scraper; Skooper; Skidder; Milling Machine (24" and Under Mandrel).	35.86	23.55 + a
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
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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Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc.	32.99	23.55 + a
Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment.	32.99	23.55 + a
Group 12: Wellpoint Operator.	32.93	23.55 + a
Group 13: Compressor Battery Operator.	32.35	23.55 + a
Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain).	31.21	23.55 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	30.80	23.55 + a
Group 16: Maintenance Engineer/Oiler	30.15	23.55 + a

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Project: Hamden High School Baseball/Multipurpose Field Improvements

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

**NOTE: SEE BELOW

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

20) Lineman, Cable Splicer, Technician	45.43	6.25%+19.20
21) Heavy Equipment Operator	40.89	6.25%+17.18
22) Equipment Operator, Tractor Trailer Driver, Material Men	38.62	6.25%+16.68

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Project: Hamden High School Baseball/Multipurpose Field Improvements

23) Driver Groundmen	24.99	6.25%+10.87
23a) Truck Driver	34.07	6.25%+15.41
----LINE CONSTRUCTION----		
24) Driver Groundmen	30.92	6.5% + 9.70
25) Groundmen	22.67	6.5% + 6.20
26) Heavy Equipment Operators	37.10	6.5% + 10.70
27) Linemen, Cable Splicers, Dynamite Men	41.22	6.5% + 12.20

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Project: Hamden High School Baseball/Multipurpose Field Improvements

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

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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 journeyperson instructing and supervising the work of each apprentice in a specific trade.

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

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

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

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

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

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

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

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

INFORMATION ONLY

Project: Hamden High School Baseball/Multipurpose Field Improvements

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.

INFORMATION ONLY

As of: Tuesday, April 19, 2016

Opportunity ★ Guidance ★ Support

CONNECTICUT DEPARTMENT OF LABOR

QUI TRANSTULIT SUSTINET

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.

INFORMATION ONLY

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.)

INFORMATION ONLY

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.

INFORMATION ONLY

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/dso/otc/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;

INFORMATION ONLY

(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 ULTMATELY ARISE CONCERNIG THE CONSTRUCTION OF THE STATUTE OR THE REGULATIONS.

INFORMATION ONLY

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)

INFORMATION ONLY

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.

STATUTE 31-55a

- 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. 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.

INFORMATION ONLY

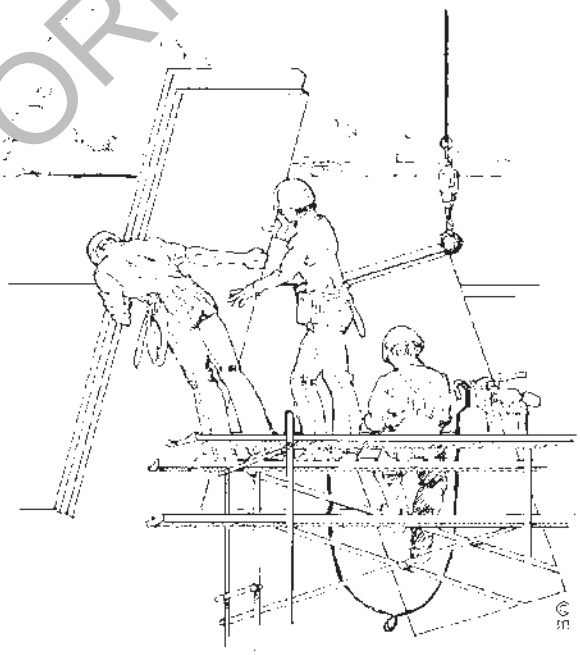
~NOTICE~

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.



INFORMATION ONLY

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: _____

INFORMATION ONLY

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): _____

INFORMATION ONLY

[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.

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

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

WEEKLY PAYROLL

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

CONTRACTOR NAME AND ADDRESS:

SUBCONTRACTOR NAME & ADDRESS

WORKER'S COMPENSATION INSURANCE CARRIER

POLICY #

EFFECTIVE DATE:
EXPIRATION DATE:

PAYROLL NUMBER | Week-Ending Date | PROJECT NAME & ADDRESS

PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/ FEMALE AND RACE*	WORK CLASSIFICATION / Trade License Type & Number - OSHA 10 Certification Number	DAY AND DATE S	M	T	W	T	F	S	Total ST Hours / Total O/T Hours	BASE HOURLY RATE / TOTAL FRINGE BENEFIT PLAN CASH	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS FICA	FEDERAL WITH-HOLDING	STATE WITH-HOLDING	LIST OTHER	GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY
				HOURS WORKED EACH DAY																
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							

12/9/2013 *IF REQUIRED
WWS-CP1

*SEE REVERSE SIDE

PAGE NUMBER _____OF

INFORMATION ONLY

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 _____ 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(d), 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)

INFORMATION ONLY

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

Weekly Payroll Certification For Public Works Projects (Continued)

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

Week-Ending Date:
Contractor or Subcontractor Business Name:

WEEKLY PAYROLL

PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/ FEMALE AND RACE*	WORK CLASSIFICATION Trade License Type & Number - OSHA 10 Certification Number	DAY AND DATE S	M	T	W	TH	F	S	Total ST Hours Total O/T Hours	BASE HOURLY RATE TOTAL FRINGE BENEFIT PLAN CASH	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS FICA	FEDERAL WITH-HOLDING	STATE WITH-HOLDING	LIST OTHER	GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY
				HOURS WORKED EACH DAY																
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3.							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							

*IF REQUIRED

12/9/2013
WWS-CP2

NOTICE: THIS PAGE MUST BE ACCOMPANIED BY A COVER PAGE (FORM # WWS-CP1)

PAGE NUMBER _____OF

INFORMATION ONLY

[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.

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

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

WEEKLY PAYROLL

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

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: 1
Week-Ending Date: 9/26/09
PROJECT NAME & ADDRESS: DOT 105-296, Route 82

PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/ FEMALE AND RACE*	WORK CLASSIFICATION / Trade License Type & Number - OSHA 10 Certification Number	S 20	M 21	T 22	W 23	TH 24	F 25	S 26	Total ST Hours / Total O/T Hours	BASE HOURLY RATE / TOTAL FRINGE BENEFIT PLAN CASH	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS: FICA	FEDERAL WITH-HOLDING	STATE WITH-HOLDING	LIST OTHER	GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY
				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 O-TIME	$ 30.75 Base Rate $ 8.82 Cash Fringe	1. $ 5.80 2. $ 3. $ 2.01 4. $ 5. $ 6. $	$1,582.80				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.[illegible] Base Rate $ 1[illegible].63 Cash Fringe	1. $ 2. $ 3. $ 4. $ 5. $ 6. $	$1,464.80	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. $	$1,500.00	xx.xx	xx.xx	xx.xx	M-xx.x		#125 xxx.xx
											S-TIME O-TIME	$ Base Rate $ Cash Fringe	1. $ 2. $ 3. $ 4. $ 5. $ 6. $							

7/13/2009
WWS-CP1
*IF REQUIRED
*SEE REVERSE SIDE
PAGE NUMBER 1 OF 2

INFORMATION ONLY

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 workers 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, 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 in 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*****

INFORMATION ONLY

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.

INFORMATION ONLY

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 4th, 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.

INFORMATION ONLY

APPENDIX A

INFORMATION ONLY

TOWN OF HAMDEN
PLANNING AND ZONING COMMISSION

SPECIAL PERMIT & SITE PLAN NO. 15-1271

The Hamden Planning and Zoning Commission hereby give notice of a Special Permit & Site Plan Approval in accordance with the Hamden Zoning Regulations to permit the following use:

Baseball Field

At the following location: 2040 Dixwell Avenue

Property owned by: Town of Hamden, Applicant

This Special Permit & Site Plan was granted at its meeting of February 23, 2016. The permit is approved by the following conditions:

1. The applicant must obtain a Zoning Permit.
2. Prior to the Issuance of a Zoning Permit, the applicant must submit a revised site plan for approval by the Town Planner and Town Engineer, containing:
    A. Use of basaltic gravel in the dynamic stone base.
    B. Extension of the silt fencing along the east side along the Route 15 ramp, as recommended by Mr. Brinton.
    C. Installation of a splash pad and erosion control measures at the storm water discharge pipe.
    D. Movement of any light pole in conflict with the 60" storm pipe.
    E. Placement of a dedicated refueling station located as far as possible from any storm water catch basins, on a paved surface, if a refueling station is needed.
    F. All Conditions of Approval.
3. Selection of the synthetic turf product must include a review of its chemical composition. The turf selected must meet the following requirements:
    A. Include a list of all the chemicals.
    B. Undergo testing that certifies the infill meets the requirements established by Underwriters Laboratories Environmental (ULE) for certification under its GreenGuard Program, per Reference Standard GGPS.006.
    C. Contain no truck tires.
    D. Use only Polyethylene fibers.
    E. Employ no painted lines containing lead-chromate.
4. The project work and subsequent maintenance must be carried out in strict compliance with the Demolition Phase and Construction Phase Notes as well as the Operation and Maintenance Plan on the title sheet.
5. The artificial turf should be installed during cooler months.
4. All work must be completed by February 23, 2021.
5. After the completion of the project:
    A. Retest the certified turf material to confirm that it still meets the requirements of the Underwriters Laboratories Environmental (ULE) for certification under its GreenGuard Program, per Reference Standard GGPS.006. Any levels not meeting

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those requirements or exceeding EPA guidelines regarding toxic substances must be reviewed with State Department of Public Health officials.

B. Prohibit use of the playing field for three months.
C. At the end of the three month period, prior to use of the field, conduct a second retest of the turf material to confirm that it still meets the requirements of the Underwriters Laboratories Environmental (ULE) for certification under its GreenGuard Program, per Reference Standard GGPS.006. Any levels not meeting those requirements or exceeding EPA guidelines regarding toxic substances must be reviewed with State Department of Public Health officials.
D. Conduct annual air and storm water retesting of the new all-purpose field and the existing football field prior to fall sports, to confirm that the turf still meets the requirements of the Underwriters Laboratories Environmental (ULE) for certification under its GreenGuard Program, per Reference Standard GGPS.006. The retesting may be discontinued after three years if there are no exceedances. Any levels not meeting those requirements or exceeding EPA guidelines regarding toxic substances must be reviewed with State Department of Public Health officials.
E. Continue to follow the scientific discussion about crumb rubber turf and ask for annual updates from the State Department of Public Health.
F. Monitor activity closely during hot weather to ensure that athletes are not at risk of exhaustion. Use of the field in summer months should be discouraged. The applicant must follow the guidelines established by the Connecticut Interscholastic Athletic Conference for safe play at various heat index values.
G. If necessary, the lighting should be adjusted so that the lights do not shine in the windows of the apartment buildings to the west.
H. The catch-basins should be cleaned of sediment and debris at least once a year and whenever the sumps are more than half full.
I. The RWA must be given access to inspect the property on an annual basis.

Dated this 4th day of March 2015

Planning and Zoning Commission
Town of Hamden

By: _____
Acting Town Planner

INFORMATION ONLY

Quote Date:
Valid Until:
Quote Number:
Version Number: 1

Hamden, CT: Crumb Rubber project

Greetings,

On behalf of UL, it is my pleasure to submit to you this quotation for services.

UL has more than a century of experience helping clients to bring products to the market. Today's global economy brings increasing technical requirements and an ever greater need for speed-to-market. With more than 10,000 people and 131 testing laboratories, operating in over 39 countries, UL can help you meet these challenges. Our expertise in Testing, Certification and Inspection is unmatched and our independence is unquestioned.

Thank you for this opportunity. We look forward to the opportunity to help your business.

Yours sincerely,

Christine Vas

Phone: +1 201 258 0048; **E-mail:** Christine.Vas@ul.com

INFORMATION ONLY

Quotation

This Quotation is provided by or on behalf of UL Verification Services Inc. dba UL Environment Inc.. We are pleased to provide you with the following Quotation and we will make every effort to exceed your expectations as we fulfill this work.

Hamden, CT: Crumb Rubber project

#	**Products/Services Quoted** (Summary table of requested product/services.)	**Quantity**	**Unit Price (USD)**	**Net Price (USD)**
1	Environmental Testing Services			
	EN 71-3 Children's Products, 1) Heavy metals content of EN 71. Limits are based on the ASTM F963-08 and the European Standard "Safety of toys," EN71: Part 3: 1994, Amendments – AC: 2000/AC:2002.	1		
2	Environmental Testing Services			
	Extraction Content Analysis for a Single Heavy Metal, Lead requirement of CPSIA for children's products.	1		
3	Environmental Testing Services			
	Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions From Indoor Sources Using Environmental Chambers (CA 01350), VOC emissions requirements of CDPH Standard Method v1.1. (CA 01350) Predicted exposure concentration of specific VOCs less than ½ Chronic Reference Exposure Levels (CRELs) with results modeled in an office and classroom environment.	1		
	Subtotal			
	Net Total			

The price is based on the information provided in your request. Please note that additional expenses such as travel costs, shipping, disposition of samples, local taxes, and others may be incurred. If these are required for your project, they will be billed to you. Invoicing for this project will occur at the times stated in this Quotation or at completion of the project.

INFORMATION ONLY

Quotation is based on the following conditions:

Additional Information
The proposal is a first step in understand chemical content. It is not exhaustive. It does not look at dermal contact, ingestion, nor the impacts of UV, temperature or other environmental impacts like acid rain. The test reports are used to determine if the product is below the established thresholds, not as a determination as to the safety of a product. This proposal is for testing one (1) sample submitted. It does not include having UL select the material for testing. Additional discounts would be available when more than five (5) samples are submitted at one time. The deliverable is limited to the reports. Milone & MacBroom has suggested the following test frequency: 1) One (1) Random sample test form each manufacturer as part of the bid submission process. 2) One (1) Sample of the product that wins the bid

Terms and Conditions
All product/services provided under this Quotation are governed by and incorporate by reference the following terms and conditions which are either provided with this Quotation or which you have previously accepted: Verification Services Terms and Conditions. For a copy of your terms and conditions on file, please contact the sender and reference the above Quotation number.

The terms and conditions will take precedence over any preprinted, additional, or different terms and conditions on your requests for quotation, POs, invoices, sales or marketing materials, or other business documents.

Payment
Unless credit has been established, a 100% deposit of quoted fees will be required prior to your project start date.

To expedite your project, please provide any relevant requested additional information upon acceptance of the Quotation. Soon after receipt of both your Quotation acceptance and relevant requested information, a member of our UL staff may contact you to confirm the required items and finalize the scope of work. Any necessary information should be provided within a time frame mutually agreed by both parties at the start of the project.

If your Accounts Payable process requires a Purchase Order (PO) to be referenced on UL's invoice to facilitate payment, please provide the PO number below, or simply reply to sender with PO number.

Your issuance of a PO to UL is for accounting purposes only and does not constitute your counter offer. Any additional or conflicting terms and conditions on your PO do not apply to any Services or bind us.

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Acceptance Instructions:

To accept this quotation, you can do one of the following:

1) Electronically sign by adding the word "ACCEPT" in the e-mail and reply to sender. Your electronic acceptance will create a valid, binding service agreement.
2) Sign below by an authorized company representative and return to sender.

By accepting this Quotation, you certify that you have read and agreed to the referenced terms and conditions; you are authorized to accept this Quotation on behalf of your company, and authorize us to commence work on the services described above.

Quotation Accepted by:

Signature	**Name (Printed)**
TITLE	**DATE**
	Purchase Order #

Thank you for choosing UL.

INFORMATION ONLY

Terms and Conditions:

All services are governed by the following Terms and Conditions.

1. **Verification Services.** The UL Contracting Party ("we", "us", or "our" as the context requires) will perform commercial testing, verification, audit, assessment, inspection, and/or other services ("Services") in accordance with your instructions as described in this order, scope of work, project proposal, quotation, or order acknowledgment ("Quotation"). The Services will be limited to an assessment of your samples' conformity to requirements, specifications, and/or protocols you have established ("Your Requirements"), and do not express any opinion regarding the bulk from which the samples were drawn. The Services do not involve any assessment or evaluation to independent safety standards, and we and our affiliates have no responsibility to make any independent safety assessment of any samples.

2. **Payment Terms.** You will pay, without set off, our fees and related expenses in accordance with the Quotation including the cost of all taxes, wire or transfer fees, duties, and other fiscal charges which become due on the quoted price and will indemnify us from and against liabilities, incurred as a result of failure to pay any such sums when they become due. We may charge interest at 1% per month (12% per year), or the maximum legal rate if less than 1.0% per month, from the due date until paid fully. You agree to pay reasonable collection costs, including attorneys' fees, if necessary, in the event of late or non-payment.

3. **Your Requirements.** You are responsible for establishing or selecting all Your Requirements that we will use in performing the Services. We may provide you with assistance in developing Your Requirements that meet your needs, however, in all cases you must review and approve Your Requirements to be used in performing the Services.

4. **Estimated Schedule and Price.** Any time schedule and pricing terms set forth in this Quotation are estimates only and subject to change upon reasonable notice from us depending upon the specific project.

5. **On-Site Investigations.** If we perform Services on site at your facilities, or at the facilities of other parties as directed by you; you will ensure that our representatives have safe, secure, and free access to the facilities. Our access will not be conditioned upon the execution of any agreement, waiver, or release. If our representatives are prevented from performing or completing any Services for any reason beyond our reasonable control, we will not be responsible for the nonperformance, and you may be charged for any actual expenses we incur and fees for Services performed.

6. **Deliverables.** We will provide you with a report outlining: (i) your instructions and request for Services accepted by us, (ii) Your Requirements used in providing the Services, (iii) the Services performed, and (iv) the results of those Services. We are under no obligation to refer to or report on any facts or circumstances which are outside your specific instructions received and accepted by us.

7. **Our Findings.** We do not guarantee that our opinions or findings will be recognized or accepted by third parties.

8. **Use of Names and Marks**. Except as otherwise authorized by us in writing, you will not use our name, abbreviation, symbols, marks, or the name of any of our subsidiaries, affiliates, or parent on any goods or their containers or packaging, or in connection with any advertising, promotions, or otherwise.

9. **Cancellation Fees.** If you cancel or change a Quotation: (i) for an inspection after 3:00 PM of the working day before the scheduled inspection date, we will charge you the Quotation price plus any travel costs incurred before the cancellation; (ii) for testing after we receive the sample(s) at the testing facility, we will charge you cancellation fees according to the amount of actual work performed with a minimum cancellation fee of $100 USD; or (iii) for a scheduled audit date, you will be responsible for all incurred non-refundable travel costs associate with that audit. Any change or cancellation of an audit that occurs within 7 days of the scheduled audit will be charged a $600 USD fee in addition to any incurred travel costs.

INFORMATION ONLY

10. **No Warranty.** NO REPRESENTATION, WARRANTY, OR GUARANTEE, EXPRESS OR IMPLIED, IS INCLUDED IN THESE TERMS AND CONDITIONS, OR IN ANY QUOTATION, REPORT, OR OTHER DOCUMENT PROVIDED UNDER THESE TERMS AND CONDITIONS INCLUDING, BUT NOT LIMITED TO: (i) ANY " IMPLIED WARRANTY OF MERCHANTABILITY" OR "FITNESS FOR A PARTICULAR PURPOSE", (ii) NON-INFRINGEMENT, AND (iii) THAT THE WEB SERVICES (AS DEFINED BELOW) WILL BE UNINTERRUPTED, TIMELY, SECURE, OR ERROR-FREE.

11. **Your Information.** You represent and warrant that all information and data provided to us by you, or on your behalf, is complete and accurate and may be relied upon to provide Services. In addition, you represent and warrant that all of Your Information is owned or licensed by you, and does not infringe on the intellectual property rights of any third party. If any information or data provided to us by you or on your behalf is either incomplete or inaccurate, we will not be liable in any manner for any deficiencies in the Services.

12. **Ownership of Work Product.** You will own the test reports or other materials provided to you pursuant to any Quotation. We may retain a copy of the test reports and other materials for our archives and for creating reports for you and third parties, as required by you.

13. **Web Services.** We may provide you with certain website tools and related services, including the ability to order services online through a website (collectively, the "Web Services"). The Web Services are provided to you as a convenience and are provided on an "as is, as available" basis. By using the Web Services, you acknowledge and agree that no data or content transmitted over our networks, the Internet, or wirelessly, or through or in connection with the Web Services, is guaranteed to be secure or free from unauthorized intrusion, and that data stored by us, our affiliates, or our service providers may be deleted, modified, or damaged. You acknowledge that if you wish to protect your transmission of data or files to us, it is your responsibility to use a secure encrypted connection to communicate with and use the Web Services. Your use of the Web Services is at your sole risk and is subject to any terms of use applicable to such Web Services. Web Services are included in the definition of Services above.

14. **Confidentiality.** We will not disclose your information obtained in confidence ("Confidential Information") to third parties, except our subsidiaries, affiliates, or subcontractors, without your prior written authorization. Confidential Information will not include information: (a) already known to us, (b) publicly available, (c) subsequently acquired by us from other sources without a breach of these Terms and Conditions, (d) disclosure that is necessary to perform the Services, (e) required to be produced by law or government order, or accreditation authority, or (f) related to a product bearing a UL Mark that should be disclosed to us or our affiliates pursuant to another agreement with you.

15. **Samples.** If we require sample examination, you will ship samples to us at your expense. Upon completion of testing, the samples will be destroyed, unless other arrangements are made for return of the samples at your expense. You acknowledge that testing and sample preparation may damage or destroy the sample(s), for which we will not be liable.

16. **LIMITATION OF LIABILITY.** OUR LIABILITY FOR ANY CLAIMS FOR LOSS, DAMAGE, OR EXPENSE OF ANY NATURE AND HOWSOEVER ARISING FOR ANY BREACH OF CONTRACT AND/OR ANY FAILURE TO EXERCISE APPROPRIATE SKILL AND CARE BY US WILL UNDER NO CIRCUMSTANCE EXCEED THE FEES RECEIVED FOR THE SPECIFIC SERVICES WHICH GIVE RISE TO SUCH CLAIMS. UNDER NO CIRCUMSTANCE WILL WE HAVE ANY LIABILITY FOR ANY CLAIMS FOR INDIRECT, CONSEQUENTIAL, INCIDENTAL, SPECIAL, EXEMPLARY, OR PUNITIVE DAMAGES OF ANY NATURE WHATSOEVER, INCLUDING BUT NOT LIMITED TO: LOSS OF PROFITS, GOODWILL, USE, DATA, FUTURE BUSINESS, OR PRODUCTION; CANCELLATION OF CONTRACTS ENTERED INTO BY YOU; OR OTHER INTANGIBLE LOSSES (EVEN IF WE HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES). UNDER NO CIRCUMSTANCE WILL WE BE LIABLE TO YOU FOR ANY CLAIMS FOR LOSS, DAMAGE, OR EXPENSE UNLESS SUCH CLAIM IS BROUGHT UNDER SECTION 24 (DISPUTES) WITHIN TWELVE MONTHS AFTER THE DATE OF THE PERFORMANCE BY US OF THE SERVICES WHICH GIVE RISE TO THE CLAIM OR, IN THE EVENT OF ANY ALLEGED NON-PERFORMANCE, WITHIN TWELVE MONTHS OF THE DATE WHEN SUCH SERVICES SHOULD HAVE BEEN COMPLETED.

17. **Indemnification.** You will defend, hold harmless, and indemnify us and our officers, directors, trustees, employees,

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agents, or subcontractors against all claims made by any third party for loss, damage, or expense arising out of these Terms and Conditions, including without limitation, the performance or non-performance of any Services or the Web Services.

18. Waiver. Any failure by a party to insist upon the performance of any section of these Terms and Conditions will not constitute a waiver of any rights under these Terms and Conditions or future performance of that section.

19. No Third Party Beneficiaries. The parties intend that no provisions of these Terms and Conditions will in any way bind or benefit any third party or the public at large and that no third party will have any rights or cause of action under these Terms and Conditions. In particular, in the event Singapore law governs these Terms and Conditions pursuant to Section 23 (Governing Law), a person or entity who is not a party to these Terms and Conditions will have no right under the Contracts (Rights of Third Parties) Act (Chapter 53B) to enforce any term of these Terms and Conditions, regardless of whether such person or entity has been identified by name, as a member of a class, or as answering a particular description.

20. No Assignment. Neither party may assign any of its rights or obligations under these Terms and Conditions to any other person without the other party's written authorization. However, we may, upon written notice, assign our rights and obligations under these Terms and Conditions to any of our affiliates or subsidiaries.

21. Subcontracting. We may use subcontractors for certain testing or other Services. All subcontractors will meet our current qualification requirements and will comply with our requirements for confidentiality, conflicts of interest, and ethical standards.

22. Termination and Notice. These Terms and Conditions will continue in effect until terminated by either party upon thirty days written notice or, in the event of your breach of these Terms and Conditions, immediately upon receipt of written notice to you. You will pay those fees and expenses incurred by us prior to termination. Notice to either party may be made by hand delivery, courier service, mail, facsimile, or e-mail transmission at the receiving party's designated principal place of business. Notice to us must be sent both to: UL Verification Services Pte. Ltd, Attn: President, 1 Maritime Square, Harbour Front Centre, #11-03, Singapore 099253 with a copy to UL LLC, Attn.: General Counsel at 333 Pfingsten Road, Northbrook, Illinois 60062. Notice will be effective upon receipt.

23. Governing Law: These Terms and Conditions will be governed and interpreted by the laws of the State of Illinois, United States of America, except if: (i) UL Contracting Party's principal place of business is Asia, Australia, or New Zealand, then Singapore law, and (ii) UL Contracting Party's principal place of business is Europe, then Swiss law, without reference to the applicable jurisdiction's choice of law principles.

24. Disputes. Any dispute or disagreement, other than nonpayment of fees, relating to these Terms and Conditions or the Services, will be settled by confidential, binding arbitration administered by the International Centre for Dispute Resolution of the American Arbitration Association ("AAA") pursuant to the AAA Commercial Arbitration Rules and the Procedures for Large, Complex Commercial Disputes. The arbitration venue will be Chicago, Illinois, except if: (i) UL Contracting Party's principal place of business is in Europe, the venue will be Geneva, Switzerland, and (ii) UL Contracting Party's principal place of business is in Asia, Australia, or New Zealand, the venue will be Singapore, Republic of Singapore. The arbitration will be conducted before a panel of three (3) arbitrators. The arbitration panel will be selected as follows: the parties will request a list of ten (10) arbitrators drawn from the AAA's panel of commercial arbitrators (who are experienced in and familiar with the AAA's Procedures for Large, Complex Commercial Disputes). From this list, both parties will each choose one arbitrator. After they have been notified of their panel selection, the two (2) arbitrators will agree on a third arbitrator from the list of ten (10), who will be the chair of the panel, and the panel will be final. The decision of the majority of the arbitrators will be the panel's decision. The arbitrators will not have the authority to add, change, or disregard any term of these Terms and Conditions to award incidental, consequential, or punitive damages (including, but not limited to, loss of use, unjust enrichment, and/or lost profits), or exceed the remedies provided by the limitation of liability of these Terms and Conditions. The panel's decision will be binding and judgment on the arbitration award may be entered by a court of competent jurisdiction. Arbitration will be the final remedy for any dispute between the parties arising out of these Terms and Conditions, provided, however, that nothing herein will prevent either party from seeking a court order for injunctive relief (in addition to other remedies) to stop or prevent misuse or misappropriation of its marks, confidential or proprietary information, or infringement of its intellectual property, in a

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court of law. All arbitrations will be conducted in English.

25. Severability. If any section of these Terms and Conditions is held invalid, void, or unenforceable for any reason that section will be severed, and all other sections of these Terms and Conditions will remain valid to the extent permissible under law.

26. Modifications. These Terms and Conditions are the entire and complete agreement between the parties and supersede any other communications, representations, or agreements with respect to its subject matter. Under no circumstances will any preprinted, additional, or different terms and conditions on your requests for quotation, purchase orders, invoices, sales or marketing materials, emails, any acceptance communications, or other business documents apply to any Services or Quotation or bind us in any manner. Modifications that have not been made by us or that have not been accepted by us in a written or emailed confirmation from us are not accepted by us, and commencement of performance will not signify acceptance by us of any such modifications. Any such modifications are excluded from our agreement, and such modifications will not be a binding agreement on us.

27. Order of Precedence. Except for conflicts with Section 2 (Payment Terms), Section 4 (Estimated Schedule and Price) and Section 9 (Cancellation Fees), these Terms and Conditions will take precedence over any conflicting terms in any Quotation.

28. Electronic Signature. These Terms and Conditions may be executed and delivered by facsimile, PDF, or by means of other electronic signature. Our electronic, digital, or hard copies of these Terms and Conditions, your acceptance, and Quotations as signed, or otherwise accepted, by you will be the true, complete, valid, authentic, and enforceable copies of these documents. You agree that you will not contest the admissibility or enforceability of our copies in a court or any proceeding arising out of such documents.

29. Force Majeure. Neither party will be liable for any failure or delay in the performance of its obligations due to fire, flood, earthquake, elements of nature, or acts of God, acts of war, terrorism, riots, civil disorder, rebellions, or other similar cause beyond the reasonable control of the party affected, provided such default or delay: (i) could not have been prevented by reasonable precautions; (ii) cannot reasonably be circumvented; (iii) and the party hindered or delayed immediately notifies the other party describing the circumstance causing delay.

INFORMATION ONLY

APPENDIX B

INFORMATION ONLY

SOCCER FIELD DIMENSIONS:
195' W x 300' L

SYNTHETIC FIELD NOTES:
1. SYSTEM A - SYNTHETIC TURF SYSTEM SHALL BE:
A. 100% SLIT-FILM
B. 2.5" PILE HEIGHT
C. SAND/CRUMB RUBBER INFILL
D . 110,000 S.F.

SYNTHETIC FIELD NOTES:
1. SYSTEM B - SYNTHETIC TURF SYSTEM SHALL BE:
A. 100% SLIT-FILM
B. 1.75" PILE HEIGHT
C. 100% COATED SAND INFILL OVER RESILIENT POLYPROPYLENE BASE / SHOCK PAD.
D . 110,000 S.F.

MILONE & MACBROOM®
99 Realty Drive
Cheshire, Connecticut 06410
(203) 271-1773 Fax (203) 272-9733
www.miloneandmacbroom.com

DATE	APRIL 26, 2016
SCALE	N.T.S.
PROJ. NO.	1228-61
DESIGNED	KCF
DRAWN	CEH
CHECKED	DJK

SYNTHETIC TURF RFP

BASEBALL/MULTIPURPOSE FIELD
HAMDEN HIGH SCHOOL

2040 DIXWELL AVENUE
HAMDEN CONNECTICUT

REVISED: --

DRAWING NAME:

1 OF 3

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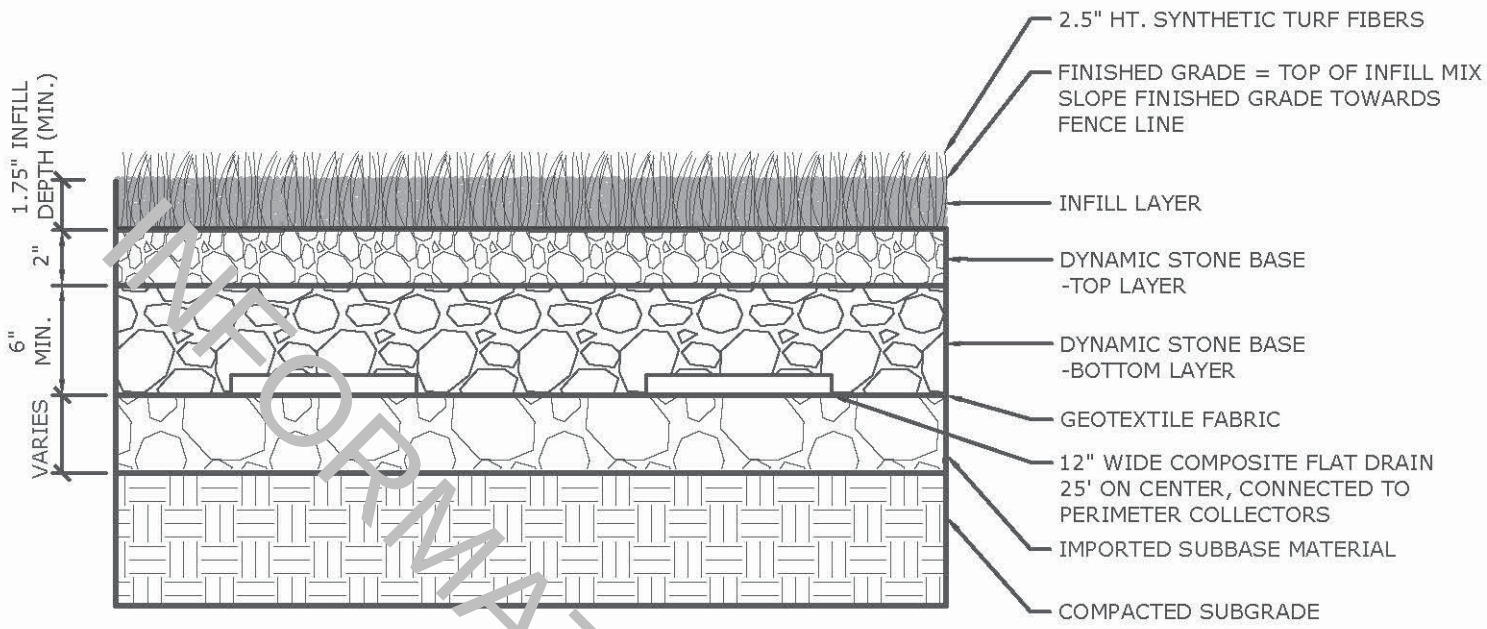
Drawing: W:\DESIGN\1228-61-DE\CAD\02-BASEBALL\HHSB-TURF RFP.DWG Layout Tab:TURF RFP 1
Plotted by: CHRISH On this date: Tue, 2016 April 26 - 3:27pm



NOTE:
SLOPE BOTTOM DYNAMIC STONE LAYER AND SUBGRADE AS SHOWN ON THE GRADING PLAN TOWARDS COLLECTOR PIPES.

SYNTHETIC INFILL TURF SYSTEM A

NOT TO SCALE

SYNTHETIC FIELD NOTES:

1. PROPOSED SYNTHETIC FIELD SIZE = ±110,000 S.F.
2. FIELD MARKINGS TO INCLUDE:
   - TUFTED/INLAID BASEBALL BASE AND WARNING TRACK AREAS - COLOR - TAN
   - TUFTED/INLAID BASEBALL STRIPING - COLOR - WHITE
   - TUFTED/INLAID SOCCER STRIPING - COLOR - YELLOW (DIMENSIONS: 300'x195')
   - TUFTED/INLAID FIELD HOCKEY STRIPING - COLOR: RED

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MILONE & MACBROOM®
99 Realty Drive
Cheshire, Connecticut 06410
(203) 271-1773 Fax (203) 272-9733
www.miloneandmacbroom.com

DATE	APRIL 26, 2016
SCALE	N.T.S.
PROJ. NO.	1228-61
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SYNTHETIC TURF RFP
BASEBALL/MULTIPURPOSE FIELD
HAMDEN HIGH SCHOOL
2040 DIXWELL AVENUE
HAMDEN CONNECTICUT

REVISED: --

DRAWING NAME:
2 OF 3

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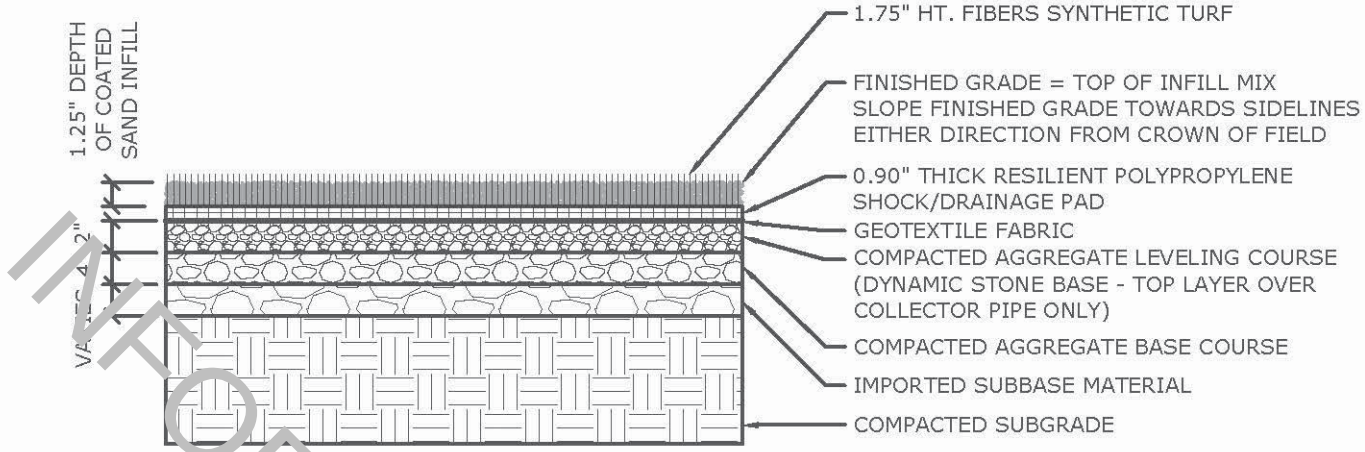
Drawing: W:\DESIGN\1228-61-DE\CAD\02-BASEBALL\HHSB-TURF RFP.DWG Layout Tab:TURF RFP 2
Plotted by: CHRISH On this date: Tue, 2016 April 26 - 3:27pm



NOTE(S):

1. SLOPE SUBGRADE, LEVELING COURSE, DRAINAGE BOARD/SHOCK PAD AND TURF WITH FINISHED GRADE AS SHOWN ON GRADING PLAN.

SYNTHETIC INFILL TURF ON DRAINAGE BOARD/SHOCKPAD FOR SYSTEM B

NOT TO SCALE

INFORMATION ONLY

SYNTHETIC FIELD NOTES:

1. PROPOSED SYNTHETIC FIELD SIZE = ±110,000 S.F.
2. FIELD MARKINGS TO INCLUDE:
   - TUFTED/INLAID BASEBALL BASE AND WARNING TRACK AREAS - COLOR - TAN
   - TUFTED/INLAID BASEBALL STRIPING - COLOR - WHITE
   - TUFTED/INLAID SOCCER STRIPING - COLOR - YELLOW (DIMENSIONS: 300'x195')
   - TUFTED/INLAID FIELD HOCKEY STRIPING - COLOR: RED

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Cheshire, Connecticut 06410
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DATE	APRIL 26, 2016
SCALE	N.T.S.
PROJ. NO.	1228-61
DESIGNED	KCF
DRAWN	CEH
CHECKED	DJK

SYNTHETIC TURF RFP

BASEBALL/MULTIPURPOSE FIELD
HAMDEN HIGH SCHOOL

2040 DIXWELL AVENUE
HAMDEN CONNECTICUT

REVISED: --

DRAWING NAME:

3 OF 3

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Drawing: W:\DESIGN\1228-61-DE\CAD\02-BASEBALL\HHSB-TURF RFP.DWG Layout Tab:TURF RFP 3
Plotted by: CHRISH On this date: Tue, 2016 April 26 - 5:00pm

DATE: May 3, 201

RE: **RFP #16-11**
SYNTHETIC INFILLED ATHLETIC TURF
AT HAMDEN HIGH SCHOOL
HAMDEN, CONNECTICUT

MMI #1228-61

This Addendum No. 1 includes responses to a question received on May 2, 2014. Modifications are hereby made to the Turf RFP dated April 26, 2015 for the above referenced project.

RESPONSES TO QUESTIONS

Q1: The RFP documents show a test form from UL for the crumb rubber infill in system A. Can you elaborate as to the type of testing that must be provided for the crumb rubber, and when it will be required for submission to the town? At time of bid, annually, etc.?

R1: Crumb rubber testing to be coordinated, and paid for by the turf vendor/manufactuerer will occur prior to ordering of materials, and then again when all material is delivered to the site. All other testing required by the Conditions of Approval will be performed by the owner. See modified Technical Specification language below for clarifications regarding the required testing of the crumb rubber.

MODIFICATIONS TO THE RFP

1. Technical Specification Section 32 32 00 Synthetic Infilled Athletic Turf Surface Item D.2.d. is clarified as follows:

D. Prior to ordering of materials:
   1. The Turf Manufacturer/Vendor shall submit through the General Site Contractor Shop Drawings indicating:
      a. Field Layout, as directed by the Owner.
      b. Field Marking Plan and details for the specified sports meeting the requirements of NFHS and CIAC
      c. Roll/Seaming Layout.
      d. Methods of attachment to anchor curbs.
   2. The Turf Manufacturer/Vendor shall submit:
      a. The fiber manufacturer's name, type of fiber, and composition of the fiber
      b. Crumb rubber manufacturer's name, composition of material, and MSDS and other related environmental test data.
      c. A list of the chemical composition of all components of the turf system, including but not limited to infill material(s), turf fiber, and backing material(s)

INFORMATION ONLY

d. Test results that certify that the infill meets the requirements established by Underwriters Laboratories Environmental (ULE for certifications under its GreenGuard Program, per reference Standard GGPS.006. (See Appendix A)

(1) The turf vendor/manufacturer shall submit a statement indicating that the crumb rubber supplier and/or source will provide a product that meets the following standards:

(a) Heavy metals content of EN 71. Limits are based on the ASTM F963-08 and the European Standard "Safety of toys," EN71: Part 3: 1994, Amendments – AC: 2000/AC:2002.

(b) Lead requirement of CPSIA for children's products. Total lead content requirement of 90pmm in surface coatings (per Consumer Product Safety Improvement Act (CPSIA) of 2008)

(c) VOC emissions requirements of CDPH Standard Method v1.1. (CA 01350) Predicted exposure concentration of specific VOCs less than ½ Chronic Reference Exposure Levels (CRELs) with results modeled in an office and classroom environment.

(2) The turf vendor/manufacturer shall be required to obtain a representative sample of the crumb rubber upon delivery of the crumb rubber to the project site and demonstrate, by means of providing actual laboratory reports and statements, that the crumb rubber that has been delivered to the project meets the following standards listed below. The turf vendor/manufacturer is advised that the entire volume of crumb rubber necessary for the construction of the field must be delivered to the site prior to collecting the representative sample:

(a) Heavy metals content of EN 71. Limits are based on the ASTM F963-08 and the European Standard "Safety of toys," EN71: Part 3: 1994, Amendments – AC: 2000/AC:2002.

(b) Lead requirement of CPSIA for children's products. Total lead content requirement of 90pmm in surface coatings (per Consumer Product Safety Improvement Act (CPSIA) of 2008

(c) VOC emissions requirements of CDPH Standard Method v1.1. (CA 01350) Predicted exposure concentration of specific VOCs less than ½ Chronic Reference Exposure Levels (CRELs) with results modeled in an office and classroom environment.

(3) Any crumb rubber that does not meet the standards above shall not be incorporated into the project and must be removed from the site and replaced with acceptable material at the selected turf vendor/manufacturer sole cost. Any replacement supply of crumb rubber shall also undergo the testing specified in 2.d.2.

(4) Turf vendor/manufacturer shall coordinate delivery of crumb rubber infill material to the site prior to installation to allow sufficient time for the material to be tested (anticipated to take approximately six weeks)

e. Certifications that crumb rubber (TURF SYSTEM A ONLY) contains no truck tires.

f. Certification that turf fiber is comprised of 100% polyethylene fiber.

END ADDENDUM NO. 1

INFORMATION ONLY

DATE: May 4, 2016

RE: **RFP #16-11**
SYNTHETIC INFILLED ATHLETIC TURF
AT HAMDEN HIGH SCHOOL
HAMDEN, CONNECTICUT

MMI #1228-61

This Addendum No. 2 includes responses to a question received on May 3, 2014.

RESPONSES TO QUESTIONS

Q1: I just went through the specs and drawings that you provided and wanted to see if there were any other drawings showing the actual layout of the drainage plan along with any possible utilities. The last 3 pages of the attachment you sent doesn't give me much info to perform a takeoff on material that is needed. Are there any other drawings available to show the complete plans on work being performed? Please let me know when you are able.

R1: **RFP 16-11 Synthetic In-Filled Turf at Hamden High School is a request for synthetic turf vendors/manufactures to provide costs for furnishing and installing the synthetic in-filled turf system (only) for the upcoming facility construction bid. We believe all relevant information has been provided in the RFP and should be sufficient for the preparation and submittal of proposals. All project elements beyond furnishing and installation of the synthetic turf carpet, shock pad/drainage mat, infill material(s) and related accessories, will be detailed and specified in a RFP for General Contractors scheduled to advertise this week.**

MODIFICATIONS TO THE RFP

No modifications required.

END ADDENDUM NO. 2

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