TOWN OF COLUMBIA

323 Jonathan Trumbull Highway, Columbia, CT 06237
(860) 228-0110 Fax: (860) 228-1952

Request for Proposals (RFP)
Town of Columbia Girls Softball Field
Solicitation Number 2018-4

Prepared by:
TO Design
114 West Main Street
New Britain, Connecticut
860.612.1700

All bids must be submitted on attached forms and in accordance with specifications supplied.

Bids will be received at the Town of Columbia, Town Administration Office at the Town Hall, 323 Route 87, Columbia, Connecticut until **4:00 p.m., October 11, 2018.** Thereafter, the names of those submitting qualifications and proposals will be read aloud.

A **mandatory pre-bid conference** will be held at the project site on **Monday, September 24, 2018 at 1:00 p.m.**

The RFP documents will be available from the Town Administration Office at Town Hall, 323 Route 87, Columbia, Connecticut, telephone number (860) 228-0110 or the Town's website, www.columbiact.gov. After bids are received, the Town Administrator may analyze whether vendors have submitted comparable bids and meet the requirements called for. In reviewing the bids, the Town Administrator may consider the past performance, financial responsibility, and sales and service experience of the vendors. The Town reserves the right to reject any or all bids, to waive any defects in same, or to choose to make purchases other than strictly in accordance with price considerations, and/or to choose other than the lowest bidder, if it be deemed in the best interest of the Town of Columbia.

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INTRODUCTION

THE TOWN OF COLUMBIA is requesting responses from qualified firms (including individuals) interested in providing construction services (hereinafter "Contractor" or "Firm") for THE TOWN OF COLUMBIA Softball Field.

1. KEY EVENT DATES

Advertisement of RFP	**September 14, 2018**
Mandatory Pre-Bid Meeting	**Monday, 1:00 pm, September 24, 2018**
Location of Mandatory Pre-Bid Meeting	**Recreation Park – (driveway entrance is next to 54 Hennequin Road). Meet at the top parking lot.**
Public Opening of Responses	**4:00 PM, Thursday, October 11, 2018**
Contract Awarded (Not Definite)	**October 2018**

2. OBTAINING RFQ&P DOCUMENTS

Specifications and RFP documents may be obtained from the Town Administrator's Office, Mark B. Walter, 323 Route 87, Columbia, CT 06237, telephone number (860) 228-0110 or the Town's website, www.columbiact.org.

3. RFP RESPONSE SUBMISSION INSTRUCTIONS

A. One (1) original and four (4) copies of all responses must be submitted in a sealed envelope clearly marked "Construction Services for the Town of Columbia Softball Field".
   If forwarded by mail or courier, the sealed envelope must be addressed to "Town Administrator Town of Columbia, 323 Route 87, Columbia, Connecticut 06237".
   Responses must be at the office of the Town Administrator by the time of the Public Opening of Responses date noticed in Section 2 titled Key Event Dates. Postmarks are NOT an acceptable waiver of this policy. Corrections and/or modifications received after the first response is publicly opened will NOT be accepted.

B. Ditto marks or words such as "SAME" on the Response Form are NOT considered writing and must not be used.

C. All information must be submitted in ink or typewritten. Mistakes may be crossed out and corrections inserted. Corrections must be initialed by the person signing the response.

D. Responses are considered valid for ninety (90) days after response(s) are opened. Contractors submitting responses may not withdraw, cancel or modify their response for a period of ninety (90) days after response(s) are opened.

E. Responses must be signed by an authorized person representing the legal entity of the firm submitting the response.

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F. The inability to meet any specified requirements(s) must be stated in writing and attached to the response form or written on the response form.

4. PRESUMPTION OF CONTRACTOR BEING FULLY INFORMED

At the time the first response is opened, each Contractor is presumed to have read and be thoroughly familiar with all RFP and contract documents herein. Failure or omission of the Contractor to receive or examine any information shall in no way relieve any Contractor from obligations with respect to their response.

The Town may, before or after proposal opening and in its sole discretion, clarify, modify, amend or terminate this RFP if the Town determines it is in the Town's best interest. Any such action shall be effected by a posting on the Town's website, www.columbiact.org. Each respondent is responsible for checking the Town's website to determine if the Town has issued any addenda and, if so, to complete its proposal in accordance with the RFP as modified by the addenda.

5. INTERPRETATION OF ACCEPTABLE WORK

The specifications, response and contract documents are to be interpreted as meaning those acceptable to the TOWN of COLUMBIA. Any substantive changes or interpretations will be issued by the Town in writing as an addendum.

6. TAX EXEMPTIONS

The TOWN of COLUMBIA is exempt from Federal Excise taxes and Connecticut Sales and Use taxes. Firms shall avail themselves of these exemptions.

7. INSURANCE

The firm awarded this contract must provide a current Certificate of Insurance to the Town Administrator PRIOR to commencement of work, with the following requirements:

1) **General Conditions:** Within ten (10) business days of the award or notice, or prior to the start of work, whichever comes first, the contractor/insured will provide, pay for, and maintain in full force and effect the insurance outlined here for coverage's at not less than the prescribed minimum limits of liability. Such coverage is to remain in force during the life of the contract and for such additional time as may be required, and will cover the contractor/insured's activities, those of any and all subcontractors, or anyone directly or indirectly employed by any of them, or by anyone for whose acts of them may be liable.

   A. Certificates of Insurance: The contractor/insured will give the Town of Columbia a certificate of insurance completed by a duly authorized representative of their

STANDARD INSTRUCTIONS (continued)

insurer certifying that at least the minimum coverages required here are in effect and specifying that the liability coverages are written on an occurrence form and that the coverage's will not be canceled, non-renewed, or materially changed by endorsement or through issuance of other policy(ices) of insurance without sixty (60) days advance written notice to the Town of Columbia's, Town Administrator.

Failure of the owner to demand such certificate or other evidence of full compliance with these insurance requirements or failure of the town to identify a deficiency from evidence provided will not be construed as a waiver of the contractor/insured's obligation to maintain such insurance.

B. Insurer Qualifications: All Insurance will be provided through companies authorized to do business in the State of Connecticut and considered acceptable by the Town.

C. Additional Insured: The policy or policies providing insurance as required, with the exception of professional liability and worker's compensation, Contractor shall add the Town of Columbia on all insurance policies. Contractor shall provide the Town of Columbia with a certificate of insurance. Contractor insurance shall be primary and non-contributory.

D. Retroactive Date and Extended Reporting Period: Any coverage written on a claims made basis requires an extended reporting period of at least 36 months upon final payment or date of project completion, whichever occurs later.

E. Subcontractors' Insurance: The contractor will require and cause each subcontractor hired and/or employed by the contractor to purchase and maintain insurance of the types specified below. When requested by the town, the contractor will furnish copies of certificates of insurance evidencing coverage for each subcontractor. Any coverage written on a claims made basis requires an extended reporting period of at least 36 months upon final payment or date of project completion, whichever occurs later.

F. Waiver of Subrogation: To the fullest extent permitted by law, Contractor shall waive subrogation and all rights of recovery against the Town of Columbia. All Contractor insurance policies required under this Agreement shall be endorsed to include clauses waiving subrogation in the certificate(s) of insurance. The Contractor/insured will require of subcontractors, by appropriate written agreements, similar waivers each in favor of the Town of Columbia enumerated in this section.

STANDARD INSTRUCTIONS (continued)

G. Hold Harmless: To the fullest extent permitted by law, Contractor shall defend, indemnify and hold harmless the Town of Columbia, and their boards, employees and agents from and against all claims, damages, losses, judgments and expenses, including but not limited to attorney fees of counsel selected by the Town, that arise from or may arise from the performance of the work, the supplying of materials and/or the breach of this Agreement provided that such claim, loss, damage, judgment and/or loss expense is attributable to bodily injury, sickness, disease or death, or to injury 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, subcontractors, 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.

2) Insurance Limits and Coverage: To the extent applicable, the amounts and types of insurance will conform to the minimum terms and conditions and coverages of the national Insurance Services Office (ISO) policies, forms, and endorsements. If the contractor/insured has self-insured retention' s or deductibles under any of the following minimum required coverage's, the contractor/insured must identify on the certificate of insurance the nature and amount of such self-insured retention's or deductibles and provide satisfactory evidence of financial responsibility for such obligations. All self-insured retention's or deductibles will be the contractor/insured's sole responsibility.

A. Commercial General Liability: The contractor/insured will maintain commercial general liability insurance covering all operations by or on behalf of the contractor/insured on an occurrence basis against all claims for personal injury (including bodily injury or death) and property damage (including loss of use).

Such insurance will have these minimum limits:

- $ 1,000,000 each occurrence.
- $ 1,000,000 each occurrence if blasting is required.
- $ 2,000,000 general aggregate with dedicated limits per project site.
- $ 2,000,000 products and completed operations aggregate.
- $ 1,000,000 personal and advertising injury.

B. Automobile Liability: The contractor/insured will maintain business auto liability coverage for liability arising out of any auto, including owned, hired, and non-owned autos.

STANDARD INSTRUCTIONS (continued)

C. Workers' Compensation: The contractor/insured will maintain workers' compensation and employer's liability insurance in the following minimum limits:

- Workers' Compensation: statutory limits.
- Employer's Liability: $1,000,000 bodily injury for each accident.
- Employer's Liability: $1,000,000 bodily injury by disease each employee.
- Employer's Liability: $1,000,000 bodily injury disease aggregate.
- Professional Liability: $1,000,000

D. Governing Law: This agreement shall be governed by the laws of the State of Connecticut. These are, minimum insurance limit requirements only. Additional insurance coverage's and amounts may be required by the Town of Columbia on a per project basis.

8. INDEMNIFICATION AND HOLD HARMLESS

To the fullest extent permitted by law the Contractor shall defend, indemnify and hold harmless the Town, its officers, officials, employees and volunteers from any and all claims, injuries, damages, losses or suits including attorney fees, arising out of or in connection with the performance of services hereunder, except for injuries and damages caused by the sole negligence of the Town.

9. PERMITS

The Contractor is solely responsible for obtaining all required permits, obtaining all necessary inspections and approvals, and satisfying any and all fees. The Town will waive all TOWN of COLUMBIA fees for building permits and inspections.

10. FAIR EMPLOYMENT PRACTICES

The Contractor agrees not to discriminate against any employee or applicant for employment in the performance of this RFP's work with respect to hire, tenure, terms, conditions, or privileges of employment due to race, sex, age, religion, national origin, or other condition proscribed by State or Federal law.

11. TERMS AND CONDITIONS OF CONTRACT

The terms, conditions, and requirements of the contract for Construction Services for Town of Columbia Softball Field are detailed in the attached specimen contract.

12. AWARDING THE CONTRACT

The TOWN of COLUMBIA reserves the right to accept or reject, any, all, or any part of responses, to waive formalities or informalities, and to make awards that are deemed to be in the best interests of the Town.

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STANDARD INSTRUCTIONS (continued)

It is the Town's policy to not award to those who owe TOWN of COLUMBIA prior year(s) property taxes.

The "Contract Awarded" date in section 2. entitled Key Event Dates is the date the contract is anticipated to be awarded. It is not date certain.

The lowest priced response is NOT the sole determining factor when making awards.

END OF STANDARD INSTRUCTIONS TO PROPOSERS

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GENERAL INSTRUCTIONS

1. INSTRUCTIONS FOR CONTRACTORS SUBMITTING RESPONSES

The services to be performed under the Contract are more particularly described in **Exhibit A** attached hereto. Requirements as to how the services are to be performed are set forth in the Sample Contract, **Exhibit B**, attached hereto.

2. JOINT RESPONSES/SUBCONTRACTORS

No joint responses shall be accepted. THE TOWN OF COLUMBIA uses the RFP process to identify and contract with firms that have expertise in construction services. However, THE TOWN OF COLUMBIA recognizes that Contractors with which it has contracts may need to employ subcontractors for particular types of work for which the Contractor has entered into a specific Request for Services ("RFS"). THE TOWN OF COLUMBIA uses the RFS process to review and approve subcontractors. If there are subcontractors that a Contractor would use for specific aspects of the project, the Contractor should identify and disclose those subcontractors in its response. However, selection of a Contractor does not in any way indicate THE TOWN OF COLUMBIA's approval of the use of any of the subcontractors identified and disclosed in the response.

3. EVALUATION AND SELECTION CRITERIA

THE TOWN OF COLUMBIA will base its evaluation of responses on the following criteria, which are not necessarily in order of importance:

A. The Contractor's understanding of the work as evidenced by the quality of the response submitted.

B. The background and experience of the Contractor in providing the construction services requested and past successful history of assignments.

C. The demonstrated effectiveness of the Contractor's proposed service delivery system to ensure quality service and timely completion of services in an efficient manner.

D. The background, education, qualifications and relevant experience of key personnel to be assigned to this contract, especially those of the day-to-day project manager, and the engineers, surveyors, construction inspectors and other staff that would work with the Town on a regular basis. Also, the qualifications of any subcontractors or subcontractors the Contractor intends to use in the performance of this contract.

E. The appropriate licenses, such as Professional Engineer in the State of Connecticut, held by Contractor's staff and subcontractors and subcontractors.

F. References attesting to the quality of similar services performed.

G. Competitiveness of proposed fees and costs, although the Town is not bound to select the Contractor(s) who proposes the lowest fees and costs. The Town reserves the right to negotiate fees with the selected Contractor(s).

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GENERAL INSTRUCTIONS (continued)

H. Any other factor or criterion that THE TOWN OF COLUMBIA, in its sole discretion, deems or may deem relevant or pertinent for such evaluation.

I. Contractor's willingness to execute the contract as provided.

4. SELECTION PROCEDURES

A. The Town reserves the right to reject any or all responses, to accept any response, to negotiate changes to response terms, and to waive minor inconsistencies with the RFP, if deemed in the best interest of the Town.

B. Responses submitted in response to this RFP will be reviewed against the Selection Criteria listed above.

C. A Selection Committee may assist the Town in choosing a Contractor to provide the requested services.

D. Contractors submitting the most comprehensive and qualified responses may be invited to an interview with a Selection Committee.

E. The Town intends to enter into a contract with the Contractor whose response are determined to best meet the needs of the Town.

END OF GENERAL INSTRUCTIONS TO PROPOSERS

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BID FORM

The undersigned bidder hereby submits the following bid for **Girls Softball Field located at Recreation Park, Columbia**, **CT** in accordance with the Bid Documents for said project. The undersigned has carefully examined and understands all Bid Documents, as listed in the Invitation to Bid and Instructions to Bidders, and has complied with all the provisions thereof in the preparation of his bid. The Undersigned also offers to furnish all labor, material, supplies, equipment and other facilities for or incidental to the said project as required by, and in strict accordance with, the Completion Drawings and Specifications, and all addenda.

The Total Lump Sum Bid Amount must be written in words and figures for the Base Bids and any Alternate Bids.

The undersigned bidder acknowledges receipt of the following:

Addendum #	**Date**	**Acknowledged**
_____	_____	_____
_____	_____	_____

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The total amount of the Contractor's lump sum bid shall which includes all work specified, indicated, and implied in the Contract Bid Documents is:

Girls Softball Field located at Recreation Park

TOTAL LUMP SUM PRICE IN WORDS:_____ DOLLARS

LUMP SUM PRICE IN FIGURES (Lump sum price includes all items shown on plans):

$_____

ALTERNATE #1:	Demolition per L-1.0	$_____
ALTERNATE #2:	Grading per L-3.1	$_____
ALTERNATE #3:	Purchase and deliver Granular Fill	$_____
ALTERNATE #4:	Purchase and deliver Infield Mix	$_____
ALTERNATE #5:	Irrigation per L-4.0	$_____
ALTERNATE #6:	Dugout roof structure	$_____
ALTERNATE #7:	PVC Fence Coating	$_____
ALTERNATE #8:	Seeding	$_____
ALTERNATE #9	Warning Track	$_____

It is understood and agreed to by the bidder that:

1) The Contractor's Lump Sum Bid for the project includes all coordination, labor, materials, supplies, equipment, and all other incidentals which are the **Girls Softball Field located at Recreation Park, Columbia, CT** as required by and in strict conformance with these Bid Documents for the use (or uses) and appearance intended by the Owner.
2) Quantities for individual construction items are to be determined by the Contractor.
3) Any increases or decreases in scope shall be mutually agreed upon by the Owner and the Contractor. Should the project be increased in length or the scope of work increased due to construction changes beyond the requirements hereinabove, any additional work required will be paid for as additional work. Should the project be decreased in length, a suitable credit, mutually agreed upon based on the reduction in actual scope or work will be taken by the Owner.

4) In submitting this Bid, the Bidder understands that the Owner reserves the right to reject any and all bids, and to waive any informalities in the bidding. The Owner further reserves the right to make the award on the basis of the above bid.

5) If written notice of the acceptance of this bid is mailed, telegraphed, or delivered to the undersigned after the opening thereof, the undersigned agrees to execute and deliver any Agreement in the prescribed form and furnish the required bonds within ten (10) days after the Agreement is presented to him for his signature.

6) The Bidder is enclosing a statement of his qualifications.

7) The Bidder shall comply with all provisions of the Bid Documents in his prosecution of the Project if awarded the Contract; and all provisions will be enforced by the Owner.

Dated this _____day of , _____, _____

Bidder's Name:

By: _____Official Address _____

Title:_____

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TOWN OF COLUMBIA, CONNECTICUT
RESPONSE FORM # 1 REQUIRED RESPONSE

Town of Columbia Girls Softball Field

Under penalty of perjury and other remedies available to the TOWN of COLUMBIA, the undersigned certifies this response is submitted without collusion and all responses are true and accurate.

_____ _____
Signature of Authorized Person Date

_____
Printed Name of Authorized Person

_____
Company Title of Authorized Person

_____
Name of Company

_____
Address of Company

_____
Address of Company

_____
City, State, and Zip Code

_____ _____
Telephone Number Facsimile Number

_____
e-mail address

END OF RESPONSE FORM #1

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RESPONSE FORM #2 REQUIRED RESPONSE

Under penalty of perjury and other remedies available to THE TOWN of COLUMBIA, the undersigned certifies:

☐ Contractor agrees to execute the Sample Contract (Exhibit B), or

☐ Contractor takes the following exceptions to the Sample Contract (Exhibit B):

Paragraph	Exception

END OF RESPONSE FORM #2

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EXHIBIT A - SCOPE OF WORK: TOWN OF COLUMBIA GIRLS SOFTBALL FIELD

Specifications Index

SECTION 011000 – SUMMARY FOR SITEWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Work covered by the Contract Documents.
2. Type of Contract.
3. Use of premises.
4. Work restrictions.
5. Specification formats and conventions.
6. Contractor Qualifications

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: Girls Softball Field Renovations at Recreation Park.

1. Project Location: Recreation Park Route 66 and Hennequin Road Columbia, CT

B. Owner: Town of Columbia Connecticut

C. Landscape Architect: TO Design LLC

D. The Work consists of the following:

1. Removing an existing softball field and replacing it with a new softball field. Improvements include grading, stone dust pavement, chain link fence, dugouts, benches, water supply and other site improvements.

1.4 TYPE OF CONTRACT

A. This project will be constructed under a single prime contract.

1.5 USE OF PREMISES

A. The project area will be closed to the public during construction

1.6 WORK RESTRICTIONS

A. On-Site Work Hours: Work shall be generally performed during normal business working hours of 7:00 a.m. to 5:00 p.m., Monday through Friday, except otherwise indicated.

1.7 SPECIFICATION FORMATS AND CONVENTIONS

A. Specification Format: T he Specifications are organized into Divisions and Sections using the 16-division format and CSI/CSC's "MasterFormat" numbering system.

1. Section Identification: The Specifications use Section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of Sections in the Contract Documents.
2. Division 1: S ections in Division 1 govern the execution of the Work of all Sections in the Specifications.

B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. W ords and meanings shall be interpreted as appropriate. W ords implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. O ccasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.

a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

1.9 WAGE RATES

A. State wage rates shall apply to this project.

1.10 QUALIFICATIONS

A. The Contractor or the prime contractor's subcontractors must demonstrate successful completion of three similar athletic field projects

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012300 – ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. The cost or credit for each alternate is the net addition to the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

C. Execute accepted alternates under the same conditions as other work of the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

1. Alternate No. 1: Demolition per L-1.0
2. Alternate No. 2: Grading per L-3.1
3. Alternate No. 3: Purchase and deliver Granular Fill
4. Alternate No. 4: Purchase and deliver Infield Mix
5. Alternate No. 5: Irrigation per L-4.0
6. Alternate No. 6: Dugout roof structure
7. Alternate No. 7: PVC Fence Coating
8. Alternate No. 8: Seeding
9. Alternate No. 9: Warning Track

END OF SECTION 012300

SECTION 012900 – PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Co ordinate preparation of the schedule of values with preparation of Contractor's construction schedule.

1. Submit the schedule of values to the Landscape Architect at earliest possible date, but no later than seven days before the submittal of initial Applications for Payment.

B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values.

1. Arrange schedule of values consistent with format of AIA Document G703.
2. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of contents.
3. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
4. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

a. Differentiate between items stored on-site and items stored off-site. If required, include evidence of insurance.

5. Allowances: Provide a separate line item in the schedule of values for each allowance.
6. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Landscape Architect and paid for by Owner.

B. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.

C. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor.

1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

D. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Provide summary documentation for stored materials indicating the following:

a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.

E. Transmittal: S ubmit three signed and notarized original copies of each Application for Payment to Landscape Architect

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

F. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of values.
3. Contractor's construction schedule.
4. Submittal schedule.
5. Copies of building permits.
6. Copies of authorizations and licenses from authorities having jurisdiction for performance of the work.
7. Initial progress report.
8. Certificates of insurance and insurance policies.
9. Performance and payment bonds.

G. Application for Payment at Substantial Completion: A fter Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

H. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
6. AIA Document G707, "Consent of Surety to Final Payment."
7. Evidence that claims have been settled.

8. Final liquidated damages settlement statement.
9. As Built Plan per City of Hartford Requirements.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 020000 – GENERAL SITEWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 REFERENCES

A. Form 817: State of Connecticut Department of Transportation Standard Specifications for Roads, Bridges, and Incidental Construction.

1.3 DESCRIPTION

A. This project involves removing turf, regrading and turf establishment, chain link fencing, dugouts, water service, and other ancillary ball field improvements.

1.4 QUALITY ASSURANCE

A. Obtain and pay for all required inspections, permits and fees. Provide notices required by governmental authorities.

B. Comply with all applicable local, state and federal requirements regarding materials, methods of work and disposal of excess and waste materials.

1.5 GENERAL JOB CONDITIONS

A. Locate and identify existing underground and overhead services and utilities within contract limit work areas. Provide adequate means of protection of utilities and services designated to remain. Repair utilities damage during sitework operations at Contractor's expense.

B. Protect and maintain all existing utility appurtenances and improvements except items designated for removal.

C. When uncharted or incorrectly charted underground piping or other utilities and services are encountered during sitework operations, notify the applicable utility company immediately to obtain procedure directions. Cooperate with the applicable utility company in maintaining active service operation.

D. Locate, protect and maintain bench marks, monuments, control points and project engineering reference points. Re-establish disturbed or destroyed items at Contractor's expense.

E. Perform sitework operations to assure minimum interference with streets, walks and other adjacent facilities.

F. Obtain written permission when required to close or obstruct driveways, walks or adjacent facilities. Provide alternative routes around closed or obstructed traffic ways when required.

G. Control dust caused by the work with calcium chloride conforming to ASTM D-98, or water. Special care shall be taken by the Contractor to control dust and debris due to construction. Dampen surfaces prior to significant earthwork or other grading operations and clean the site on a regular basis to minimize unsightly or dangerous debris.

H. Protect existing building, paving and other services or facilities on site and adjacent to the site from damage caused by sitework operation. Cost of repair and restoration of damaged items shall be at the Contractor's expense.

I. Coordinate all work of each section with related work of other sections. Failure to coordinate properly will not reduce the obligation to meet the standards of acceptance of the various elements of work contained herein.

J. Examine all work that the work of each section is contingent upon and report any deficiencies to the Owner's Representative. Commencement of work will be construed to mean complete acceptance of the preparatory work of others. No adjustment will be made for discrepancies brought to the Owner's Representative attention after work has begun.

1.6 TRAFFIC MAINTENANCE, SAFETY AND PROTECTION

A. The contractor shall provide for maintenance and protection of traffic, including permits and plans as required by the Town of Columbia**.**

B. Provide, place, move, maintain and dismantle such barricades, warning signs and lights as necessary to adequately protect the work and provide for public safety.

C. Furnish flagmen or police as required for the proper direction and control of traffic during the construction period.

1.7 STANDARD SPECIFICATIONS

A. All reference to the Standard Specifications refers to CT DOT Form 817. A copy of these specifications shall be available on site at all times.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. As selected by Contractor, except as indicated.

PART 3 - EXECUTION

3.1 PREPARATION

A. Examine the areas and conditions under which sitework is performed. Do not proceed with the work until unsatisfactory conditions are corrected.

END OF SECTION 020000

SECTION 116833 – BALL FIELD EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Foul pole.
2. Bases.
3. Fence crown.
4. Pitching rubber.
5. Home plate.

B. Related Sections include the following:

1. Division 31 Section "Earth Moving" for excavation, backfilling, and grading.

1.3 SUBMITTALS

A. Product data for all manufactured products.

PART 2 – PRODUCTS AND MATERIALS

2.1 MANUFACTURERS

A. Foul pole – 12'-9" high foul pole with wing panel, #BBSBFP-12 (Custom), Jaypro Sports, Waterford, CT ph. No. 800.243.0533 (www.jayprosports.com).

B. Bases – model #RBBS-T for Little League, Rogers Sports Group,130 Market Place #287 San Ramon, CA, 94583, ph. No. 800.829.7311 (www.rogersbreakawaybase.com). Base system to include base top, base plates and anchor systems.

C. Safety Top Fence Crown – Safety Top Cap model # STC-8, color yellow, Jaypro Sports, Waterford, CT ph. No. 800.243.0533 (www.jayprosports.com).

D. Home Plate: Rubber home plate, #HP-100, Jaypro Sports, Waterford, CT ph. No. 800.243.0533 (www.jayprosports.com).

E. Pitching Rubber: 6" x 6" pitching rubber model #PR-618 required for little league fields. Pitching rubbers supplied by Jaypro Sports, Waterford, CT ph. No. 800.243.0533 (www.jayprosports.com).

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces indicated to receive site improvements for compliance with requirements for installation. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Foul pole – install plumb & true in a concrete footing.

B. Bases – install per manufacturers recommendations.

C. Safety Top Cap – secure to chain link fence per manufacturers recommendation.

D. Pitching rubber – fill PVC tube with clay and install below grade.

E. Home plate – set according to layout plans.

END OF SECTION 116833

SECTION 129300 – SITE FURNISHINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Player Benches - Town Supplied. Installation only.

1.3 SUBMITTALS

A. Product Data for all manufactured products.

PART 2 – PRODUCTS AND MATERIALS

2.1 MANUFACTURERS (Product purchased by the Town, installation only)

A. Subject to compliance with requirements, provide product by the following.

1. Players Bench shall be model 21' players bench with back rest in natural finish model PB-10PI manufactured by Jaypro Sports (www.jaypro.com).

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces indicated to receive site improvements for compliance with requirements for installation. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install site furnishings as noted on the Drawings and per manufacturer's written installation instructions.

3.3 CLEANING

A. After completing site furnishing installation, inspect components. Remove spots, dirt, and debris. Repair damaged finishes to match original finish or replace component.

END OF SECTION 129300

SECTION 221113 – WATER DISTRIBUTION

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

A. This section includes all labor, materials and equipment required to complete the following:

1. Valves, valve boxes and related fittings
2. Connection to existing water line.

1.2 SUMMARY

A. Related Sections include the following:

1. Division 31 Section "Earth Moving".

1.3 SUBMITTALS

A. The contractor shall submit the following samples, certifications or test results prior to use on the project:

1. Product data for pipe, pipe fittings, valves valve boxes, tapping sleeves and valves.
2. Yard hydrant.

1.4 SPECIAL REQUIREMENTS

A. Before commencing work, field check the existing elevations and topography shown on the plan. Report any discrepancies, which will affect the work of this contract to the Architect in writing. Commencement of work will be implied to mean acceptance. No adjustments will be made for discrepancies brought to the Architect's attention after work has begun.

B. The Contractor shall carefully protect from disturbance or damage all land monuments until an authorized agent has witnessed or otherwise referenced their location, and shall not remove or destroy them without proper authorization.

C. Existing buried utilities are indicated in the vicinity of new construction. The Contractor shall examine all contract drawings and available information and drawings of the existing site. T ake care to avoid damage to, or interruption of utilities scheduled to remain.

D. Make all necessary arrangements with the Town of Columbia Engineering, Town of Columbia Department of Public Works.

E. Should unexpected soil or subsurface conditions or discrepancies between plans and layout work occur, contact the Architect before proceeding with any work in the area.

PART 2 - PRODUCTS

2.1 STANDARDS

A. Materials shall be in accordance with the specifications of the American Water Works Association (AWWA) and the American National Standards Institute (ANSI).

2.2 PRODUCTS

A. Valves 1.5 inches and smaller shall be standard brass body round way round key stops with T-heads, as manufactured by Nibco, Kennedy or Pratt & Cady. Furnish tow suitable key.

B. Copper Tubing

1. Water pipe smaller than 4 inches shall be hard drawn copper tubing, type K conforming to Federal Specifications WWT-799 and ASTM B 88-76. Fittings shall be compression type. 1-1/4 inch copper tubing shall not be used on any portion of this project.

C. Plastic Pipe

1. Plastic Pipe 2" or less Copper Tubing Size (CTS) polyethylene 200 psi.
2. PVC C-900 4" or greater.

PART 3 - EXECUTION

3.1 CONSTRUCTION METHODS

A. Pipe laying the interior of the pipe shall be clean and joint surfaces wiped clean and dry when the pipe is lowered into the trench. Each pipe, fitting and valve shall be lowered into the trench carefully and laid true to line and without abrupt change in grade. The depth of cover below finished grade shall be not less than 4.5 feet. Water or dirt shall not be allowed into enter the pipe after laying. A water tight plug shall be inserted in the open end of

the pipe when pipe installations are not in progress. Pipe shall be handled and installed in compliance with the manufacturers published directions.

B. If blocks are placed under the pipe while laying, they shall be removed so that pipe bears on the trench bottom for its full length. Backfill shall be tamped firmly around the sides of the pipe and with special care under valves and fittings.

C. Before setting each valve, the Contractor shall examine the valve to assure that the interior is clean and test opening and closing. Valves and stops shall be set with stem plumb and at the exact locations shown on the plans. Valves and boxes shall be plumb with tops at finished grade.

D. Before joints are covered, the pipe shall be filled with water, opening a faucet or providing other outlets as necessary for expelling air.

E. Refilling Trenches shall be completed as soon as practicable after the pipes have been laid. The trenches shall be refilled at least to a level 12 inches above the top of the pipe with approved gravel or sand, deposited in layers not more than 12 inches in depth and satisfactorily compacted with pneumatic hand tampers. Each layer to be leveled and thoroughly compacted to the satisfaction of the Engineer before the next layer is deposited. Special care shall be taken to consolidate the gravel or sand under the pipe and the whole work of refilling shall be done in a manner which will prevent subsequent settlement and damage to the pipe.

3.2 TESTING

A. After pipe has been laid, the joints completed and the trench partially backfilled, leaving the joints exposed for examination, the newly laid piping or any valved section of piping shall unless otherwise specified, be subject to hydrostatic pressure test of 150 psi for one hour. Defective pipes, joints, fittings, valves and hydrants disclosed in the pressure test shall be replaced by the Contractor with sound material and the test shall be repeated until the test results are satisfactory to the Local Water Authority. When an actual visible inspection of each joint cannot be made, because of the necessity of immediate backfilling, suitable means shall be provided by the Contractor for determining the quantity of water lost by leakage under normal operating pressure. Allowable leakage shall be within the limits of Table 3 , Section 13 of AWWA 0600-64.

3.3 DISENFECTION WATER MAINS

A. After testing of the new water mains is complete and the work has been approved by the local authority, the Contractor shall disinfect the new mains in cooperation with District forces shall sterilize the main by using a

modification of the Tablet method as described in Section 5-1 of the ANSI/AWWA C601-81, Standard for Disinfecting Water Mains.

B. The appropriate number of five (5) gram calcium hypochlorite tablets as shown in Table 1 shall be cemented in each length of pipe by the contractor. All H.T.H. tablets (the only approved brand name) will be furnished by the District. Once the line has been completed the main shall be filled with water as part of the tablet method of sterilization. The water shall remain in the pipe a minimum of 24 hours. After final flushing and before placing the main in service, district forces will make the appropriate bacteriological tests. If the main fails these tests, the Engineer will require additional sterilization flushing and testing. All expense for this additional work including the use of District forces will be the responsibility of the Contractor and will not be reimbursed by the owner. The complete test procedure requires four consecutive working days for the results to be obtained.

1. Number of tablets per pipes.

Pipe Dia.	Tablets/length
4 inch	1
6 inch	2
8 inch	3
10 inch	5
12 inch	7

2. Tablets are not to be left in pipes above ground overnight or on the job site where they can come in contact with children or animals.

3.4 AS BUILT DRAWINGS

A. As work progresses, record on one set of plans all changes and deviations from contract drawings in size, line grade. Make sufficient measurements to locate the work completed. Deliver the plans to the Architect.

END OF SECTION 221113

SECTION 311000 – SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Clearing.
2. Removing Fences
3. Removing miscellaneous site improvements
4. Topsoil Stripping

B. Related Sections include the following:

1. Division 31 Section "Earth Moving" for soil materials, excavating, backfilling, and site grading.
2. Division 32 Section “Turf Grasses " for seeding and sodding.
3. Division 31 Section “Erosion Control” for soil stabilization.
4. Division 31 Section “Sod Removal” for turf removal.

1.3 MATERIAL OWNERSHIP

A. Except for stripped topsoil or other materials indicated to remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.4 DEFINITIONS

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

1.5 SUBMITTALS

A. Photographs or videotape, sufficiently detailed, of existing conditions of trees and plantings, adjoining construction, and site improvements that might be misconstrued as damage caused by site clearing.

1.6 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. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.

B. Utility Locator Service: Engage a utility locator service before site clearing.

C. Do not commence site clearing operations until temporary erosion and sedimentation control measures are in place.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

3.2 TOPSOIL STRIPPING

A. Remove sod and grass before stripping topsoil.

B. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.

1. Strip surface soil of unsuitable topsoil, including trash, debris, weeds, roots, and other waste materials.

C. Stockpile topsoil materials away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Limit height of topsoil stockpiles to 72 inches (1800 mm).
2. Do not stockpile topsoil within drip line of remaining trees.
3. Dispose of excess topsoil as specified for waste material disposal.
4. Stockpile surplus topsoil and allow for respreading deeper topsoil.

3.3 SITE IMPROVEMENTS

A. Remove existing above- and below-grade improvements as indicated and as necessary to facilitate new construction.

B. Remove all footings associated with demolished site elements

3.4 DISPOSAL

A. Disposal: Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

1. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities.

END OF SECTION 311000

SECTION 311100 – SOD REMOVAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Removing existing sod.

B. Related Sections include the following:

1. Division 31 Section "Earth Moving" for soil materials, excavating, backfilling, and site grading.
2. Division 32 Section "Turf Grasses" for providing & installing seed or sod.

1.3 MATERIAL OWNERSHIP

A. Cleared materials shall become contractors property and shall be removed from the Project site.

1.4 SUBMITTALS

A. Photographs or videotape, sufficiently detailed, of existing conditions of trees and plantings, adjoining construction, and site improvements that might be misconstrued as damage caused by site clearing.

1.5 QUALITY ASSURANCE

A. Preinstallation Conference: Co nduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.6 PROJECT CONDITIONS

A. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

3.2 UTILITIES

A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

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

3.3 SOD STRIPPING

A. Remove sod with a mechanical sod cutter to 2" depth minimum.

B. Strip sod to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.

1. Remove thatch layer with sod.

3.4 DISPOSAL

A. Disposal: Remove waste materials including trash and debris.

END OF SECTION 311100

SECTION 312000 – EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Preparing subgrades outside of ball field.
2. Excavating and backfilling outside of ball field.

B. Related Sections include the following:

1. Division 31 Section "Site Clearing" for site stripping, grubbing, stripping and stockpiling topsoil, and removal of above- and below-grade improvements and utilities.

2. Division 32 Section "Turf Grasses" for finish grading, including preparing and placing topsoil and planting soil for lawns.

3. Division 31 Section "Earth Moving at Athletic Field" for earthwork at sports fields.

1.3 REFERENCES

A. Form 817: St ate of CT Dept. of Transportation Standard Specifications for Roads, Bridges and Incidental Construction.

B. Geotechnical Engineering Report: Section 329201.

C. Topsoil Analysis: Section 329201

1.4 DEFINITIONS

A. Backfill: Soil material used to fill an excavation.

B. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

C. 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 Landscape Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.

2. Bulk excavation: excavation more than 10 feet (3 m) in width and more than 30 feet (9 m) in length.
3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Landscape Architect. Unauthorized excavation, as well as remedial work directed by Landscape Architect, shall be without additional compensation.

D. Fill: Soil materials used to raise existing grades.

E. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 1 cu. yd. (0.76 cu. m) for bulk excavation or 3/4 cu. yd. (0.57 cu. m) for footing, trench, and pit excavation that cannot be removed by rock excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering, ripping, or blasting, when permitted:

1. Excavation of Trenches, and Pits: Late-model, track-mounted hydraulic excavator; equipped with a 42-inch- (1065-mm-) wide, maximum, short-tip-radius rock bucket; rated at not less than 138-hp (103-kW) flywheel power with bucket-curling force of not less than 28,090 lbf (125 kN) and stick-crowd force of not less than 18,650 lbf (83 kN); measured according to SAE J-1179.
2. Bulk Excavation: Late-model, track-mounted loader; rated at not less than 210-hp (157-kW) flywheel power and developing a m inimum of 48,510-lbf (216-kN) breakout force with a general-purpose bare bucket; measured according to SAE J-732.

F. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.

G. Utilities: O n-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.5 SUBMITTALS

A. Sieve analysis of Borrow soil

B. Preexcavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by earthwork operations. Submit before earthwork begins.

1.6 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Landscape Architect and then only after arranging to provide temporary utility services according to requirements indicated.

1. Notify Landscape Architect not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Landscape Architect's written permission.
3. Contact utility-locator service for area where Project is located before excavating.

B. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shut off services if lines are active.

PART 2 - PRODUCTS

2.1 GENERAL FILL

A. The Contractor shall satisfactorily place material conforming to "Borrow" Section 2.07.01 and 2.07.02 of the "State of Connecticut Department of Transportation Standard Specifications Form 817 for Roads, Bridges, and Incidental Construction" dated 1995, including all supplements and revisions.

B. All material whether from the excavation or from borrow, shall be of such nature that after it has been placed and properly compacted, it will make a dense, stable fill.

C. It shall not contain vegetation, masses of roots, individual roots more than 18 inches long, or more than ½ inch in diameter, stones over 6 inches in diameter, porous matter, or organic matter.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

B. Preparation of subgrade for earthwork operations including removal of vegetation, topsoil, debris, obstructions, and deleterious materials from ground surface is specified in Division 31 Section "Site Clearing."

C. Protect and maintain erosion and sedimentation controls.

3.2 DEWATERING

A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

3.3 EXCAVATION, GENERAL

A. Classified Excavation: Excavate to subgrade elevations. The Contract Sum will be adjusted for rock excavation. Ch anges in the Contract time may be authorized for rock excavation.

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

a. Intermittent drilling; ram hammering; or ripping of material not classified as rock excavation is earth excavation.

2. Rock excavation includes removal and disposal of rock. Remove rock to lines and subgrade elevations indicated to permit installation of permanent construction without exceeding the following dimensions:

a. 24 inches (600 mm) outside of concrete forms other than at footings.
b. 12 inches (300 mm) outside of concrete forms at footings.
c. 6 inches (150 mm) outside of minimum required dimensions of concrete cast against grade.
d. 6 inches (150 mm) beneath bottom of concrete slabs on grade.
e. 6 inches (150 mm) beneath pipe in trenches, and the greater of 24 inches (600 mm) wider than pipe or 42 inches (1065 mm) wide.

3.4 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Ex cavate trench walls vertically from trench bottom to 12 inches (300 mm) higher than top of pipe or conduit, unless otherwise indicated.

1. Clearance: 12 inches (300 mm) each side of pipe or conduit or As indicated on drawings.

C. Trench Bottoms: Excavate trenches 4 inches (100 mm) deeper than bottom of pipe elevation to allow for bedding course. Hand excavate for bell of pipe.

1. Excavate trenches 6 inches (150 mm) deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

3.7 SUBGRADE INSPECTION

A. Notify Landscape Architect when excavations have reached required subgrade.

B. If Landscape Architect determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices.

D. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Landscape Architect, without additional compensation.

3.8 STORAGE OF SOIL MATERIALS

A. Remove unused excavated material from the site.

3.9 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:

1. Surveying locations of underground utilities for Record Documents.
2. Testing and inspecting underground utilities.
3. Removing concrete formwork.
4. Removing trash and debris.
5. Removing temporary shoring and bracing, and sheeting.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.10 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 (25 mm) in any dimension, to a height of 12 inches (300 mm) 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. Backfill voids with satisfactory soil while installing and removing shoring and bracing.

E. Place and compact final backfill of satisfactory soil to final subgrade elevation.

F. Install warning tape directly above utilities, 12 inches (300 mm) below finished grade.

3.11 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.

B. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.12 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.

3.13 COMPACTION OF SUBGRADE

A. All soft and yielding material and other portions of the subgrade which will not compact readily when rolled, vibrated or tamped shall be removed and replaced with suitable material. The surface shall be compacted uniformly by rolling with a power roller having a minimum compression of 300 pounds per inch of width of tread on the rear wheel of wheels, and weighing not less than 10 tons, or with an equivalent vibratory roller or compactor.

B. When more than one compacting unit is used, the unit exerting the greatest compactive effort shall be used to make the initial compaction. Any portion of the subgrade which is not accessible to a roller or other compacting unit shall be compacted thoroughly with hand tampers or with approved mechanical vibrators.

3.14 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than 8 inches (200 mm) in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches (100 mm) in loose depth for material compacted by hand-operated tampers.

B. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 1557:

1. Under pavements, compact each layer of backfill or fill soil material at 95 percent.
2. Under walkways compact each layer of backfill or fill soil material at 92 percent.
3. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

3.15 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.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Lawn or Unpaved Areas: Plus or minus 1 inch (25 mm).
2. Pavements: Plus or minus 1/2 inch (13 mm).

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.

1. Scarify or remove and replace soil material to depth as directed by Landscape Architect; reshape and recompact.

C. Where settling occurs before Project warranty 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 unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.

B. Material must be handled in accordance with applicable CT DEEP regulations concerning fill, solid waste, and remediation standards

END OF SECTION 312000

SECTION 312001 – EARTH MOVING AT ATHLETIC FIELD

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Soil Tilling
2. Para plowing.
3. Subgrade preparation
4. Fill and topsoil
5. As-built Survey

B. Related Sections include the following:

1. Division 32 Section "Turf Grasses" for providing & installing seed.
2. Division 32 Section "Infield Surface Soils" for infield soils.
3. Division 31 Section "Sod Removal" for sod removal.
4. Division 31 Section "Site Clearing" for topsoil removal.
5. Division 31 Section "Earth Moving" for general earthwork.
6. Division 32 Section "Soil Profiles for Field Soils" for field soils.

1.3 PROJECT CONDITIONS

A. Equipment:

1. Grading shall be performed with a laser grade spectra physics dual slope laser system. Land leveler shall be a tow type base blade with 4 tires that support the blade & keep it level. Leveler shall be powered by an independent receiver that receives a signal from the laser. A n electric/hydraulic valve shall automatically raise & lower the blade.

2. All equipment used on the field shall be wide track or rubber turf tire type.

B. Tolerances:

1. Grading accuracy shall be to within ¼"

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. See Section 329113 & 329201.

PART 3 - EXECUTION

3.1 DEWATERING

A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

3.2 EARTHWORK - GENERAL

A. Complete rough grading with laser grading equipment as described in Section 1.3

B. Roll with 8 foot turf roller, tow behind, not more than 2500# to firm surface, not compact.

C. Finish the surface with a k uhn power harrow and barber tow behind stone picker/field finisher for a clean, lightly loose soil ready for seed.

D. Complete fine grading with laser grading equipment as described in Section 1.3 A.

3.3 SUBGRADE INSPECTION

A. Notify Architect when excavations have reached required subgrade.

B. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Landscape Architect, without additional compensation.

3.4 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.

3.5 COMPACTION

A. Do not compact with vibrating equipment or rollers. Compaction shall be by water misting only.

3.6 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place fill and topsoil materials in layers not more than 6 inches (100 mm) in loose depth.

3.7 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.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Grading: Slope grades as directed on grading plan. Finish to required elevations within a tolerance of ¼":

3.8 FIELD QUALITY CONTROL

A. Testing Agency: Prior to seeding Contractor shall engage a qualified independent land surveyor to verify grading accuracy at softball field. Spot elevations shall be provided on a 20' grid. If field does not meet specified tolerances, it shall be regraded.

3.9 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.

C. Where settling occurs before Project warranty 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.

END OF SECTION 312001

SECTION 312500 – EROSION CONTROL

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. The General Provisions of the Contract, including the General Conditions and Supplementary General Conditions apply to work specified in this Section.

1.2 SUMMARY

A. The work of this Section includes, but is not limited to the furnishing of all labor, materials and equipment required to provide silt fences, and any other measures necessary to prevent erosion and resulting sedimentation in areas adjacent to the site improvements.

1.3 REFERENCES

A. Form 817: "State of Connecticut Department of Transportation, Standard Specifications for Roads, Bridges and Incidental Construction".

B. CT Guidelines for Soil Erosion and Sediment Control-2002 published by CT Council on Soil and Water Conservation in cooperation with the CT Dept. of Environmental Protection.

1.4 SUBMITTALS

A. Provide written certification of compliance to the specification for the following:

1. Silt Fence.

1.5 PROJECT CONDITIONS OR SITE CONDITIONS

A. Environmental Requirements: Protect adjacent properties and water resources from erosion and sediment damage throughout Work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Silt Fences:

1. Filter Fabric Fence: The fabric used shall be a non-woven material and a minimum of 30-inches high, fastened to stakes, and be CT DOT approved.
2. Posts: Provide wood or metal posts of the length shown in the Contract Documents and of sufficient strength to support the wire backing and filter fabric.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General:

1. Comply with Form 817, Section 2.10.

B. Silt Fences:

1. Install silt fences in the locations shown and as detailed and described in the Contract Documents. Silt fence shall be installed with end runs turned up grade at 45° for a distance of 2' (foot).
2. Drive the support posts firmly into the ground so as to maintain the silt fence in a vertical position.

3.2 MAINTENANCE AND CLEANING

A. General: All temporary erosion and sedimentation control devices shall be maintained and cleaned as required from the time of their installation until their final removal. Permanent erosion control devices shall be maintained and cleaned as required until their final acceptance.

B. Erosion Control Supervisor:

1. The Contractor shall name one (1) individual as his sediment and erosion control supervisor whose responsibility will be maintenance and repair of all on-site erosion and control measures. He will keep a daily log of his activities and an updated schedule of proposed construction activities. The log shall be made available to the local authority as well as any State/ Federal Inspectors.

C. Silt Fences: Remove silt as required to maintain the integrity of silt fences. If required, remove the silt fence completely and remove all accumulated silt, then reinstall.

3.3 ADJUSTMENTS AND CLEANUP

A. At the end of construction and after project areas have been stabilized with vegetation or other permanent site improvements as noted on the drawings, remove and legally dispose of, off site, all non-permanent erosion control devices and restore the damaged areas. Leave the site neat and clean.

END OF SECTION 312500

SECTION 321500 – WARNING TRACK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This section includes the following.

1. Furnishings, placing and grading stone dust surface material on a prepared gravel base.

B. Related sections include the following.

1. Division 31 Section "Earth Moving" for grading and compaction.

1.3 SUBMITTALS

A. Sieve analysis of the material.

B. Samples: Submit one (1) pint of material for approval before purchase.

1.4 REFERENCE

A. Conform to ASTM F2270, Standard Guide for Construction and Maintenance of Warning Track Areas on Sports Fields.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced installer who has completed stone dust paths similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

B. Source Limitations for Stone Dust: Obtain each variety of stone dust from a single supplier with resources to provide materials of consistent quality in appearance and physical properties without delaying the work.

1.5 DELIVERY AND STORAGE

A. Deliver materials to Project site in undamaged condition.

B. Store and handle stone and related materials to prevent deterioration or damage due to moisture, temperature changes, contaminants, corrosion, breaking, chipping, or other causes.

C. Store materials off the ground, under cover, and in a dry location.

D. Store aggregates, covered and in a dry location, where grading and other required characteristics can be maintained and contamination avoided.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Grading per ASTM F2270

Square Mesh Size	Passing
6.35mm	95-100 %
.3mm	>80%
.05 mm	<5%

PART 3 - EXECUTION

3.1 INSTALLATION

A. Compact subgrade to 95%.

B. Install base course and compact to 95%.

C. Install weed fabric between base course and stone dust.

D. Stone dust shall be spread to the lines and depth as indicated on the plans, with a variance of no more than ¼".

E. Compact stone dust to 95%.

F. 95% compaction shall be achieved by utilizing mechanical compactors.

G. Rake and tamp to a smooth even surface.

H. Edges of the stone dust to be flush with adjacent soils.

END OF SECTION 321500

SECTION 323113 – CHAIN LINK FENCE AND BACKSTOP

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Chain-Link Fences and backstop.
2. Gates.

1.3 SUBMITTALS

A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for chain-link fences and gates.

1. Fence and gate posts, rails, and fittings.
2. Chain-link fabric, reinforcements, and attachments.
3. Gates and hardware.
4. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

B. Warranty: Sample of warranty.

C. Sample of hinge, mesh, and tip wire.

1.4 REFERENCE

A. ASTM F626 – Standard specification for fence fittings

B. ASTM F2000 – Standard Guide for Fences for Baseball and Softball Fields.

1.5 QUALITY ASSURANCE

A. Mockups: B uild mockups to set quality standards for fabrication and installation.

1. Include 10 ft. (3 m) length of fence complying with requirements.

1.6 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.

1.7 WARRANTY

A. Special Warranty: Manufacturer's standard form in which Installer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.

1. Failure include, but are not limited to, the following:

a. Faulty operation of gates
b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Warranty Period: Five 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 requirements indicated below:

1. Fabric Height: Varies, see plans.
2. Steel Wire Fabric: 9 gauge, aluminized, 6 gauge at backstop lower panels.

a. Mesh Size: 2 inches (50 mm)
b. Polymer-Coated Fabric: ASTM F 668, Class 2b over zinc-coated steel wire.

1) Color: Black, according to ASTM F 934

3. Selvage: Knuckled at both selvages.

2.2 FENCE FRAMING

A. Posts and Rails: Comply with CLFMI Produce Manual for framing, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness based on the following:

1. Fence Height: Varies, see plans.
2. Heavy Industrial Strength: Material Group IA, round steel pipe, Schedule 40.
3. Polymer coating over metallic coating.

a. Color: Black, according to ASTM F 934.

2.3 TENSION WIRE

A. Metallic-Coated Steel.

B. Polymer-Coated Steel Wire: 0.177-inch diameter, tension wire according to ASTM F 1664, Class 2b zinc coated steel wire.

2.4 SWING GATES

A. General: Comply with ASTM F 900 for gate posts and swing gate types.

B. Frame Corner Construction: assembled with corner fittings.

C. Hardware:

1. Heavy Duty Bull Dog Hinges with adapter for 180-degree inward and outward swing.
2. Latches permitting operation from both sides of gate with provision for padlocking.
3. Keeper: Provide keeper as indicated on plans. Gate keeper shall consist of a mechanical device for securing the free end of the gate when in the open position.

2.5 FITTINGS

A. General: Comply with ASTM F 626.

B. Post Caps: Provide for each post. Glue caps to post.

1. Provide line post caps with loop to receive tension wire or top rail.

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 (152 mm) long.
2. Rail Clamps: L ine 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 (50 mm) 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. Truss Rod Assemblies: St eel, hot-dip galvanized after threading rod and turnbuckle or other means of adjustment.

H. Tie Wires, Clips, and Fasteners: According to ASTM F 626.

1. High Security Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, complying with the following:

a. Hot-Dip Galvanized Steel: 6 ga. wire; galvanized coating thickness matching coating thickness of chain-link fence fabric.

I. Finish

1. Polymer coating over metallic coating.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, and other conditions affecting performance.

1. Do not begin installation before final grading is completed, unless otherwise permitted by Landscape Architect.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Install chain-link fencing to comply with ASTM F 567 F20001, CLFMI Product Manual, and ASTM documents.

3.3 CHAIN-LINK FENCE INSTALLATION

A. Post Excavation: Dr ill 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.

a. Exposed Concrete: Extend 2 inches (50 mm) above grade; shape and smooth to shed water.

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 15 degrees or more.

D. Line Posts: Space line posts uniformly at 10 feet (3 m) o.c.

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 6 feet (1.83 m) or higher, on fences with top rail and at 2/3 fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.

F. Tension Wire: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch- (3.05-mm-) diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches (610 mm) o.c. Install tension wire in locations indicated before stretching fabric. Provide horizontal tension wire at the following locations:

1. Extend along bottom of fence fabric. Install bottom tension wire within 6 inches (152 mm) of bottom of fabric and tie to each post with not less than same diameter and type of wire.

G. 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.

H. Brace Rails: Install, spanning between posts.

I. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 1 inch (50 mm) 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.

J. 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 (380 mm) o.c.

K. Tie Wires: Power fasten wires. Use wire of proper length to firmly secure fabric to line posts and rails. A ttach wire at 1 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 and rails at 12 inches (300 mm) o.c. and to braces at 24 inches (610 mm) o.c.

L. 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.

3.4 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. Tack weld gate hinges to posts.

3.5 ADJUSTING

A. Gate: Adjust gate 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 323113

SECTION 323330 – GRAVEL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This section includes the following:

1. Base and Sub -base courses for paving.

B. Related sections:

1. Division 31 Section "Earth Moving" for grading, compaction and trenching requirements.

1.3 REFERENCES

A. Form 817: " State of Connecticut Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction".

1.4 SUBMITTALS

A. Provide written certification of compliance to the Specification for:

1. Gravel.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Gravel/Aggregate: Conform to Article M.02.03 of Form 817, except that gravel should conform to grading "A".

PART 3 - EXECUTION

3.1 PRE-INSTALLATION REQUIREMENTS

A. Secure approval of compacted subgrade by Owner's Representative prior to commencing installation of rolled base.

3.2 INSTALLATION

A. As pavement base

1. Conform to Article 3.02.03 of Form 817.
2. Gravel shall be spread upon the prepared, compacted sub-grade to such depth that this course will be to the specified depth after compaction.
3. If after the material has been spread and shaped, it is found that additional binder is required, it shall be furnished and applied as necessary.
4. The material shall then be shaped, wetted and compacted with a power roller weighing not less than ten tons or an equivalent vibratory roller until thoroughly compacted.
5. The compacting and wetting shall continue until all voids are filled after which this course may be left to dry. Compacting shall continue until this course is thoroughly compacted.
6. Compact each lift to 95 percent of modified AASHTO laboratory density (ASTMD-1557, Method C).

B. As trench backfill

1. See earth moving section 312000.

END OF SECTION 323330

SECTION 329113 – INFIELD SURFACE SOILS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

1. Infield clay.
2. Pitchers circle & batters box clay.

B. Related Sections include the following:

1. Division 32 Section "Turf & Grasses" for turf
2. Division 31 Section "Earth Moving" for subgrade preparation and topsoiling.

1.3 SUBMITTALS

A. Manufacturers Product Data:

Submit technical data, including application instructions where relevant, for the following items:

1. Pitcher circle and batters box clay.
2. Infield clay.

B. Samples- Soil Mix Components:

Each 1 lb. packaged.

1. Infield clay.
2. Pitchers circle and batters box clay.

C. Test Results –Soil Mixes:

1. Sieve analysis.
2. Sand, Silt, Clay breakdown

1.4 REFERENCES

A. ASTM F2107 – Standard Guide for Construction and Maintenance of Skinned Areas on Baseball and Softball Fields.

1.5 DELIVERY AND STORAGE

A. Confirm to all governmental regulations in regard to the transportation of materials to, from, and at the job site, and secure in advance such permits as may be necessary.

B. Packaged Materials: Deliver packaged materials to the location where planting Soil Mixes are to be blended in unopened bags or containers, each bearing the name and trademark of the producer, material composition, manufacturers' certified analysis, and weight of the material.

1. All bags shall be protected from water and contamination with other materials.

2. Retain packages for inspection by Landscape Architect.

3. All packaged materials shall be stored, handled and applied in strict accordance with manufactures instructions.

C. Stockpiles: S tockpiles of on-site or off site bulk materials and Soil Mixes shall not exceed 50 cubic yards, and shall be no more than six (6) feet in height to prevent anaerobic conditions within the piles.

1. All stock piled materials shall be adequately covered with tarpaulins or otherwise protected to prevent excessive water absorption and blowing by winds, until time of actual use.

1.5 WEATHER LIMITATIONS

A. Perform both blending and site soil work only during suitable weather conditions. Do not handle, haul, place, work, disc or rototil soil when frozen, excessively wet, or in otherwise unsatisfactory condition.

1.6 INSPECTION AND COORDINATION

A. Contractor shall inspect the site before bidding to determine the characteristics of the site and the existing soil in areas to be planted. Contractor shall be responsible for determining the location of all underground utilities, by contacting the appropriate utility company prior to any construction, and shall be liable for all damage to such utilities during the course of construction.

B. Contractor shall be liable for any and all damage to surrounding areas caused by operations and shall be required to restore or replace damage areas to original conditions, to the satisfaction of the Landscape Architect.

1.7 REGULATORY REQUIREMENTS

A. Comply with all rules, regulations, laws, and ordinances of local, state, and federal authorities having jurisdiction. Provide labor, materials, equipment and services necessary for work to comply with such requirements at no additional cost to Owner.

B. Procure and pay for all permits and licenses required for the Work of this section.

PART 2 - PRODUCTS

2.1 GENERAL

A. Perform all required tests and submit test reports. All soil components shall be tested and approved prior to placement.

B. Provide adequate quantities of all Soil Mix materials to attain, after compaction and natural settlement, all design finished grades.

2.2 PRODUCTS

A. Pitchers Circle & Home Plate Area: All natural, extra firm, red clay, or clay bricks (sand, 15-20%, clay greater than 35%, silt/clay ratio .75-1.25) provided by Reid Custom Soils or approved equal.

C. Infield: Native Infield Mix, 70%-75% sand, 25%-30% silt clay, silt/clay ratio .5-1.0. provided by Read Custom Soils or approved equal. Sand shall be quartz.

Sieve	Percent Passing
3/8"	100%
#8	97%
#5	85%
#140	60%

C. Conditioner: Red infield Conditioner as manufactured by Turface, Diamond Pro, or approved equal.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General:

1. Prior to installing any soil, the Landscape Architect shall approve the condition of the subgrade.
2. Place soil, working from the perimeter in, using a wide track dozer. No rubber tired vehicle will be allowed onto the field.
3. Install the soil mixes in 6" lifts to the depths and grades shown on the drawing. The depths and grades shown on the drawing are the final grades after settlement and shrinkage of the organic material. The contractor shall install the soil at a higher level to anticipate this reduction of soil volume.
4. Lightly compact each lift sufficiently to reduce settling but not to prevent the movement of water and feeder roots through the soil.
5. Maintain moisture conditions within the soils during installation to allow for satisfactory compaction. Suspend installation operations if the soil becomes wet. Do not place soils on wet or frozen subgrade.
6. Provide adequate equipment to achieve consistent and uniform compaction of the soils. Do not use vibrator equipment or sheeps foot rollers.
7. Thoroughly soak the soil after installation. Reset grades after soil has settled.
8. Protect soil from compaction after placement. Any area, which becomes compacted, shall be tilled to depth of 6". Any uneven or settled areas shall be filled and re graded.

3.4 CLEAN UP AND PROCTECTION

A. Upon completion of soil operations, clean areas within the contract limits.

1. Remove all excess fill soils and soil stock piles; legally dispose of all waste, materials, trash and debris.

2. Wash all paving and other exposed surfaces of dirt and mud.

3.5 RESTORATION OF SETTLED GRADES:

A. Sixty (60) days after the date of substantial completion of the soil installation work, inspect the site and restore any areas where the grades have settled beyond the elevations shown on the drawings.

END ON SECTION 329113

SECTION 329200 – TURF AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Hydroseeding of all disturbed areas other than the ballfield.

2. Slice seeding of ballfield.

3. Compaction testing.

4. Turf Watering and Maintenance.

B. Related Sections:

1. Division 31 Section "Site Clearing" for topsoil stripping and stockpiling.
2. Division 31 Section "Earth Moving at Athletic Fields" for excavation, filling and backfilling, and rough grading.
3. Division 32 Section “Soil Profiles” for planting soils.

1.3 REFERENCES

A. Form 817: St ate of CT Dept. of Transportation Standard Specifications for Roads, Bridges and Incidental Construction.

1.4 SUBMITTALS

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

1. Pesticides and Herbicides: Include product label and manufacturer's application instructions specific to this Project.

B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity,

germination, and weed seed. Include the year of production and date of packaging.

C. Material Test Reports: For existing native surface topsoil.

D. Product Certificates: For soil amendments and fertilizers from manufacturers.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful turf establishment.

1. Professional Membership: Installer shall be a member in good standing of either the Professional Land care Network or the American Nursery and Landscape Association.
2. Experience: Five years' experience in turf installation.
3. Installer's Field Supervision: Re quire Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
4. Pesticide Applicator: State licensed, commercial.

B. Soil-Testing Laboratory Qualifications: An independent laboratory or university laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, as applicable.

B. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk fertilizers, lime, and soil amendments with appropriate certificates.

1.7 PROJECT CONDITIONS

A. Planting Restrictions: Plant during the following period. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of Substantial Completion.

1. Complete by September 15th, 2016.

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. A pply products during favorable weather conditions according to manufacturer's written instructions.

1.8 MAINTENANCE

A. Initial Turf Maintenance Service: P rovide full maintenance by skilled employees of landscape Installer. Begin maintenance immediately after each area is planted and continue until acceptable turf is established but for not less than the following periods:

1. Turf: 60 days from date of Substantial Completion.

a. When initial maintenance period has not elapsed before end of planting season, or if turf is not fully established, continue maintenance during next planting season.

PART 2 - PRODUCTS

2.1 SEED

A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.

B. Seed Species: Seed of grass species as follows, with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed:

25% Blue Grass
20% Red Fescue
20% Chewing Fescue
25% Perennial Rye
10% Panterra Rye (fine bladed annual rye)

2.3 INORGANIC SOIL AMENDMENTS

A. Lime: A STM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:

1. Class: T, with a minimum of 99 percent passing through No. 8 (2.36-mm) sieve and a minimum of 75 percent passing through No. 60 (0.25-mm) sieve.

2.4 FERTILIZERS

A. Starter Fertilizer: Polyon controlled release, 30-0-7

B. Second Fertilization: 15.15.15

2.5 MULCHES

A. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.

2.6 PESTICIDES / HERBICIDES

A. General: Treat any lawn diseases with a Pesticide, registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

B. Pre-Emergent Herbicide (Selective and Non-Selective): control the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.

1. Typerson

C. Post-Emergent Herbicide (Selective and Non-Selective): treat any crabgrass or broadleafed weed

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to be planted for compliance with requirements and other conditions affecting performance.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.2 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.

1. Protect adjacent and adjoining areas from hydromulching overspray.
2. Protect grade stakes set by others until directed to remove them.

B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.3 TURF AREA PREPARATION

A. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/4 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.

B. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

C. No rubber tire vehicles shall be allowed on prepared seed bed. Keep all heavy construction vehicles off seed bed.

D. Before seeding or sodding, obtain Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

E. Roll seed bed with a 200 pound roller to achieve 70% compaction.

F. Provide compaction tests (two per field) as directed by landscape architect prior to seeding.

3.4 SLICE SEEDING

A. Sow seed using a Brillon seeder. Apply the seed in two directions with the second application at a 75 degree angle to the first.

B. Seed at a rate of 5 lbs/1000 SF.

C. Hydromulch all seeded areas.

D. Apply starter fertilizer at a rate of 10 lbs/1000 SF.

3.5 HYDROSEEDING

A. Hydroseeding: Mix specified seed, fertilizer, fiber mulch and pre-emergent herbicides in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application. Apply dye to mix.

B. Seed at a rate of 5 1lbs/1000 SF.

C. Apply starter fertilizer at a rate of 10lbs / 1000 sq. ft.

3.5 MAINTENANCE

A. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.

B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches (100 mm).

1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
2. Water turf with fine spray at a minimum rate of 1 inch (25 mm) per week unless rainfall precipitation is adequate.

C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:

1. Mow to a height of 1-1/2 to 2 inches (38 to 50 mm).

D. Turf Post fertilization: Apply fertilizer after initial mowing and when grass is dry.

1. Use fertilizer that will provide actual nitrogen of at least 2 lb/1000 sq. ft. (0.45 kg/92.9 sq. m) to turf area. Fertilize at a rate of 6.5lbs / 1000 sq. ft.

E. Apply herbicides as necessary to control weeds.

3.6 SATISFACTORY TURF

A. Turf installations shall meet the following criteria as determined by Landscape Architect:

1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. (0.92 sq. m) and bare spots not exceeding 5 by 5 inches.

B. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.

3.7 HERBICIDE AND PESTICIDE APPLICATION

A. Apply pesticides and other chemical products and biological control agents in accordance with requirements manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

B. Post-Emergent Herbicides (Selective and Non-Selective): Apply only as necessary to treat already-germinated weeds and in accordance with manufacturer's written recommendations.

3.6 CLEANUP AND PROTECTION

A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Erect temporary fencing or barricades and warning signs as required to protect new turf areas from traffic. M aintain fencing and barricades throughout initial maintenance period and remove after turf is established.

C. Contractor is responsible for protecting and watering new lawn areas until grass is established, by whatever means necessary to ensure a full stand or grass.

D. Remove non-degradable erosion-control measures after grass establishment period.

END OF SECTION 329200

SECTION 329201 – SOIL PROFILES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This section includes the following:

1. Preparing and placing planting soil mix and granular fill layer.
2. Testing of blended soil mix and all components including hydraulic conductivity test.

B. Related sections:

1. Division 31 Section "Earth Moving" for general grading, compaction and trenching requirements.
2. Division 31 Section "Earth Moving at Athletic Field" for grading at ball field.
3. Division 32 Section "Infield Surface Soils" for surface treatment at infield.

1.4 REFERENCES AND STANDARDS

A. The following references are used herein and shall mean:

1. ASTM: American Society of Testing Materials
2. USDA: United States Department of Agriculture
3. AASHTO: American Association of State Highway and Transportation Officials
4. AOAC: Association of Official Analytical Chemists
5. SSSA: Soil Science of America, Methods of Soil Analysis
6. NER493: Recommended Soil Testing Procedures for the Northeastern U.S.
7. TMECC: Test Methods for the Examination of Composting and Compost

B. Geotechnical Report – attached.

1.5 DEFINITIONS

A. Finish Grade: Elevation of finished surface of planting soil.

B. Topsoil: A mineral soil taken from the A Horizon of a well-drained site and having a USDA soil texture classification of a Clay Loam or Loam as specified below.

C. Planting Soil: Native, imported or manufactured soil mixed with soil amendments as specified.

D. Base Mix: Homogenously blended mix of the specified topsoil and the specified sand and compost.

E. Subgrade: Surface or elevation of subsoil remaining after completing excavation or backfill immediately beneath planting soil.

F. Debris: Elements including, but not limited to, concrete, concrete masonry, wood, excavated rock and rock fragments, rubble, overburden soils, abandoned utility structures, trash, refuse and litter.

1.6 SUBMITTALS

A. Refer to and comply with division 1 of specifications for procedures and additional submittal criteria.

B. Product Data: Submit technical descriptive data, to include sieve analysis, for each manufactured or packaged product of this Section including

1. Topsoil
2. Granular Fill
3. Compost
4. Planting mix

1.7 QUALITY ASSURANCE

A. Planting Mixes are comprised of the topsoil, sand, additional organic amendment and other soil amendment materials. Each component of each Planting Mix must meet the specification and be verified by testing as specified, prior to delivery at the site.

B. No mix component will be accepted unless it meets all submittal, testing and certification requirements.

C. It shall be the responsibility of the Contractor to see that the specifications are being adhered to. Failure of the Landscape Architect to immediately reject unsatisfactory workmanship or to notify the Contractor of his/her deviation from the specifications shall not relieve the Contractor of his/her responsibility to repair and/or replace unsatisfactory work.

D. Testing

1. All testing required in this Section or additionally required by the Landscape Architect shall be furnished and paid for by Contractor.

2. The Landscape Architect reserves the right to take and analyze at any time samples of materials as deemed necessary for verification of conformance to specification requirements. Contractor shall furnish samples for this purpose upon request and shall perform testing as requested.

3. Contractor shall engage an independent testing agency to perform quality control tests on all planting components and mixes including, topsoil, granular fill, compost and final planting mix.

    a. The Contractor shall submit representative samples of all soil materials and organic material components which are intended to be used for planting soil mixes and all final planting soil mixes to an agricultural soil testing laboratory acceptable to the Landscape Architect.

    b. All reports prepared by the testing laboratory shall be sent to the Landscape Architect for approval.

    c. Deficiencies in the soils, organic materials, or other mix components shall be corrected by the Contractor,

    d. All compost testing shall be done in conformance with the U.S. Compost Council's publication *Test Methods for the Examination of Composting and Compost* (TMECC) unless otherwise specified above

4. All mix components as well as the final planting mix shall be tested and include the following:

    a. PH and Buffer PH Test.

    b. Analysis for levels of toxic elements and compounds including arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, and zinc

    c. Particle size analysis performed and compared to the USDA Soil Classification System per ASTM D422 (hydrometer test).

    d. Percent of organic matter determined by ASTM F1647 Procedure Method A, loss on ignition at 360°C.

e. Analysis for nutrient levels in parts per million including Nitrate nitrogen, Phosphorus, Potassium, Calcium, Magnesium, Iron, Manganese, Zinc, Copper, Boron and Extractable Aluminum per NER493 or NCR221. (Planting Mix)

f. Soluble salts by electrical conductivity of a 1:2 soil/water sample reported in milliohms per cm. per NER493.

g. Recommendations for soil nutrient additives, including organic and inorganic soil amendments, necessary to accomplish turf grass growth.

h. Compost shall be tested for, pH, salinity, total nitrogen, C:N Ratio, phosphorus, potassium, calcium, magnesium, sodium and boron by saturated media extraction (SME per NCR-221), moisture, bulk density, particle size analysis, organic matter content and Solvita Maturity Index. USEPA 503, heavy metals, fecal coliforms and salmonella.

i. Fineness modulus and coefficient of uniformity (granular fill)

5. Testing Agencies: The following firms are acceptable testing agencies for the various components.

a. Soil physical analysis on all components and planting soil mixes including particle size analysis shall be determined by an A2LA Accredited Lab, such as Hummel & Co, 35 King Street, Trumansburg, NY 14886, tel. 607-387-5694, fax 607-387-9499 or other qualified laboratory approved by the Landscape Architects.

b. Compost testing may be performed by Woods End Research Laboratory, PO Box 297, Mt. Vernon, ME 04352, tel. 800-451-0337, fax 207-293-2488 or other qualified laboratory approved by the Landscape Architects.

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E. Submit physical samples of all listed materials to the Landscape Architect for review:

1. Organic Amendment (Compost), 5 lb. packaged.
2. Granular Fill, 5 lb packaged.
3. Topsoil, 5 lb packaged.
4. Planting Mixes, 5 lb. packaged.

F. Qualifications

1. Foreman on the job shall be competent supervisor experienced in soil installation and maintenance. Perform work with personnel familiar with

planting soil preparation and lawn and planting installations under the supervision of a foreman experienced with landscape work.

H. Pre-Installation Conferences: Person responsible for soil preparation and mixes of this Section shall attend Pre-Installation Conference to coordinate with work of other sections.

1.8 REGULATORY REQUIREMENTS

A. Comply with all rules, regulations, laws and ordinances of local, state and federal authorities having jurisdiction. Provide labor, materials, equipment and services necessary to make Work comply with such requirements without additional cost to Owner.

B. Procure and pay for permits and licenses required for work of this section.

1.9 PROJECT CONDITIONS

A. Environmental Requirements for Soil:

1. Perform both off-site mixing and on-site soil work only during suitable weather conditions. Do not disc, rototill, or work soil when frozen, excessively wet (as defined by Landscape Architect), or in otherwise unsatisfactory condition.
2. Mixes shall not be handled, hauled or placed during rain or wet weather or when near or above the point where maximum compaction will occur (as defined by Landscape Architect).

B. Sequencing and Scheduling: Adjust, relate together and otherwise coordinate work of this Section with work of Project and all other Sections of Project Specifications.

1.10 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Packaged Materials: Deliver packaged materials to the location where soils are to be mixed, in unopened bags or containers, each bearing the name, guarantee, and trademark or the producer, material composition, manufacturer's certified analysis, and the weight or the material. Retain packages for the Landscape Architect.

B. Store and handle packaged materials in strict compliance with manufacturer's instructions and recommendations. Protect all materials from weather, damage, and theft.

C. Soil or amendment materials stored on site temporarily in stockpiles prior to placement shall be protected from intrusion of contaminants and erosion. All temporary storage means and methods shall be approved by the Landscape Architect.

D. After mixing, soil mixtures shall be covered with a tarpaulin until time of actual use and protected from contamination or erosion.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Granular Fill Layer

1. The granular fill for use as drainage medium should conform to CTDOT Form 817, Article M.11.04 (Gradation A) and graded within the following limits. Granular fill should be compacted to at least 92 percent of its maximum dry density as determined by ASTM D698.

2. The allowable particle size distribution is as follows:

Percent Passing	Sieve Size
100	3/8"
95 - 100	No. 4
80 -100	No. 8
50 - 85	No. 16
25 - 60	No. 30
10 - 30	No. 50
2 - 10	No. 100

B. TOPSOIL

1. A loamy, friable mineral soil essentially free from heavy or stiff clay lumps, stones, cinders, concrete, brick, roots, sticks brush, litter, plastics, metals, refuse or other deleterious materials in accordance with ASTM D 5286-92. The soil shall be free of herbicides, petroleum-based materials or other substances of a hazardous or toxic nature which may inhibit plant growth. The soil shall be free of noxious weeds, seeds or vegetative parts of weedy plants that cannot be selectively controlled in the planting. Topsoil shall be screened to remove all objects over ¼".

2. The soil shall be taken from the A Horizon of a well-drained site and have a USDA soil texture classification of a Sandy Loam. The topsoil shall have the following particle size distribution:

Particle Name	Size (mm)	Allowable
Gravel	2.00 – 4.75	Less than 5%
Sand	0.05 – 2.00	40 – 50 %
Silt	0.002 – 0.05	10 – 40 %
Clay	minus 0.002	15 – 40 %

3. The topsoil component shall meet the following specifications. Submit test reports showing that the following criteria are met.

   a. The particle size analysis/distribution as defined above.
   b. The pH shall be 5.5 to 7.5
   c. The soluble salts shall be less than 1.5 mmoh/cm
   d. The organic matter content shall be 6.0 to 8.0% by weight

4. The existing topsoil can be mixed with borrow topsoil. The mixture shall meet the requirements above.

C. ORGANIC MATTER

1. The organic amendment shall be a stable, mature aerobically woodchip bulked bio-solids compost. Leaf humus (compost), peat, peat- humus and mushroom compost products are not acceptable. The compost material must meet the following characteristics:

   a. The compost shall be a homogeneous material essentially free of soil clods, lumps, roots and stones
   b. The compost shall have a man-made foreign material (hard plastics, metal, glass, etc.) content less than 1.5% as material retained on a U.S. Std.No.5 (4 mm) sieve (TMECC 03.06).
   c. The compost shall be screened such that a minimum of 90% passes a U.S. Std. 3/4" sieve and that no more than 10% passes a U.S. Std. No.10 sieve on a dry weight basis.
   d. The compost shall have a pH of 7.0 to 8.0
   e. The compost shall have a soluble salts content less than 6.0 milliohms per cm. when determined on a 1:5 compost/water slurry.
   f. The compost shall have an organic matter content of not less than 35%, by weight determined by ASTM D2974-87 Method C on material passing a U.S. Std.1/4" sieve
   g. The compost shall have a carbon to nitrogen (C:N) ratio less than 36:1.
   h. The compost shall have a Solvita® Maturity Index between 6 and 7.
   i. The compost shall have a moisture content of 35% to 65%.
   j. The compost shall have a dry bulk density of 0.17 to 0.35 grams per cubic centimeter (g/cc).
   k. The compost shall be tested for nitrate nitrogen, phosphorus, potassium, calcium, magnesium iron, manganese, zinc, copper,

boron and sodium using the SME-DTPA extraction method (NER493 or NCR-221).

I. The heavy metal content as determined by TMECC 04.06 shall not exceed the following limits:

Element	Concentration Limits
Arsenic	41
Cadmium	39
Chromium	1200
Copper	1500
Lead	300
Mercury	17
Molybdenum	50
Nickel	420
Selenium	36
Zinc	2800

2. The compost shall meet all applicable state regulations based on the feedstock type or U.S. E.P.A. 503 Regulations for biosolids compost.

2.3 PLANTING MIX

A. Prepare the Mix by thoroughly blending the sand ,compost and topsoil component.

B. The Mix shall have a granular consistency essentially free of soil lumps larger than 1". Topsoil shall be screened.

C. Mixing shall be done using equipment designed for soil blending and screening. Wind rowing/ tilling on an approved hard surface area may also be used as an alternative. Do not mix components when frozen or wet.

D. The saturated hydraulic conductivity of the Mix shall be 3 to 8 inches per hour. Adjust the proportion of the approved Sand and the approved Topsoil in the manufactured Mix to meet these criteria.

E. The Mix shall have one sample tested from each 500 cu. yds. of soil

2.4 SOIL AMENDMENT MATERIALS

A. Ground Limestone: Ground Limestone as a soil amendment material will only be used pending results of analysis.

1. Provide a Ground Agricultural Limestone with a minimum of 88% of calcium and magnesium carbonates.
2. Ground Limestone material shall have total 100% passing the 10 mesh sieve, minimum of 90% passing the 20 mesh sieve and a minimum of 60% passing the 100 mesh sieve.

B. Sulfur: Granular, biodegradable with a minimum 99 percent passing through No. 6 sieve and a maximum 10 percent passing through No. 40 sieve.

C. Agricultural Gypsum: Finely ground, containing a minimum of 90 percent calcium sulfate.

PART 3 – EXECUTION

3.1 VERIFICATION

A. Prior to construction and soil placement, ascertain the location of all electric cables, conduits, under drainage systems and utility lines. Take proper precaution so as not to disturb or damage sub-surface elements. Contractor failing to take these precautions shall be responsible for making requisite repairs to damaged utilities at Contractor's own expense.

B. Verify that required underground utilities are available, located, and ready for use. Coordinate with other trades.

C. Verify that all work requiring access through or adjacent to areas where plant mixes are to be placed has been completed and no further access will be required. In the event that access will be required, this must be coordinated with the Contractor.

3.2 MIXING AND SAMPLING

A. Mix the compost and topsoil in proportions to achieve the minimum of 6% organic matter in the topsoil. The compost is to be thoroughly mixed throughout the topsoil to achieve a homogeneous mixture, final blend to be approved by the Landscape Architect. If the compost is not thoroughly blended with the topsoil, mixing will continue until thorough blending of the two components is accomplished to the satisfaction of the Landscape Architect.

3.3 PLACING SOIL MIXES

A. Remove all large clods, lumps, brush, roots, stumps, litter, and other foreign material. Dispose of removed material legally off-site.

B. Place planting soil using a wide track dozer. No rubber tired vehicles will be allowed.

C. Place and spread planting soil mix to a depth sufficiently greater than the depth required for planting areas so that after settlement, the completed work will conform to the lines, grades, and elevations shown or otherwise indicated.

1. Very carefully settle soils to eliminate air pockets and to minimize future settling. Lightly scarify previously placed surfaces prior to placing subsequent lifts. Compaction method may include, but is not limited to, natural settlement over an approved period of time, light hand-tamp, light water misting of each layer, and / or light rolling.

2. Roll the whole surface of lawn bed with a hand roller weighing approximately two hundred pounds (200 lb.) per foot (12") of roller width. During the rolling, fill all depressions caused by settlement with additional planting soil and then re-grade. Lightly roll and rake until the surface presents a smooth, even, and uniform finish that is at required grade.

2. Allow plant mix in lawn areas to remain undisturbed until fully settled in accordance with settlement methodology . After any additional settlement has occurred, restore areas to finished grade prior to sodding or hydroseeding.

a. If soils are placed in the fall, the use of winter rye will be permitted. Where winter rye is used, the rye grass shall be rototilled into the soil in the spring and soil preparation and rolling shall be repeated as specified.

D. Grading Tolerances: Planting areas shall be fine graded within ±1/10 (0.10) feet of grades indicated on drawings. Maintain slopes to allow free flow of surface drainage without ponding.

3.6 DISPOSAL AND CLEAN UP

A. Promptly remove soil and debris created by soil work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Legally dispose of off-site all refuse and debris for these operations. Do not dump or burn materials on site.

C. Maintain the site in an orderly condition during the progress of the Work. Continuously and promptly remove excess waste materials; keep lawn areas, walks, and roads clear. Store materials and equipment where

directed. Promptly remove equipment, surplus materials, and debris and trash resulting from operations under this Contract upon completion and prior to initial acceptance or Work.

END OF SECTION 329201

Soil and Plant Nutrient Testing Laboratory
203 Paige Laboratory
161 Holdsworth Way
University of Massachusetts
Amherst, MA 01003
Phone: (413) 545-2311
e-mail: soiltest@umass.edu
website: soiltest.umass.edu

Soil Test Report

Prepared For:

Phil Barlow
TO Design LLC
114 West Main St Suite 202
New Britain, CT 06051

wpbarlow@todesignllc.com
860-612-1700

Sample Information:
Sample ID: Columbia Field

Order Number: 38941
Lab Number: S180628-221
Area Sampled: 1 acres
Received: 6/28/2018
Reported: 7/9/2018

Results

Analysis	*Value Found*	*Optimum Range*
Soil pH (1:1, H2O)	6.0	
Modified Morgan extractable, ppm		
Macronutrients		
Phosphorus (P)	1.0	4-14
Potassium (K)	136	100-160
Calcium (Ca)	1034	1000-1500
Magnesium (Mg)	353	50-120
Sulfur (S)	12.5	>10
Micronutrients *		
Boron (B)	0.0	0.1-0.5
Manganese (Mn)	1.8	1.1-6.3
Zinc (Zn)	0.6	1.0-7.6
Copper (Cu)	0.2	0.3-0.6
Iron (Fe)	7.6	2.7-9.4
Aluminum (Al)	153	<75
Lead (Pb)	1.6	<22

Analysis	*Value Found*	*Optimum Range*
Cation Exch. Capacity, meq/100g	13.4	
Exch. Acidity, meq/100g	4.9	
Base Saturation, %		
Calcium Base Saturation	39	50-80
Magnesium Base Saturation	22	10-30
Potassium Base Saturation	3	2.0-7.0
Scoop Density, g/cc	0.77	
Optional tests		
Soil Organic Matter (LOI), %	8.5	
Soluble Salts (1:2), dS/m	0.08	<0.6
Nitrate-N (NO3-N), ppm	28	

* *Micronutrient deficiencies rarely occur in New England soils; therefore, an Optimum Range has never been defined. Values provided represent the normal range found in soils and are for reference only.*

Soil Test Interpretation

Nutrient	Very Low	Low	Optimum	Above Optimum
Phosphorus (P):				
Potassium (K):				
Calcium (Ca):				
Magnesium (Mg):				

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e-mail: soiltest@umass.edu
website: soiltest.umass.edu

Recommendations for Sports Turf/Golf Fairway-Establishment

Limestone (Target pH of 6.5)	Nitrogen, N	Phosphorus, P2O5	Potassium, K2O
	lbs / 1000 sq ft		
75	2 - 4	2.5	1

Comments:

-For best results, split the N, P2O5, and K2O recommendations above into three to four applications over the course of the growing season at six to eight week intervals, beginning in mid- to late-April.
-Many fertilizer sources and rates may be combined to provide acceptable turfgrass fertilty.

Recommendations for Sports Turf/Golf Fairway-Maintenance

Limestone (Target pH of 6.5)	Nitrogen, N	Phosphorus, P2O5	Potassium, K2O
	lbs / 1000 sq ft		
75	3 - 5	2	1

Comments:

-Do not topdress with more than 50 lb limestone per 1000 sq ft at one time. Split the above application between early spring and mid-autumn.
-Many fertilizer sources and rates may be combined to provide acceptable turfgrass fertilty.
-For best results, split the N, P2O5, and K2O recommendations above into three to four applications over the course of the growing season at six to eight week intervals, beginning in mid- to late-April.

General References:

Interpreting Your Soil Test Results	http://soiltest.umass.edu/fact-sheets/interpreting-your-soil-test-results
For current information and order forms, please visit	http://soiltest.umass.edu/
UMass Extension Nutrient Management	http://ag.umass.edu/agriculture-resources/nutrient-management

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website: soiltest.umass.edu

Particle Size Analysis - Comprehensive

Prepared For:

Phil Barlow
TO Design LLC
114 West Main St Suite 202
New Britain, CT 06051

wpbarlow@todesignllc.com
860-612-1700

Sample Information:
Sample ID: Columbia Field

Order Number: 39045
Lab Number: X180706-113
Received: 7/6/2018
Reported: 7/13/2018

USDA Size Fraction

Main Fractions	Size (mm)	Percent
Sand	0.05-2.0	53.5
Silt	0.002-0.05	36.1
Clay	<0.002	10.3

Sand Fractions	Size (mm)	Percent
Very Coarse	1.0-2.0	7.9
Coarse	0.5-1.0	10.2
Medium	0.25-0.5	16.0
Fine	0.10-0.25	14.4
Very Fine	0.05-0.10	5.0

Silt Fractions	Size (mm)	Percent
Coarse	0.02-0.05	21.6
Medium	0.005-0.02	12.4
Fine	0.002-0.005	2.1

Percent of Whole Sample Passing

Size (mm)	Sieve #	Whole Sample % of Sample Passing
2.00	#10	94.0
1.00	#18	86.6
0.50	#35	77.0
0.25	#60	61.9
0.10	#140	48.4
0.053	#270	43.7
0.02	20 um	23.3
0.005	5 um	11.7
0.002	2 um	9.7

USDA Textural Class: sandy loam

Gravel Content: (%) 6.0

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

June 14, 2018
File No. 0061-001.00

Mr. W. Phillips Barlow, PLA AICP
TO Design, LLC
114 West Main Street, Suite 202
New Britain, CT 06051

Via email: wpbarlow@todesignllc.com

Re: Geotechnical Engineering Report
Proposed Softball Field
Columbia Recreation Area, Columbia, Connecticut

Dear Phil:

Down To Earth Consulting, LLC (DTE) prepared this geotechnical engineering report for the new softball field located at approximately 30 Hennequin Road in Columbia, Connecticut (Site) for TO Design, LLC (Client). An Area Plan is included as Figure 1.

Existing conditions and proposed features related to Site development are generally based on the Client's provided drawings (*Approximate Boring Locations,* prepared by the Client, transmitted on June 6, 2018*;* and *Appendix F, Recreation Park, Columbia, CT,* prepared by the Client, transmitted on May 25, 2018*).*

Elevations (El.) stated in this report are in feet and reference the topographic information in the provided Approximate Boring Locations plan. This report is subject to the limitations presented in Appendix A.

EXISTING SITE CONDITIONS AND PROJECT UNDERSTANDING

An existing soccer and softball field will be reconstructed as part of an overall recreation park renovations project. Our objective was to collect subsurface data in the area of the new softball field and to develop geotechnical design and construction recommendations to support renovation of the softball field.

There is approximately an eight-foot elevation difference from the northern existing park access road (El. 668 +/-) to the southern limits of the proposed softball field (El. 660 +/-). It is anticipated that the new field will have natural turf (aside from the infield area) and proposed grade changes will be minor. Refer to Figure 2 for existing site features.

SUBSURFACE CONDITIONS

Geologic Information

We reviewed available subsurface/geologic information in the vicinity of the project area (1:125,000 scale, *Surficial Materials Map of Connecticut, Janet Radway Stone, 1992* and *Bedrock Geological Map of Connecticut, John Rodgers, 1985)*.

The surficial material within the Site area is mapped as a variable mixture of gravel, sand, silt, and clay that is intermixed with cobbles and boulders (Glacial Till) overlying shallow bedrock that is classified as light-gray, medium-grained Gneiss.

Subsurface Explorations

We observed and logged ten test borings (B-1 through B-10) drilled by our subcontractor Associated Borings Co., Inc. on June 8, 2018. Boring locations are depicted on Figure 2 and the logs are included in Appendix B. Borings were located in the field by taping/pacing from existing site features and the approximate ground surface elevation was estimated from the referenced proposed boring location plan. Test boring locations and their elevations should be considered approximate.

The borings were drilled to explore the soil, bedrock, and groundwater conditions (if encountered) in the Site area. Prior to advancement of the borings, Columbia Public Works personnel stripped 3-inches of sod at each of the boring locations (except for B-1 which was advanced in the existing infield). Solid-stem auger drilling methods were used to advance borings to a depth of approximately 1.5 to 5.25 feet (approximate Elev. 656 to 663) below existing grades.

Representative soil samples were obtained for soil classification by split barrel sampling procedures in general accordance with ASTM D-1586. The split-spoon sampling procedure utilizes a standard 2-inch O.D. split-barrel sampler that is driven into the bottom of the boring with a 140-pound hammer falling a distance of 30 inches. The number of blows required to advance the sampler the middle 12-inches of a normal 24-inch penetration is recorded as the Standard Penetration Resistance Value (N). The blows (i.e. “N-Value”) are indicated on the boring logs at their depth of occurrence and provide an indication of the relative consistency of the material.

Groundwater levels were measured using a weighted tape in open drill holes at the completion of drilling.

Generalized Subsurface Profile

Based on the subsurface explorations completed at the Site, the general soil profile consists of Topsoil at the surface overlying natural Glacial Till and Weathered Bedrock/Bedrock. Subsoil was also encountered beneath the Topsoil in a few boring locations. These strata are described below in order of increasing depth.

- *Topsoil* – Topsoil was encountered below the 3-inches of sod and/or infield soils at each of the explorations and was about 2 to 4 inches thick. Topsoil generally consisted of dark brown, fine to medium sand and silt, with trace (0 to 10%) amounts of fine gravel and roots. Buried Topsoil was encountered in boring locations adjacent to the existing infield area (i.e., B-1 through B-4).

- *Subsoil* – Subsoil was encountered at some of the boring locations directly below the Topsoil. This material ranged in thickness from about 0 to 1.5 feet and generally consisted of loose, brown, silt with varying amounts of sand (about 20 to 60%). The subsoil did not have an organic odor, but trace (0 to 10%) amounts of organic material (e.g., rootlets) was observed in many samples.

- *Glacial Till* – The Glacial Till was typically 0 to over 5 feet thick, and was encountered overlying Decomposed Rock and inferred Bedrock in Borings B-6 and B-9. This material generally consisted of fine to coarse sand with varying amounts of gravel (20 to 50%) and silt (10% to 50%). In some instances, decomposed Rock fragments was encountered within this stratum.

- *Weathered Bedrock/Bedrock* – Prior to sampler and/or auger refusal at Borings B-6 and B-9, white/gray decomposed Rock fragments were encountered. The surface of the decomposed bedrock was encountered at depths ranging from 1.5 to over 5.25 feet below the ground surface. A rock outcrop was also observed during the explorations as detailed in Figure 2.

Groundwater levels were measured in the boreholes at the times and under the conditions stated on the logs. Groundwater was generally not encountered in the explorations. Perched water was documented in Borings B-2, B-3, B-4, and B-5 from about 4 to 5 feet below existing grades. Water levels measured in the boreholes may not have had sufficient time to stabilize due to the fine graded nature of the site soils and should be considered approximate. Groundwater levels will vary depending on factors such as temperature, season, precipitation, construction activity, and other conditions, which may be different from those at the time of these measurements.

GEOTECHNICAL DESIGN AND CONSTRUCTION RECOMMENDATIONS

The geotechnical recommendations presented below are based on our evaluation of the available data and design concepts provided to DTE and are subject to the limitations contained in Appendix A.

Outfield Drainage Recommendations

We recommend a minimum of six inches of free-draining, Granular Fill (GF) beneath the proposed turf and topsoil for the new softball outfield. A nonwoven, geotextile fabric separation layer should be placed between the GF and subgrade soils. Subsurface drains should be considered if it is anticipated that there will be a demand to use the outfield after significant rain events. If so, subsurface drains should be constructed beneath the GF at a forty-foot center-to-center spacing. At a minimum, a perimeter subsurface drain should be constructed around the outfield.

Infield Drainage Recommendations

We recommend a minimum of twelve inches of GF beneath proposed infield surface soils (infield “clay”). A geotextile fabric should be placed between the GF and subgrade soils. Subsurface drains should be constructed beneath the GF at a fifteen-foot center-to-center spacing. Alternatively, a proprietary drainage panel could be considered beneath the GF to allow for a potential reduction in the 12-inch thickness of GF.

Subsurface Drainage

We recommend that the drains consist of a minimum 4-inch diameter perforated PVC pipe, surrounded by 6-inches of Crushed Stone, wrapped in non-woven filter fabric. The drains should be gravity drained to a site drainage system in accordance with recommendations of the Client.

Temporary Excavation Support

The existing site soils are classified as OSHA Class “C” soil and can be cut at a maximum one vertical to one and a half horizontal (1V:1.5H) slope up to the anticipated maximum excavation depth of 5 feet. These maximum slope and excavation depths assume no surcharge load (i.e., stockpiles, construction equipment, etc.) at the top of the excavations or groundwater seepage.

Temporary Groundwater Control

We expect that temporary groundwater/storm water control can be accomplished by means of shallow trenches and sumps, and grading the excavation to low points.

MATERIALS

Recommended earthwork materials are as follows:

Granular Fill (GF) for use as drainage medium should conform to CTDOT Form 817, Article M.11.04 (Gradation A) and graded within the following limits:

Sieve Size	Percent finer by weight
3/8-inch	100%
No. 4	95 - 100
No. 8	80 - 100
No. 16	50 - 85
No. 30	25 - 60
No. 50	10 - 30
No. 100	2 - 10

GF should be compacted to at least 92 percent of its maximum dry density as determined by ASTM D698.

Crushed Stone for use around drains should conform to CTDOT Form 817, Article M.01.01 (Gradation No. 8) and graded within the following limits:

Sieve Size	Percent finer by weight
1/2-inch	100%
3/8-inch	85 - 100
No. 4	10 - 30
No. 8	0 - 10
No. 16	0 - 5

Geotextile Fabric placed around crushed stone pipe bedding or used as a separation fabric for crushed stone and soil material should meet the following criteria:

Property	Criteria	Test Method
Grab Strength	min. 80lbs	ASTM D4632
Static (CBR) Puncture	min. 50lbs	ASTM D6241
Trapezoid Tear	min. 25lbs	ASTM D4533
Apparent Opening Size	No. 70-100 U.S. Sieve Size	ASTM D4751

Fabric should be needle-punched non-woven material. Seams should be overlapped a minimum of six inches. During stone placement, the stone drop height should not exceed three feet and equipment traffic should be kept off the fabric until at least 6 to 12 inches of material is placed.

REVIEW OF FINAL PLANS AND SPECIFICATIONS

When project plans and specifications are available they should be provided to DTE for review of conformance with our geotechnical recommendations. If any changes are made to the proposed softball field, the recommendations provided in this report will need to be verified by DTE for applicability.

CLOSURE

We trust the information presented herein is sufficient for your use to progress design of the proposed softball field improvements project. We have enjoyed working with you on this project and please do not hesitate to call us if you have any questions.

Sincerely,

DOWN TO EARTH CONSULTING, LLC

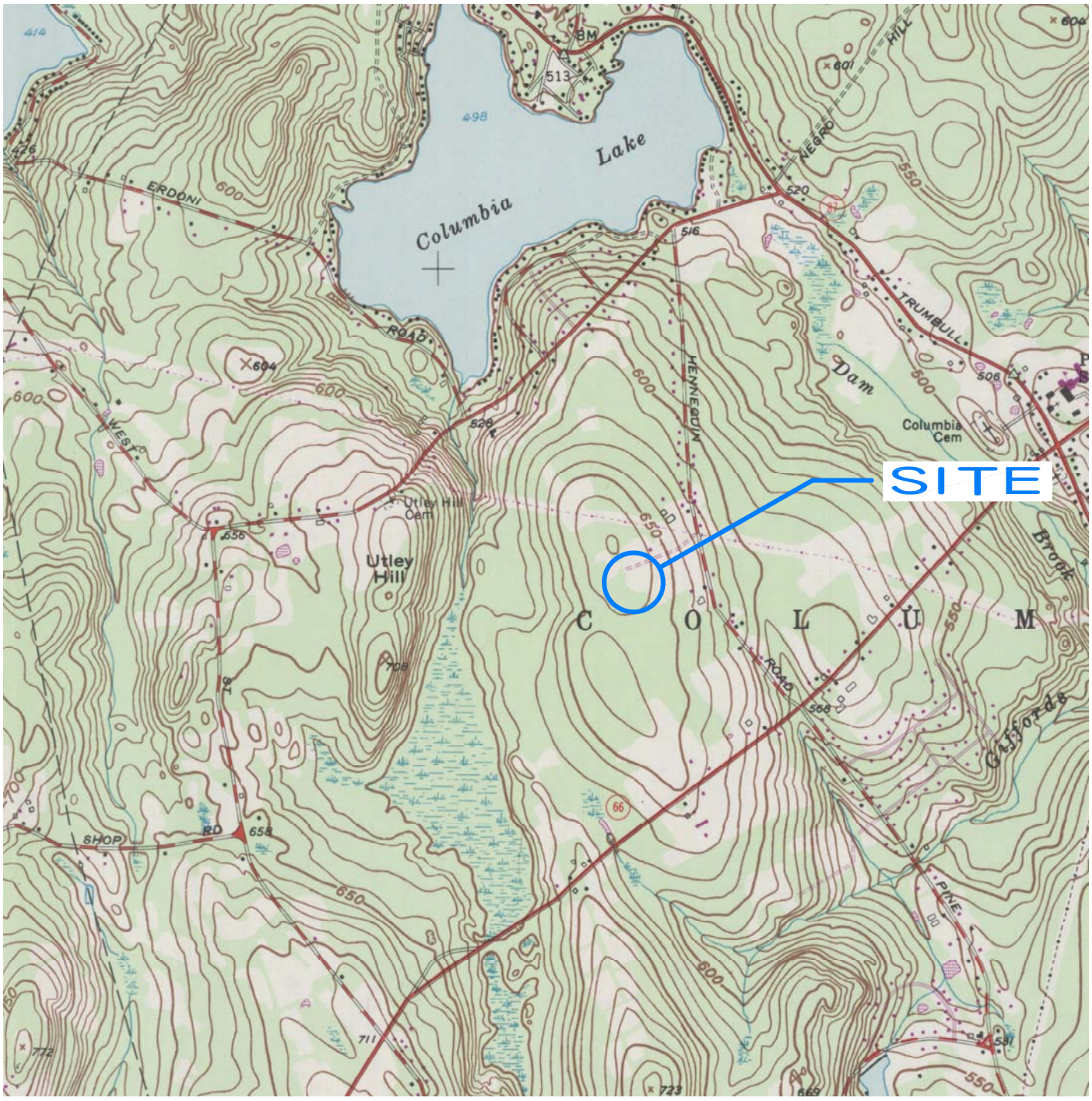
Raymond P. Janeiro, PE
Principal

Daniel F. LaMesa, P.E.
Principal/Reviewer

Attachments: Figure 1 – Area Plan
Figure 2 – Site and Boring Location Plan
Appendix A – Limitations
Appendix B – Boring Logs

FIGURES

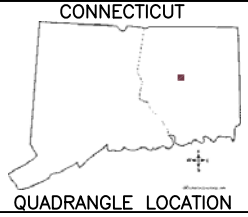
- Figure 1 – Area Plan
- Figure 2 – Site and Boring Location Plan



DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

122 CHURCH STREET
NAUGATUCK, CONNECTICUT 06770

CONNECTICUT



QUADRANGLE LOCATION

AREA PLAN
COLUMBIA RECREATION AREA
30 HENNEQUIN ROAD
COLUMBIA, CONNECTICUT

REFERENCE:
USGS TOPOGRAPHIC QUADRANGLE: COLUMBIA, CT

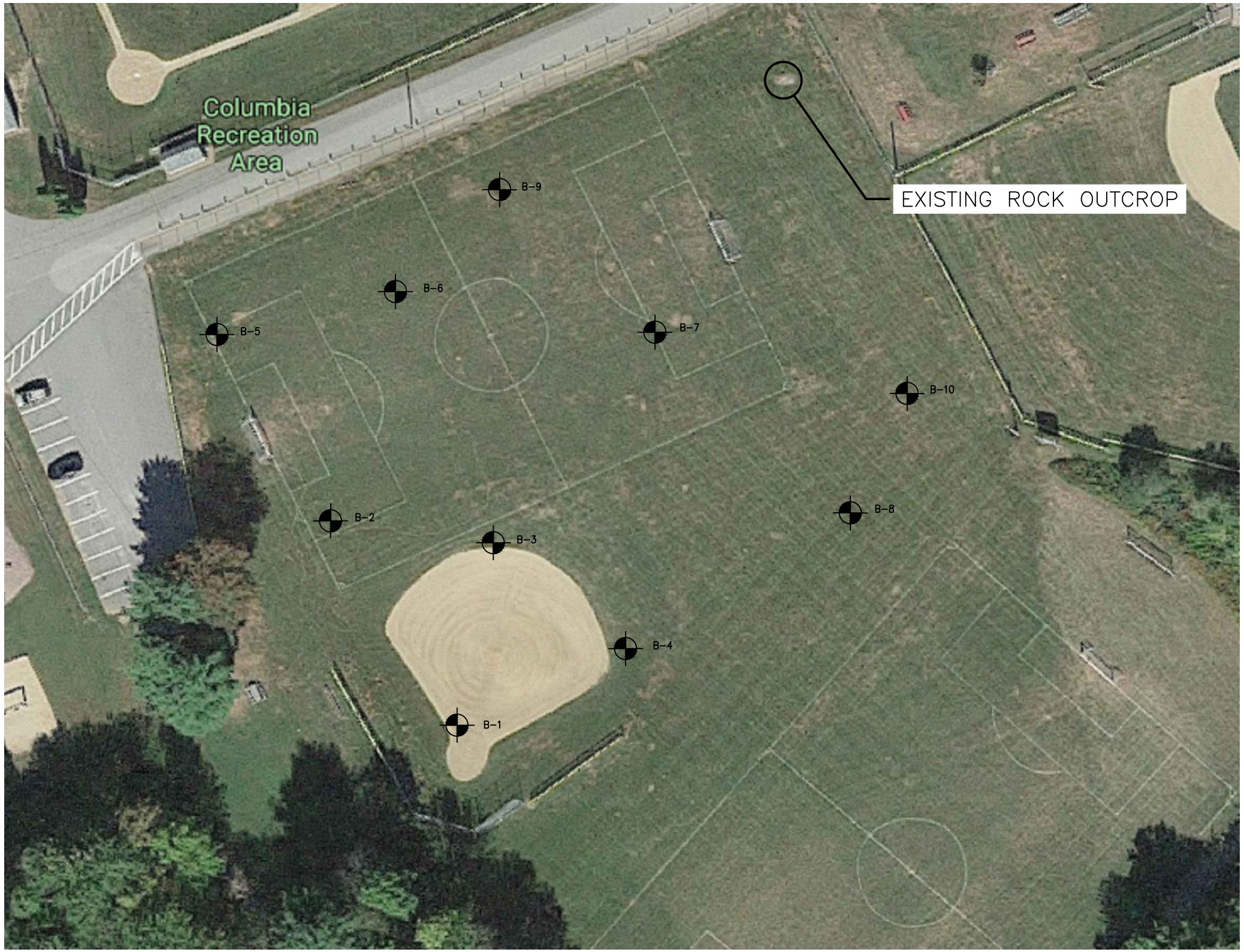
SCALE 1"= 2,000'

2,000' 1,000' 0 2,000'

DRAWN BY: RPJ	REVIEWED BY: RPJ

PROJECT NO.	0061–001.00
DATE:	06/13/18
FIGURE NO.	1

G:\My Drive\DTE Root Drive\Client Folders\0061 – TO Design\0061–001.00 AREA AND SITE PLAN (Melissa).dwg



LEGEND

B-1 ⊕ TEST BORING NO. AND LOCATION BY DOWN TO EARTH CONSULTING, LLC

NOTES:
1) BASE MAP DEVELOPED FROM AN ELECTRONIC AERIAL PHOTO PREPARED BY GOOGLE, ACCESSED ON JUNE 6, 2018.
2) BORINGS WERE COMPLETED BY ASSOCIATED BORINGS CO., INC. AND OBSERVED BY DOWN TO EARTH CONSULTING, LLC.
3) THE LOCATIONS OF THE EXPLORATIONS WERE DETERMINED BY TAPING AND VISUAL ESTIMATES FROM EXISTING SITE FEATURES. THESE LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

DESIGNED BY OTHERS						
DRAWN BY MH						
CHECKED BY DFL						
APPROVED BY RPJ	NO.	DATE	REVISIONS	DRWN.	CHKD	APPVD

SCALE 1"= 50'
50' 25' 0 50'

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING
122 CHURCH STREET
NAUGATUCK, CONNECTICUT 06770

PROJECT
PROPOSED SOFTBALL FIELD
COLUMBIA RECREATION AREA
30 HENNEQUIN ROAD
COLUMBIA, CONNECTICUT

DWG. TITLE.
SITE AND BORING LOCATION PLAN

FILE NO. 0061-001.00
SCALE AS NOTED
DATE 06/13/18
FIGURE NO. 2

G:\My Drive\DTE Root Drive\Client Folders\0061 - TO Design\0061-001.00 AREA AND SITE PLAN (Melissa).dwg Ray 6/13/2018 3:56 PM ----

APPENDIX B

Test Boring Logs

- Test Boring Log B-1
- Test Boring Log B-2
- Test Boring Log B-3
- Test Boring Log B-4
- Test Boring Log B-5
- Test Boring Log B-6
- Test Boring Log B-7
- Test Boring Log B-8
- Test Boring Log B-9
- Test Boring Log B-10

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
NEW SOFTBALL FIELD
COLUMBIA RECREATION AREA
COLUMBIA, CONNECTICUT

BORING NO. B-1
SHEET 1 of 1
FILE NO. 0061-001.00
CHKD. BY DFL

Boring Co.	Associated Borings Co., Inc.	Boring Location	See Boring Location Plan		
Driller	Jaime Lloret	Ground Surface El.	665+/-	Datum	Not Available
Logged By	Ray Janeiro	Date Start	6/8/2018	Date End	6/8/2018

Sampler Type:	Cathead - Donut Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Rig
Drilling Method:	4" Solid Stem Augers

Groundwater Readings (from ground surface)

Date	Time	Depth	Elev.	Stabilization Time
06/08/2018				Not Encountered

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	PEN/REC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	PID ppmv	SAMPLE DESCRIPTION	STRATA DESCRIPTION
1		S-1	24/8	0.25 to 2.25	4-3-4-4		Loose, Top 5": light brown fine to coarse SAND and SILT Bottom 3": dark brown, TOPSOIL	8" Infield Soil 3" Buried Topsoil
2								
3		S-2	24/13	2.25 to 4.25	11-21-34-55		Very dense, brown fine to coarse SAND, some Silt, trace fine Gravel, with decomposed Rock fragments at sample tip, moist	TILL
4								
5		S-3	12/6	4.25 to 5.25	15-13-X-X		Medium dense, gray-brown fine to coarse SAND and GRAVEL, little Silt, with decomposed Rock fragments, moist	
6								
7							END OF BORING @ 5.25 FEET BELOW GRADE	
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 1 to 10%	1. S denotes split-barrel sampler.	7. PID denotes Photoionization Detector
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%	2. ST denotes 3-inch O.D. undisturbed sample.	8. PPM denotes parts per million.
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%	3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%	4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
Over 50 - Very Dense	16 to 30 - Very Stiff		5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard		6. SPT denotes Standard Penetration Test.	12. R denotes core run number.

FIELD NOTES:

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
NEW SOFTBALL FIELD
COLUMBIA RECREATION AREA
COLUMBIA, CONNECTICUT

BORING NO. B-2
SHEET 1 of 1
FILE NO. 0061-001.00
CHKD. BY DFL

Boring Co.	Associated Borings Co., Inc.	Boring Location	See Boring Location Plan		
Driller	Jaime Lloret	Ground Surface El.	667+/-	Datum	Not Available
Logged By	Ray Janeiro	Date Start	6/8/2018	Date End	6/8/2018

Sampler Type:	Cathead - Donut Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Rig
Drilling Method:	4" Solid Stem Augers

Groundwater Readings (from ground surface)

Date	Time	Depth	Elev.	Stabilization Time
06/08/2018	-	4'	663+/-	Perched Water - End of Drilling

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	PEN/REC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	PID ppmv	SAMPLE DESCRIPTION	STRATA DESCRIPTION
1		S-1	24/8	0.25 to 2.25	2-4-6-22		Loose to medium dense, light brown fine to coarse SAND, some fine Gravel, some Silt, trace Roots	3" Sod 3" Topsoil
2								
3		S-2	24/12	2.25 to 4.25	23-36-34-31		Very dense, light brown fine to coarse SAND and GRAVEL, some Silt, with decomposed Rock fragments	TILL
4								
5		S-3	12/9	4.25 to 5.25	17-26-X-X		Medium dense, light brown fine to coarse SAND and SILT, trace fine Gravel, moist	
6								
7							END OF BORING @ 5.25 FEET BELOW GRADE	
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 1 to 10%	1. S denotes split-barrel sampler.	7. PID denotes Photoionization Detector
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%	2. ST denotes 3-inch O.D. undisturbed sample.	8. PPM denotes parts per million.
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%	3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%	4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
Over 50 - Very Dense	16 to 30 - Very Stiff		5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard		6. SPT denotes Standard Penetration Test.	12. R denotes core run number.

FIELD NOTES:

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
NEW SOFTBALL FIELD
COLUMBIA RECREATION AREA
COLUMBIA, CONNECTICUT

BORING NO. B-3
SHEET 1 of 1
FILE NO. 0061-001.00
CHKD. BY DFL

Boring Co.	Associated Borings Co., Inc.	Boring Location	See Boring Location Plan		
Driller	Jaime Lloret	Ground Surface El.	665.5+/-	Datum	Not Available
Logged By	Ray Janeiro	Date Start	6/8/2018	Date End	6/8/2018

Sampler Type:	Cathead - Donut Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Rig
Drilling Method:	4" Solid Stem Augers

Groundwater Readings (from ground surface)

Date	Time	Depth	Elev.	Stabilization Time
06/08/2018	-	5'	660.5+/-	Perched Water - End of Drilling

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	PEN/REC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	PID ppmv	SAMPLE DESCRIPTION	STRATA DESCRIPTION
1		S-1	24/7	0.25 to 2.25	3-3-2-3		Loose, Top 2": dark brown, TOPSOIL Middle 3": brown fine to medium SAND and SILT Bottom 2": dark brown, TOPSOIL	3" Sod FILL
2								
3		S-2	24/12	2.25 to 4.25	4-14-29-41		Dense, brown to gray brown fine to coarse SAND, some fine to coarse Gravel, little Silt, moist	TILL
4								
5		S-3	12/8	4.25 to 5.25	33-36-X-X		Very dense, gray brown fine to coarse SAND and GRAVEL, little Silt, with decomposed Rock fragments at sample tip, moist	
6								
7							END OF BORING @ 5.25 FEET BELOW GRADE	
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 1 to 10%	1. S denotes split-barrel sampler.	7. PID denotes Photoionization Detector
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%	2. ST denotes 3-inch O.D. undisturbed sample.	8. PPM denotes parts per million.
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%	3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%	4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
Over 50 - Very Dense	16 to 30 - Very Stiff		5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard		6. SPT denotes Standard Penetration Test.	12. R denotes core run number.

FIELD NOTES:

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
NEW SOFTBALL FIELD
COLUMBIA RECREATION AREA
COLUMBIA, CONNECTICUT

BORING NO. B-4
SHEET 1 of 1
FILE NO. 0061-001.00
CHKD. BY DFL

Boring Co.	Associated Borings Co., Inc.	Boring Location	See Boring Location Plan		
Driller	Jaime Lloret	Ground Surface El.	664+/-	Datum	Not Available
Logged By	Ray Janeiro	Date Start	6/8/2018	Date End	6/8/2018

Sampler Type:	Cathead - Donut Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Rig
Drilling Method:	4" Solid Stem Augers

Groundwater Readings (from ground surface)

Date	Time	Depth	Elev.	Stabilization Time
06/08/2018	-	5'	659+/-	Perched Water - End of Drilling

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	PEN/REC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	PID ppmv	SAMPLE DESCRIPTION	STRATA DESCRIPTION
1		S-1	24/8	0.25 to 2.25	3-4-2-2		Loose, Top 6": brown, fine to medium SAND, some Silt, trace fine Gravel, trace (-) Roots Bottom 2": dark brown, TOPSOIL	3" Sod FILL
2								
3		S-2	24/15	2.25 to 4.25	15-11-11-33		Medium dense, brown fine to coarse SAND and GRAVEL, some Silt, moist	TILL
4								
5		S-3	12/8	4.25 to 5.25	19-25-X-X		Dense, gray-brown fine to coarse SAND, little fine Gravel, little Silt, with decomposed Rock fragments at sample tip, moist	
6								
7							END OF BORING @ 5.25 FEET BELOW GRADE	
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 1 to 10%	1. S denotes split-barrel sampler.	7. PID denotes Photoionization Detector
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%	2. ST denotes 3-inch O.D. undisturbed sample.	8. PPM denotes parts per million.
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%	3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%	4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
Over 50 - Very Dense	16 to 30 - Very Stiff		5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard		6. SPT denotes Standard Penetration Test.	12. R denotes core run number.

FIELD NOTES:

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
NEW SOFTBALL FIELD
COLUMBIA RECREATION AREA
COLUMBIA, CONNECTICUT

BORING NO. B-5
SHEET 1 of 1
FILE NO. 0061-001.00
CHKD. BY DFL

Boring Co.	Associated Borings Co., Inc.	Boring Location	See Boring Location Plan		
Driller	Jaime Lloret	Ground Surface El.	668+/-	Datum	Not Available
Logged By	Ray Janeiro	Date Start	6/8/2018	Date End	6/8/2018

Sampler Type:	Cathead - Donut Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Rig
Drilling Method:	4" Solid Stem Augers

Groundwater Readings (from ground surface)

Date	Time	Depth	Elev.	Stabilization Time
06/08/2018	-	4.5'	663.5+/-	Perched Water - End of Drilling

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	PEN/REC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	PID ppmv	SAMPLE DESCRIPTION	STRATA DESCRIPTION
1		S-1	24/7	0.25 to 2.25	2-2-3-8		Loose, Top 5": dark brown, TOPSOIL	3" Sod/5" Topsoil
2							Bottom 2": light brown, fine to medium SAND, some Silt, trace (-) Roots	SUBSOIL
3		S-2	24/5	2.25 to 4.25	12-13-9-7		Medium dense, light brown fine to coarse SAND, some Silt	TILL
4								
5		S-3	12/9	4.25 to 5.25	8-12-X-X		Medium dense, light brown fine to coarse SAND and SILT, little fine Gravel, with decomposed Rock fragments, moist	
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7							END OF BORING @ 5.25 FEET BELOW GRADE	
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 1 to 10%	1. S denotes split-barrel sampler.	7. PID denotes Photoionization Detector
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%	2. ST denotes 3-inch O.D. undisturbed sample.	8. PPM denotes parts per million.
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%	3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%	4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
Over 50 - Very Dense	16 to 30 - Very Stiff		5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard		6. SPT denotes Standard Penetration Test.	12. R denotes core run number.

FIELD NOTES:

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
NEW SOFTBALL FIELD
COLUMBIA RECREATION AREA
COLUMBIA, CONNECTICUT

BORING NO. B-6
SHEET 1 of 1
FILE NO. 0061-001.00
CHKD. BY DFL

Boring Co.	Associated Borings Co., Inc.	Boring Location	See Boring Location Plan		
Driller	Jaime Lloret	Ground Surface El.	667+/-	Datum	Not Available
Logged By	Ray Janeiro	Date Start	6/8/2018	Date End	6/8/2018

Sampler Type:	Cathead - Donut Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Rig
Drilling Method:	4" Solid Stem Augers

Groundwater Readings (from ground surface)

Date	Time	Depth	Elev.	Stabilization Time
06/08/2018	-	-	-	Not Encountered

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	PEN/REC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	PID ppmv	SAMPLE DESCRIPTION	STRATA DESCRIPTION
1		S-1	24/8	0.25 to 2.25	2-2-3-6		Loose, Top 4": dark brown, TOPSOIL	3" Sod/4" Topsoil
2							Bottom 4": light brown, fine to coarse SAND and SILT, trace (-) Roots	SUBSOIL
3		S-2	24/10	2.25 to 4.25	22-61-59-29		Very dense, Top 6": light brown fine to coarse SAND and GRAVEL, little Silt	TILL
4							Bottom 4": gray/white, decomposed ROCK fragments	
5		S-3	8/5	4.25 to 4.7	26-50/2"-X-X		Very dense (refusal), decomposed ROCK, with fractured piece of gravel-sized Rock	WEATHERED ROCK
6							fragments jammed in sample tip	
7							END OF BORING @ 4.7 FEET BELOW GRADE	
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 1 to 10%	1. S denotes split-barrel sampler.	7. PID denotes Photoionization Detector
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%	2. ST denotes 3-inch O.D. undisturbed sample.	8. PPM denotes parts per million.
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%	3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%	4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
Over 50 - Very Dense	16 to 30 - Very Stiff		5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard		6. SPT denotes Standard Penetration Test.	12. R denotes core run number.

FIELD NOTES:

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
NEW SOFTBALL FIELD
COLUMBIA RECREATION AREA
COLUMBIA, CONNECTICUT

BORING NO. B-7
SHEET 1 of 1
FILE NO. 0061-001.00
CHKD. BY DFL

Boring Co.	Associated Borings Co., Inc.	Boring Location	See Boring Location Plan		
Driller	Jaime Lloret	Ground Surface El.	664.5+/-	Datum	Not Available
Logged By	Ray Janeiro	Date Start	6/8/2018	Date End	6/8/2018

Sampler Type:	Cathead - Donut Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Rig
Drilling Method:	4" Solid Stem Augers

Groundwater Readings (from ground surface)

Date	Time	Depth	Elev.	Stabilization Time
06/08/2018	-	-	-	Not Encountered

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	PEN/REC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	PID ppmv	SAMPLE DESCRIPTION	STRATA DESCRIPTION
1		S-1	24/6	0.25 to 2.25	2-2-2-3		Loose, Top 4": dark brown, TOPSOIL	3" Sod/4" Topsoil
2							Bottom 2": brown, fine to medium SAND and SILT, trace (-) Roots	SUBSOIL
3		S-2	24/13	2.25 to 4.25	4-23-21-48		Dense, brown fine to coarse SAND, some fine to coarse Gravel, some Silt, with decomposed Rock fragments, moist	TILL
4								
5		S-3	12/8	4.25 to 5.25	15-11-X-X		Medium dense, brown/gray fine to coarse SAND and SILT, little fine Gravel, with decomposed Rock fragments, moist	
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7							END OF BORING @ 5.25 FEET BELOW GRADE	
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 1 to 10%	1. S denotes split-barrel sampler.	7. PID denotes Photoionization Detector
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%	2. ST denotes 3-inch O.D. undisturbed sample.	8. PPM denotes parts per million.
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%	3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%	4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
Over 50 - Very Dense	16 to 30 - Very Stiff		5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard		6. SPT denotes Standard Penetration Test.	12. R denotes core run number.

FIELD NOTES:

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
NEW SOFTBALL FIELD
COLUMBIA RECREATION AREA
COLUMBIA, CONNECTICUT

BORING NO. B-8
SHEET 1 of 1
FILE NO. 0061-001.00
CHKD. BY DFL

Boring Co.	Associated Borings Co., Inc.	Boring Location	See Boring Location Plan
Driller	Jaime Lloret	Ground Surface El.	662+/-
Logged By	Ray Janeiro	Date Start	6/8/2018
		Datum	Not Available
		Date End	6/8/2018

Sampler Type:	Cathead - Donut Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Rig
Drilling Method:	4" Solid Stem Augers

Groundwater Readings (from ground surface)

Date	Time	Depth	Elev.	Stabilization Time
06/08/2018	-	-	-	Not Encountered

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	PEN/REC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	PID ppmv	SAMPLE DESCRIPTION	STRATA DESCRIPTION
1		S-1	24/10	0.25 to 2.25	1-2-5-21		Loose, Top 4": dark brown, TOPSOIL	3" Sod/4" Topsoil
2							Bottom 6": light brown/gray, fine to coarse SAND and SILT, trace fine Gravel, trace (-) Roots	SUBSOIL
3		S-2	24/12	2.25 to 4.25	21-33-23-22		Very dense, light brown fine to coarse SAND and GRAVEL, little Silt, with decomposed Rock fragments	TILL
4								
5		S-3	12/5	4.25 to 5.25	8-8-X-X		Medium dense, light brown fine to coarse SAND and GRAVEL, little Silt, with decomposed Rock fragments	
6								
7							END OF BORING @ 5.25 FEET BELOW GRADE	
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 1 to 10%	1. S denotes split-barrel sampler.	7. PID denotes Photoionization Detector
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%	2. ST denotes 3-inch O.D. undisturbed sample.	8. PPM denotes parts per million.
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%	3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%	4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
Over 50 - Very Dense	16 to 30 - Very Stiff		5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard		6. SPT denotes Standard Penetration Test.	12. R denotes core run number.

FIELD NOTES:

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
NEW SOFTBALL FIELD
COLUMBIA RECREATION AREA
COLUMBIA, CONNECTICUT

BORING NO. B-9
SHEET 1 of 1
FILE NO. 0061-001.00
CHKD. BY DFL

Boring Co.	Associated Borings Co., Inc.	Boring Location	See Boring Location Plan		
Driller	Jaime Lloret	Ground Surface El.	667+/-	Datum	Not Available
Logged By	Ray Janeiro	Date Start	6/8/2018	Date End	6/8/2018

Sampler Type:	Cathead - Donut Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Rig
Drilling Method:	4" Solid Stem Augers

Groundwater Readings (from ground surface)

Date	Time	Depth	Elev.	Stabilization Time
06/08/2018	-	-	-	Not Encountered

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	PEN/REC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	PID ppmv	SAMPLE DESCRIPTION	STRATA DESCRIPTION
1		S-1	12/5	0.25 to 1.25	2-4-50/0"		Loose, Top 3": dark brown, TOPSOIL	3" Sod/4" Topsoil
2							Bottom 2": gray/white decomposed ROCK fragments	WEATHERED ROCK
3							END OF BORING (AUGER REFUSAL) @ 1.25 FEET BELOW GRADE	
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 1 to 10%	1. S denotes split-barrel sampler.	7. PID denotes Photoionization Detector
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%	2. ST denotes 3-inch O.D. undisturbed sample.	8. PPM denotes parts per million.
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%	3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%	4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
Over 50 - Very Dense	16 to 30 - Very Stiff		5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard		6. SPT denotes Standard Penetration Test.	12. R denotes core run number.

FIELD NOTES:

TOWN OF COLUMBIA

323 Jonathan Trumbull Highway, Columbia, CT 06237
(860) 228-0110 Fax: (860) 228-1952

SAMPLE

EXHIBIT B - TOWN OF COLUMBIA GIRLS SOFTBALL FIELD

Contract for Construction Services for Town of Columbia Girls Softball Field
by and between
THE TOWN OF COLUMBIA
and

_____

This Contract is by and between THE TOWN OF COLUMBIA, a municipal corporation having its territorial limits within the County of Hartford, and State of Connecticut, hereinafter referred to as the **Town**, and _____, whose address is_____, hereinafter referred to as the **Contractor.**

WHEREAS, the Town is seeking construction firms to provide construction and related professional services on an as-needed basis when projects cannot be completed by Town staff due to time, staff, or other resource constraints or when outside expertise is required, and

WHEREAS, the Contractor is qualified, ready, willing, and able to perform such services for an agreed upon compensation,

NOW, THEREFORE,

The Town and Contractor do mutually covenant and agree as follows:

1 Technical Standards & Specifications

The Contractor shall perform all work in accordance with good engineering practice and all applicable local, state and federal industry standards.

Town approval of each invoice. Payments are conditioned upon the satisfactory performance of all work. In the event that the Town determines the Contractor to be in nonconformance with the terms of this Contract or if in the Town's judgment the Contractor's work is not satisfactory, the Town may take corrective action, including, but not limited to, the following:

1) Delay of payment
2) Adjustment of payment
3) Suspension or termination of this Contract

The Contractor agrees to meet with representatives of the Town, at no cost to the Town, to

discuss billing issues as the Town deems necessary. Payments to the Contractor will be made on a periodic basis in accordance with the percentage of work actually completed. Payments for each phase of the work within the project will be prorated based upon the amount of work actually completed within that phase.

1.1. SCOPE OF WORK

1.1.1 General Technical Specifications

The technical specifications appended to this document are included as part of this contract and are also a part of the Project Manual.

1.1.2 General Conditions of the Contract for Construction

The AIA Document A201 – 2007, the "General Conditions of the Contract for Construction" are a part of these specifications and shall be binding on the contractor/subcontractors who performs this work.

1.2. ADDITIONAL REQUIREMENTS

1.2.1 Questions Relating to Specifications

Any request from prospective bidders for interpretation of meaning of contract drawings, specifications or other contract documents shall be made in writing to Jon Tunsky, TO Design LLC @ Jtunsky@todesignllc.com. Requests must be received at least seven (7) days prior to date fixed for opening of Proposals to be given consideration. Interpretations will be made in the form of written Addenda to Contract Documents, which Addenda shall become a part of Contract. Not later than four (4) days prior to date fixed for opening of Proposals, Addenda will be mailed to all persons who obtained Contract Documents. Failure of any bidder to receive any such Addenda shall not relieve bidder from any obligation under his Proposal as submitted.

1.2.2 Site Examination

At date fixed for opening of Bids, it will be presumed that each Bidder has made an examination of location and site of work to be done under Contract, has satisfied himself as to actual conditions, requirements, and quantities of work and has read and become thoroughly familiar with Contract Documents including Contract Drawings, Specifications and Addenda.

1.2.3 Inspection of Work

All materials and each part of detail of work shall be subject at all times to inspection by the representatives of the Town of Columbia and To Design and Contractor will be held strictly to true intent of specifications in regard to quality of materials, workmanship, and

diligent execution of contract. Material furnished under these specifications is subject to such inspection. Town of Columbia and To Design shall be allowed access to all parts of work and shall be furnished such information and assistance by Contractor as is required to make a complete and detailed inspection.

1.2.4 Disposal of Materials

The Contractor at his sole cost shall be responsible for removal and proper disposal of all material.

1.2.5 Safety

All work done and equipment installed shall comply with all pertinent OSHA, Federal, State, and Local Regulations. The contractor shall maintain safety measures at all times when a hazard or hazards exist in or around the work area. The contractor shall implement additional safety measures as directed by the owner's representative or by other State, Federal, or Local authorities at no additional cost to the owner.

NOTE: If, at any time, the owner must install or provide labor, equipment, or materials, in order to eliminate a safety hazard due to activity related to this contract, the Contractor shall be billed by the owner for such services.

1.2.6 Utilities

The Contractor shall contact the respective utility companies including "CALL BEFORE YOU DIG" and must be especially careful not to disturb or break existing utilities or services. The Contractor is solely responsible for any monetary charges made by the Utility Company for repair or replacement of damaged utilities, or for any damage to his own equipment.

1.2.7 Permits

Permits for the Town of Columbia will be waived, but not State permits. All Permits and Licenses necessary for prosecution of work including Building Permits are the responsibility of the contractor.

1.2.8 Construction Scheduling

A schedule of construction operations shall be submitted to the owner for approval and shall include a flow chart of major work items and approximate lengths of time related to work items.

SAMPLE

1.2.9 Power

The Contractor will be responsible for providing his own power.

2 Management and Administration of the Contract

The Town's designated Managing Authority for this Contract will be the Town Administrator, or his authorized designee, who will have complete authority to act for and on behalf of the Town and control, supervise, and direct the Contractor's activities hereunder. Services are to be provided by the Contractor, except where the use of specific subcontractors or subcontractors has been approved in writing by the Town for a particular project.

The Contractor's primary contact person will be _____, who will communicate and report directly to the Town's Managing Authority, be responsible for directing and coordinating the activities of the firm's personnel and approved subcontractors and subcontractors and shall be authorized to prepare and execute proposals, including scopes of services, fee proposals, proposed staffing plans, and schedules as requested by the Town under this Contract.

The Contractor and the Town shall work closely together in all aspects of this program, and each shall follow the reasonable suggestions of the other to improve the operation of the program.

3 Relationship Between the Parties

It is mutually agreed that the Contractor, including its employees, is an independent contractor and not an officer, employee, or agent of the Town, and that this Contract is a contract for services and not a contract of employment, and that, as such, the Contractor and its employees shall not be entitled to any employment benefits from the Town such as, but not limited to: vacation, sick leave, insurance, workers' compensation, pension and retirement benefits. All personnel matters affecting Contractor's staff will be the responsibility of the Contractor.

In no event shall anything in this Contract be deemed to confer upon any person or entity agency status or third-party beneficiary rights against the Town.

4 Indemnification and Hold Harmless Contract

To the fullest extent permitted by law the Contractor shall at all times indemnify and save harmless the Town and its officers, agents, and employees on account of and from any and all claims, damages, losses, workers' compensation payments, judgments, litigation expenses, and legal counsel fees arising out of injuries to persons (including death) or damage to property

alleged to have been caused in whole or in part by the willful, wanton, or negligent acts or omissions of the Contractor, his employees, subcontractors, subcontractors, or materialmen. The existence of insurance shall in no way limit the scope of this indemnification. The Contractor shall

SAMPLE

reimburse the Town for damage to property of the Town caused by the Contractor, or his employees, subcontractors, subcontractors, or materialmen.

5 Insurance

The selected Contractor shall furnish a Certificate of Insurance evidencing the following insurance coverage in effect on or before the date of execution of this Contract. Insurance coverage shall remain in full force for the duration of the Contract term, including any extensions. Renewal certificates shall be furnished at least thirty (30) days prior to policy expiration. Failure to maintain insurance coverage as required and to name the Town as an Additional Insured will be grounds for termination of the Contract. The interest of the Town shall be included in all insurance policies required herein, except Workers' Compensation and Professional Liability, as Additional Insured as its interest may appear, which shall be noted on the Certificate of Insurance, and shall include, but not be limited to, investigation, defense, and payment of settlement or judgment. Such insurance must be written by companies of recognized standing, qualified and licensed to engage in the insurance business in the State of Connecticut. All deductibles are the sole responsibility of the Contractor to pay and/or indemnify.

The Contractor awarded this proposal must provide a current Certificate of Insurance to the Town Administrator PRIOR to commencement of work, with the following requirements:

Insured Limits and Coverage:

A. To the extent applicable, the amounts and types of insurance will conform to the minimum terms and conditions and coverages of the national Insurance Services Office (ISO) policies, forms, and endorsements.
B. If the contractor/insured has self-insured retention' s or deductibles under any of the following minimum required coverage's, the contractor/insured must identify on the certificate of insurance the nature and amount of such self-insured retention's or deductibles and provide satisfactory evidence of financial responsibility for such obligations. All self-insured retention's or deductibles will be the contractor/insured's sole responsibility.

SAMPLE

C. Commercial General Liability: The contractor/insured will maintain commercial general liability insurance covering all operations by or on behalf of the contractor/insured on an occurrence basis against all claims for personal injury (including bodily injury or death) and property damage (including loss of use).

   Such insurance will have these minimum limits:
   - $ 1,000,000 each occurrence.
   - $ 1,000,000 each occurrence if blasting is required.
   - $ 2,000,000 general aggregate with dedicated limits per project site.
   - $ 2,000,000 products and completed operations aggregate.
   - $ 1,000,000 personal and advertising injury.

D. Automobile Liability: The contractor/insured will maintain business auto liability coverage for liability arising out of any auto, including owned, hired, and non-owned autos.
E. Workers' Compensation: The contractor/insured will maintain workers' compensation and employer's liability insurance in the following minimum limits:

   - Workers' Compensation: statutory limits.
   - Employer's Liability: $1,000,000 bodily injury for each accident.
   - Employer's Liability: $1,000,000 bodily injury by disease each employee.
   - Employer's Liability: $1,000,000 bodily injury disease aggregate.

F. Professional Liability: $1,000,000
G. Governing Law: This agreement shall be governed by the laws of the State of Connecticut.
H. These are, minimum insurance limit requirements only. Additional insurance coverage's and amounts may be required by the Town of Columbia on a per project basis.

6 Indemnification and Hold Harmless

The Contractor shall defend, indemnify and hold harmless the Town, its officers, officials, employees and volunteers from any and all claims, injuries, damages, losses or suits including attorney fees, arising out of or in connection with the performance of services hereunder, except for injuries and damages caused by the sole negligence of the Town.

7 Ethics and Conflict of Interest

The Contractor shall comply with all applicable provisions of the Code of Ethics for Professional Engineers and Land Surveyors, Section 20-300-12 of the Regulations of Connecticut State

SAMPLE

Agencies and with all applicable requirements of Chapter 391 (sections 20-299 to 20-3 10) of the Connecticut General Statutes, Professional Engineers and Land Surveyors, and the regulations implementing this Chapter, Sections 20-300-1 to 20-300-15 of the Regulations of Connecticut State Agencies.

In order to avoid perceived or actual conflicts of interest, the Contractor shall disclose to the Town any known special personal or financial interests, beyond those applicable to the general public, of the Contractor, its employees, subcontractors, or subcontractors, regarding any matter that they are working on under this Contract. The Town will determine if a significant conflict of interest exists, and if necessary will assign the work to others to avoid the conflict of interest.

8 Events of Default and Remedies

8.1 EVENT OF DEFAULT

Any of the following occurrences or acts shall constitute an Event of Default under this Contract:

8.1.1 If in the opinion of the Town, default shall have been made by the Contractor, its successors or assigns, in the performance or observance of any of the covenants, conditions or Contracts on the part of the Contractor set forth in this Contract; or

8.1.2 If in the opinion of the Town, the Contractor fails to deliver services by the dates agreed upon for any specific project and the Contractor has not received written approval from the Town for an extension to the agreed upon schedule;

8.1.3 or If any determination shall have been made by a competent authority such as, but not limited to, any authorized federal, state or local government official, or a certified public accountant, that the Contractor's management or

8.1.4 any accounting for its funding, from whatever source, is improper, inadequate or illegal, as such management or accounting may relate to the Contractor's performance of this Contract; or

8.1.5 If a decree or order by a court having jurisdiction in the matter shall have been entered adjudging the Contractor as bankrupt or insolvent or approving as properly filed a petition seeking reorganization, readjustment, arrangement, composition or similar relief for the Contractor under the federal bankruptcy laws, or any other similar applicable federal or state law.

TOWN OF COLUMBIA

323 Jonathan Trumbull Highway, Columbia, CT 06237
(860) 228-0110 Fax: (860) 228-1952

SAMPLE

8.2 ELECTION OF REMEDIES

If any Event of Default hereunder shall have occurred and be continuing, the Town may elect to pursue any one or more of the following remedies, in any combination or sequence:

8.2.1 Take such action as it deems necessary, including, without limitation, reduction of payment or temporary withholding of payment;

8.2.2 Require the Contractor to pay Liquidated Damages in the amount of five hundred dollars ($500), or one percent of the total compensation for the project on which it has contracted to work, whichever is less, per calendar day to the Town until the work is complete;

8.2.3 Suspend work under the Contract;

8.2.4 Require the Contractor to correct or cure such default to the satisfaction of the Town; and

8.2.5 Terminate this Contract for cause in accordance with Section 11 hereof.

The selection of any remedy shall not prevent or stop the Town from pursuing any other remedy and shall not constitute a waiver by the Town of any other right or remedy.

9 Termination of Contract

9.1 TERMINATION

"Termination", for purposes of this Contract, shall mean the cessation, upon the effective date of termination, of the following obligations only: The Contractor's obligation to perform the services described in Section 1, Scope of Services, of this Contract, and the Town's obligation, as described in Section 4, Compensation, of this Contract, to pay for such services.

9.2 TERMINATION FOR CAUSE

Upon the occurrence of any Event of Default, as set forth in Section 10.1 hereof, the Town may terminate this Contract by giving five (5) days' written notice thereof to the Contractor.

TOWN OF COLUMBIA

323 Jonathan Trumbull Highway, Columbia, CT 06237
(860) 228-0110 Fax: (860) 228-1952

SAMPLE

9.3 TERMINATION FOR PROGRAM CHANGE

In the event the on-call engineering program shall be terminated or significantly changed,

the Town may terminate this Contract by giving ten (10) days' written notice thereof to the Contractor.

9.4 TERMINATION FOR NON-AVAILABILITY OF FUNDS

In the event the Town shall not have funds available for this program, the Town may terminate this Contract by giving ten (10) days' written notice thereof to the Contractor.

9.5 TERMINATION FOR CONVENIENCE

The Town may terminate this Contract for convenience at any time, and for any reason, or for no reason, by giving ten (10) days' prior written notice thereof to the Contractor.

9.6 PAYMENT UPON TERMINATION

In the event this Contract is terminated as herein provided, the Town shall make full payment to the Contractor for all authorized services performed up to and including the date of termination.

10 Amendments

This Contract may be amended by written instrument executed by the parties hereto, acting therein by their duly authorized representatives. The Contractor's duly authorized representative shall be_____, and the Town's duly authorize representative shall be the Managing Authority.

11 Establishment and Maintenance of Records

The Contractor agrees to establish and maintain fiscal control and accounting procedures that assure proper accounting for all funds paid by the Town to the Contractor under this Contract. The Contractor agrees that all records with respect to all matters covered by this Contract shall be maintained during the term of this Contract, including any renewal or extension, and for one full year following termination or expiration.

12 Audits

At any time during normal business hours, and as often as may be deemed necessary, the Contractor shall make available to the Town, for examination, all records with respect to all matters covered by this Contract.

SAMPLE

13 Reports and Information

The Contractor shall furnish the Town with such information and reports concerning the progress and management of this project as may be required from time to time. The form of said reports shall be determined by the Town.

14 Non-Assignability

The Contractor shall not assign or transfer any interest in this Contract without prior written consent of the Town.

15 Severability

If any provision of this Contract is held invalid, the remainder of this Contract shall continue in full force and effect.

16 Cumulative Remedies

All rights and remedies of the Town hereunder shall be cumulative and the exercise or beginning of the exercise by the Town of any of its rights or remedies hereunder shall not preclude the Town from exercising any other right or remedy granted hereunder or permitted by law.

17 Governing Law

This Contract shall be governed by, and construed in accordance with, the laws of the State of Connecticut.

18 Subcontractors

Portions of this work may be subcontracted, provided that:

18.1 The Town shall give prior approval to such subcontract in writing.

18.2 All of the terms, covenants, conditions and provisions of this Contract shall have been incorporated in such subcontract(s) and the subcontractor(s) and subcontractor(s) shall have agreed in writing to assume, perform and be bound by this Contract and all the terms, covenants, conditions and provisions hereof.

18.3 The Town shall not be liable for payment of any wages, materials, or other expenses of any subcontractors or subcontractors.

SAMPLE

19 Gender/Number/Title

Words of any gender used in this Contract shall be held and construed to include any other gender, and words in the singular shall be held and construed to include the plural, unless the Contract requires otherwise. In the event of any discrepancy or conflict between the name and title of any person referred to in this Contract, the title shall prevail.

20 Notices

All notices, approvals, demands, requests, or other documents required or permitted under this Contract, other than routine communications necessary for the day-to-day operation of this contract, shall be deemed properly given if hand delivered or sent by United States mail, first class postage, to the following addresses:

As to the Town:	As to the Contractor:
(The Managing Authority designated	_____
in Section 5 of this Contract)	_____
323 Route 87	_____
Columbia, CT 06237	_____

21 Non-Waiver

Any failure by the Town or the Contractor to insist upon the strict performance by the other of any of the terms and provisions hereof shall not be a waiver, and each party hereto, notwithstanding any such failure, shall have the right thereafter to insist upon the strict performance by the other, of any and all of the terms and provisions of the Contract and neither party hereto shall be relieved of such obligation by reason of the failure of the other to comply with or otherwise enforce any of the provisions of this Contract.

22 Delinquency in Obligations

The Contractor hereby agrees that throughout the period of the Contract, all taxes, debts, contractual obligations, and audit responsibilities owed to the Town shall be and shall remain current.

23 Ownership of Work Product

All work produced under this Contract shall be the property of the Town. The Contractor shall turn over to the Town all original documents and other work products upon completion or demand.

TOWN OF COLUMBIA

323 Jonathan Trumbull Highway, Columbia, CT 06237
(860) 228-0110 Fax: (860) 228-1952

SAMPLE

24 Entire Contract

This Contract, and its exhibits attached hereto and referenced herein, contain the entire understanding between the parties hereto and supersedes any and all prior understandings, negotiations, and Contracts, whether written or oral, between them respecting the written subject matter.

IN WITNESS THEREOF, the TOWN OF COLUMBIA and the CONTRACTOR have executed this Contract on this _____day of _____, 2018.

TOWN OF COLUMBIA

Reviewed: _____
By: George Murphy
Title: Director, DPW

Approved: _____
By: Mark B. Walter
Title: Town Administrator

Witness: _____

CONTRACTOR

Approved: _____
Signature

Title:_____

Witness: _____
Signature

Title:_____

TOWN OF COLUMBIA

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(860) 228-0110 Fax: (860) 228-1952

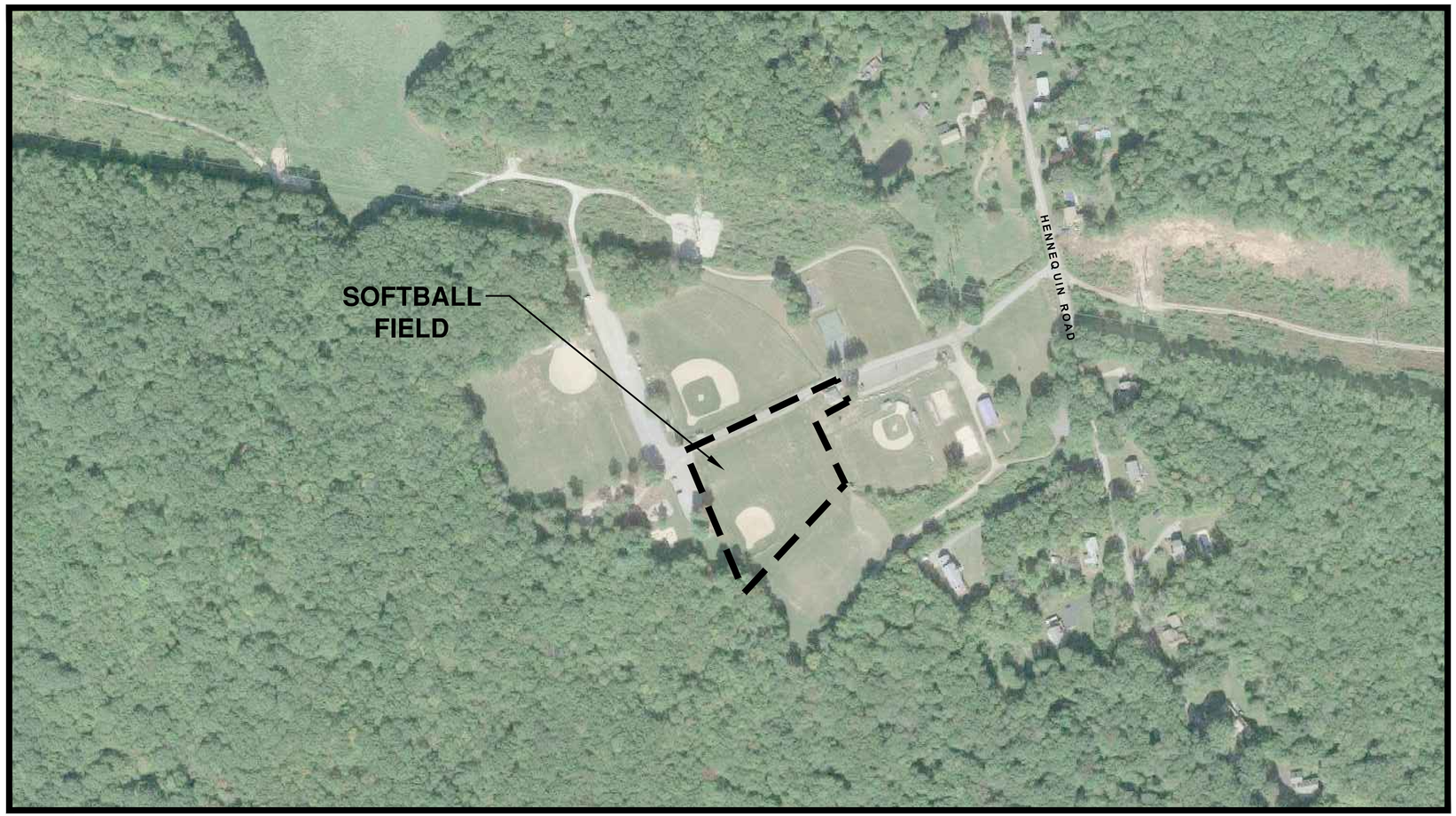
ATTACHMENT A - CONSTRUCTION DOCUMENTS

GIRLS SOFTBALL FIELD RENOVATIONS
RECREATION PARK

Route 66 and Hennequin Road **Columbia, Connecticut**

ALTERNATES:

1. Demolition per L-1.0
2. Grading per L-3.1
3. Purchase and deliver Granular Fill
4. Purchase and deliver Infield Mix
5. Water Line per L-4.0
6. Dugout roof structure
7. PVC fence coating
8. Lawn seeding



Project Site

NTS

CONTENTS

CONSTRUCTION DOCUMENTS **09.10.2018**

Prepared for The Town of Columbia, Connecticut

Director of Parks and Recreation
Director: Marc Volza

Prepared by:

todesign
SITE DESIGN
LANDSCAPE ARCHITECTURE
URBAN PLANNING

114 WEST MAIN STREET
SUITE 202
NEW BRITAIN, CT 06051
860-612-1700

todesignllc.com

CREATING MEANINGFUL OUTDOOR SPACES

LEGEND

- PROPERTY LINE
- BUILDING LINE
- STONE WALL
- CHAIN LINK FENCE
- 500 — EXISTING CONTOUR
- EDGE WOODS OR CLEARING
- TREE WITH WIRE
- FENCE POST WITH WIRE
- ANGLE POINT
- IRON PIN OR PIPE FOUND
- MONUMENT FOUND
- DRILL HOLE FOUND
- IRON PIN TO BE SET 5/8" REBAR
- MONUMENT TO BE SET
- DRILL HOLE TO BE SET
- SURVEYOR CONTROL POINT

MAP STANDARD NOTES

1. THIS SURVEY (OR MAP) HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THRU 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996; THE TYPE OF SURVEY IS A TOPOGRAPHIC SURVEY. BOUNDARY DETERMINATION IS BASED ON A RESURVEY OF PROPERTY AND CONFORMS TO THE 'A-2' CLASS OF ACCURACY.

2. TOPOGRAPHIC FEATURES, IF SHOWN HEREON, WERE PREPARED IN ACCORDANCE WITH CLASS T- 2 .

3. THE INTENDED PURPOSE OF THIS MAP/SURVEY IS TO SHOW EXISTING TOPOGRAPHY AT 1' CONTOURS IN AREA OF PROPOSED GIRLS SOFTBALL FIELD.

MAP REFERENCE:

"TOPOGRAPHIC AND WETLAND SURVEY PREPARED FOR THE TOWN OF COLUMBIA ROUTE 66 AND HENNEQUIN ROAD COLUMBIS CT NOVEMBER 24, 2014 BY ROB HELLSTROM LAND SURVEYING LLC"

GRAPHIC SCALE
80 40 0 40
(IN FEET)
1 inch = 40 ft.

TOPGRAPHIC SURVEY
- PREPARED FOR -
TOWN OF COLUMBIA
FUTURE GIRLS SOFTBALL FIELD
HENNEQUIN ROAD
COLUMBIA CONNECTICUT

SHEET NO.: 1 OF 1 | JOB NO.: 2018-068
SCALE: 1" = 30' | FILE NO.: COL18068FLD
BY: AGS & RWH | DATE: JULY 16, 2018

ROB HELLSTROM
LAND SURVEYING LLC
Mailing Address:
P.O. BOX 497
COLUMBIA, CT. 06237-0497
(860) 228-9853
(860) 228-1360 (FAX)
32 MAIN STREET HEBRON, CT. 06248
hellstromsurveying@yahoo.com
www.hellstromlandsurveying.com

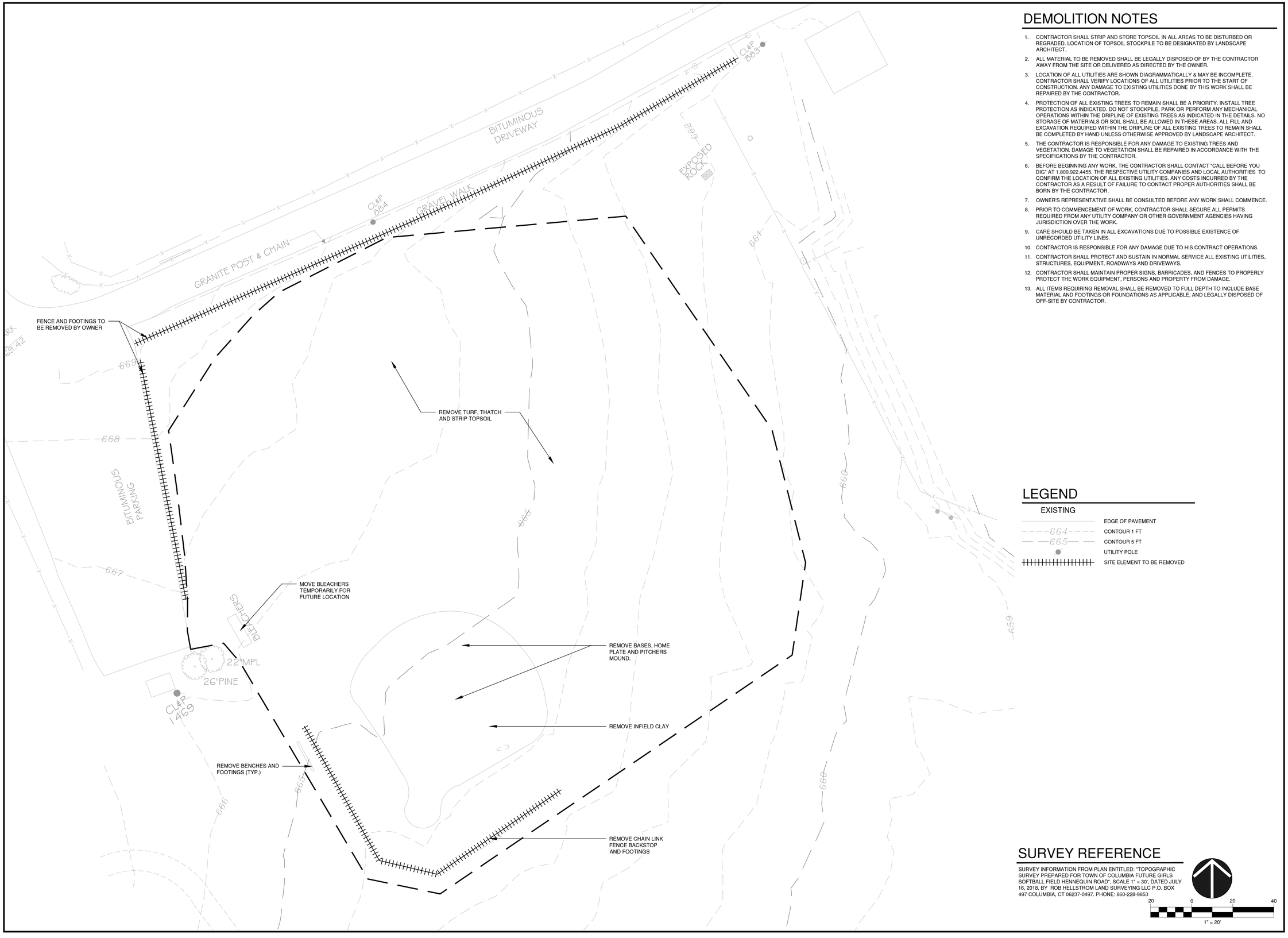
REVISIONS

NO.	DATE	DESCRIPTION

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

THIS DRAWING IS NOT VALID UNLESS IT BEARS AN ORIGINAL INK SIGNATURE AND EMBOSSED SEAL

ROBERT W. HELLSTROM, L.S. #13626



DEMOLITION NOTES

1. CONTRACTOR SHALL STRIP AND STORE TOPSOIL IN ALL AREAS TO BE DISTURBED OR REGRADED. LOCATION OF TOPSOIL STOCKPILE TO BE DESIGNATED BY LANDSCAPE ARCHITECT.
2. ALL MATERIAL TO BE REMOVED SHALL BE LEGALLY DISPOSED OF BY THE CONTRACTOR AWAY FROM THE SITE OR DELIVERED AS DIRECTED BY THE OWNER.
3. LOCATION OF ALL UTILITIES ARE SHOWN DIAGRAMMATICALLY & MAY BE INCOMPLETE. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UTILITIES PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES DONE BY THIS WORK SHALL BE REPAIRED BY THE CONTRACTOR.
4. PROTECTION OF ALL EXISTING TREES TO REMAIN SHALL BE A PRIORITY. INSTALL TREE PROTECTION AS INDICATED. DO NOT STOCKPILE, PARK OR PERFORM ANY MECHANICAL OPERATIONS WITHIN THE DRIPLINE OF EXISTING TREES AS INDICATED IN THE DETAILS. NO STORAGE OF MATERIALS OR SOIL SHALL BE ALLOWED IN THESE AREAS. ALL FILL AND EXCAVATION REQUIRED WITHIN THE DRIPLINE OF ALL EXISTING TREES TO REMAIN SHALL BE COMPLETED BY HAND UNLESS OTHERWISE APPROVED BY LANDSCAPE ARCHITECT.
5. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING TREES AND VEGETATION. DAMAGE TO VEGETATION SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIFICATIONS BY THE CONTRACTOR.
6. BEFORE BEGINNING ANY WORK, THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT 1.800.922.4455. THE RESPECTIVE UTILITY COMPANIES AND LOCAL AUTHORITIES TO CONFIRM THE LOCATION OF ALL EXISTING UTILITIES. ANY COSTS INCURRED BY THE CONTRACTOR AS A RESULT OF FAILURE TO CONTACT PROPER AUTHORITIES SHALL BE BORN BY THE CONTRACTOR.
7. OWNER'S REPRESENTATIVE SHALL BE CONSULTED BEFORE ANY WORK SHALL COMMENCE.
8. PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL SECURE ALL PERMITS REQUIRED FROM ANY UTILITY COMPANY OR OTHER GOVERNMENT AGENCIES HAVING JURISDICTION OVER THE WORK.
9. CARE SHOULD BE TAKEN IN ALL EXCAVATIONS DUE TO POSSIBLE EXISTENCE OF UNRECORDED UTILITY LINES.
10. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE DUE TO HIS CONTRACT OPERATIONS.
11. CONTRACTOR SHALL PROTECT AND SUSTAIN IN NORMAL SERVICE ALL EXISTING UTILITIES, STRUCTURES, EQUIPMENT, ROADWAYS AND DRIVEWAYS.
12. CONTRACTOR SHALL MAINTAIN PROPER SIGNS, BARRICADES, AND FENCES TO PROPERLY PROTECT THE WORK EQUIPMENT, PERSONS AND PROPERTY FROM DAMAGE.
13. ALL ITEMS REQUIRING REMOVAL SHALL BE REMOVED TO FULL DEPTH TO INCLUDE BASE MATERIAL AND FOOTINGS OR FOUNDATIONS AS APPLICABLE, AND LEGALLY DISPOSED OF OFF-SITE BY CONTRACTOR.

LEGEND

EXISTING

- EDGE OF PAVEMENT
- 664 CONTOUR 1 FT
- 665 CONTOUR 5 FT
- UTILITY POLE
- SITE ELEMENT TO BE REMOVED

SURVEY REFERENCE

SURVEY INFORMATION FROM PLAN ENTITLED: "TOPOGRAPHIC SURVEY PREPARED FOR TOWN OF COLUMBIA FUTURE GIRLS SOFTBALL FIELD HENNEQUIN ROAD", SCALE 1" = 30', DATED JULY 16, 2018, BY ROB HELLSTROM LAND SURVEYING LLC P.O. BOX 497 COLUMBIA, CT 06237-0497. PHONE: 860-228-9853

20 0 20 40
1" = 20'

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114 WEST MAIN STREET
SUITE 202
NEW BRITAIN, CT 06051
860-612-1700
todesignllc.com

SITE DESIGN
LANDSCAPE ARCHITECTURE
URBAN PLANNING

Prepared For:
TOWN OF COLUMBIA

Consultant

GIRLS SOFTBALL FIELD RENOVATIONS RECREATION PARK

ROUTE 66 AND HENNEQUIN ROAD COLUMBIA, CT

Sheet Description:
Demolition Plan: Alternate #1

Rev:

Issue Date: SEPTEMBER 10, 2018

Scale: 1"=20'-0"

Drawn by: JT

Project number: 6265

Sheet #: L-1.0

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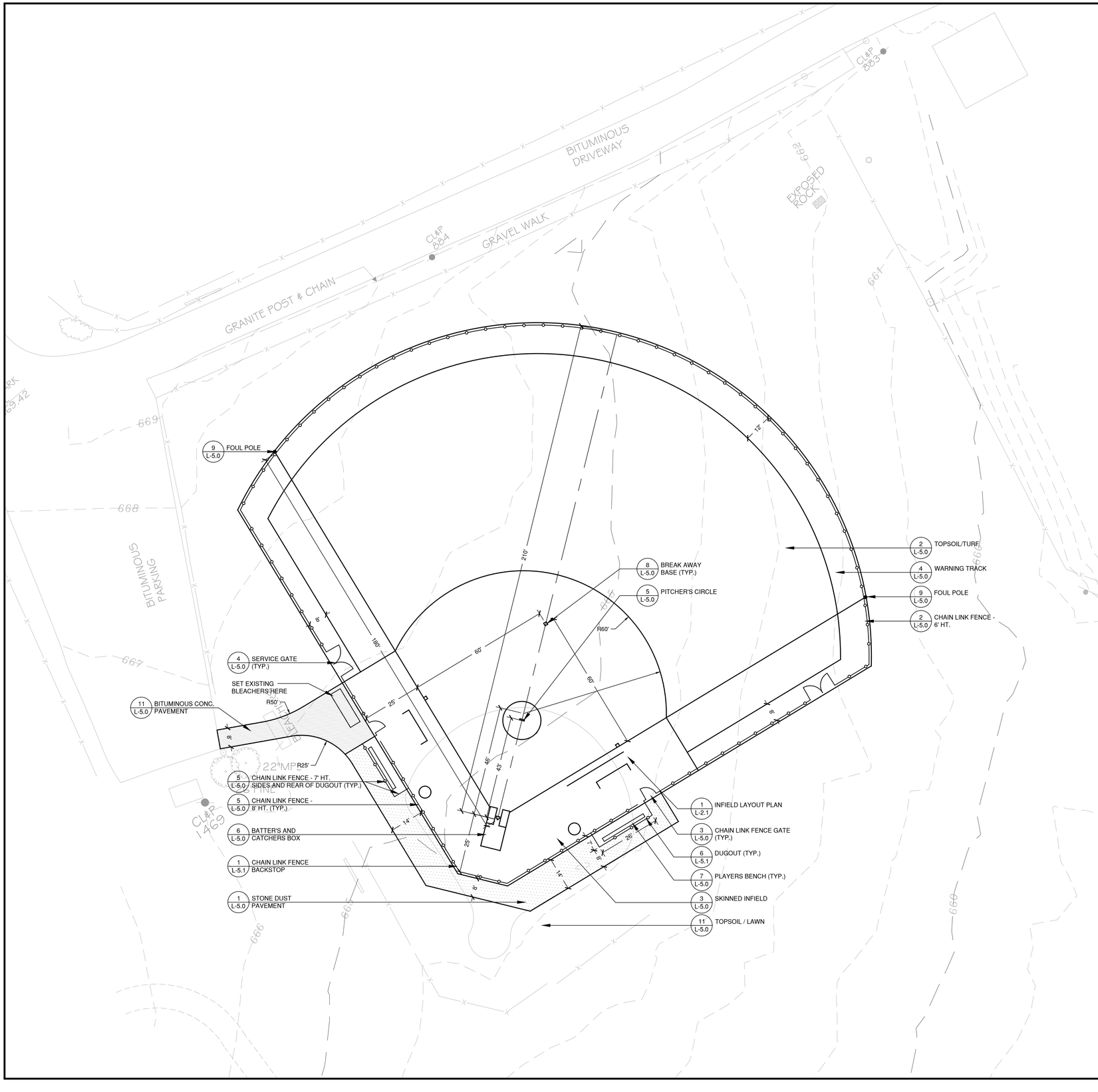

LAYOUT NOTES

1. THE CONTRACTOR SHALL COMPLY WITH ALL STATE, LOCAL AND FEDERAL REGULATIONS.
2. MATERIALS AND CONSTRUCTION PROCEDURES SHALL COMPLY WITH CT DOT FORM 816/817 AND THE TOWN OF COLUMBIA SPECIFICATIONS.
3. CONTRACTOR TO SECURE ALL NECESSARY TRADE PERMITS.
4. NEW PAVEMENT TO MEET LINE & GRADE OF EXISTING PAVEMENTS.
5. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE DUE TO CONSTRUCTION ACTIVITIES.
6. LOAM AND SEED ALL DISTURBED AREAS NOT COVERED BY OTHER IMPROVEMENTS.
7. ALL LINES AND DIMENSIONS ARE PARALLEL OR PERPENDICULAR TO THE LINES FROM WHICH THEY ARE MEASURED.
8. ALL LOCATIONS WHERE EXISTING CURBING, BITUMINOUS CONCRETE ROADWAY OR CONCRETE ROADWAY OR CONCRETE SIDEWALK ABUT NEW CONSTRUCTION, THE EDGE OF THE EXISTING CURB OR PAVEMENT SHALL BE SAW CUT TO PROVIDE A CLEAN, SMOOTH EDGE. TACK COAT EXPOSED EDGES OF EXISTING CONCRETE PRIOR TO PLACEMENT OF NEW BITUMINOUS CONCRETE PAVEMENT.
9. FIELD ADJUSTMENTS MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE AND APPROPRIATE MUNICIPAL OFFICIALS PRIOR TO CONSTRUCTION.
10. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE VERTICAL AND HORIZONTAL POSITION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
11. CONTRACTOR SHALL CONTROL DUST CAUSED BY HIS OPERATIONS BY APPLYING WATER OR DUST PALLIATIVE, OTHER THAN CALCIUM CHLORIDE.
12. CONTRACTOR SHALL CONTROL NOISE TO AS GREAT AN EXTENT AS POSSIBLE. ALL POWER EQUIPMENT USED DURING CONSTRUCTION SHALL BE EQUIPPED WITH MUFFLERS.
13. MANUFACTURED ITEMS SHALL BE INSTALLED, CONNECTED AND CLEANED ACCORDING TO THE MANUFACTURERS DIRECTIONS.
14. PRIOR TO PROJECT CLOSE-OUT, CONTRACTOR SHALL REMOVE ALL DEBRIS AND EXCESS MATERIALS FROM SITE. ALSO, ANY DAMAGE TO FIELD OR FACTORY APPLIED FINISHES SHALL BE REPAIRED.
15. EXPANSION AND SCORE JOINTS FOR NEW CONCRETE WALKS SHALL BLEND TO MATCH EXISTING PATTERNS. CONTRACTOR TO ARRANGE TIMELY ON-SITE CONFERENCES WITH LANDSCAPE ARCHITECT TO APPROVE LAYOUT OF JOINT PATTERNS.
16. PROVIDE EXPANSION JOINTS FOR NEW CONCRETE PAVING AT ALL CURBS, TREE GRATES, BUILDING WALLS, SITE WALLS, STAIRS, LIGHT POLE BASES, MANHOLES, GRATES/VAULTS, EXISTING CONCRETE PAVING, STOP LIGHTS, FIRE HYDRANTS AND ALL OTHER FIXED MATERIALS. MAXIMUM DISTANCE BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 25 FEET.
17. A DIGITAL CAD FILE CAN BE PROVIDED TO THE CONTRACTOR FOR THE LAYOUT OF SITE IMPROVEMENTS IN THE FIELD.

LEGEND

EXISTING		PROPOSED
X	CHAIN LINK FENCE	
	STONE DUST PAVEMENT	
	BITUMINOUS PAVEMENT	
DETAIL 1 / SHEET L-5.0	DETAIL NAME	

SURVEY REFERENCE

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1" = 20'

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SITE DESIGN
LANDSCAPE ARCHITECTURE
URBAN PLANNING

Prepared For:
TOWN OF COLUMBIA

Consultant

GIRLS SOFTBALL FIELD RENOVATIONS RECREATION PARK

ROUTE 66 AND HENNEQUIN ROAD COLUMBIA, CT

Sheet Description:
Layout Plan

Rev:

Issue Date:
SEPTEMBER 10, 2018

Scale: 1"=20'-0"

Drawn by: JT

Project number: 6265

Sheet #: L-2.0

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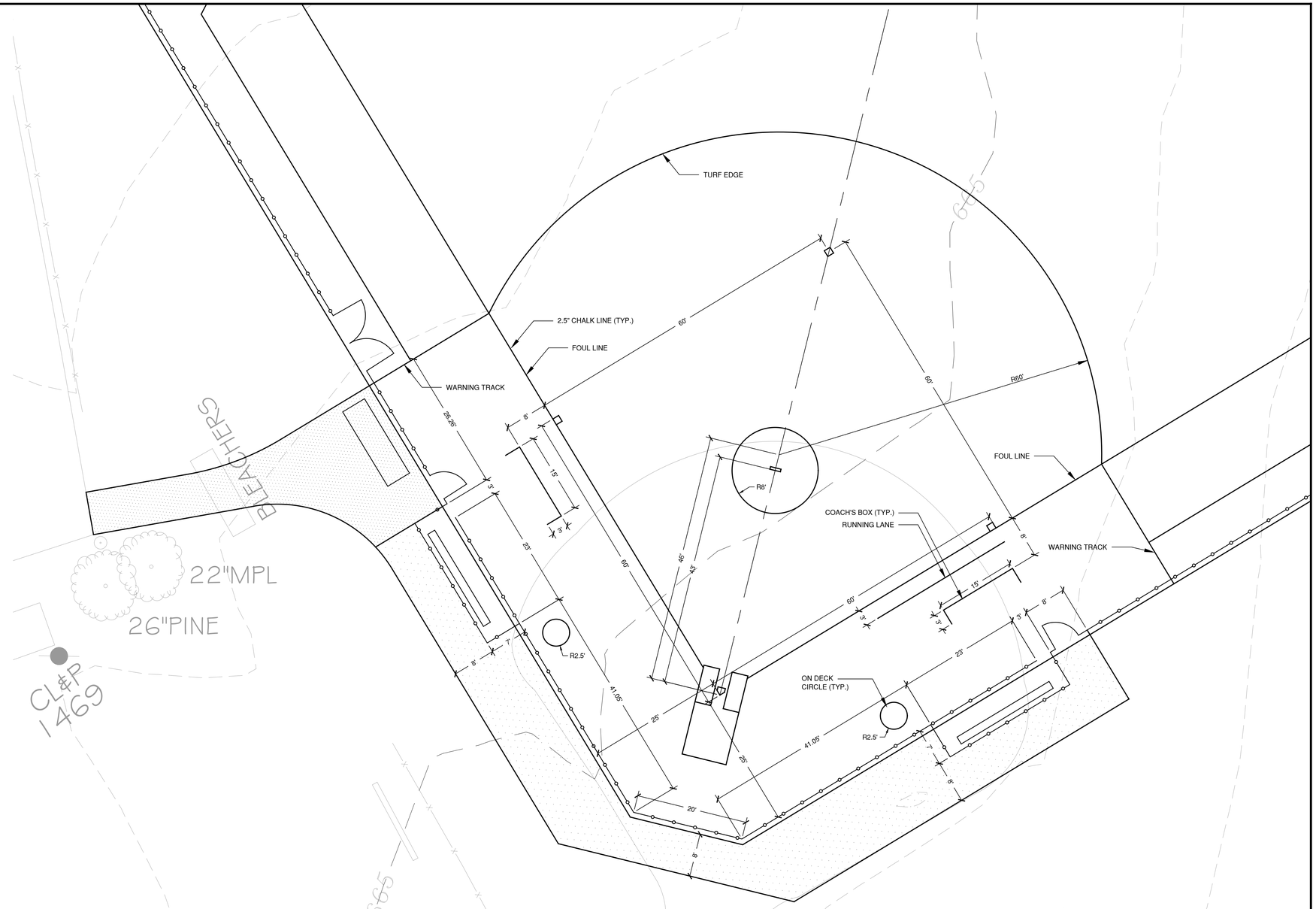

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SITE DESIGN
LANDSCAPE ARCHITECTURE
URBAN PLANNING

Prepared For:

TOWN OF COLUMBIA

Consultant

GIRLS SOFTBALL FIELD RENOVATIONS RECREATION PARK

ROUTE 66 AND HENNEQUIN ROAD **COLUMBIA, CT**

Sheet Description:

Infield Layout Plan

Rev:

Issue Date: SEPTEMBER 10, 2018

Scale: 1"=20'-0"

Drawn by: JT

Project number: 6265

Sheet #: L-2.1

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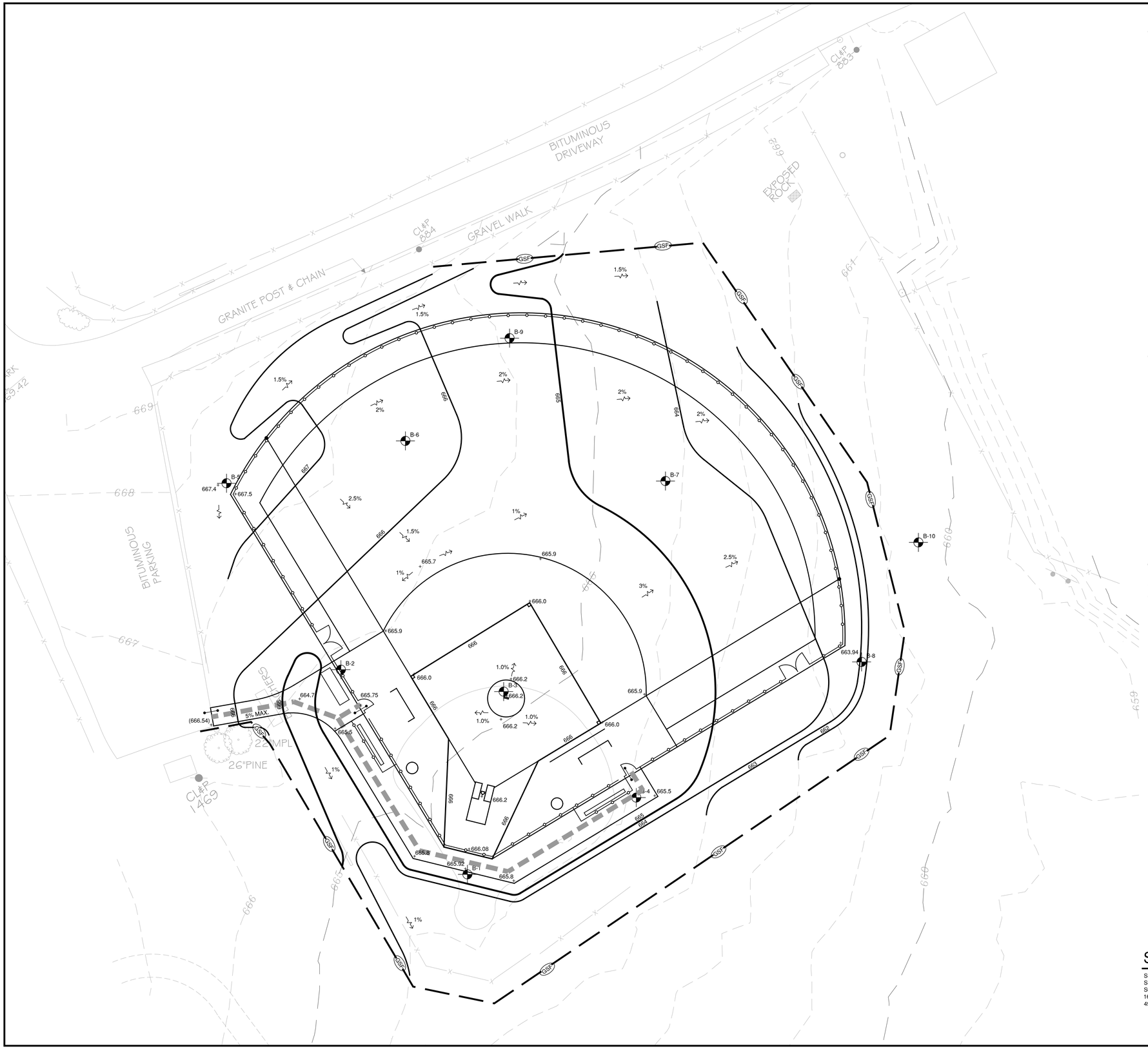

GRADING AND UTILITY NOTES

1. PROPOSED GRADES INDICATE INTENT. THE CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS AS REQUIRED TO MEET FIELD CONDITIONS.
2. WHERE FIELD CONDITIONS CALL FOR ON-SITE ADJUSTMENTS OF FINISHED GRADES, THE OWNER'S REPRESENTATIVE SHALL MAKE THE FINAL DETERMINATION.
3. CONTRACTOR TO TAKE AND VERIFY ALL DIMENSIONS AND CONDITIONS OF THE JOB AND BE RESPONSIBLE FOR THE SAME. NOTIFY SITE PLANNER OF DISCREPANCIES PRIOR TO BEGINNING WORK.
4. EROSION CONTROL FABRIC TO BE USED ON ALL SLOPES GREATER THEN 3:1
5. STRIP AND STOCKPILE TOPSOIL FOR REUSE ON SITE.
6. PITCH ALL WALKS AT 2% CROSS SLOPE UNLESS OTHERWISE NOTED.
7. ADJUST ALL EXISTING AND PROPOSED UTILITY FRAMES, GRATES, MANHOLE COVERS, VALVE BOXES, ETC. TO BE FLUSH WITH THE PROPOSED SURFACE.
8. ALL EXISTING UTILITY LINES TO BE ABANDONED SHALL BE ABANDONED ACCORDING TO UTILITY COMPANY REQUIREMENTS.
9. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH APPLICABLE STANDARDS.
10. ALL EXCESS MATERIAL, EXCEPT TOPSOIL, SHALL BE LEGALLY DISPOSED OF OUTSIDE THE PROJECT LIMITS.
11. REFERENCE IS MADE IN THESE DOCUMENTS TO THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGES AND INCIDENTAL CONSTRUCTION. FORM 816/817 AND SUPPLEMENTS THERETO.
12. DAMAGE TO EXISTING UTILITIES AS A RESULT OF THE CONTRACTOR'S OR ANY OF HIS SUBCONTRACTOR'S ACTIVITIES DURING THE CONSTRUCTION PROCESS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEWATERING DURING THE EXECUTION OF HIS WORK.
14. THE LOCATION OF EXISTING UNDERGROUND UTILITIES IS DEVELOPED FROM THE BEST AVAILABLE INFORMATION. THE ACTUAL LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO THE START OF EXCAVATION ACTIVITIES.
15. ACCESS AND UTILITIES TO EXISTING FACILITIES MUST BE MAINTAINED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR MUST MAINTAIN SUFFICIENT TRAVEL LANE(S), APPROVED BY THE OWNER, TO ENABLE ALL EMERGENCY VEHICLES TO ACCESS THE ENTIRE PROJECT SITE.
16. CONTRACTOR TO VERIFY THAT ALL EXISTING UTILITIES TO BE REUSED ARE FUNCTIONAL.

ACCESSIBILITY NOTES

1. SLOPES ALONG THE ACCESSIBLE ROUTE SHALL BE LESS THAN 1:20 (5%) AND THE CROSS SLOPES SHALL NOT EXCEED 1:50 (2%). CHANGES IN LEVELS SHALL NOT BE GREATER THAN ¼ INCH.
2. SLOPES ALONG THE HANDICAP ACCESSIBLE RAMP SHALL NOT EXCEED 1:12 (8.3%) AND THE CROSS SLOPE SHALL NOT EXCEED 1:50 (2%). CHANGES IN LEVEL SHALL NOT BE GREATER THAN ¼ INCH.
3. LANDINGS SHALL NOT HAVE A SLOPE GREATER THAN 1:50 (2%) IN ANY DIRECTION.
4. SLOPES WITHIN THE HCP PARKING SPACE SHALL NOT EXCEED 1:50 (2%) IN ANY DIRECTION.
5. CHECK EXISTING GRADES AT PROPOSED CROSSWALK AREA. REMOVE AND REPLACE EXISTING PAVEMENT AT PROPOSED CROSSWALK AREA AS NECESSARY IF EXISTING GRADES DO NOT COMPLY WITH REQUIRED SLOPES FOR THE ACCESSIBLE ROUTE.

LEGEND

EXISTING		PROPOSED
664	CONTOUR 1 FT	664
665	CONTOUR 5 FT	665
	SPOT GRADE	+666.7
	FLOW ARROW	
	FLUSH CONDITION	
	SILT FENCE	GSF
	ACCESSIBLE ROUTE	

SURVEY REFERENCE

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20 0 20 40
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SITE DESIGN
LANDSCAPE ARCHITECTURE
URBAN PLANNING

Prepared For:
TOWN OF COLUMBIA

Consultant

GIRLS SOFTBALL FIELD RENOVATIONS RECREATION PARK

ROUTE 66 AND HENNEQUIN ROAD COLUMBIA, CT

Sheet Description:
Grading Plan

Rev:

Issue Date:
SEPTEMBER 10, 2018

Scale: 1"=20'-0"
Drawn by: JT

Project number:
6265

Sheet #:
L-3.0

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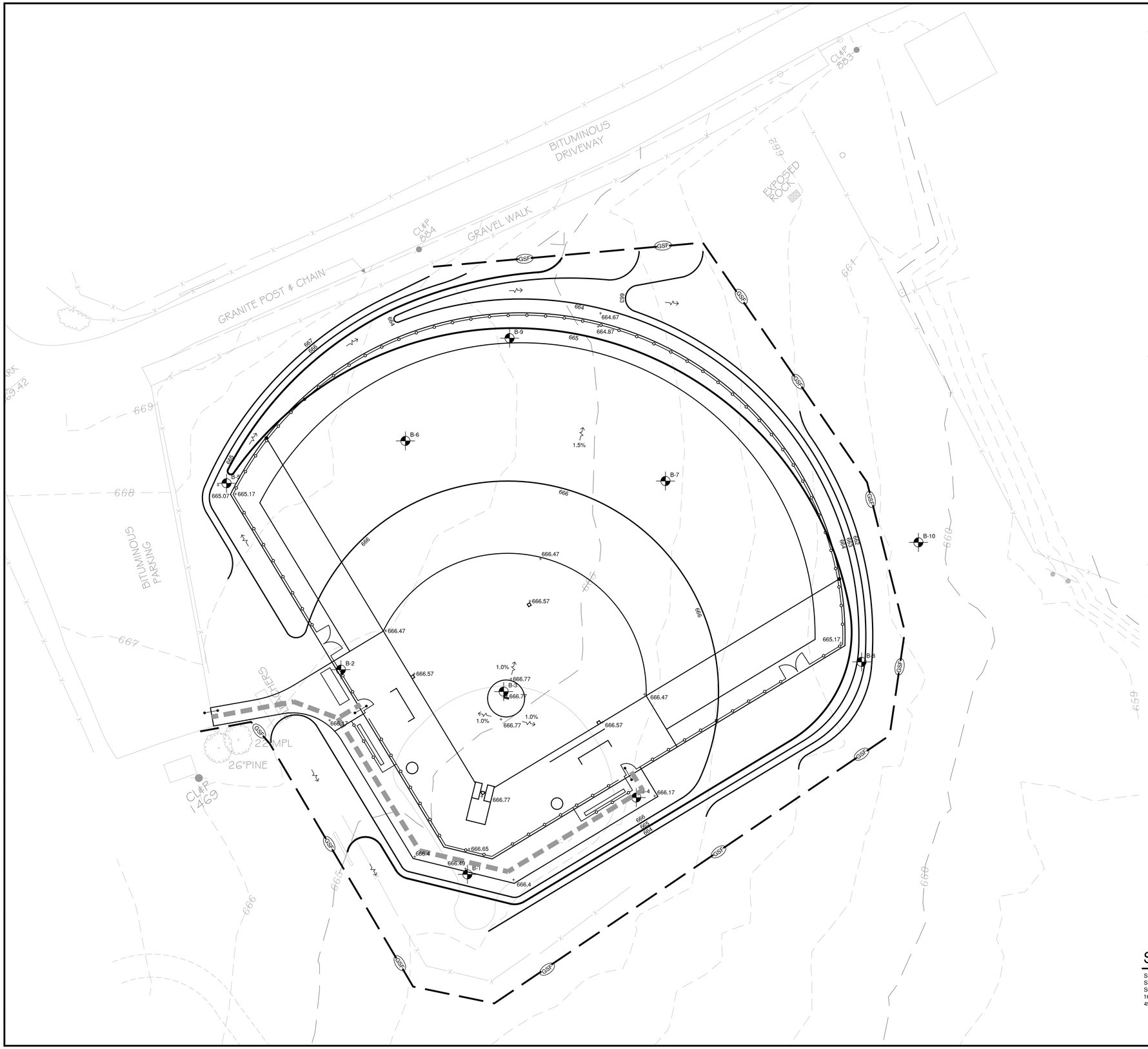

GRADING AND UTILITY NOTES

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3. CONTRACTOR TO TAKE AND VERIFY ALL DIMENSIONS AND CONDITIONS OF THE JOB AND BE RESPONSIBLE FOR THE SAME. NOTIFY SITE PLANNER OF DISCREPANCIES PRIOR TO BEGINNING WORK.
4. EROSION CONTROL FABRIC TO BE USED ON ALL SLOPES GREATER THEN 3:1
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6. PITCH ALL WALKS AT 2% CROSS SLOPE UNLESS OTHERWISE NOTED.
7. ADJUST ALL EXISTING AND PROPOSED UTILITY FRAMES, GRATES, MANHOLE COVERS, VALVE BOXES, ETC. TO BE FLUSH WITH THE PROPOSED SURFACE.
8. ALL EXISTING UTILITY LINES TO BE ABANDONED SHALL BE ABANDONED ACCORDING TO UTILITY COMPANY REQUIREMENTS.
9. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH APPLICABLE STANDARDS.
10. ALL EXCESS MATERIAL, EXCEPT TOPSOIL, SHALL BE LEGALLY DISPOSED OF OUTSIDE THE PROJECT LIMITS.
11. REFERENCE IS MADE IN THESE DOCUMENTS TO THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGES AND INCIDENTAL CONSTRUCTION. FORM 816/817 AND SUPPLEMENTS THERETO.
12. DAMAGE TO EXISTING UTILITIES AS A RESULT OF THE CONTRACTOR'S OR ANY OF HIS SUBCONTRACTOR'S ACTIVITIES DURING THE CONSTRUCTION PROCESS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEWATERING DURING THE EXECUTION OF HIS WORK.
14. THE LOCATION OF EXISTING UNDERGROUND UTILITIES IS DEVELOPED FROM THE BEST AVAILABLE INFORMATION. THE ACTUAL LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO THE START OF EXCAVATION ACTIVITIES.
15. ACCESS AND UTILITIES TO EXISTING FACILITIES MUST BE MAINTAINED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR MUST MAINTAIN SUFFICIENT TRAVEL LANE(S), APPROVED BY THE OWNER, TO ENABLE ALL EMERGENCY VEHICLES TO ACCESS THE ENTIRE PROJECT SITE.
16. CONTRACTOR TO VERIFY THAT ALL EXISTING UTILITIES TO BE REUSED ARE FUNCTIONAL.

ACCESSIBILITY NOTES

1. SLOPES ALONG THE ACCESSIBLE ROUTE SHALL BE LESS THAN 1:20 (5%) AND THE CROSS SLOPES SHALL NOT EXCEED 1:50 (2%). CHANGES IN LEVELS SHALL NOT BE GREATER THAN ¼ INCH.
2. SLOPES ALONG THE HANDICAP ACCESSIBLE RAMP SHALL NOT EXCEED 1:12 (8.3%) AND THE CROSS SLOPE SHALL NOT EXCEED 1:50 (2%). CHANGES IN LEVEL SHALL NOT BE GREATER THAN ¼ INCH.
3. LANDINGS SHALL NOT HAVE A SLOPE GREATER THAN 1:50 (2%) IN ANY DIRECTION.
4. SLOPES WITHIN THE HCP PARKING SPACE SHALL NOT EXCEED 1:50 (2%) IN ANY DIRECTION.
5. CHECK EXISTING GRADES AT PROPOSED CROSSWALK AREA. REMOVE AND REPLACE EXISTING PAVEMENT AT PROPOSED CROSSWALK AREA AS NECESSARY IF EXISTING GRADES DO NOT COMPLY WITH REQUIRED SLOPES FOR THE ACCESSIBLE ROUTE.

LEGEND

EXISTING		PROPOSED
664	CONTOUR 1 FT	664
665	CONTOUR 5 FT	665
	SPOT GRADE	+666.7
	FLOW ARROW	
	FLUSH CONDITION	
	SILT FENCE	GSF
	ACCESSIBLE ROUTE	

SURVEY REFERENCE

SURVEY INFORMATION FROM PLAN ENTITLED: "TOPOGRAPHIC SURVEY PREPARED FOR TOWN OF COLUMBIA FUTURE GIRLS SOFTBALL FIELD HENNEQUIN ROAD", SCALE 1" = 30', DATED JULY 16, 2018, BY ROB HELLSTROM LAND SURVEYING LLC P.O. BOX 497 COLUMBIA, CT 06237-0497. PHONE: 860-228-9853

20 0 20 40
1" = 20'

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SITE DESIGN
LANDSCAPE ARCHITECTURE
URBAN PLANNING

Prepared For:
TOWN OF COLUMBIA

Consultant

GIRLS SOFTBALL FIELD RENOVATIONS
RECREATION PARK
ROUTE 66 AND HENNEQUIN ROAD
COLUMBIA, CT

Sheet Description:
Grading Plan: Alternate #2

Rev:

Issue Date: SEPTEMBER 10, 2018

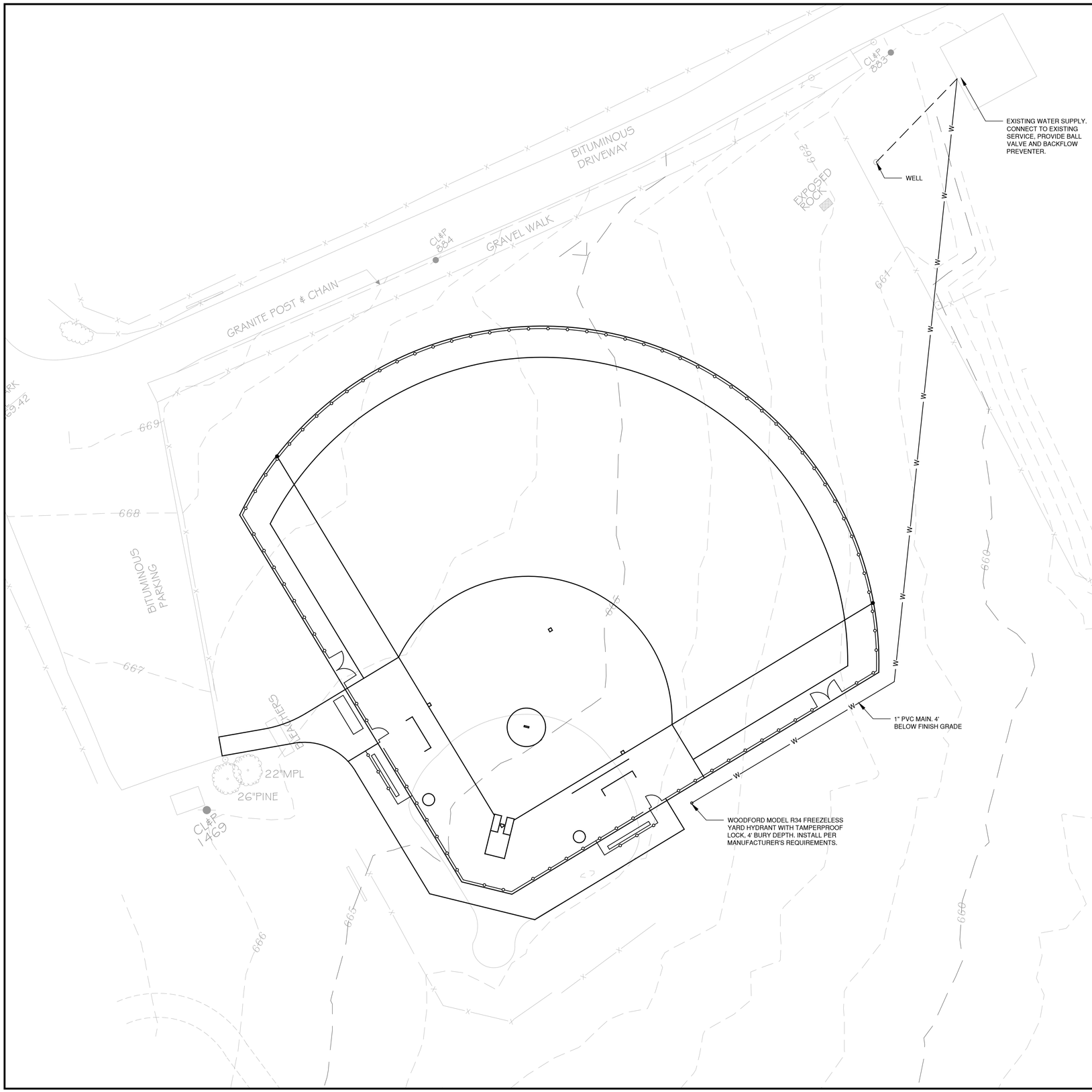
Scale: 1"=20'-0"

Drawn by: JT

Project number: 6265

Sheet #: L-3.1

G:\1Drawing Files\6265 - Columbia softball field\Dwg\6265-SitePlan.dwg 9/10/2018 2:38:14 PM jtunsky



SURVEY REFERENCE

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20 0 20 40

1" = 20'

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URBAN PLANNING

Prepared For:

TOWN OF COLUMBIA

Consultant

GIRLS SOFTBALL FIELD RENOVATIONS RECREATION PARK

ROUTE 66 AND HENNEQUIN ROAD COLUMBIA, CT

Sheet Description:

Water Line: Alternate #5

Rev:

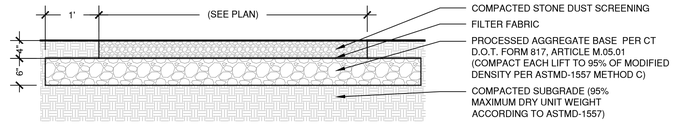
Issue Date: SEPTEMBER 10, 2018

Scale: 1"=20'-0"

Drawn by: JT

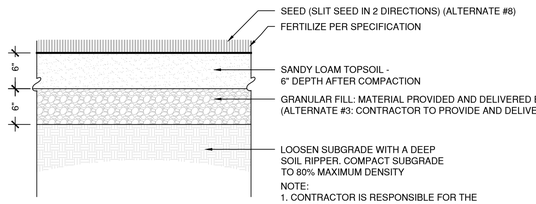
Project number: 6265

Sheet #: L-4.0



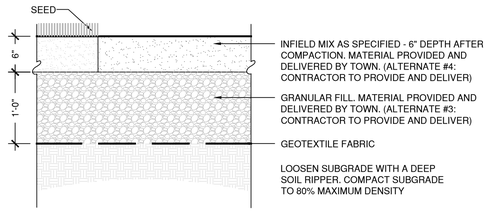
PROVIDE 2% CROSS SLOPE TYPICAL

1 STONE DUST PAVEMENT
SCALE 3/4" = 1'-0"

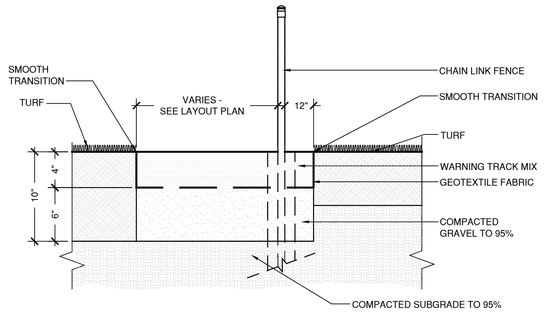


NOTE:
1. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND WATERING OF GRASS UNTIL FINAL ACCEPTANCE. (ALTERNATE #8)
2. SEE GEOTECHNICAL REPORT FOR EXISTING TOPSOIL DEPTHS.

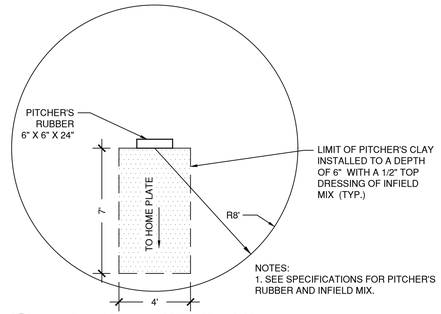
2 TOPSOIL/TURF
NOT TO SCALE



3 SKINNED INFIELD
SCALE 1" = 1'0"

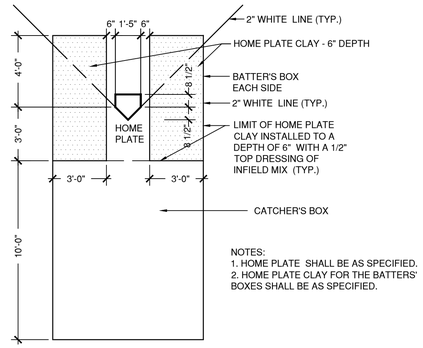


4 WARNING TRACK
SCALE 1 1/2" = 1'-0"



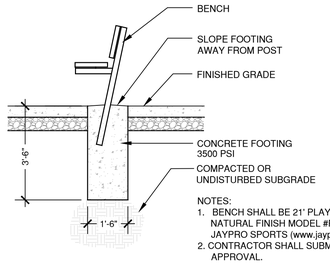
NOTES:
1. SEE SPECIFICATIONS FOR PITCHER'S RUBBER AND INFIELD MIX.

5 PITCHER'S CIRCLE
SCALE: 1/4"=1'-0"



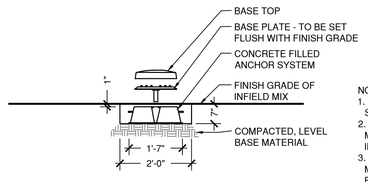
NOTES:
1. HOME PLATE SHALL BE AS SPECIFIED.
2. HOME PLATE CLAY FOR THE BATTERS' BOXES SHALL BE AS SPECIFIED.

6 BATTER'S AND CATCHER'S BOX
SCALE: 1/4"=1'-0"



NOTES:
1. BENCH SHALL BE 21' PLAYERS BENCH WITH BACK REST IN NATURAL FINISH MODEL #PB-10PI MANUFACTURED BY JAYPRO SPORTS (www.jaypro.com).
2. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL.

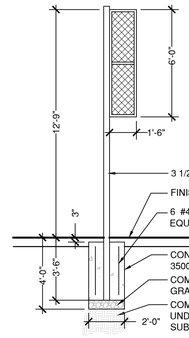
7 PLAYER'S BENCH
SCALE: 3/8"=1'-0"



NOTES:
1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL.
2. CONTRACTOR SHALL FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.
3. BREAK AWAY BASE SHALL BE MODEL #RBBS-T MANUFACTURED BY ROGERS SPORTS GROUP, SAN RAMON, CA (www.rogersbreakawaybase.com)

8 BREAK AWAY BASE
SCALE: 1/2"=1'-0"

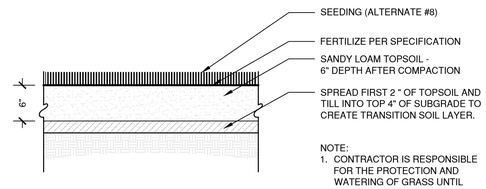
ROGERS SPORTS GROUP



NOTES:
1. FOUL POLE SHALL BE GALVANIZED STEEL WITH A BRIGHT WHITE POWDER COAT FINISH.
2. CONTRACTOR SHALL SUBMIT SHOP DRAWING FOR APPROVAL.
3. INSTALL FOUL POLE WITH OUTSIDE OF EDGE OF FOUL POLE FLUSH WITH OUTSIDE EDGE OF FOUL LINE AND OUTSIDE OF CHAIN LINK FENCE (SEE LAYOUT PLAN).
4. FOUL POLE SHALL BE MANUFACTURED BY JAYPRO SPORTS, WATERFORD, CT (www.jayprosports.com) OR APPROVED EQUAL. (SEE SPECIFICATIONS)

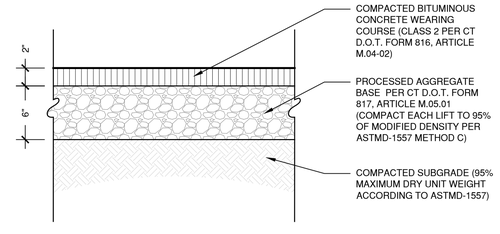
9 FOUL POLE
SCALE: 1/4"=1'-0"

JAYPRO SPORTS



NOTE:
1. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND WATERING OF GRASS UNTIL FINAL ACCEPTANCE.

10 TOPSOIL/LAWN
SCALE 1" = 1'-0"



11 BITUMINOUS CONC. PAVEMENT
SCALE 1 1/2" = 1'-0"

(PEDESTRIAN)

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SITE DESIGN
LANDSCAPE ARCHITECTURE
URBAN PLANNING

Prepared For:
TOWN OF COLUMBIA

Consultant

GIRLS SOFTBALL FIELD RENOVATIONS RECREATION PARK

ROUTE 66 AND HENNEQUIN ROAD COLUMBIA, CT

Sheet Description:
Details

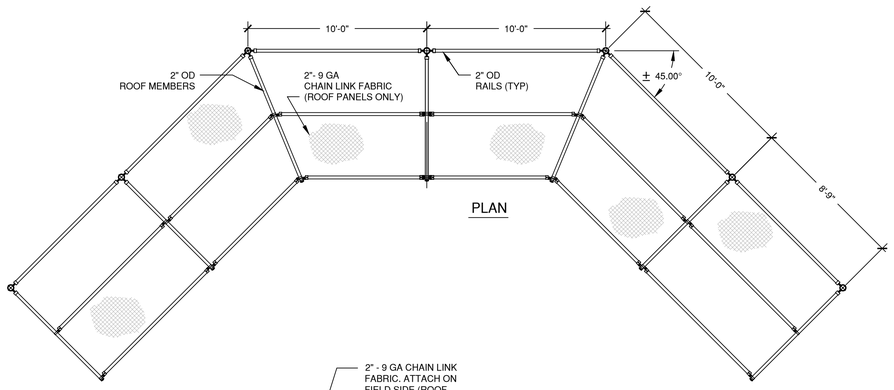
Rev:

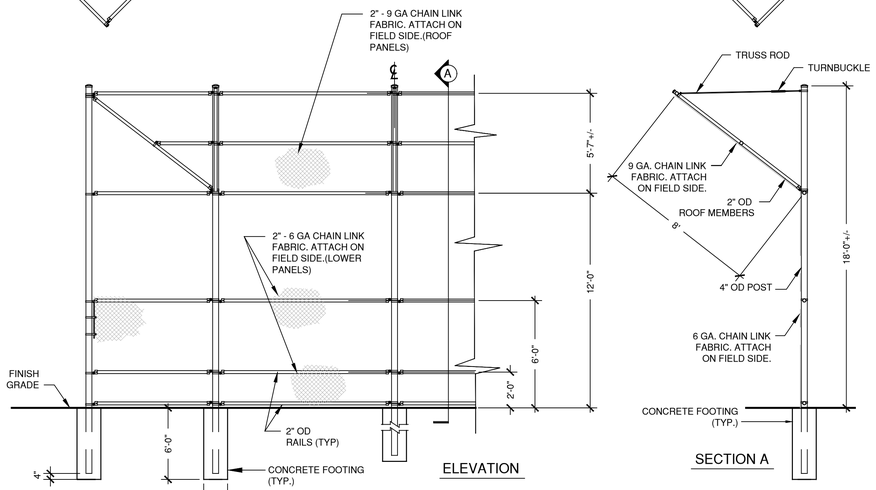
Issue Date:
SEPTEMBER 10, 2018

Scale: AS SHOWN
Drawn by: JT

Project number:
6265

Sheet #:
L-5.0

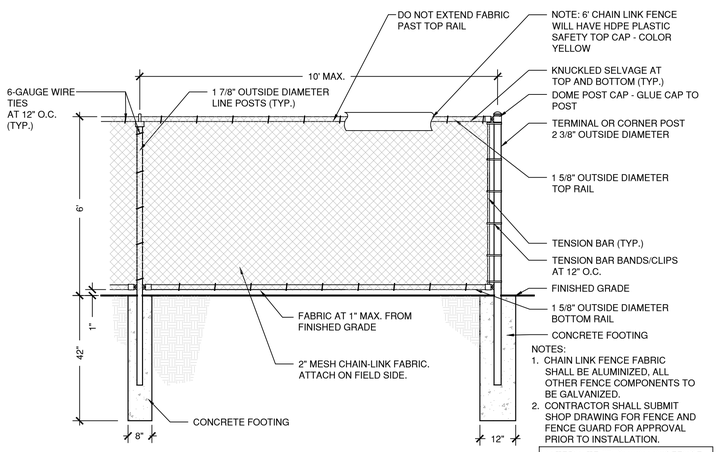




NOTES:
1. CHAIN LINK FENCE FABRIC SHALL BE ALUMINIZED, ALL OTHER FENCE COMPONENTS TO BE GALVANIZED.
2. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL.

ALTERNATE #7: CHAIN LINK FENCE FABRIC AND ALL COMPONENTS SHALL BE POLYMER COATED CLASS 2B, COLOR BLACK.

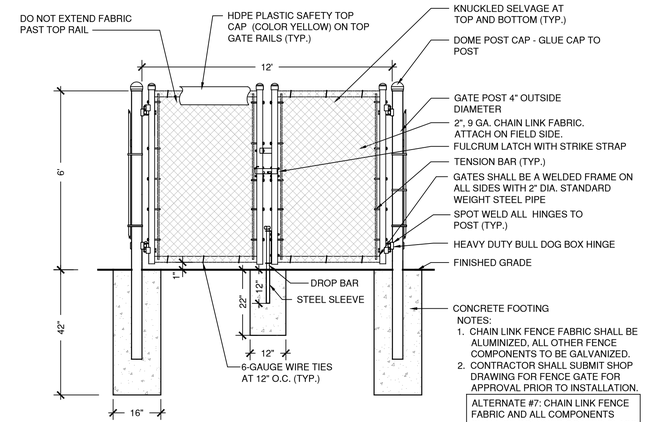
1 CHAIN LINK FENCE BACKSTOP
SCALE 1/4"=1'-0"



NOTES:
1. CHAIN LINK FENCE FABRIC SHALL BE ALUMINIZED, ALL OTHER FENCE COMPONENTS TO BE GALVANIZED.
2. CONTRACTOR SHALL SUBMIT SHOP DRAWING FOR FENCE AND FENCE GUARD FOR APPROVAL PRIOR TO INSTALLATION.

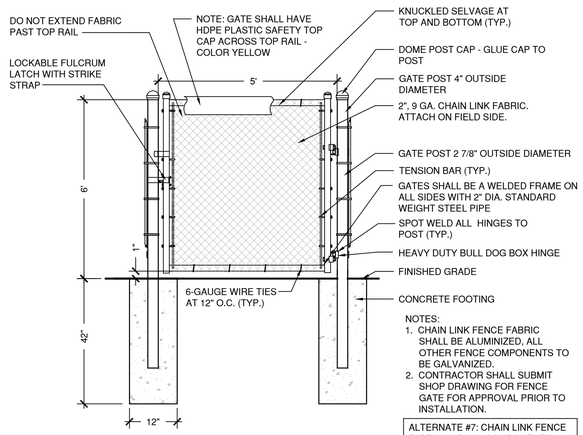
ALTERNATE #7: CHAIN LINK FENCE FABRIC AND ALL COMPONENTS SHALL BE POLYMER COATED CLASS 2B, COLOR BLACK.

2 CHAIN LINK FENCE - 6' HT.
SCALE: 1/2"=1'-0"



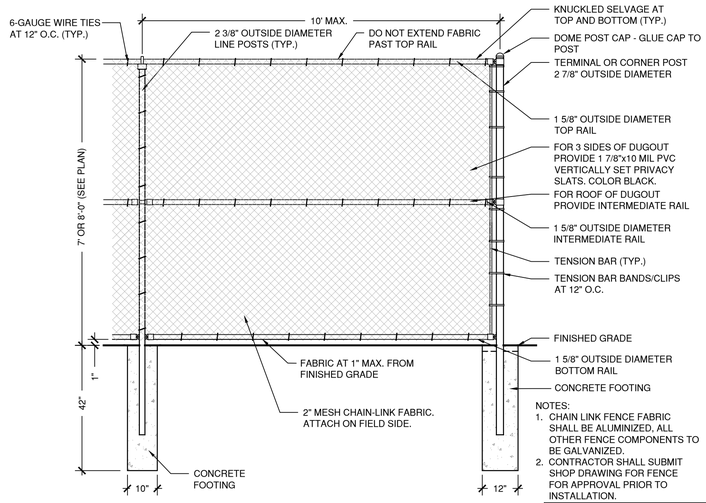
ALTERNATE #7: CHAIN LINK FENCE FABRIC AND ALL COMPONENTS SHALL BE POLYMER COATED CLASS 2B, COLOR BLACK.

4 SERVICE GATE
NOT TO SCALE



ALTERNATE #7: CHAIN LINK FENCE FABRIC AND ALL COMPONENTS SHALL BE POLYMER COATED CLASS 2B, COLOR BLACK.

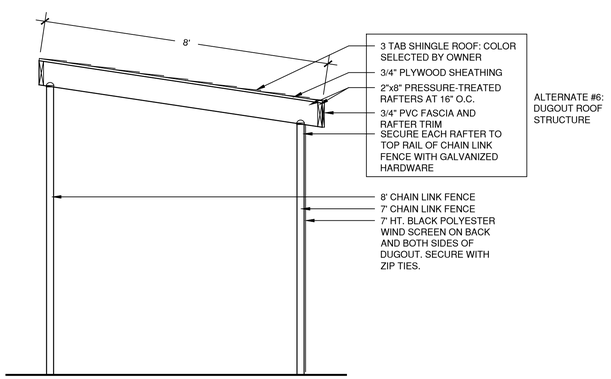
3 CHAIN LINK FENCE GATE
NOT TO SCALE



NOTES:
1. CHAIN LINK FENCE FABRIC SHALL BE ALUMINIZED, ALL OTHER FENCE COMPONENTS TO BE GALVANIZED.
2. CONTRACTOR SHALL SUBMIT SHOP DRAWING FOR FENCE FOR APPROVAL PRIOR TO INSTALLATION.

ALTERNATE #7: CHAIN LINK FENCE FABRIC AND ALL COMPONENTS SHALL BE POLYMER COATED CLASS 2B, COLOR BLACK.

5 CHAIN LINK FENCE - 7'/8' HT.
SCALE: 1/2"=1'-0"



6 DUGOUT
SCALE: 1/2"=1'-0"

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Prepared For:
TOWN OF COLUMBIA

Consultant

GIRLS SOFTBALL FIELD RENOVATIONS RECREATION PARK

ROUTE 66 AND HENNEQUIN ROAD COLUMBIA, CT

Sheet Description:
Details

Rev:

Issue Date:
SEPTEMBER 10, 2018

Scale: AS SHOWN
Drawn by: JT

Project number:
6265

Sheet #:
L-5.1

G:\1Drawing Files\6265 - Columbia softball field\Dwg\6265-Details.dwg 9/10/2018 2:38:30 PM jlunsky

SEDIMENTATION AND EROSION CONTROL

PER STATE OF CONNECTICUT PUBLIC ACT 83-388
All applicable practices recommended by the 2002 CT Guidelines for Soil Erosion & Sediment Control are included by reference.

1. DESCRIPTION

The project consists of removing an existing softball field and replacing it with a new softball field. Improvements include grading, stone dust pavement, chain link fence, dugouts, benches, water service and other site improvements.

2. SCHEDULE

The project is anticipated to be constructed in 2018.

3. DESIGN AND CRITERIA

Note: The Contractor shall name one individual as his Sediment and Erosion Control Supervisor whose primary responsibility will be the maintenance of all on-site erosion control measures. He will keep a daily log of his activities and an updated schedule of proposed construction activities. The log will be made available to inspectors.

A. **GEOTEXTILE SILT FENCE (GSF)** - Shall be non-woven material, minimum 36" high and fastened to wood stakes (see detail this sheet). Silt fence shall be installed with end runs turned up grade at 45 degrees for a distance of 10 feet.

B. **TEMPORARY SEEDING (TS)**

1. Contractor shall scarify the soil to a depth of 2" before applying fertilizer, limestone and seed.
2. Seed may be applied by hand or mechanically. Seed application shall be uniform. Seed rate shall be in accordance with the 2002 Guidelines for Soil Erosion and Sediment Control (increase seeding rates by 10% when hydroseeding, Limestone, fertilizer and seed may be applied in slurry.)
3. Contractor shall mulch area (MS) immediately following seeding. (Note: In the event seeding operations are not feasible due to seasonal restrictions or extended inclement weather patterns, the Contractor shall install an Erosion Control Blanket over exposed soils.)

C. **PERMANENT SEEDING (PS)**

1. Contractor shall apply topsoil and fine grade all areas before the application of permanent seed. Apply limestone and fertilizer as needed, in accordance with soil tests.
2. Remove all surface stones ½ inch and larger. Remove all other debris and rake seed bed.
3. Apply seed within 7 days after establishing final grades. See planting plan.

D. **HAY BALE BARRIER (HB)** - Shall be made of hay or straw with 40 pounds minimum weight and 120 pounds maximum weight, held together by twine or wire. (See detail this sheet.)

E. **CONSTRUCTION ENTRANCE (CE)** - Shall be an angular stone (DOT Standard Spec Section M.01.01 size #3) pad, a minimum of 12' wide and 50' long. (See detail this sheet.)

F. **EROSION CONTROL BLANKET (ECB)** - Erosion mat shall be placed on all exposed cut/fill slopes steeper than 3:1 (including swales & ditches) to protect against rainfall and hold moisture content to enhance vegetation growth in seeded areas. Mat (or blankets) shall be straw or straw/coconut fiber combination sewn together with lightweight netting. Use North American green. S150 - slopes up to 3:1, SC150-slopes from 3:1 up to 2:1 or greater. Temporary hay mulch to be applied to areas less than 3:1 slope and all areas to be left barren over the winter, mulch rate to be 70 pounds/1000 s.f

4. APPLICATION/GENERAL PROCEDURES

A. Soil erosion and sediment control measures will be installed prior to any site disturbance, and development will proceed according to a specific construction sequence. The objective is to maximize the reduction of sediment-laden runoff through implementation of conventional soil sedimentation and erosion control practices currently recommended by the 2002 "CT Guidelines for Soil Erosion and Sediment Control".

B. Earthwork will be scheduled for periods when soil saturation is low and Soil loss hazard is at a minimum.

C. Suspend earthwork for major storm events and implement additional sedimentation and erosion control measures as necessary.

D. There shall be no cuts or fill left exposed for longer than 30 days. The established procedure of temporarily seeding and/or cover with erosion protection (mat or hay) shall be followed to insure minimal soil loss.

5. MONITORING AND MAINTENANCE PROGRAM

A. For the duration of the project construction, the Contractor shall maintain all sedimentation and erosion control devices to insure their efficient operation.

B. The responsibility for performing periodic checks of the protection system in-place and to coordinate cleaning and repair operations shall be assigned to the General Contractor's project representative.

C. All sedimentation and erosion control devices shall be checked for the adequacy of the control systems prior to severe storm weather forecasts . Inspect control system during and after storms to determine necessary repairs.

D. Repairs to sedimentation control systems directed by the project representative shall be done within 24 hours of the directive or as soon as possible prior to storm warnings.

E. Replacement materials for the devices utilized must be readily available for repairs.

F. Clean sedimentation and erosion control devices as directed by the projects representative.

G. Placement of temporary sedimentation and erosion control devices that are not shown on plans, but are required due to Contractor's operations, shall be placed at the direction of the projects representative.

H. Dust control and off-site debris caused by the Contractor's earthwork operations shall be prevented, or cleaned-up in accordance with the standard state specification "Form 816".

6. SPECIFIC MAINTENANCE MEASURES SHALL BE AS FOLLOWS:

A. **GEOTEXTILE SILT FENCE (GSF)** - Inspect GSF at least once a week and within 24 hours of the end of any storm event of 0.5-inch or greater.

Repair or replace the fence within 24-hours of observed failure.

B. **HAY BALE BARRIER (HB)** - Inspect HB at least once a week and within 24 hours of the end of any storm event of 0.5-inch or greater.

Repair or replace the hay bales within 24-hours of observed failure.

C. **CONSTRUCTION ENTRANCE (CE)** - Maintain the entrance in a condition which will prevent tracking and washing of sediment onto paved surfaces. Provide periodic top dressing with additional stone or additional length as conditions demand. Repair any measures used to trap sediment as needed. Immediately remove all sediment spilled, dropped, washed or tracked onto paved surfaces. Roads adjacent to a construction site shall be left clean at the end of each day.

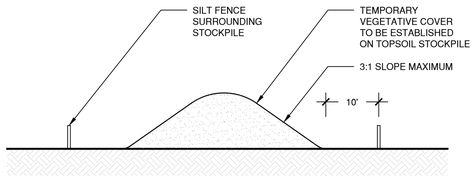
If the construction entrance is being properly maintained and the action of a vehicle traveling over the stone pad is not sufficient to remove the majority of the sediment, then either (1) increase the length of the construction entrance, (2) modify the construction access road surface, or (3) install washing racks and associated settling area or similar devices before the vehicle enters a paved surface.

D. **SEEDING (TEMPORARY & PERMANENT)**

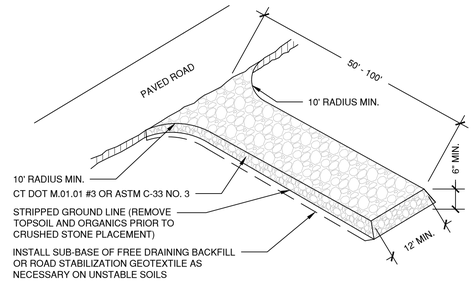
Inspect seeded area at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for seed and mulch movement and rill erosion.

Where seed has moved or where soil erosion has occurred, determine the cause of the failure. Bird feeding may be a problem if mulch was applied too thinly to protect seed. Re-seed and re-mulch. If movement was the result of wind, then repair erosion damage (if any), reapply seed and mulch and apply mulch anchoring. If failure was caused by concentrated runoff, install additional measures to control water and sediment movement, repair erosion damage, re-seed and re-apply mulch with anchoring or use Temporary Erosion Control Blanket measure.

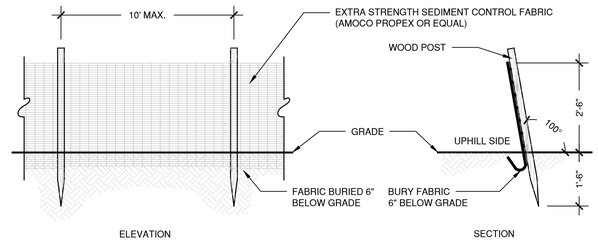
Continue inspections until the grasses are firmly established. Grasses shall not be considered established until a ground cover is achieved which is mature enough to control soil erosion and to survive severe weather conditions (approximately 80% vegetative surface cover).



1 TOPSOIL STOCK PILE AREA
N.T.S.



2 CONSTRUCTION ENTRANCE (CE)
N.T.S



3 GEOTEXTILE SILT FENCE (GSF)
N.T.S.

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SITE DESIGN
LANDSCAPE ARCHITECTURE
URBAN PLANNING

Prepared For:
TOWN OF COLUMBIA

Consultant

GIRLS SOFTBALL FIELD RENOVATIONS
RECREATION PARK
ROUTE 66 AND HENNEQUIN ROAD
COLUMBIA, CT

Sheet Description:
Erosion and Soil Sedimentation Control Notes and Details

Rev:

Issue Date: SEPTEMBER 10, 2018

Scale: AS SHOWN | Drawn by: JT

Project number: 6265

Sheet #: ES-1