

BID PACKAGE

Proposed Drainage Improvements

Congdon Road

Prepared For

The Town of Voluntown

Congdon Road

Voluntown, Connecticut 06384

Project Engineer
Boundaries LLC
179 Pachaug River Drive
P.O. Box 184
Griswold, Connecticut 06351
860-376-2006
Fax 860-376-5899

Project No. 18-2633

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PROCUREMENT
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CONTRACTING
REQUIREMENTS
Division 00

Section 001116 – Notice to Bid
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SECTION 001116 – NOTICE TO BID

TOWN OF VOLUNTOWN, CT

NOTICE TO BID

PROPOSED DRAINAGE IMPROVEMENTS AND ASSOCIATED SITE WORK
CONGDON ROAD

Sealed bids for the PROPOSED DRAINAGE IMPROVEMENTS AND ASSOCIATED SITE WORK PROJECT on Congdon Road, are invited and will be received by the Town of Voluntown, until **11:00 AM, Monday, June 1, 2020** at the Town Clerks Office, Voluntown Town Hall, 115 Main Street, Voluntown, Connecticut, 06384 at which time and place they will be publicly opened and read aloud via livestream on YouTube at:

<https://www.youtube.com/channel/UCXdf6kZQMhDVNetgjDX2MAQ>.

Proposals must be submitted on the forms provided and in a sealed envelope plainly marked with the appropriate title.

Specifics concerning the requirements for bid submissions are described in Section 002113 – Information to Bidders

The Information to Bidders, Form of Bid, Specifications, and other contract documents may be obtained electronically by contacting David McKay at Boundaries LLC by phone (860-376-2006) or email (dmckay@boundariesllc.net).

Bids, to receive consideration, must be in the hands of the Town of Voluntown, no later than the day and hour mentioned above.

The Town of Voluntown reserves the right to accept or reject any or all bids; to waive any informalities, or; to accept any bid deemed in the best interests of the Town of Voluntown. This project is funded by the Town.

All bids will be considered valid and held open for acceptance until June 30, 2020. In the event that the contract cannot be awarded within this time period, the time may be extended by mutual agreement between the Town of Voluntown and the designated, qualified low Bidder.

The Town of Voluntown is an affirmative action/equal opportunity employer.

TOWN OF VOLUNTOWN

END OF SECTION 001116

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SECTION 002113 – INFORMATION TO BIDDERS

1. DEFINITIONS AND SELECTED ACRONYMS

- A. Engineer – Boundaries LLC (Boundaries), under contract with the Town of Voluntown, is responsible for preparation of the Contract Documents and construction oversight of the project. Boundaries will serve as the Town of Voluntown Engineer for the project. Engineer includes all employees of Boundaries.
- B. Owner or Town - The Owner of the project is the Town of Voluntown. The use of the term Owner or Town with the contract Documents means the Town of Voluntown
- C. Contract - Wherever the term "Contract" is used in these Documents, it shall mean the actual form of bid, specifications, drawings, General Conditions, Standard Form of Agreement between Owner and Contractor and formal purchase order issued to the successful bidder.
- D. Contractor - The term "Contractor" as hereinafter used shall refer to the General Contractor for this work or his authorized representative who is responsible for performing and completing the project as described in the Contract Documents.
- E. Subcontractor – Companies, individuals, or other parties under contract with the Contractor to perform a component of the work described in the Contract Documents.
- F. Bidder – Companies that will submit bid proposals for the performance of the work described in the Contract Documents.
- G. Contract Documents – This Contract package includes:
 - Notification to Bidders
 - Form of Bid
 - Project Bid Schedule
 - Contractor and Subcontractor Forms
 - General Requirements
 - Technical Specifications
 - Contract Drawings
 - Addenda or amendments
- H. Work or Project – All construction activities as designed and described in the Contract Documents.

2. BID FORM

- A. Attached to these specifications is a bid package, which includes the Notification to Bidders, Form of Bid, and other forms, which shall be used by the Contractor submitting bids on this work.

B. Documents required to be included in the submitted bid package are:

- i. Form of Bid
- ii. Bid Surety

C. Bids for this work shall be received at the Town Clerk's Office; Voluntown Town Hall, 115 Main Street, Voluntown, Connecticut at the time of the date designated on the Notice to Bid, and will be publicly opened and read at the time and place, for this work.

D. Discrepancies between the indicated product of item unit and unit price and the correct product will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

3. PREPARATION AND SUBMITTAL OF BIDS

A. Bids shall be submitted by the bid date due indicated in the Notice to Bid. Failure to comply with these requirements may be cause for rejection of the bid. Bids shall be delivered to the Town via a physical drop box or may be mailed provided that the bidder assumes the risk of the mailed bids arriving at the location of the bid submission prior to the date and time the bids are due. For those bidders wishing to submit bids via drop box, specifics concerning the physical location of the drop box will be issued to all known bidders via addendum.

B. The Bid Form provided will be used with all copies properly executed, all blank spaces filled in, and any alterations or erasures explained.

C. The bids shall be addressed and forwarded as follows:

BID FOR CONGDON ROAD DRAINAGE IMPROVEMENTS
Tracey Hanson, First Selectman
Voluntown Board of Selectman
Voluntown Town Hall
115 Main Street
Voluntown, CT 06384

D. Partial or incomplete bids will not be considered. Bids shall be in strict conformity with the Contract Documents and any applicable addenda. If there are any variations from the Contract Documents' requirements, the Bidder shall itemize all such variations and attach them to the applicable sections. It is the sole responsibility of the Bidder to see that its bid is submitted by the date stated in the Notice to Bid.

E. All correspondence or other communications during the bidding and evaluation period must be directed to the Engineer.

F. Each bid shall show the full legal name and business address of the Bidder, including its street address if it differs from its mailing address, and shall be signed by the person or persons authorized (an officer of the Contractor company) to bind the Bidder, and dated. When requested by the Engineer or Town, satisfactory evidence of the authority of any signature on behalf of the Bidder shall be furnished.

G. The preparation of the bid shall be by and at the expense of the Bidder.

- H. Each Bidder submitting a proposal is responsible for examining the complete Bid Package and all addenda, and is also responsible for informing itself of all conditions that might in any way affect the cost or the performance of any work. Failure to do so will be at the sole risk of the Bidder, and no relief will be given for errors or omissions by the Bidder.
- I. Submission of a bid will be considered presumptive evidence that the Bidder is conversant with local facilities and difficulties, the requirements of the bid package documents, and of pertinent local, state, and federal laws and codes, prevailing local labor and materials markets, and has made due allowances in its bid for contingencies.
- J. The Bidder's quotation and the bidder's equipment, material, and services are to be in strict conformance with the Engineer's requirements as set forth in the Contract Documents and all addenda. If there is any variation from the Engineer's requirements, the Bidder shall itemize all variations in an attachment to the proposal.
- K. Brand names, when specified, are provided for illustrative purposes, and do not constitute an endorsement or an approved type. The bidder may propose substitution of an equivalent product of another manufacturer unless specifically prohibited. Bidder shall give a complete description of any proposed substitution, including specifications and materials of construction.

4. RECEIPT AND OPENING OF BIDS

- A. The Town of Voluntown, hereinafter referred to as the Town, invites bids on the form attached hereto. All blanks must be appropriately filled in. Bids will be received by the Town in the Town Clerk's Office, Voluntown Town Hall, 115 Main Street, Voluntown, CT 06384, until 11:00 AM, Monday, June 1, 2020, and then in said office publicly opened and read aloud via livestream on YouTube at: <https://www.youtube.com/channel/UCXdF6kZQMhDVNetgjDX2MAQ>. The envelopes containing the bids must be sealed and indicate that the envelope contains a bid, and addressed to Tracey Hanson, First Selectman, Town of Voluntown, 115 Main Street, Voluntown, CT 06384. The Town may consider informal any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all bids. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or the authorized postponement thereof. Any bid received after the time and date specified shall not be considered. No bidder may withdraw a bid after the actual date of the opening thereof until July 1, 2020. The Town may accept or reject any and all bids and any or all portions of bids and take any action deemed to be in its best interest.

Bids shall be delivered to the Town via a physical drop box or may be mailed provided that the bidder assumes the risk of the mailed bids arriving at the location of the bid submission prior to the date and time the bids are due. For those bidders wishing to submit bids via drop box, specifics concerning the physical location of the drop box will be issued to all known bidders via addendum.

5. BID VALIDITY PERIOD

- A. Bidder's proposal shall be binding, or valid, and held open for acceptance through June 30, 2020. Bidder agrees to accept an order, if selected, based on the terms of the contract documents as defined herein in the event that a notification of award is received by the bidder on or before the aforementioned date.

- B. Bidder may, without prejudice, modify or withdraw its proposal by written request, provided that the request is received by the Town prior to the bid due date and at the address to which proposals were to be submitted. Following withdrawal or modification of its proposal, Bidders may submit a new proposal, provided it is received by the Town prior to the bid due date.

6. BID SECURITY

- A. Each Contractor submitting a bid shall accompany it with Bid Surety in the form of cash, certified check, or bid bond equal to 5% of the bid. Should the Contractor refuse to go through with the work after having been awarded it by the Town within the scheduled time, he shall then forfeit the Bid Surety to the Town who shall use the surety to offset costs to the next lowest bidder or if the Contractor fails to provide satisfactory performance and payment bonds as required. The bonding company must be licensed to do business in the State of Connecticut and be listed on the most recent IRS Circular 570.

7. CONTRACTOR'S BONDS AND INSURANCE

- A. Each bidder must be able to enter into contract, covering the work, within 10 days from the acceptance of his proposal.
- B. The successful bidder must, within ten (10) days from the date of acceptance of his proposal, furnish and file with the Town, a corporate surety bond or equivalent security, guaranteeing completion of the job in accordance with the proposal and a labor and material payment bond guaranteeing payment of all labor and materials furnished to himself or to his subcontractors for use in the prosecution of the work. These bonds or equivalent shall both be for 100% of the amount of the contract. The cost of the bonds is to be figured as part of the cost of the job. The Surety company must be one licensed to do business in the State of Connecticut, must be satisfactory to the Town, and be listed on IRS Circular 570.
- C. The successful bidder must, within ten (10) days from the date of acceptance of his proposal, file with the Town, Workmen's Compensation, Comprehensive General Liability, Comprehensive Auto Liability, Certificates of Insurance satisfactory to the Town, in compliance with the law, and in the following form and amount:

COMPREHENSIVE GENERAL LIABILITY	
Premises - Operations - Products/Completed Operations	
General Aggregate	\$2,000,000.00
Occurrence	\$1,000,000.00
COMPREHENSIVE AUTOMOBILE LIABILITY	
Combined Single Limit	\$1,000,000.00
WORKMEN'S COMPENSATION Statutory	
EMPLOYER'S LIABILITY;	\$100,000.00
UNDERGROUND EXPLOSIVE (XCR)	\$1,000,000.00
EXCESS/UMBRELLA LIABILITY	\$5,000,000.00

- D. Any additional insurance coverage that may be required for permits issued by other authorities having jurisdiction over the work site shall be provided by the successful bidder.
- E. If subcontractors are employed, same limits as named above shall apply and the certificate of insurance must be filed with the Town. The subcontractors shall be bound by the same

additional insured obligations and waiver of subrogation in favor of the Town and the Engineer as the Contractor.

- F. No contract shall be binding upon the Town until such bonds have been given and until Comprehensive General Liability, Comprehensive General Auto Liability and Workmen's Compensation policy certificates indicated above have been filed with the Town and approved as to form and sufficiency by the Owner. The insurance policy certificate provided by the successful bidder and all subcontractors shall carry a statement by the insurance company that the Town will receive at least ten (10) days notice prior to cancellation of any portion of the policies or any modifications in the insurance coverage that may affect the Town's interest. The cost of all insurance coverage shall be included in the price of the contract cost.
- G. The insurance company must be licensed to do business in the State of Connecticut and must be satisfactory to the Town. THE TOWN OF VOLUNTOWN AND THE ENGINEER MUST BE NAMED AS ADDITIONAL INSURED ON A PRIMARY AND NON-CONTRIBUTORY BASIS. ANY INSURANCE AVAILABLE TO THE TOWN OF VOLUNTOWN OR THE ENGINEER SHALL BE SECONDARY AND NON-CONTRIBUTORY. EVIDENCE OF ADDITIONAL INSURED STATUS SHALL BE BY ENDORSEMENT IN A FORM ACCEPTABLE TO THE TOWN.
- H. THE CONTRACTOR AND THE CONTRACTOR'S SUBCONTRACTORS AND THEIR RESPECTIVE INSURERS WAIVE ALL RIGHTS OF SUBROGATION AGAINST THE TOWN AND ITS INSURERS. THE TOWN SHALL RETAIN ALL RIGHTS OF SUBROGATION.

8. TAXES

- A. Purchases made by the Town of Voluntown, Connecticut, are considered exempt from the payment of Federal excise taxes, Connecticut Sales Taxes, etc. and such taxes shall be identified separately or excluded from the bid prices.

9. METHOD OF AWARD-LOWEST QUALIFIED BIDDER

- A. If, at the time this contract is to be awarded, if at all, the lowest base bid submitted by a responsible bidder does not exceed the amount of funds estimated by the owner as available to finance the contract, then the contract will be awarded on the lowest base bid by a responsible bidder, availability of bidder and bidder considered best suited to the owner's needs in the owner's opinion. If such bid exceeds such amount, the owner expressly reserves the right to increase or decrease any class, item, or part of the work, and this reservation includes the omission of any such item, items, class, or part of the work as may be decided by the owner at unit prices submitted by the bidder to bring the contract within available funds; or the owner may reject all bids. In determining the lowest qualified bidder, the total price bid for the basic contract will be used.

10. DELETIONS FROM CONTRACT

- A. The Awarding Authority reserves the right, prior to award of the Contract, to delete any portion of the contractor's work as its interests may appear, and to adjust the quantities of work at any time.

11. BALANCE BIDDING

- A. Minus bidding on any item or items of the specifications is prohibited. Bids should be made on each separate item of work shown in the bid Proposal form with reasonable relation to the probable cost of doing the work included in such item and the right is reserved to reject wholly any bid in case any item or items thereof are obviously unbalanced or appear to the owner to be so unbalanced as to affect or to be liable to affect adversely any interest of the owner. The attention of the bidder is called to the fact that unbalancing of bids may adversely affect the contractor if certain portions of the work are increased or decreased as provided in the contract documents.

12. ADDENDA AND INTERPRETATIONS

- A. No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any bidder orally.
- B. Every request for such interpretation must be in writing and addressed to David McKay of Boundaries LLC, P.O. Box 184, Griswold, CT 06351, or by email at dmckay@boundariesllc.net, and to be given consideration, must be received at least five days prior to the date fixed for the opening of the bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be emailed (at the respective email addresses furnished for such purposes), not later than three days prior to the date fixed for the opening of the bids. Failure of any bidder to receive any such addenda or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the contract documents.

13. INDEMNITY OF THE TOWN OF VOLUNTOWN, ENGINEER.

- A. To the fullest extent allowed by law, the Contractor shall indemnify and save harmless the Town of Voluntown, and the Engineer against any and all damages to property or injuries to, or death of any person or persons, including property and employees or agents of the Town of Voluntown, and the Engineer, and shall defend, indemnify and save harmless the Town of Voluntown, and the Engineer, demands, suits, actions or proceedings of any kind or nature including workmen's compensation claims, of or by anyone whomsoever, in any way resulting from or arising out of the operations in connection herewith, including operations of subcontractors and acts or omissions of employees or agents of contractors or his subcontractors. Insurance coverage specified herein and in any special conditions constitutes the minimum requirements and said requirements shall in no way lessen or limit the liability of the Contractor under the terms of the contract.
- B. The Contractor shall procure and maintain, at his own cost and expense, any additional kinds and amounts of insurance, which in his own judgment, may be necessary for his proper protection in the prosecution of the work. To the fullest extent allowed by law, the Contractor agrees to indemnify and keep harmless the Town of Voluntown, and the Engineer, against all liability, judgments, costs and expenses which may in any wise come against the Town of Voluntown, and the Engineer, or which may in any wise result from carelessness, omission or neglect of the Contractor or his agents, employees or workmen in any way arising or resulting from the operation in connection herewith, including all liability to the Town of Voluntown, and the Engineer, resulting from the failure to maintain sufficient railing or fence as required by Section 13a-111, Conn. General Statutes, and against all liability from defects claimed to be in violation of Section 13a-149, Conn. General Statutes. Any additional cost of this save harmless insurance coverage shall be included in the price of the contract.

14. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT

- A. The successful bidder, upon his failure or refusal to execute and deliver the contract, bonds and certificates of insurance required within 10 days after he has received notice of the acceptance of his bid, shall forfeit to the Town, as liquidated damages for such failure or refusal, the security deposited with his bid.

15. PERMITS, LICENSES AND LAWS

- A. The Contractor shall obtain all necessary permits and licenses from the proper authorities and shall give all notices required by law or ordinance, and shall pay all fees, bonds, and charges incident to the due and lawful prosecution of the work and shall comply with all laws, ordinances and regulations relating thereto.
- B. This project is subject to a permit from the Voluntown Inland Wetlands and Watercourses Commission and the Contractor shall be responsible for all conditions of the permit. The permit is attached as Division 00, Appendix A.

16. RIGHT TO REJECT BIDS

- A. The Town reserves the right to reject any and all bids, to waive any technicalities and to make such awards, including awards not to the lowest bidder, as it deems in its opinion to be the best interest of the Town, awards made by the Town shall be final and conclusive and without recourse or appeal by any remaining bidders. The award of the contract, if at all, will be to the lowest responsible and qualified bidder. As used in this section, "lowest responsible and qualified bidder" means the bidder whose bid is the lowest of those bidders possessing the skill, ability, and integrity necessary to faithful performance of the work.
- B. The Town reserves the right to accept or reject any and all proposals with or without prior discussion with the Bidder. The Town and the Engineer may:
1. Make the award based on the proposals received without discussion of the proposals.
 2. Reject all proposals.
- C. The Town may conduct any investigations deemed necessary to determine the ability of the Bidder to perform the work. The Bidder shall furnish any information and data requested by the Town or the Engineer.
- D. Prior to award, the Bidder may be required to attend a post-bid meeting at the Town's office, the Engineer's office, or the Site.

17. BIDDERS TO EXAMINE SPECIFICATIONS AND VISIT SITE OF WORK

- A. Bidders must carefully examine the specifications, and in addition must use whatever means may be necessary to completely satisfy themselves not only of the quantity of equipment and labor and the extent and requirements of the work, but also of the actual conditions under which the work specified is to be performed. It is therefore pre-requisite that all bidders shall visit the site of the work to determine actual conditions for themselves. No future plea of ignorance of existing conditions shall be considered as a basis for additional compensation.
- B. If bidders fail to fully understand any clause or requirement of the specifications, inquiry must be made of the Engineer for his interpretation of the specifications in advance of the submission of a Bid. Failure on the part of the Bidder to acquaint themselves thoroughly with the work to be performed and the conditions under which it will be performed will not be considered as a valid excuse for claims of any kind after the award of the contract. The signature of the Bidder upon the Bid shall be considered proof of his acceptance of full responsibility in this respect.
- C. All answers to significant questions will be issued as written "addenda" and sent to all Bidders via e-mail. No alleged "verbal interpretation" shall be valid.
- D. The right is reserved to issue addenda until three (3) days prior to closing of bids but, with the cooperation of the Bidders, it is anticipated that all clarifications of the bidding documents can be completed well in advance of the bid due date.
- E. All Addenda issued during the bidding period supersede previous information and automatically become part of the bid package documents.

18. REPRESENTATION OF CONTRACTOR

- A. The Contractor represents and warrants that he is financially solvent and that he is experienced and competent to perform the type of work outlined on the specifications and drawings and that he has carefully examined the drawings and specifications along with addendum (or addenda), if any, and the site of the work, and that from his own investigations, he has satisfied himself as to the nature and location of the work, the character, quality and quantity of the surface and subsurface materials likely to be encountered, the character of equipment and other facilities needed for the performance of the work, the general and local conditions and all other materials which may in any way affect the work or its performance and that he is aware of the hazards involved in the work and the danger to life and property both evident and inherent and that he will conduct the work in a careful and safe manner without injury to persons or property. He further warrants that any injury to persons or property resulting from the work shall be the sole responsibility of the Contractor.

19. COMPETENT HELP TO BE EMPLOYED

- A. The Contractor shall employ experienced superintendent and foremen, craftsmen, and other workmen competent in the work in which they are to be engaged. All work shall be accomplished by able, skilled, and competent personnel. If any person employed on the work by the Contractor shall appear to be incompetent or unreliable in any way, or guilty of

being noisy, profane, or otherwise disruptive to the surrounding working environment, he shall be discharged immediately upon the request of the Owner and shall not again be employed on the work.

20. SCOPE OF WORK

- A. The Contractor, as promptly and as economically as practicable, shall perform all necessary engineering services, shall procure, order and furnish all of the required materials (unless furnished by the Owner), labor, equipment, tools, plant, etc. and perform all of the services necessary for the construction, installation and completion of, and shall construct, install and complete all work called for and described in the specifications, drawings and other descriptive data that may be referred to herein.

21. MATERIALS

- A. Unless otherwise specified the Contractor warrants that all materials shall be new and shall be of good quality. The Contractor shall, if required by the Town, furnish samples or other satisfactory evidence as to the kind and quality of materials as directed by the Town, and all materials thereafter furnished by the Contractor shall be in strict accordance with such approved samples.

22. SUB-CONTRACTS

- A. The Contractor agrees to obtain the agreement of every subcontractor to be bound to terms and conditions materially and substantially comparable to those contained herein unless otherwise authorized and approved by the Town.

23. ASSIGNMENT

- A. No assignment or transfer of the contract, or of any money or moneys due or to become due thereunder, or any part of such contract or of such money, will be permitted, until and unless the same shall be approved by the Town, nor shall the Contractor subcontract any substantial portion of this contract without the Town's written consent.

24. SEPARATE CONTRACTS

- A. The Owner shall have the right to let other contracts in connection with this work or other work and the Contractor shall afford other Contractors reasonable opportunity for the execution of their work and shall properly connect and coordinate its work with theirs. The Contractor shall be liable for any damage that it, its agents or employees may cause to any other Contractor and shall save Owner harmless there from. The Owner also reserves the right to perform work related to the contract with his own employees.

25. PARTIAL INVALIDITY

- A. The Owner and Contractor agree that they will perform their obligations hereunder in accordance with all applicable laws, rules, regulations and ordinances now and hereafter in effect. If any term or provision of these conditions shall be found to be illegal or unenforceable then, notwithstanding, these conditions shall remain in full force and effect and such term or provision shall be deemed stricken.

26. SAFETY AND HEALTH REGULATIONS

- A. The successful bidder shall comply with the Department of Labor Safety and Health Regulations for Construction promulgated under the Occupational Safety and Health Act of 1970 (PC-91-596) and under Section 107 of the Contract Work Hours and Safety Standards Act (PL-91-54).
- B. The successful bidder shall have a competent person or persons, as required under Occupational Safety and Health Act, on the Site to inspect the work and to supervise the conformance of the work with the regulations of the Act.
- C. This project is subject to the Safety and Health regulations of the U.S. Department of Labor set forth in 29 CFR, Part 1926. Contractors shall be familiar with the requirements of these regulations.

27. TERMINATION FOR CONVENIENCE

- A. The Town hereby reserves the right to terminate the performance of this contract for any reason the Town deems appropriate, upon five (5) days written notice to the Contractor. The Town will pay all actual costs to date of termination; however, the Contractor shall not be entitled to any profit on unfinished or unearned work.

28. TITLE TO WORK

- A. The title to all work completed or in the course of construction, and all materials on account of which any payment has been made by the Town to the Contractor, shall be in the Town.

29. TIME OF COMPLETION AND LIQUIDATED DAMAGES

- A. The Contractor shall commence work immediately upon receiving notification from the Town to do so unless otherwise stated in the bid form and shall follow-up the work diligently without interruption until completed in accordance with the specifications, on or before the date set forth in the specifications or Bid. The work shall be completed in 30 calendar days from the date of the signed Contract and receipt of a notice to proceed. The bidder must also agree to pay as liquidated damages, and not as a penalty, the sum of \$100.00 for each consecutive day thereafter.

30. RIGHT OF THE OWNER TO TERMINATE THE CONTRACT:

- A. In the event that any of the provisions of these general conditions are violated by the contractor, or by any of his subcontractors, the owner may serve written notice upon the contractor and his surety of its intention to terminate the contract, such notices to contain the reasons for such intention, and unless within five (5) days after the serving of such notice upon the contractor, such violations or delay shall cease and satisfactory arrangements or correction be made, the contract shall, upon the expiration of said five (5) days, cease and terminate. In the event of any such termination, the owner shall immediately serve notice upon the surety and the contractor. The surety shall have the right to take over and perform the contract; provided however, that if the surety does not commence performance thereof within five (5) days from the date of the mailing of notice of termination, the owner may take over the work and prosecute the same to completion by contract or by force account for the amount and at the expense of the contractor, and the contractor and his surety shall be liable to the owner for any excess cost occasioned by the owner. In such event, the owner may

take possession of and utilize in completing the work, any materials, appliances, and plant as may be on the site of the work and necessary therefore.

31. LAWS AND REGULATIONS:

- A. The bidders' attention is directed to the fact that all applicable State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over the construction of the project shall apply to the contract throughout, and they are considered included in the contract the same as though they were written out in full.
- B. Any reference to sections or articles shall be construed as pertaining to the State of Connecticut Department of Transportation Standard Specifications for Roads, Bridges, and Incidental Construction, Form 817, latest revision.

32. CONSTRUCTION SCHEDULE

- A. Prior to start of work the contractor will be required to submit a construction schedule showing the order in which he proposes to carry on the work, including dates at which he will start and finish various parts of the work conforming to major divisions of the specifications.

END OF SECTION 002113

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SECTION 004113 – BID FORM

Proposed Drainage Improvements
Congdon Road
Town of Voluntown, Connecticut

Date

Name of Bidder

Address

City, State, Zip Code

The undersigned herewith submits a bid pursuant to the Contract Documents for the specific applicable contract to provide all labor, supervision, equipment, materials, equipment, tools, and technical support, necessary to provide the **Proposed Drainage Improvements and Associated Site Work Project**, Congdon Road, Voluntown, Connecticut.

This Bidder has carefully examined the site of the Work, the Specifications and the Drawings referred to in the Specifications, and proposes and agrees, if this bid is accepted, to work under an original contract with the Town of Voluntown in a form prescribed by the Town of Voluntown, to fulfill all the obligations of the Contractor as set forth in the Contract Documents, and all Addenda issued thereto and receipt of which is hereby acknowledged, and to do all work in the manner described therein, within 30 calendar days of the signed contract, and at the prices stated in the Project Bid Schedule for the work.

LUMP SUMP PRICE TO COMPLETE THE WORK AS SPECIFIED AND AS SHOWN ON THE CONTRACT DOUCUMENTS:

In figures: \$ _____

In words: \$ _____

ADDITIONAL UNIT PRICE ITEMS THAT MAY BE REQUIRED:

Reference Schedule of Unit Price Section 0012200

Unit Price #1: Removal of unsatisfactory soil and replacement with satisfactory soil material (token quantity for comparison of bids).

<u>Quantity</u>	<u>Unit Price</u>	<u>Extended Price in Figures</u>	<u>Extended Price in Words</u>
25 C.Y.	\$ _____ per C.Y.	\$ _____	\$ _____

Unit Price #2: Rock excavation and replacement with satisfactory soil material (token quantity for comparison of bids).

<u>Quantity</u>	<u>Unit Price</u>	<u>Extended Price in Figures</u>	<u>Extended Price in Words</u>
25 C.Y.	\$ _____ per C.Y.	\$ _____	\$ _____

Unit Price #3: Additional crushed stone (token quantity for comparison of bids).

<u>Quantity</u>	<u>Unit Price</u>	<u>Extended Price in Figures</u>	<u>Extended Price in Words</u>
25 C.Y.	\$ _____ per C.Y.	\$ _____	\$ _____

TOTAL BASE BID INCLUDING ALL LUMP SUMP AND UNIT PRICE ITEMS (BASIS OF AWARD):

In figures: \$ _____

In words: \$ _____

RESPECTFULLY SUBMITTED:

Signature Address

Title Date

License Number (if applicable)

(Seal – if bid by a corporation)

Attest

In addition to completing the Project Bid Schedule, the Contractor shall provide the following information with the proposal form.

- A list of all subcontractors that will be used to perform the work.
- A construction schedule for work to be performed on a task-specific basis including a Schedule of Values and completion date.
- Bid Surety

END OF SECTION 004113

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SECTION 004313 – BID BOND FORM

KNOW ALL MEN BY THESE PRESENTS, That we, _____
_____ hereinafter called the Principal,
of _____, a Principal,
and _____, hereinafter
called the Surety, a corporation organized and existed under the laws of the
State of _____, and duly authorized to transact a
Surety business in the State of Connecticut, as Surety, are held and firmly bound unto the Town of
Voluntown, Connecticut, as Obligee, in the penal sum of five (5) percent of the amount of the bid set forth
in a proposal hereinafter mentioned, _____

Lawful money of the United States of America, for the payment of which, well and truly to be made to the
Obligee, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors
and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, That, whereas the Principal has submitted or is
about to submit a proposal to the Obligee related to a contract for the following Project:

NOW, THEREFORE, if the said contract to be awarded to the Principal and the Principal shall, within
such time as may be specified, enter into the said contract in writing with the Town of Voluntown and give
the required bonds, with Surety acceptable to the Obligee, or if the Principal shall fail to do so, pay to the
Obligee the damages which the Obligee may suffer by reason of such failure not exceeding the penalty of
the bond, then this obligation shall be void, otherwise to remain in full force and effect.

SIGNED, SEALED AND DELIVERED this _____ day of _____, 20_____

_____ Principal's Signature	_____ Surety
_____ Print Name	_____ Its attorney in fact
_____ Company Name	_____ Print Name

END OF SECTION 004313

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SECTION 006738 – AGREEMENT

AGREEMENT

Index

Article 1	Work
Article 2	Engineer
Article 3	Contract Times
Article 4	Contract Price
Article 5	Payment Procedures
Article 6	Interest
Article 7	Contractor's Representations
Article 8	Contract Documents
Article 9	Miscellaneous

AGREEMENT

TOWN OF VOLUNTOWN, CONNECTICUT PROPOSED DRAINAGE IMPROVEMENTS AND ASSOCIATED SITE WORK

THIS AGREEMENT is dated as of the _____ day of _____ in the year 20____ by and between the Town of Voluntown, Connecticut (hereinafter called OWNER) and _____ (hereinafter called CONTRACTOR).

OWNER AND CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 WORK

CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents.

ARTICLE 2 ENGINEER

The Owner has engaged **Boundaries, LLC** who is hereinafter called ENGINEER and who is to act as OWNER'S representative, assume all duties and responsibilities, and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

ARTICLE 3 CONTRACT TIMES

- 3.1 The Work will be substantially completed within 30 days after the date when the Contract Times commence to run as provided in the General Requirements, and completed and ready for final payment in accordance with the General Requirements.
- 3.2 Liquidated Damages. OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in paragraph 3.1 above, plus any extensions thereof allowed in accordance with the General Requirements. They also recognize the delays, expense, and difficulties involved in proving the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER One Hundred dollars (\$100.00) for each day that expires after the time specified in paragraph 3.1 for Substantial Completion until the Work is substantially complete. After Substantial Completion, if CONTRACTOR shall neglect, refuse, or fail to complete the remaining Work within the time specified in paragraph 3.1 for completion and readiness for final payment or any proper extension thereof granted by OWNER. CONTRACTOR shall pay OWNER One Hundred dollars (\$100.00) for each day that expires after the time specified in paragraph 3.1 for completion and readiness for final payment.

ARTICLE 4 CONTRACT PRICE

OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the prices stipulated in the CONTRACTOR's BID attached to this Agreement.

ARTICLE 5 PAYMENT PROCEDURE

CONTRACTOR shall submit Applications for Payment in accordance with the General Requirements. Applications for Payment will be processed by ENGINEER as provided in the General Requirements.

5.1 Progress Payments; Retainage. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment as recommended by ENGINEER, and in accordance with applicable state law during construction as provided in paragraphs 5.1.1 and 5.2 below. All such payments will be measured by the schedule of values established in paragraph the General Requirements (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements.

5.1.1 Progress payments will be made in an amount equal to 95 percent of Work completed (with the balance being retainage) but, in each case, less the aggregate of payments previously made and less such amounts as ENGINEER shall determine, or OWNER may withhold, in accordance the General Requirements.

5.2 Final Payment. Upon final completion and acceptance of the Work in accordance the General Requirements, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said General Requirements.

ARTICLE 6 INTEREST

All moneys not paid when due as provided in the General Requirements shall bear interest at the annual rate of 0.5%.

ARTICLE 7 CONTRACTOR'S REPRESENTATION

In order to induce OWNER to enter into this Agreement, CONTRACTOR makes the following representations:

7.1 CONTRACTOR has examined and carefully studied the Contract Documents (including the Addenda and the other related data identified in the Bidding Documents including "technical data."

- 7.2 CONTRACTOR has visited the site and become familiar with and is satisfied as to the general, local, and site conditions that may affect cost, progress, performance, or furnishing of the Work.
- 7.3 CONTRACTOR is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, performance, and furnishing of the Work.
- 7.4 CONTRACTOR has carefully studied all reports of the physical conditions of the site. CONTRACTOR acknowledges that OWNER and ENGINEER do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Contract Documents. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all such additional supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions at or contiguous to the site or otherwise which may affect cost, progress, performance, or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto. CONTRACTOR does not consider that any additional examinations, investigations, explorations, tests, studies, or data are necessary for the performance and furnishing of the Work at the Contract Price, within the Contract Times and in accordance with the other terms and conditions of the Contract Documents.
- 7.5 CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at the site that relates to the Work as indicated in the Contract Documents.
- 7.6 CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the site, and reports identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.
- 7.7 CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that CONTRACTOR has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 8 CONTRACT DOCUMENTS

The Contract Documents which comprise the entire agreement between OWNER and CONTRACTOR concerning the Work consist of the following:

- 8.1 Invitation to Bid
8.2 Instructions to Bidders
8.3 Contractor's Bid
8.4 Bid Bond
8.5 Proposed Subcontractors

AGREEMENT

- 8.6 Contract Agreement
- 8.7 Performance and Payment Bonds
- 8.8 Specifications prepared by Boundaries, LLC
- 8.9 Plans prepared by Boundaries, LLC
- 8.10 Addenda:
 - No. _____, Dated _____
 - No. _____, Dated _____
 - No. _____, Dated _____

ARTICLE 9 MISCELLANEOUS

- 9.1 Terms used in this Agreement which are defined in the General Requirements will have the meanings indicated in the General Requirements.
- 9.2 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically, but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment with release or discharge the assignor from any duty or responsibility under the Contract Documents;
- 9.3 OWNER and CONTRACTOR each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.
- 9.4 Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

IN WITNESS WHEREOF, OWNER AND CONTRACTOR have signed this Agreement in quintuplicate. One counterpart each has been delivered to OWNER, CONTRACTOR and ENGINEER. All portions of the Contract Documents have been signed, initialed or identified by OWNER and CONTRACTOR or identified by ENGINEER on their behalf.

This Agreement will be effective on _____, 20 ____ (which is the Effective Date of the Agreement).

OWNER - Town of Voluntown

(Fill-in Correct Title)

CONTRACTOR

By:
[CORPORATE SEAL]

Attest: _____

Address for giving notices

Agent for service of process:

(If CONTRACTOR is a corporation, attach evidence of authority to sign.)
Approved as to Form

END OF SECTION 006738

SECTION 006847 – PERFORMANCE BOND

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that

_____, hereinafter Principal, and
(Name of Contractor)

_____, hereinafter Surety,
(Name of Surety)

A corporation licensed to do business as a surety under the laws of the State of Connecticut with a Best's rating of no less than A-, are held and firmly bound unto the **Town of Voluntown Connecticut**, (Obligee) in the full and just sum of \$ _____, to be paid to the **Town of Voluntown Connecticut**, or its assigns, to which payment we bind ourselves, heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by this bond.

WHEREAS, the Principal will enter into a contract with the **Town of Voluntown Connecticut**, effective _____ (date) for _____ (Contract title and number), and more fully described in said Contract and made a part hereof and incorporated herein by reference; AND

WHEREAS, it is one of the conditions of the Contract award by the Obligee that this Bond be executed;

NOW, THEREFORE, the conditions of this obligation are such that if the Principal as Contractor shall: in all respects faithfully perform all of the provisions of the Contract and its obligations thereunder; and well, truly, and faithfully complete the Contract in a manner satisfactory to the **Town of Voluntown Connecticut**, or be liable for any and all costs associated with the well, true, and faithful completion of the contract and protect, indemnify and save harmless the Town of Voluntown, Connecticut as stated in the Contract from any liability for payment of invoices, wages, penalties, or interest due to laborers, mechanics, subcontractors and material suppliers who perform work or furnish material under the Contract; and pay and discharge all lawful assessments, then this obligation will be void: otherwise: it shall remain in full force and effect.

In the event of any conflict, the laws of the State of Connecticut will control with venue in New London County.

The Town of Voluntown
Proposed Drainage Improvements
Congdon Road
Boundaries LLC Project No. 18-2633

Division 00
Procurement and Contracting Documents

SIGNATURES

Contractor Name

Contractor Signature

Date Signed

Surety Name

By: _____
Attorney-in-Fact (Seal and Signature)

Date Signed

Agency

Address

Note: A copy of the agent's Power of Attorney for the Surety Company must be attached to this performance bond.

END OF SECTION 006847

SECTION 006924 – PAYMENT BOND

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, that

_____, hereinafter Principal, and
(Name of Contractor)

_____, hereinafter Surety,
(Name of Surety)

A corporation licensed to do business as a surety under the laws of the State of Connecticut are held and firmly bound unto the **Town of Voluntown Connecticut**, (Obligee) in the full and just sum of \$ _____, to be paid to the **Town of Voluntown Connecticut**, or its assigns, to which payment we bind ourselves, heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by this bond.

WHEREAS, the Principal will enter into a contract with the **Town of Voluntown Connecticut**, effective _____ (date) for _____ (Contract title and number), and more fully described in said Contract and made a part hereof and incorporated herein by reference; AND

WHEREAS, it is one of the conditions of the Contract award by the Obligee that this Bond be executed;

NOW, THEREFORE, the conditions of this obligation are such that if the Principal as Contractor shall: in all respects faithfully perform all of the provisions of the Contract and its obligations thereunder; and well, truly, and faithfully complete the Contract in a manner satisfactory to the **Town of Voluntown Connecticut**, or be liable for any and all costs associated with the well, true, and faithful completion of the contract and protect, indemnify and save harmless the Town as stated in the Contract from any liability for payment of invoices, wages, penalties, or interest due to laborers, mechanics, subcontractors and material suppliers who perform work or furnish material under the Contract; and pay and discharge all lawful assessments, then this obligation will be void: otherwise: it shall remain in full force and effect.

In the event of any conflict, the laws of the State of Connecticut will control with venue in New London County.

SIGNATURES

Contractor Name

Contractor Signature

Date Signed

Surety Name

By: _____
Attorney-in-Fact (Seal and Signature)

Date Signed

Agency

Address

Note: A copy of the agent's Power of Attorney for the Surety Company must be attached to this performance bond.

Note: If contractor is a partnership all parties should execute bond.

END OF SECTION 006924

WETLANDS PERMIT

Appendix A

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GENERAL REQUIREMENTS

Division 01

- Section 011000 – General Conditions
- Section 012200 – Unit Prices
- Section 012600 – Contract Modification Procedures
- Section 012900 – Payment Procedures
- Section 013100 – Project Management and Coordination
- Section 013233 – Photographic Documentation
- Section 015000 – Temporary Facilities and Controls
- Section 017300 – Execution
- Section 017419 – Construction Waste Management
- Section 017700 – Closeout Procedures

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SECTION 011000 – GENERAL CONDITIONS

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:
 - 1. Project information.
 - 2. Work covered by Contract Documents.
 - 3. Phased construction.
 - 4. Work by Owner.
 - 5. Access to site.
 - 6. Work restrictions.
 - 7. Specification and drawing conventions.
 - 8. Miscellaneous provisions.

1.3 PROJECT INFORMATION

- A. Project Identification: Proposed Drainage Improvements, Project No. 18-2633.
 - 1. Project Location: Congdon Road, Voluntown, CT
- B. Owner: Town of Voluntown, 115 Main Street, Voluntown, CT.
 - 1. Owner's Representative: Tracey Hanson, First Selectman, Town of Voluntown
- C. Engineer: Boundaries, LLC c/o David C. McKay 860-376-2006

1.4 CONTRACT SECURITY

- A. The Contractor shall furnish a Performance Bond and Payment Bond in amounts equal to at least one hundred percent (100%) of the contract price as security for the faithful performance of the contract, and for the payment of all persons performing labor on the project under this contract and furnishing materials, equipment and all other incidentals in connection with this contract. The surety on such a bond shall be a duly authorized surety company satisfactory to the Owner and the cost of the same shall be paid by the Contractor. Prior to the starting of any work, the bonds must be approved by the Owner and be in the owner's hands. The bonds must be from a surety company licensed and approved to do business in the State of Connecticut.

1.5 CONTRACTOR'S OBLIGATIONS

- A. The Contractor shall perform all work in a good workmanlike manner, and in accordance with the plans and specifications and any supplements thereto, and according to any directions or orders given by the Owner unless otherwise stipulated. He shall furnish all supplies, materials, except those supplies and materials furnished by the Owner, facilities, equipment, tools and anything else necessary or proper to perform and complete the work required by this contract. He shall furnish, erect, maintain, and remove any construction plant or temporary work as may be required. He alone shall be responsible for the safety, efficiency, and adequacy of his plant, appliances, and methods and for any damage which may result from their failure or their improper construction maintenance, or operation. The Contractor shall observe, comply with, and be subject to all terms, conditions, requirements, and limitations of the contract and specifications and shall do, carry on, and complete the entire work to the satisfaction of the Owner.

1.6 ACCESS TO SITE

- A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.
- B. Use of Site: Limit use of Project site areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated. Easements have been obtained from the property owner to complete the work. All disturbed areas shall be restored to pre-construction conditions at the completion of the work.

1.7 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
- B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 - 1. Notify Engineer and Owner not less than two (2) days in advance of proposed utility interruptions.
- C. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 - 1. Notify Engineer and Owner not less than two (2) days in advance of proposed disruptive operations.
- D. Work in Inclement Weather: The Town or the Engineer may determine when conditions are unfavorable for work and may order the work or any portion of it suspended whenever, in his opinion the conditions are not such as will insure first class work. In general, work shall be prosecuted throughout the year and the Contractor will be expected to keep work going and employment of labor as continuous as possible, however, the Contractor shall, and shall cause his sub-contractors to protect carefully his and their work against damage of injury from the weather. If this is not done to the Town's satisfaction and any damage to the work occurs, the work shall be removed and replaced at the expense of the Contractor

1.8 SPECIFICATION AND DRAWING CONVENTIONS

- A. 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. Imperative mood and streamlined language are generally used in the Specifications. 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.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
 - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 - 2. Abbreviations: Materials and products are identified by abbreviations.
 - 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.
- D. Interpretation of Plans and Specifications: The Contractor shall keep at the site of the work at least one copy of the plans and specifications, and shall at all times give the Owner and his representative's access thereto. Anything shown on the plans and not mentioned in the Specifications, or mentioned in the Specifications and not shown on the plans shall have the same effect as if shown or mentioned on both.

1.9 SUBCONTRACT

- A. The contractor may utilize the services of specialty subcontractors on those parts of the work which, under normal contracting practices, are performed by specialty subcontractors.
- B. The contractor shall not award any work to any subcontractor without the approval of the owner. Approval will not be given until the contractor submits to the owner a written statement including appropriate certifications concerning the proposed award to the subcontractor, which statement will contain such information as the owner may require.
- C. The contractor shall be as fully responsible to the owner for the acts and omissions of his subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons employed directly by him.
- D. The contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the contractor by the terms of the general conditions and other contract documents insofar as applicable to the work of subcontractors and to give the contractor the same power as regards terminating any subcontract that the owner may exercise over the contractor under any provision of the contract documents.

- E. Nothing contained in this contract shall create any contractual relation between any subcontractor and the owner.
- F. The contractor shall insert these same general conditions in any subcontract he awards.

1.10 DEFAULTS

- A. If the Contractor shall fail in this prosecution of the work under this contract, to perform any provisions of this contract, the Town after a five (5) days written notice to the Contractor to remedy said failure, and upon the refusal or neglect of the Contractor to remedy such failure, the Town, without prejudice to any other remedy the Town may have, shall be entitled to remedy such deficiency and any cost thereby incurred by the Town shall be paid for the account of the Contractor and deducted from the contract sum then or thereafter due the Contractor. Any expense or cost arising out of the Contractor's negligence, or that of its agents or employees for replacing defective work, and for the disposal of material wrongly supplied, may be paid by the Town for the account of the Contractors and deducted from the contract sum then or thereafter due the Contractor. It is hereby understood and mutually agreed by and between the contractor and the owner that the date of beginning and the time for completion as specified in the contract of work to be done hereunder are essential conditions of the contract and it is further mutually understood and agreed that the work embraced in this contract shall be commenced on a date to be specified in the Notice to Proceed.
- B. The contractor agrees that said work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will ensure full completion thereof within the time specified. It is expressly understood and agreed, by and between the contractor and the owner, that the time for completion of the work described herein is a reasonable time for the completion of the same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.
- C. If the contractor neglects, fails or refuses to complete the work within the time herein specified, or any proper extension thereof granted by the owner, then the contractor agrees, as a part consideration for the awarding of this contract, to pay to the owner the amount specified in the contract, not as a penalty but as liquidated damages for breach of contract as hereinafter set forth, for each and every calendar day that the contractor shall be in default after the time stipulated in the contract for completing the work.
- D. The liquidated damages amount is fixed and agreed upon by and between the contractor and the owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the owner would in such event sustain, and said amount is agreed to be the amount of damages which the owner would sustain and said amount shall be retained from time to time by the owner from current periodical estimates.
- E. It is further agreed that time is of the essence of each and every portion of this contract and of the specification wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the contract an additional time is allowed for the completion of any of the work, the new time limit fixed by such extension shall be of the essence of this contract, provided that the contractor shall not be charged with liquidated damages or any excess cost when the owner determines that the contractor is without fault and the contractor's reasons for the time extension are acceptable to the owner, provided further that the contractor shall not be charged with liquidated damages or any excess cost when the delay of completion of the work is due:
 - 1. To any preference, priority or allocation order duly issued by the government;

2. To unforeseeable cause beyond the control and without the fault or negligence of the contractor, including but not restricted to, acts of the owner, acts of another contractor in the performance of a contract with the owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and severe weather; and/or
3. To any delays of subcontractors or suppliers occasioned by any of the causes specified in the preceding two paragraphs, provided further that the contractor shall, within ten (10) days from the beginning of such delay, unless the owner shall grant a further period of time prior to the date of final settlement of the contract, notify the owner, in writing, of the cause of delay, who shall ascertain the facts and extent of the delay and notify the contractor within a reasonable time of its decision in the matter.
4. Provided said delay impacts the critical path of the construction schedule or is necessary to obtain a certificate of occupancy or use (temporary or permanent), then the Contract Time shall be extended by Change Order or Constructive Change Directive for such reasonable time as the Engineer may determine and the construction schedule shall be revised accordingly. In order for the Contractor to obtain an extension of time, the Contractor must prove to the Owner and Engineer that the cause of the delay will extend the critical path of the construction schedule leading to the use of the Project. Such extensions of Contract Time shall apply only to delays for which the Contractor has no responsibility. If a delay is attributable to both the Contractor and the Owner (including parties for which each is responsible), then entitlement to an extension of Contract Time shall apply proportionately. Notwithstanding anything to the contrary in the Contract Documents, an extension of Contract Time, to the extent permitted herein, shall be the sole remedy of the Contractor for any (1) delay in the start, prosecution, or completion of the Work, (2) hindrance or obstruction in the performance of the Work, (3) loss of productivity, or (4) other similar claims, whether or not such claims are foreseeable, contemplated, or unanticipated. In no event is the Contractor entitled to any compensation or recovery of any damages, in connection with any Claim, including without limitation, consequential damages, lost opportunity costs, impact damages or other similar remuneration. The Owner's exercise of any of its rights or remedies under the Contract Documents, including without limitation, ordering changes in the Work, or directing the suspension, rescheduling or correction of the Work, regardless of the extent or frequency of the Owner's exercise of such rights or remedies, are not to be construed as active interference with the Contractor's performance of the Work.
5. The Contractor shall include the above no damage for delay and waiver of impact clause in its agreements with its Subcontractors and suppliers.

1.11 ARCHEOLOGICAL FINDS

- A. The Contractor for the life of this contract, is herewith required to immediately notify the Town and the Engineer in the event that any articles such as "charcoal," "bone," "shell," "cultural objects," "fire-cracked stones," "stone flaking material," or any other such related items of historical significance are discovered.

1.12 USE OF "HE," "HIS," OR "HIM"

- A. Whenever in these Documents the masculine words, "he", "his" or "him" are used pertaining to the Contractor or buyer, it shall be for brevity and in no way is any sexual discrimination intended.

1.13 OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

- A. The Contractor shall also insure that all his operations and those of his sub-Contractor abide by the provisions of the William Steiger Occupational Safety and Health Act of 1970, Public Law 91-956 and all subsequent amendments. In the event of any inconsistencies between the above laws and regulations and the provisions of these conditions, the laws and regulations shall prevail. If the Owner or Representative assigned to the work find the Contractor or his sub-Contractor are not abiding with this act, the Owner shall immediately stop all work until the Contractor or sub-contractor adhere to the provisions of the act at no additional cost to the Owner.

END OF SECTION 011000

SECTION 012200 - UNIT PRICES

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 for unit prices.
- B. Related Requirements:
 - 1. Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.

1.3 DEFINITIONS

- A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

- A. Unit Price 1: Removal of unsatisfactory soil and replacement with satisfactory soil material.
 - 1. Description: Unsatisfactory soil excavation and disposal off site and replacement with satisfactory fill material or engineered fill from off site, as required, according to Section 312000 "Earth Moving."
 - 2. Unit of Measurement: Cubic yard of soil excavated, based on field measurement of volume removed as required by the Engineer.

- B. Unit Price No. 2: Rock excavation and replacement with satisfactory soil material.
 - 1. Description: Classified rock excavation and disposal off site and replacement with satisfactory fill material or engineered fill from off site, as required, according to Section 312000 "Earth Moving."
 - 2. Unit of Measurement: Cubic yard of rock excavated, based on field measurement of volume removed as required by the Engineer.

- C. Unit Price No. 3: Additional crushed stone.
 - 1. Description: Provide additional crushed stone beyond the amount specified in the Contract Documents and plan details as required by the Engineer to address field conditions, according to Section 312000 "Earth Moving."
 - 2. Unit of Measurement: Cubic yard of crushed stone in place.

END OF SECTION 012200

SECTION 012600 - CONTRACT MODIFICATION 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 for handling and processing Contract modifications.

1.3 MINOR CHANGES IN THE WORK

- A. Engineer will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time.

1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Engineer will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Work Change Proposal Requests issued by Engineer are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within 7 days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Engineer.
 - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.

2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
7. Proposal Request Form: Use form acceptable to Engineer.

1.5 ADMINISTRATIVE CHANGE ORDERS

- A. Unit-Price Adjustment: See Section 012200 "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit-price work.

1.6 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Changes Proposal Request, Engineer will issue a Change Order for signatures of Owner and Contractor.

1.7 CONSTRUCTION CHANGE DIRECTIVE

- A. Work Change Directive: Engineer may issue a work Change Directive for subsequent inclusion in a Change Order.
 1. Work Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the work Change Directive.
 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

END OF SECTION 012600

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.
- B. Related Requirements:
 - 1. Section 012200 "Unit Prices" for administrative requirements governing the use of unit prices.
 - 2. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.

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: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
 - 1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:
 - a. Application for Payment forms with continuation sheets.
 - b. Submittal schedule.
 - c. Items required to be indicated as separate activities in Contractor's construction schedule.
 - 2. Submit the schedule of values to Engineer at earliest possible date, but no later than seven (7) days before the date scheduled for 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. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Name of Engineer.
 - c. Engineer's project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
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. Provide multiple line items for principal subcontract amounts in excess of five (5) percent of the Contract Sum.
3. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
4. 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. Payment to the Contractor: The owner shall make periodic progress payments to the contractor on the basis of a duly certified and approved estimate of the work performed during the preceding work period under the contract. To ensure proper performance under the contract, the owner shall retain 5% of the amount of each estimate until final completion and acceptance of all work covered by the contract.
 1. All material and work covered by partial payments made shall thereupon become the sole property of the owner, but this provision shall not be construed as relieving the contractor from his responsibility for the care and protection of materials and work upon which payments have been made or the restoration of any damaged work, or as a waiver of the right of the owner to require fulfillment of all the terms of the contract.
 2. The contractor agrees that he will indemnify and hold the owner and its agents all claims growing out of the lawful demands of subcontractors, laborers, workmen, mechanics, material men, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the furtherance of the performance of this contract. The contractor shall, at the owner's request, furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged or waived. If the contractor fails to do so, then the owner may, after having served written notice on the contractor, either pay unpaid bills of which the owner has written notice, direct or withhold from the contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the contractor shall be resumed in accordance with the terms of this contract, but in no event

shall the provisions of this sentence be construed to impose any obligations upon the owner to either the contractor or his surety.

3. In paying any unpaid bills of the contractor, the owner shall be deemed the agent of the contractor, and any payment so made by the owner shall be considered as a payment made under the contract by the owner to the contractor, and the owner shall not be liable to the contractor for any such payment made in good faith.
- B. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Engineer and paid for by Owner.
1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- C. Payment Application Times: Submit Application for Payment to Engineer by the 5th of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.
- D. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment or approved alternate form.
- E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Engineer will return incomplete applications without action.
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.
 4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.
- F. Transmittal: Submit three (3) signed and notarized original copies of each Application for Payment to Engineer by a method ensuring receipt. One copy shall include waivers of lien and similar attachments if required.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- G. Waivers of Mechanic's Lien and Claims: With each Application for Payment, submit waivers of mechanic's lien and Claims from entities lawfully entitled to file a mechanic's lien or Claim arising out of the Contract and related to the Work covered by the payment.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit conditional final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.

4. Waiver Forms: Submit executed waivers of lien and Claims on forms acceptable to Owner.
- H. 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 (preliminary if not final).
 4. Products list
 5. Schedule of unit prices.
 6. List of Contractor's staff assignments.
 7. List of Contractor's principal consultants.
 8. Certificates of insurance and insurance policies.
 9. Performance and payment bonds.
- I. Application for Payment at Substantial Completion: After Engineer 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.
- J. 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.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

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 provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Coordination drawings.
 - 3. Requests for Information (RFIs).
 - 4. Project meetings.
- B. Contractor shall participate in coordination requirements.
- C. Related Requirements:
 - 1. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 - 2. Section 017700 "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

- A. RFI: Request from Owner, Engineer or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
 - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Drawing number and detail references, as appropriate, covered by subcontract.
- B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone

numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1.5 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's construction schedule.
 2. Preparation of the schedule of values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Pre installation conferences.
 7. Project closeout activities.
 8. Startup and adjustment of systems.

1.6 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
1. Engineer will return RFIs submitted to Engineer by other entities controlled by Contractor with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
 2. Project number.
 3. Date.
 4. Name of Contractor.
 5. Name of Engineer.
 6. RFI number, numbered sequentially.
 7. RFI subject.

8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 12. Contractor's signature.
 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, and details of affected materials, assemblies, and attachments on attached sketches.
 14. Attachments shall be electronic files in Adobe Acrobat PDF format.
- C. Engineer's Action: Engineer will review each RFI, determine action required, and respond. Allow seven (7) working days for Engineer's response for each RFI. RFIs received by Engineer after 1:00 p.m. will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Engineer's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. Engineer's action may include a request for additional information, in which case Engineer's time for response will date from time of receipt of additional information.
 3. Engineer's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Engineer in writing within ten (10) days of receipt of the RFI response.

1.7 PROJECT MEETINGS

- A. General: Engineer will schedule and conduct meetings and conferences at Project site unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Engineer of scheduled meeting dates and times.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, and Engineer, within three (3) days of the meeting.

- B. Preconstruction Conference: Engineer will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Engineer, but no later than 15 days after execution of the Agreement.
1. Conduct the conference to review responsibilities and personnel assignments.
 2. Attendees: Authorized representatives of Owner and Engineer. Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Lines of communications.
 - f. Procedures for RFIs.
 - g. Use of the premises.
 - h. Work restrictions.
 - i. Working hours.
 - j. Construction waste management and recycling.
 - k. Parking availability.
 - l. Work, and storage areas.
 - m. Equipment deliveries and priorities.
 - n. First aid.
 - o. Security.
 4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Engineer, but no later than 14 days prior to the scheduled date of Substantial Completion.
1. Conduct the conference to review requirements and responsibilities related to Project closeout.
 2. Attendees: Authorized representatives of Owner and Engineer. Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
 - a. Preparation of record documents.
 - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
 - c. Submittal of written warranties.
 - d. Preparation of Contractor's punch list.
 - e. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
 - f. Submittal procedures.
 - g. Responsibility for removing temporary facilities and controls.
 4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

- D. Progress Meetings: Conduct progress meetings at weekly intervals.
1. Coordinate dates of meetings with preparation of payment requests.
 2. Attendees: In addition to representatives of Owner and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Access.
 - 6) Site utilization.
 - 7) Temporary facilities and controls.
 - 8) Quality and work standards.
 - 9) Status of correction of deficient items.
 - 10) Field observations.
 - 11) Status of RFIs.
 - 12) Status of proposal requests.
 - 13) Pending changes.
 - 14) Status of Change Orders.
 - 15) Pending claims and disputes.
 - 16) Documentation of information for payment requests.
 4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

END OF SECTION 013100

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SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

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 for the following:
 - 1. Preconstruction photographs.
 - 2. Periodic construction photographs.
 - 3. Final completion construction photographs.
- B. Related Requirements:
 - 1. Section 012200 "Unit Prices" for procedures for unit prices for extra photographs.
 - 2. Section 017700 "Closeout Procedures" for submitting photographic documentation as project record documents at Project closeout.
 - 3. Section 311000 "Site Clearing" for photographic documentation before site clearing operations commences.
- C. Construction Photographs: Digital files of each photographic view within prior to the start of construction.
 - 1. Identification: In the file name of each photo include:
 - a. Name of Project.
 - b. Date photograph was taken if not date stamped by camera.
 - c. Description of subject matter.

PART 2 - EXECUTION

2.1 CONSTRUCTION PHOTOGRAPHS

- A. Photographer: Project superintendent.

- B. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work.
- C. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points.
 - 1. Take photographs to show existing conditions of the property before starting the work.
 - 2. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- D. Periodic Construction Photographs: Take photographs for each individual activity with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- E. Final Completion Construction Photographs: Take color photographs after date of Substantial Completion for submission as project record documents.

END OF SECTION 013233

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

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 requirements for temporary utilities, support facilities, security and protection facilities.
- B. Related Requirements:
 - 1. Section 011000 "General Requirements" for work restrictions and limitations on utility interruptions.

1.3 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to occupants of Project, testing agencies, and authorities having jurisdiction.
- B. Sewer Service: Provide portable toilets.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
 - 1. Locate facilities to limit site disturbance.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. Sewers and Drainage: Provide portable toilets to remove effluent lawfully.

3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
- B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 - 2. Maintain access for fire-fighting equipment.
- C. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
 - 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
 - 2. Remove snow and ice as required to minimize accumulations.
- D. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 017300 "Execution."

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- C. Temporary Erosion and Sedimentation Control: Comply with requirements specified in Section 311000 "Site Clearing."
- D. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties, according to erosion- and sedimentation-control Drawings.
 - 1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant- protection zones.
 - 2. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
 - 3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
 - 4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

- E. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains. Special care shall be taken to prevent contamination or muddying up or interfering in any way with the stream flows along the line of work. No waste matter of any kind will be allowed to discharge into the stream flows or impounded waters of any ponds or other bodies of water.
- F. Temporary Egress: Maintain temporary egress to the site as indicated and as required by authorities having jurisdiction.

END OF SECTION 015000

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SECTION 017300 - EXECUTION

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 general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. Installation of the Work.
 - 4. Progress cleaning.
 - 5. Protection of installed construction.
 - 6. Correction of the Work.
- B. Related Requirements:
 - 1. Section 011000 "General Requirements" for limits on use of Project site.
 - 2. Section 017700 "Closeout Procedures" for submitting final Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.3 QUALITY ASSURANCE

- A. Layout: Initial layout including control points and benchmarks will be provided by the Town of Voluntown, by employment of a licensed land surveyor. It is the responsibility of the contractor to maintain all established bounds, and benchmarks. Bring any deviations from the locations and elevations indicated on the Contract Drawings to the attention of the Engineer immediately. Any additional layout required for the construction of the project is to be provided at the cost of the contractor.

PART 2 - EXECUTION

2.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of storm sewer.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 1. Description of the Work.
 2. List of detrimental conditions, including substrates.
 3. List of unacceptable installation tolerances.
 4. Recommended corrections.

2.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction. Call Before You Dig: 1-800-922-4455.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Engineer according to requirements in Section 013100 "Project Management and Coordination."

2.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Engineer promptly.
- B. General: Lay out the Work using accepted surveying practices.
 1. Establish benchmarks to set levels at each phase of construction and elsewhere as needed to locate each element of Project.
 2. Establish limits on use of Project site.
 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 4. Inform installers of levels to which they must comply.

5. Check the location, level and plumb, of every major element as the Work progresses.
6. Notify Engineer when deviations from required levels exceed allowable tolerances.
7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

- C. Record Log: Maintain a log of layout control work. Record deviations from required levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Engineer.

2.4 FIELD ENGINEERING

- A. Identification: Owner will identify existing benchmarks and control points.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
1. Do not change or relocate existing benchmarks or control points without prior written approval of Engineer. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Engineer before proceeding.
 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Benchmarks: Establish and maintain a minimum of two (2) permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

2.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produces harmful noise levels.
- G. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

2.6 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways.
- E. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- F. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- G. Limiting Exposures: Supervise construction operations to assure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

2.7 PROTECTION OF INSTALLED CONSTRUCTION

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

END OF SECTION 017300

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

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 for the following:
 - 1. Salvaging nonhazardous demolition and construction waste.
 - 2. Recycling nonhazardous demolition and construction waste.
 - 3. Disposing of nonhazardous demolition and construction waste.
- B. Related Requirements:
 - 1. Section 311000 "Site Clearing" for disposition of waste resulting from site clearing and removal of above- and below-grade improvements.

1.3 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials where applicable.

1. Demolition Waste:
 - a. Piping.
 - b. Concrete masonry units.

2. Construction Waste:
 - a. Masonry and CMU.
 - b. Piping.
 - c. Packaging: Regardless of salvage/recycle goal indicated in "General" Paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
 - 1) Paper.
 - 2) Cardboard.
 - 3) Boxes.
 - 4) Plastic sheet and film.
 - 5) Polystyrene packaging.
 - 6) Wood crates.
 - 7) Plastic pails.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
 1. Comply with operation, termination, and removal requirements in Section 015000 "Temporary Facilities and Controls."

3.2 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.
- C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.

1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination and remove contaminated materials if found.
2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste from Owner's property and transport to recycling receiver or processor.

3.3 RECYCLING CONSTRUCTION WASTE

A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Polystyrene Packaging: Separate and bag materials.
3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Wood Materials:

1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

3.4 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

END OF SECTION 017419

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SECTION 017700 - CLOSEOUT 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 for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of the work.
- B. Related Requirements:
 - 1. Section 013233 "Photographic Documentation" for submitting final completion construction photographic documentation.
 - 2. Section 017300 "Execution" for progress cleaning of Project site.

1.3 ACTION SUBMITTALS

- A. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- B. Certified List of Incomplete Items: Final submittal at Final Completion.

1.4 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.

1.5 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
- C. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of ten (10) days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Engineer and Construction Manager will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.
1. Re-inspection: Request re-inspection when the work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for final completion.

1.6 FINAL COMPLETION PROCEDURES

- A. Work will not be considered Finally Complete until 90% vegetative coverage of grassed areas has been achieved. It is the responsibility of the Contractor to maintain (water) seeded areas until the date of final completion.
- B. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
 2. Certified List of Incomplete Items: Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- C. Inspection: Submit a written request for final inspection to determine acceptance a minimum of ten (10) days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Engineer and Construction Manager will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Re-inspection: Request re-inspection when the work identified in previous inspections as incomplete is completed or corrected.

1.7 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1.8 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Engineer for designated portions of the work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.

PART 2 - EXECUTION

2.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning:
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Clean exposed exterior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

2.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces and touching up with matching materials.

END OF SECTION 017700

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EARTHWORK

Division 31

Section 311000 – Site Clearing

Section 312000 – Earth Moving

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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 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.
5. Removing above- and below-grade site improvements.
6. Disconnecting, capping or sealing, and removing site utilities.
7. Temporary erosion and sedimentation control.

- B. Related Sections:

1. Section 015000 "Temporary Facilities and Controls" for temporary utility services, construction and support facilities, security and protection facilities and temporary erosion and sedimentation control measures.
2. Section 017300 "Execution" for field engineering and surveying.
3. Section 017419 "Construction Waste Management and Disposal requirements.

1.3 DEFINITIONS

- A. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- B. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.
- C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil and is the zone where plant roots grow.
- D. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 MATERIAL OWNERSHIP

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

1.5 INFORMATIONAL SUBMITTALS

- A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.
 - 1. Use sufficiently detailed photographs or videotape.
 - 2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.
- B. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.6 QUALITY ASSURANCE

- A. Pre-construction Conference: Conduct conference at Project site.

1.7 FIELD 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 the Owner and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Utility Locator Service: Notify Call Before You Dig for area where Project is located before site clearing.
- C. Do not commence site clearing operations until temporary erosion- and sedimentation-control measures are in place.
- D. Soil Stripping, Handling, and Stockpiling: Perform only when the topsoil is dry or slightly moist.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 312001 "Earth Moving."
 - 1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Verify that trees, shrubs, and other vegetation to remain have been flagged.
- C. Protect existing site improvements to remain from damage during construction.
 - 1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- A. Provide temporary erosion- and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties, according to erosion- and sedimentation-control Drawings and requirements of authorities having jurisdiction.
- B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones or adjoining properties.
- C. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
- D. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.3 EXISTING UTILITIES

- A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed.
- B. Interrupting Existing Utilities: Do not interrupt utilities.
- C. Excavate for and remove underground utilities indicated to be removed.

3.4 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.
 - 1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
 - 2. Grind down stumps and remove roots larger than 2 inches in diameter, obstructions, and debris to a depth of 18 inches below exposed subgrade.
 - 3. Chip removed tree branches and dispose of off-site.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.

3.5 TOPSOIL STRIPPING

- A. Remove sod and grass before stripping topsoil.
- B. Strip topsoil to subsoil layer in a manner to prevent intermingling with underlying subsoil or other waste materials.
 1. Remove subsoil and non-soil materials from topsoil, including clay lumps, gravel, and other objects more than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials.
- C. Stockpile topsoil away from edge of excavations without intermixing with subsoil or other materials. Grade and shape stockpiles to drain surface water. Seed with rye grass to prevent windblown dust and erosion by water.
 1. Limit height of topsoil stockpiles.
 2. Stockpile surplus topsoil to allow for re-spreading deeper topsoil.

3.6 STOCKPILING ROCK

- A. Remove from construction area naturally formed rocks that measure more than 1 foot across in least dimension. Do not include excavated or crushed rock.
 1. Separate or wash off non-rock materials from rocks, including soil, clay lumps, gravel, and other objects larger than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials.
- B. Stockpile rock away from edge of excavations without intermixing with other materials. Cover to prevent windblown debris from accumulating among rocks.
 1. Dispose of surplus rock. Surplus rock is that which exceeds quantity indicated to be stockpiled or reused.

3.7 SITE IMPROVEMENTS

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

3.8 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. 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.
- B. Excess soil materials shall be retained on the site and used as general fill where suitable, or placed, graded and stabilized.

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- C. Separate recyclable materials produced during site clearing from other non-recyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities. Do not interfere with other Project work.

END OF SECTION 311000

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SECTION 312000 – EARTH MOVING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The work of this Section includes but is not necessarily limited to the following:
 - 1. Excavation, filling, grading, and backfilling.
 - 2. Providing, placing, and compacting of backfill materials.
- B. Related Requirements:
 - 1. "State of Connecticut Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction", Form 817, including all supplements and revisions.
 - 2. Section 311000 "Site Clearing" for site stripping, grubbing, stripping and stockpiling topsoil, and removal of above- and below-grade improvements and utilities.

1.2 RELATED DOCUMENTS AND SECTIONS

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

1.3 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
 - 1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
 - 2. Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.
- C. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- D. 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 Engineer. Authorized additional excavation and replacement material will be paid for according to Contract provisions.
 - 2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.
- E. Fill: Soil materials used to raise existing grades.

- F. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 1 cu. yd. that cannot be removed by excavating equipment, without systematic drilling, ram hammering or ripping.
- G. Rough Grade: Rough grade shall mean the completed surface of excavations or fills which forms a plane parallel to that of the finished grade within indicated tolerances. Rough grade may exist prior to fine grading or the placement of topsoil, sub base, or other materials.
- H. Fine Grade: Fine grade shall mean the completed surface of excavations or fills within a 3/4 inch tolerance.
- I. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.
- J. Utilities: On-site underground pipes, conduits, ducts, and cables.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct preconstruction conference at Project site.
 - 1. Review methods and procedures related to earthmoving, including, but not limited to, the following:
 - a. Personnel and equipment needed to make progress and avoid delays.
 - b. Coordination of Work with utility locator service.
 - c. Coordination of Work and equipment movement with the locations of tree- and plant-protection zones.
 - d. Field quality control.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of the following manufactured products required:
 - 1. Geotextiles.
 - 2. Warning tapes.

1.6 INFORMATIONAL SUBMITTALS

- A. Material Test Reports: For each on-site and borrow soil material proposed for fill and backfill as follows:
 - 1. Borrow earth fill, bedding material, gravel base materials, all stone and other soil products to be used in construction shall be sampled conforming to ASTM D75 Practice for Sampling Aggregates. Sieve Analysis shall conform to ASTM C-136-84a Standard Method for Sieve Analysis of Fine and Coarse Aggregates and or ASTM C117 where applicable.
- 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 earth-moving operations. Submit before earth moving begins.

1.7 QUALITY ASSURANCE

- A. Contractor shall retain a ½ cubic foot labeled sample of approved materials at the on-site field office until acceptance of the site work.
- B. Materials that are not approved as evidenced by sieve analysis and as determined by the Engineer shall be immediately removed from the site at the Contractor's expense.
- C. The Contractor shall perform earthwork operations in conformance with all applicable Federal, State and Local codes and regulations.

1.8 FIELD CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving 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 Owner or authorities having jurisdiction.
- B. The Contractor shall verify the location of existing utilities in the areas of work of this section. The Contractor shall contact "Call Before You Dig" (800) 922-4455 to obtain additional data concerning the locations of existing utilities and to obtain a permit. Call a minimum of seventy-two (72) hours (working days) in advance of commencing excavation work.
- C. When existing utilities are encountered that are to remain, provide all means of support and protection necessary to prevent damage during earthwork operations.
- D. Should uncharted or miss-charted utilities, subsurface conditions or piping be encountered discontinue work in the affected area and consult utility owner and Engineer immediately for instructions. Repair damaged utilities to the satisfaction of the utility owner.
- E. Do not interrupt existing utility services.
- F. The Contractor shall be aware that no warranties are implied concerning the accuracy of subsurface conditions shown on the plans. The Contractor is responsible for all conclusions or assumptions made from this data. The Contractor may request additional subsurface testing, at the Contractor's expense, subject to the written approval of the Engineer.
- G. Do not commence earth-moving operation until temporary site erosion- and sedimentation-control measures specified in Section 015000 "Temporary Facilities and Controls" are in place.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Earth Fill

1. Earth fill materials shall be free of frozen matter, debris, organic matter and shall contain less than 20% by weight of material which would pass a #200 sieve.
2. On site materials and borrow used as fill shall conform to Sections 02.07.01, 02.07.02, and 02.07.03 of Form 817.
3. Unsuitable and unapproved materials shall be promptly relocated outside of proposed paved areas.

C. Processed Gravel shall conform to Sections M.05.01 of Form 817.

D. Bedding Material

1. Stone bedding material shall conform to M.01.01 and M.01.02 of Form 817. No. 6 gradation (3/4 inch size).

E. Topsoil shall conform to M13.01-1 of Form 817.

2.2 GEOTEXTILES

- A. Filter fabric shall conform to Sections 7.55.01, 7.55.02, and M.08.01-26 of Form 817.
- B. Filter fabric shall be Mirafi 140N as manufactured by Tencate Mirafi, Pendergrass, GA (706) 693-2226 or approved equal.

2.3 ACCESSORIES

- A. Warning tape shall be Manufactured by Line Tec, Inc., PO Box 67, Glen Ellyn, Illinois, or approved equal. Provide the appropriate color as indicted in Section 1.05.15 of Form 817.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Contractor is responsible for and shall protect land monuments and survey benchmarks from disturbance. If this is not possible, benchmarks shall be moved by a licensed land surveyor.
- B. Protect structures, utilities, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations.
- C. Protect and maintain erosion and sedimentation controls during earth-moving operations.
- D. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

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 EXPLOSIVES

- A. Explosives: Do not use explosives.

3.4 EXCAVATION, GENERAL

- A. Classified Excavation: Excavate to subgrade elevations. Material to be excavated will be classified as earth and rock. Do not excavate rock until it has been classified and cross sectioned by Engineer.
 - 1. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; and soil, boulders less than 1 cubic yard in size, 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.

3.5 EXCAVATION FOR UTILITY TRENCHES

- A. Trench excavation includes excavation for all utility structures, utilities and other miscellaneous footings as required by the drawings and site conditions. Excavate trenches as required to allow for efficient installation of materials and inspection. Excavate to the depth required to support pipe or conduit on a foundation as specified and to conform to the indicated slope, invert or elevation. Slope walls of excavation or erect shoring as required to prevent cave-in. Excavate for structures to the widths and depths shown on drawings or as specified.
- B. Furnish all shoring, bracing and water removal equipment necessary for the completion of the work. Keep excavations dry. Do not excavate to full depth in freezing temperature unless pipes, structures, and footings are to be installed immediately.
- C. Conform to Sections 02.05.01 and 02.05.03 of Form 817.
- D. Where over excavation or unsuitable bearing material such as boulders, ledge rock or muck are encountered at the depth of installation or within 6" of the pipe bottom, notify Engineer immediately. Additional excavation may be required to provide an adequate pipe foundation. Backfill with approved bedding material as required by the Engineer, up to the required grade for bottom of pipe.
- E. Excavation Protection and Maintenance:

1. Pipe Trenching: Grade bottom of trenches evenly and insure even bearing of pipe over the full length. Excavate a minimum of 6" below all pipes. Hand trim trenches for bell and spigot pipe joints. Bell ends of pipe shall be fully bedded.
2. Contractor shall keep trenches free of water at all times. Trenches shall not be used for drainage purposes.
3. Structure excavation: Conform to Specification Section 2.03 of Form 817.

3.6 SUBGRADE INSPECTION

- A. Notify Engineer when excavations have reached required subgrade.
- B. If Engineer determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Engineer, without additional compensation.

3.7 STORAGE OF SOIL MATERIALS

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

3.8 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
 1. Construction below finish grade.
 2. Measuring locations of underground utilities for Record Documents.
 3. Inspecting underground utilities.
 4. Removing trash and debris.
- B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.9 UTILITY TRENCH BACKFILL

- A. Place backfill on subgrades free of mud, frost, snow, or ice.
- B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- C. Backfill voids with satisfactory soil while removing shoring and bracing.
- D. Bedding material shall be 3/4 inch crushed stone conforming to M.01.01 of Form 817. Install all pipes in bedding material with a thickness directly under the pipe of minimum 6 inches and preshaped to a height of 10% of total height of pipe for pipes 12 inches or larger. Install pipe

and backfill trench with bedding material to a height of the total height of the pipe or as shown on the construction details. Remaining backfill to subgrade outside of paved areas may be existing material provided that no unsuitable material as listed herein is used. Within paved areas trench shall be backfilled with suitable existing soils as determined by sieve analysis, or processed gravel, to the bottom of the roadway subbase. Conform to Form 817, Section 10.01.03.

- E. Backfill in compacted lifts not exceeding 8 inches in depth. Do not backfill against any pipe, structure or footing until permission is given by the Owner or Engineer.
- F. Compact all backfill to subgrade to 95% Modified AASHTO laboratory density (ASTM D-1557, Method C).
- G. If pipes or structures are over fill areas, fill 12 inches higher than the top of pipe invert and compact to density required. Trench to required elevation. Extend fill and compaction at least 2 feet laterally on both sides of proposed pipe or structure.
- H. Warning Tape: Install warning tape directly above utilities, 12 inches below finished grade.

3.10 SOIL FILL

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations as follows:
 - 1. Under grass and planted areas, use satisfactory soil material.
- C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.11 SOIL MOISTURE CONTROL

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

3.12 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 12 inches in loose depth for material compacted by heavy compaction equipment and not more than 4 inches in loose depth for material compacted by hand-operated tampers. Trench backfill shall be placed in layers no more than 8 inches in loose depth.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.

- C. Compact soil materials to not less than the following percentages of maximum dry density according to ASTM D 1557:
 - 1. Under structures scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
 - 2. Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.
 - 3. For utility trenches, compact each layer of initial and final backfill soil material at 95 percent.

3.13 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 - 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 Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:
 - 1. Unpaved Areas: Plus or minus 1 inch.

3.14 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 Engineer; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.15 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus waste materials, including trash, and debris, and legally dispose of them off Owner's property.
- B. Surplus soil materials shall remain on site and be utilized as fill material, if suitable, or placed, graded, and stabilized.

3.16 MAINTENANCE:

- A. Contractor shall correct settlements up to 1 year after acceptance of work. Correction of settlements includes all work incidental to the replacement of subsoils or any other structure or improvement affected by the settlement. Restore damaged areas to the intended grade, quality and appearance.
 - 1. Compact completed areas disturbed by construction or adverse weather to the required density prior to further construction. Repair work shall conform to the requirements of this specification.
- B. Protect graded areas from traffic, erosion and debris. Contractor shall repair and regrade areas which have settled, been compacted, rutted or eroded to the intended grade and shape.
- C. Erosion control devices shall be promptly installed, repaired or replaced as conditions dictate.

3.17 CLEAN UP

- A. Promptly remove and dispose of all debris, rock and other excess or unsuitable material off site in a legal manner.

END OF SECTION 312000

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EXTERIOR IMPROVEMENTS

Division 32

Section 329200 – Turf and Grasses

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SECTION 329200 - TURF AND GRASSES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Seeding.

1.2 DEFINITIONS

- A. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- B. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

1.3 INFORMATIONAL SUBMITTALS

A. Certification of grass seed.

1. Certification of each seed mixture for turfgrass sod.

B. Product certificates.

1.4 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 compliance with state and Federal laws, as applicable.

PART 2 - PRODUCTS

2.1 SEED

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

- B. Grass-Seed Mix: Proprietary seed mix as follows:
 - 1. Products: Subject to compliance with requirements, provide the following:
 - a. Seed Mix 2, Figure PS-3, 2002 CT Guidelines for Soil Erosion and Sediment Control: 48% Creeping Red Fescue, 4% Redtop, 48% Tall Fescue.

2.2 FERTILIZERS

- A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
 - 1. Composition: 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
- B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
 - 1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.

2.3 MULCHES

- A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.

2.4 PESTICIDES

- A. General: Pesticide, registered and approved by the 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.

PART 3 - EXECUTION

3.1 TURF AREA PREPARATION

- A. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- B. Before planting, obtain Engineer's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.2 SEEDING

- A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph.
 - 1. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
 - 2. Do not use wet seed or seed that is moldy or otherwise damaged.
 - 3. Do not seed against existing trees.
- B. Sow seed at a total rate of 2.1 lb/1000 sq. ft. (1.05 lb/1000 sq. ft. in each direction).
- C. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.
- D. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Spread uniformly at a minimum rate of 2-3 bales/1,000 sq. ft. to form a continuous blanket 1 inch in loose thickness over seeded areas.
 - 1. Anchor straw mulch by crimping into soil with suitable mechanical equipment.
- E. Protect seeded areas from hot, dry weather or drying winds by applying mulch within 24 hours after completing seeding operations. Soak areas, scatter mulch uniformly to a thickness of, and roll surface smooth.

3.3 TURF MAINTENANCE

- A. General: 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.
- B. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more than one-third of grass-leaf growth in initial or subsequent mowings.

3.4 SATISFACTORY TURF

- A. Turf installations shall meet the following criteria as determined by 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. 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.

END OF SECTION 329200

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UTILITIES

Division 33

Section 334200 – Stormwater Conveyance

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SECTION 334200 – STORMWATER CONVEYANCE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. PE pipe and fittings.
 - 2. Pipe outlets.
 - 3. Erosion control blankets.

1.3 QUALITY ASSURANCE

- A. Piping materials shall bear label, stamp, or other markings of specified testing agency.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Do not store plastic manholes, pipe, and fittings in direct sunlight.
- B. Protect pipe, pipe fittings, and seals from dirt and damage.
- C. Handle catch basins and stormwater inlets in accordance with manufacturer's written rigging instructions.

1.5 PROJECT CONDITIONS

- A. Interruption of Existing Storm Drainage Service: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:
 - 1. Notify engineer no fewer than two days in advance of proposed interruption of service.
 - 2. Do not proceed with interruption of service without Engineer's written permission.

PART 2 - PRODUCTS

2.1 CORRUGATED-PE PIPE AND FITTINGS

- A. Corrugated PE Pipe and Fittings shall be smooth interior, high density polyethylene corrugated exterior pipe. Pipe Material shall meet ASTM D1248 Type III, Category 4, Grade P33, Class C; or ASTM D3350 Cell Classification 324420C.
- B. Twelve (12) to twenty four (24) inch diameter pipe shall conform to AASHTO M294 Type S.
- C. Coupling bands shall cover at least one full corrugation on each section of pipe. When gasketed coupling bands are required, the gasket shall be made of closed-cell synthetic expanded rubber meeting the requirements of ASTM D1056, Type 2. Gaskets shall be installed on the coupling band by the pipe manufacturer. All coupling bands shall meet or exceed the soil-tightness requirement of the AASHTO Standard Specification for Highway Bridges, Section 23, paragraph 23.3.1.5.4(e).
- D. Pipe fittings shall conform to AASHTO M252 or AASHTO M294 or approved equal.

2.2 RIPRAP

- A. Rip Rap shall conform to the size as shown on the drawings and to the appropriate subsections of Article M.12.02 of CT Form 818:
 - 1. Modified Rip Rap: Shall conform to Section M.12.02-3.

2.3 EROSION CONTROL BLANKETS

- A. Erosion control blankets shall be included on the CT DOT Qualified Products List, latest revision, Class 1 Type A Erosion Control Matting. Erosion control blankets shall be installed in accordance with manufacturer requirements.

PART 3 - EXECUTION

3.1 EARTHWORK

- A. Excavation, trenching, and backfilling are specified in Section 312000 "Earth Moving."

3.2 PIPING INSTALLATION

- A. General Locations and Arrangements: Drawing plans and details indicate general location and arrangement of underground storm drainage piping. Location and arrangement of piping layout take into account design considerations. Install piping as indicated, to extent practical. Where specific installation is not indicated, follow piping manufacturer's written instructions.
- B. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves,

and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements.

- C. Install proper size increasers, reducers, and couplings where different sizes or materials of pipes and fittings are connected. Reducing size of piping in direction of flow is prohibited.
- D. Install gravity-flow, nonpressure drainage piping according to the following:
 - 1. Install piping pitched down in direction of flow.
 - 2. Install piping with 24-inch minimum cover.

3.3 PIPE JOINT CONSTRUCTION

- A. Join gravity-flow, nonpressure drainage piping according to the following:
 - 1. Join corrugated PE piping according to ASTM D 3212 for push-on joints.

3.4 STORMWATER OUTLET INSTALLATION

- A. Construct riprap of broken stone, as indicated.
- B. Install outlets that spill onto grade, with flared end sections that match pipe, where indicated.
- C. Construct energy dissipaters at outlets, as indicated.

3.5 CONNECTIONS

- A. Make connections to existing piping and underground manholes.
 - 1. Protect existing piping, manholes, and structures to prevent concrete or debris from entering while making tap connections. Remove debris or other extraneous material that may accumulate.

3.6 IDENTIFICATION

- A. Materials and their installation are specified in Section 312000 "Earth Moving." Arrange for installation of green warning tape directly over piping and at outside edge of underground structures.
 - 1. Use detectable warning tape over nonferrous piping and over edges of underground structures.

3.7 FIELD QUALITY CONTROL

- A. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches of backfill is in place, and again at completion of Project.
 - 1. Submit separate reports for each system inspection.
 - 2. Defects requiring correction include the following:

- a. Alignment: Less than full diameter of inside of pipe is visible between structures.
 - b. Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less than 92.5 percent of piping diameter.
 - c. Damage: Crushed, broken, cracked, or otherwise damaged piping.
3. Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.
 4. Reinspect and repeat procedure until results are satisfactory.

3.8 CLEANING

- A. Clean interior of piping of dirt and superfluous materials. Flush with potable water. Collect and properly dispose of all debris prior to entering the public storm drainage system.
- B. Existing drainage system that remains in service following construction shall be cleaned in accordance with applicable State and Federal regulations (remove collected sediment and debris from sump).

END OF SECTION 334200