

BID PACKAGE

Alternative Driveway Project

Industrial Park Road

Sterling, CT

Technical specifications

**Town of Sterling
110 industrial park drive**

**Alternative Driveway
Phase 1: Drainage & Site Grading**

July 20, 2017

INDEX TO TECHNICAL SPECIFICATIONS

<u>SECTION</u>	<u>TITLE</u>
01010	SUMMARY OF WORK
01027	APPLICATIONS FOR PAYMENT
01090	REFERENCE STANDARDS
01150	MEASUREMENT AND PAYMENT
01300	SUBMITTALS
01700	CONTRACT CLOSE OUT
01710	CLEANING UP
01715	AS BUILT DRAWINGS
01800	SCHEDULE OF TESTING
02005	CONSTRUCTION STAKING
02010	MAINTENANCE AND PROTECTION OF TRAFFIC
02012	TRAFFIC MEN
02020	CONSTRUCTION BARRICADES
02060	SEDIMENTATION CONTROL SYSTEM
02101	DEWATERING CONTROL AND DIVERSION OF WATER
02110	CLEARING AND GRUBBING
02115	TRENCH EXCAVATION
02118	GRAVEL FILL
02119	GRAVEL SUB-BASE
02160	PERVIOUS STRUCTURE BACKFILL
02202	ROADWAY EXCAVATION, FORMATION OF EMBANKMENT AND DISPOSAL OF SURPLUS MATERIAL
02204	STRUCTURE EXCAVATION

<u>SECTION</u>	<u>TITLE</u>
02303	CRUSHED STONE
02426	LOAMING
02435	TURF ESTABLISHMENT
02440	RIPRAP
03117	CATCH BASINS/MANHOLES
05003	MANHOLE FRAMES AND COVERS
05100	HIGH DENSITY POLYETHYLENE PIPE (HDCPP)
05105	POLYVINYL CHLORIDE PLASTIC PIPE (PVC)
05120	REINFORCED CONCRETE CULVERT END
11000	CONSTRUCTION SIGNING
11050	GEOTEXTILE

SECTION 01010 - SUMMARY OF WORK

PART 1.00 - GENERAL

1.01 PROJECT SITE

- A. The project site is shown on the Contract Drawings, and is identified as number 110 Industrial Park Drive, Sterling, Connecticut.

1.02 PROJECT SCOPE

- A. This project is for the development of a second driveway to serve the existing Town building. The work to perform this project includes utilizing the existing driveway to #110 for this project. The proposed work involves site clearing, stump removal, topsoil stockpiling, earthwork, drainage installation, dewatering, erosion and sedimentation control, loaming and seeding, site restoration, cleanup at completion of construction, and installing the pavement sub grade material only, all without removing the existing metal beam guiderail along Industrial Park Drive from the existing parking lot curb line to the existing guiderail. All work is shown and detailed on the following plan "Improvement Location & Topographic Survey, "Proposed Driveway" prepared for Town of Sterling, 110 Industrial Park Drive. Dated: March 2015, revised 7/24/2015"
- B. Contractor is responsible for marking the work area, and notifying call before up dig to identify all underground utility lines prior to performing any work.

1.03 INTENT

- A. The entire work provided for in these Technical Specifications and on the drawings shall be constructed and finished in every respect in a good workmanlike and substantial manner. It is not intended that the drawings shall show every detail piece of material or equipment, but such parts and pieces as may be in accordance with the best practices and regulatory requirements, even though not shown, shall be new unless specifically stated otherwise in these Specifications.

1.04 JOB SITE PROGRESS MEETINGS

- A. Conduct weekly job site meetings for the purpose of reviewing, scheduling and coordinating project progress, as well as other matters of general interest to the project.
- B. Notify the Town of Sterling Economic Development Coordinator and all major subcontractors involved in work to be discussed of each meeting. Keep written record of the minutes of each meeting and make record available for review by any person attending each meeting and by the Economic Development Coordinator or designated agent whether or not present at any meeting.

END OF SECTION

SECTION 01027 - APPLICATIONS FOR PAYMENT

PART 1.00 - GENERAL

1.01 SECTION INCLUDES

- A. Procedures for preparation and submittal of Applications for Payment.

1.02 RELATED SECTIONS

- A. Section 01700 - Contract Closeout: Final Payment.

1.03 FORMAT

- A. AIA G702 - Application and Certificate for Payment including continuation sheets where required.
- B. For each item, provide a column for listing: Item Number; Description of Work; Scheduled Value, Previous Applications: Work in Place and Stored Materials under this Application: Authorized Change Orders; Total Completed and Stored to Date of Application; Percentage of Completion; Balance to Finish; and Retainage.

1.04 PREPARATION OF APPLICATIONS

- A. Present required information in typewritten form.
- B. Execute certification by signature of authorized officer.
- C. List each authorized Change Order as an extension on continuation sheet, listing Change Order number dollar amount as for an original item of Work.
- D. Prepare Application for Final Payment as specified in Section 01700.

1.05 SUBMITTAL PROCEDURES

- A. Submit three copies of each Application for Payment.
- B. Submit an updated construction schedule with each Application for Payment.
- C. Payment Period: Submit at intervals stipulated in the Agreement.

1.06 SUBSTANTIATING DATA

- A. When the Town of Sterling requires substantiating information, submit data justifying dollar amounts in question.
- B. Provide one copy of data with cover letter for each copy of submittal. Show Application number and date, and line item by number and description.

1.07 SCHEDULE OF VALUES

- A. The selected contractor shall provide to the Town Economic Development Coordinator or designated agent prior to the pre-construction meeting, a schedule of values to be used as the basis of monthly payments.

PART 2.00 - MATERIALS

Vacant

PART 3.00 - EXECUTION

Vacant

PART 4.00 - MEASUREMENT AND PAYMENT

Vacant

**END OF SECTION
SECTION 01090 - REFERENCE STANDARDS**

PART 1.00 - GENERAL

1.01 SECTION INCLUDES

- A. Quality Assurance.
- B. Schedule of references.

1.02 QUALITY ASSURANCE

- A. For Products or workmanship specified by association, trade, or Federal Standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard current of date of approval.
- C. Obtain copies of standards when required.
- D. Maintain copy at job site during submittals, planning, and progress of the specific work, until acceptance.
- E. Should specified reference standards conflict with these Specifications, request clarification from the Town of Sterling before proceeding.

1.03 SCHEDULE OF REFERENCES

- AA Aluminum Association
818 Connecticut Avenue, N.W.
Washington, DC 20006
- AASHTO American Association of State Highway
and Transportation Officials
444 North Capitol Street, N.W.
Washington, DC 20001
- ACI American Concrete Institute
Box 19150
Redford Station
Detroit, MI 48219
- AGC Associated General Contractors of America
1957 E Street, N.W.
Washington, DC 20006
- AI Asphalt Institute
Asphalt Institute Building
College Park, MD 20740
- AIA American Institute of Architects
1735 New York Avenue, N.W.
Washington, DC 20006

AITC	American Institute of Timber Construction 333 W. Hampden Avenue Englewood, CO 80110
AISC	American Institute of Steel construction 400 North Michigan Avenue Eighth Floor Chicago, IL 60611
AISI	American Iron and Steel Institute 1000 16th Street, N.W. Washington, DC 20036
ANSI	American National Standards Institute 1430 Broadway New York, NY 10018
APA	American Plywood Association Box 11700 Tacoma, WA 98411
ASME	American Society of Mechanical Engineering Coordinator or designated agents 345 East 47th Street New York, NY 10017
ASPA	American Sod Producers Association Association Building Ninth and Minnesota Hastings, NE 68901
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235
AWPA	American Wood-Preservers' Association 7735 Old Georgetown Road Bethesda, MD 20014
AWS	American Welding Society 550 LeJune Road Miami, FL 33135
CDA	Copper Development Association

57th Floor, Chrysler Building
405 Lexington Avenue
New York, NY 10174

CLFMI	Chain Link Fence Manufacturers Institute 1101 Connecticut Avenue, M.W. Washington, DC 20036
CRSI	Concrete Reinforcing Steel Institute 933 Plum Grove Road Schaumburg, IL 60195
EJMA	Expansion Joint Manufacturers Association 707 Westchester Avenue White Plains, NY 10604
NFPA	National Fire Protection Association Batterymarch Park Quincy, MA 02169
Standard	State of Connecticut Specifications, Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction, Form 817, 2016 As Amended

PART 2.00 - PRODUCTS

Vacant

PART 3.00 - EXECUTION

Vacant

PART 4.00 - MEASUREMENT AND PAYMENT

Vacant

END OF SECTION

SECTION 01150 - MEASUREMENT AND PAYMENT

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. The Contract lump sum price shall constitute full compensation as herein specified for all items of work completed in accordance with the drawings and specifications.
- B. No separate payment will be made for cleaning up. Such clean up shall be considered incidental to the item to which it applies and shall be included in the lump sum price.

END OF SECTION

SECTION 01300 - SUBMITTALS

PART 1.00 - GENERAL

1.01 SECTION INCLUDES

- A. Submittal procedures
- B. Construction progress schedules
- C. Schedule of values
- D. Proposed products list
- E. Shop drawings
- F. Product data.
- G. Samples
- H. Manufacturers' instructions
- I. Manufacturers' certificates

1.02 SUBMITTAL PROCEDURES

- A. Each submittal shall include six copies for review and distribution by the Town of Sterling.
- B. Contractor shall sequentially number the transmittal forms. Re-submittals to have original number with an alphabetic suffix.
- C. Identify Project, Contractor, Subcontractor or supplier; pertinent Drawing sheet and detail number(s), and specification Section number, as appropriate.
- D. Apply Contractor's stamp, signed or initialed certifying that review, verification of Products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents.
- E. Schedule submittals to expedite the Project.
- F. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.
- G. Provide space for Contractor and Economic Development Coordinator or designated agent review stamps.

- H. Revise and resubmit submittals as required, identify all changes made since previous submittal.
- I. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.

1.03 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial progress schedule in duplicate within 15 days after established in Notice to Proceed for Town of Sterling's review.
- B. Revise and resubmit as required.
- C. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.
- D. Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates.

1.04 SCHEDULE OF VALUES

- A. The Contractor shall submit to the Town Economic Development Coordinator or designated agent, prior to the pre-construction meeting, a schedule of values to be used as the basis of monthly payments for approval.

1.05 PROPOSED PRODUCTS LIST

- A. Within 15 days after date of Notice to Proceed, submit complete list of major products proposed for use, with name of manufacturer, trade name, and model number or each product.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.06 SHOP DRAWINGS

- A. Submit the number of blue-line reproductions which Contractor requires, plus four copies which will be retained by the Town of Sterling.
- B. After review, distribute in accordance with Article on Procedures above and for Record Documents described in Section 01700 - Project Close-out.

1.07 PRODUCT DATA

- A. Submit the number of copies which the Contractor requires, plus four copies which will be retained by the Town of Sterling.

- B. Mark each copy to identify applicable products, models, options, and other data. supplement manufacturers' standard data to provide information unique to this Project.
- C. After review, distribute in accordance with Article on Procedures above and provide copies for Record Documents described in Section 01700 - Project Close-out.

1.08 SAMPLES

- A. Submit samples, when specified in individual specification sections, to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

1.09 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification Sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, start-up, adjusting, operation and maintenance and finishing, in quantities specified for Product Data.
- B. Identify conflicts between manufacturers' instructions and Specifications.

1.10 MANUFACTURER'S CERTIFICATES

- A. When specified in individual specification Sections, submit manufacturer's certificate to the Town of Sterling for review, in quantities specified for Product Data.
- B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or Product, but must be acceptable to the Town of Sterling.

PART 2.00 - PRODUCT

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PART 3.00 - EXECUTION

Vacant

PART 4.00 - MEASUREMENT AND PAYMENT

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END OF SECTION

SECTION 01700 - CONTRACT CLOSEOUT

PART 1.00 - GENERAL

1.01 SECTION INCLUDES

- A. Close Out Procedures.
- B. Final Cleaning.
- C. Adjusting.
- D. Project Record Documents.
- E. Operation and Maintenance Data.
- F. Warranties.
- G. Spare Parts and Maintenance Materials.

1.02 CLOSEOUT PROCEDURES

- A. Submit written certification that the Specifications have been reviewed, Work had been inspected, and that Work is complete in accordance with the Specifications and ready for the Town of Sterling's inspection.
- B. Provide submittals to the Town of Sterling that are required by governing or other authorities.

1.03 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.
- B. Remove waste and surplus materials, rubbish and construction facilities from the site.

1.04 ADJUSTING

- A. Adjust operating Products and equipment to ensure smooth and unhindered operation.

1.05 PROJECT RECORD DOCUMENTS

- A. Maintain on site, one set of the following record documents; record actual revisions to the Work:
 - 1. Contract Drawings.
 - 2. Specifications.
 - 3. Addenda.

4. Review shop drawings, product data, and samples.
- B. Store Record Documents separate from documents used for construction.
- C. Record information concurrent with construction progress.
- D. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
 1. Manufacturer's name and product model and number.
 2. Product substitutions or alternates utilized.
 3. Changes made by Addenda and Modifications.
- E. Record Documents and Shop Drawings: Legibly mark each item to record actual construction.

PART 2.00 - PRODUCTS

Vacant

PART 3.00 - EXECUTION

Vacant

PART 4.00 - MEASUREMENT AND PAYMENT

Vacant

END OF SECTION

SECTION 01710 - CLEANING UP

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. During its progress, the work and the adjacent areas affected thereby shall be kept cleaned and all rubbish, surplus materials, and unneeded construction equipment shall be removed and all damage repaired so that the public and Tenants will be inconvenienced as little as possible.
- B. Where material or debris has washed or flowed into or been placed in existing watercourses, ditches, gutters, drains, pipes, and drainage structures during the course of the Contractor's operations, such material or debris shall be entirely removed and satisfactorily disposed of during the progress of the work, and the ditches, channels drains, pipes, structures, and work, etc., shall upon completion of the work, be left in a clean and neat condition.
- C. On or before the completion of the work, the Contractor shall, unless otherwise especially directed or permitted in writing, tear down and remove all temporary buildings and structures built by him; shall remove all temporary works, tools and machinery or other construction equipment furnished by him; shall remove, acceptably disinfect and cover all organic matter and material containing organic matter in, under and around privies, houses and other buildings used by him; shall remove all rubbish from any grounds which he has occupied; and shall leave the roads and all parts of the premises and adjacent property affected by his operations in a neat and satisfactory condition.
- D. The Contractor shall restore or replace, when and as directed, any public or private property damage by his work, equipment or employees, to a condition at least equal to that existing immediately prior to the beginning of operations. To this end, the Contractor shall do as required, all necessary roadway or driveway, walk and landscaping work. Suitable materials, equipment and methods shall be used for such restoration.
- E. The Contractor shall thoroughly clean all materials and equipment installed by him and his subcontractors, and on completion of the work, shall deliver it undamaged and in fresh and new-appearing condition. All mechanical equipment shall be left fully charged with lubricant and ready for operation.

PART 2.00 - MATERIALS

Vacant

PART 3.00 - EXECUTION

Vacant

PART 4.00 - MEASUREMENT AND PAYMENT

- A. This item is considered incidental and shall be included in the lump sum bid.

END OF SECTION

SECTION 01715 - AS BUILT DRAWINGS

PART 1.00 - GENERAL

- A. At completion of construction, "As Built Drawings" are to be prepared as part of this contract and submitted to the Town of Sterling. The Drawings shall depict the actual work as completed, including road alignment, grading, drainage, culvert, road widths, property lines, right of ways, easements etc. All work shown on the contract drawings shall be shown in their actual locations and elevations.
- B. The drawings shall be prepared by a surveyor licensed by the State of Connecticut and shall be certified to be to A-2 and T-2 accuracy. The surveyor shall sign, seal and date each drawing. All drawings shall be 24" x 36".

PART 2.00 - MATERIALS

- A. The drawings shall be reproducible mylar drawings and shall be in ink. Sepia mylars are not acceptable.

PART 3.00 - EXECUTION

Vacant

PART 4.00 - MEASUREMENT

- A. This work shall be included and paid for as part of the contract lump sum price.

END OF SECTION

SECTION 01800 - SCHEDULE OF TESTING

PART 1.00 - GENERAL

1.01. SCOPE

- A. The Contractor shall be responsible for all testing as indicated below. The Contractor shall be responsible for obtaining a Materials Testing Firm and for all costs associated with any and all testing.

1.02. SCHEDULE

- A. Compaction testing of the finished sub-grade shall be taken at 100 foot intervals (a minimum of 2) and as ordered by the Town Economic Development Coordinator or designated agent and shall meet the minimum compaction requirement of 95% compaction.
- B. Compaction testing of the finished sub-base shall be taken at 100 foot intervals (a minimum of 2) and as ordered by the Town Economic Development Coordinator or designated agent and shall meet the minimum compaction requirement of 95% compaction.
- C. Compaction testing of the finished base shall be taken at 100 foot intervals (a minimum of 2) and as ordered by the Town Economic Development Coordinator or designated agent and shall meet the minimum compaction requirement of 95% compaction.

1.03. REPORTS

- A. Test result reports shall be given to the Town Economic Development Coordinator or designated agent at the following points in time:
 - 1. Compaction test results prior to placement of the next course of material.

1.04. PENALTIES

- A. In the event that the test result reports are not given to the Town Economic Development Coordinator or designated agent within the time frame above, the Contractor may be required to remove any and all material placed, at the discretion of the Town Economic Development Coordinator or designated agent.

1.05. MATERIAL TESTING FIRMS

- A. The Contractor shall employ only those Material Testing Firms that are approved by the State of Connecticut, Department of Transportation for such testing.

2.0 MATERIALS

VACANT

3.0 - EXECUTION

VACANT

4.0 - MEASUREMENT AND PAYMENT

4.01. BASIS OF PAYMENT

- A. This work shall be included in the Contract lump sum bid price and will be paid as part of that price.

END OF SECTION

SECTION 02005 - CONSTRUCTION STAKING

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. The work under this item shall consist of all construction layout and reference staking necessary for the proper control and satisfactory completion of all work on the project, except property line, highway lines, or non-access lines.

PART 2.00 - MATERIALS

Vacant

PART 3.00 - EXECUTION

3.01 CONSTRUCTION METHODS

- A. The contractor shall be responsible for the placement and preservation of adequate ties to all control points, whether established by him or found on the project, necessary for the accurate reestablishment of all base lines or center lines shown on the plans.
- B. All stakes, references and batter boards including original, additional or replacement, which may be required for the construction operations, signing and traffic control shall be furnished, set and properly referenced by the Contractor. He shall be solely and completely responsible for the accuracy of the line and grade of all features of the work. Any errors or apparent discrepancies found in previous surveys, plans, specifications or special provisions shall be called to the Town of Sterling's attention by the Contractor for correction or interpretation prior to proceeding with the work.
- C. The Contractor shall provide and maintain for the periods needed to complete the work, reference stakes at 100 foot intervals outside the slope limits. Further, the Contractor shall provide and maintain reference stakes at 50 foot intervals immediately prior to and during the formation of sub-grade and the construction of all subsequent pavement layers. These stakes shall be properly marked as to station, offset and shall be referenced to the proposed grade.
- D. Upon request of the Economic Development Coordinator or designated agent, the Contractor shall furnish copies of all data used in setting and referencing all stakes and other layout markings used by the Contractor.
- E. All staking shall be performed by qualified Engineering or Surveying personnel who are trained, experienced and skilled in construction layout and staking of the type required under the contract. The personnel shall

perform this staking under the direct supervision of a CT licensed land surveyor.

- F. The Contractor shall furnish all necessary personnel, equipment and supplies, materials, transportation and work incidental to the accurate and satisfactory completion of this work.

PART 4.00 - MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. Construction staking will be paid for as part of the Contract Lump Sum Price.

END OF SECTION

SECTION 02020 - CONSTRUCTION BARRICADES

PART 1.00 GENERAL

1.01 DESCRIPTION

- A. Under this item the Contractor shall furnish all construction barricades of Type I, II or III as defined by the Manual of Uniform Traffic Control Devices Millennium Edition as required to barricade off the parking lot from the proposed construction.

PART 2.00 MATERIALS

2.01 MATERIALS

- A. Construction barricades Type I, II or III shall conform to Article 9.79.02 of the Standard Specifications and Chapter 6 F of the Manual of Uniform Traffic Control Devices Millennium Edition.
- B. All barricades shall be in "good" condition.
- C. Barricade warning lights shall conform to Article 9.76.02, type B, of the Standard Specifications and Section 6 F.72 of the Manual of Uniform Traffic Control Devices Millennium Edition.

PART 3.00 EXECUTION

3.01 CONSTRUCTION METHODS

- A. Construction shall be in accordance with Article 9.79.03 of the Standard Specifications and Chapter 6 F of the Manual of Uniform Traffic Control Devices Millennium Edition.
- B. Any barricade deemed by the Economic Development Coordinator or designated agent to not be in good condition shall be replaced at the Contractor's expense.
- C. Warning lights shall conform to Article 9.76.03 of the Standard Specifications and Section 6 F.72 of the Manual of Uniform Traffic Control Devices Millennium Edition.

PART 4.00 MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. This item will be paid for as part of the Contract lump sum price.

END OF SECTION

SECTION 02060 - SEDIMENTATION CONTROL SYSTEM

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. This work shall consist of furnishing, placing, maintaining and removal of sedimentation control systems as shown on the plans.

PART 2.00 - MATERIALS

2.01 SEDIMENTATION CONTROL SYSTEMS

- A. Hay bales shall conform to Article 2.18.02, and filter fabric shall conform to Section 7.55 of the Standard Specifications.

PART 3.00 - EXECUTION

3.01 CONSTRUCTION METHODS

- A. Construction methods shall conform to the requirements of Article 2.19.03 of the Standard Specifications.

PART 4.00 - MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. This work will be paid for as part of the Contract lump sum price.

END OF SECTION

SECTION 02101 - DEWATERING CONTROL AND DIVERSION OF WATER

PART 1.00 - GENERAL

1.01 WORK INCLUDED

- A. Contractor shall prepare a dewatering plan for work in the wet basin and shall present same to the Inland Wetlands Agent and the Town Economic Development Coordinator or designated agent for approval. Only the approved plan shall be used. **The Contractor should allow sufficient time for the proposed plan to be reviewed by the Inland Wetland Agent.**
- B. The work covered under this Section includes furnishing all labor, equipment and materials, and performing all operations in connection with the de-watering control, including construction of sediment control traps and all other operations necessary to maintain in a dry condition at all excavations and work areas.
- C. The Contractor shall be responsible for performing all required de-watering in such a manner as to prevent injury to persons or public health, or damage to existing facilities or the work in progress.
- D. This work includes providing and constructing concrete waste blocks/rip-rap dikes for the drainage swale during construction. This work also includes removal and proper disposal of these items after construction.

PART 2.00 - PRODUCTS

2.01 MATERIALS

- A. The Contractor shall be responsible for providing, maintaining, operating and removing all de-watering and other facilities, including all pumping and appurtenant equipment, required to maintain in a dry condition the areas in which construction is to be conducted. The sediment control traps shall be constructed of hay bales, wood stakes and crushed stone.

PART 3.00 - EXECUTION

3.01 DEWATERING EXCAVATIONS

- A. The excavations for work required may be to some extent below existing ground water levels. The contractor shall provide, operate and maintain all pumps, drains, well points sediment control trap or any facility necessary for the control, collection and disposal of all surface and subsurface water encountered in the performance of the work. All excavations shall be kept dry at all times, and all construction work shall be performed in the dry, unless otherwise authorized or directed by the Town of Sterling.
- B. Any damage to existing facilities or new work resulting from the failure of the Contractor to maintain the work areas in a dry condition shall be repaired

by the Contractor, as directed by the Town of Sterling, at no additional expense to the Town of Sterling. Pumping shall be continuous where specified or directed, or as necessary to protect the work and to maintain satisfactory progress.

- C. The Contractor's pumping and de-watering operations shall be carried out in such a manner that no loss of ground will occur. All structures not stable against uplift during Construction or prior to completion shall be thoroughly braced or otherwise protected against movement or damage.
- D. Water being disposed of by the pumping and de-watering operations shall be disposed of in such a manner to avoid injury to persons or public or private property, or to the work in progress. De-watering shall be accomplished by pumping water to the sediment control trap and allowing such water to filter through the hay bales.

PART 4.00 - MEASUREMENT AND PAYMENT

- A. This item is considered incidental and shall be included in the Contract lump sum price.

END OF SECTION

SECTION 02110 - CLEARING AND GRUBBING

PART 1.00 - GENERAL

1.00 GENERAL

- A. This work shall consist of clearing the ground of trees, stumps, brush, rubbish and all objectionable material in accordance with these specifications or as directed by the Town of Sterling. This work shall also include the clearing of the ground necessary for the construction and installation of drainage, structures, ditches, channels, fences and other highway appurtenances and the removal of the existing culvert and endwalls, as shown on the plans. Included in this work shall be the preservation from injury or defacement, or the removal and resetting of vegetation and objects designated to remain.

PART 2.00 - MATERIAL

Vacant

PART 2.00 - CONSTRUCTION METHODS

2.01 CONSTRUCTION METHODS

- A. Within the excavation lines all trees shall be cut off and stumps removed to a depth of not less than 12 inches below the graded surface.
- B. Within the fill lines where an embankment is to be made not more than 5 feet in depth, trees, stumps, roots, etc., shall be cut off to within 6 inches of the ground surface, except where rip-rap is to be placed. In that case these shall be cut off to 6" below bottom of rip-rap.
- C. Outside of the roadway and for a distance not to exceed 15 feet beyond the slope limits, and in areas where clearing is necessary for the construction and installation of various highway appurtenances, all trees and stumps shall be cut flush with the ground; and all dead or uprooted trees, brush roots or otherwise objectionable material shall be removed as detected unless otherwise indicated on the plans.
- D. The Contractor shall dispose of all such trees, stumps, brush, etc. in a satisfactory manner and shall remove all rubbish and refuse from within the construction limits.
- E. All excavations made below sub-grade surface by the removal of all trees, stumps, etc., shall be filled with suitable material, which shall be compacted thoroughly in accordance with the provisions governing formation of embankments.

PART 4.00 - MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. Payment for this work will be part of the Contract lump sum price.

END OF SECTION

SECTION 02115 - TRENCH EXCAVATION

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. Trench excavation shall consist of the removal and satisfactory disposal of all materials including bituminous pavement, the removal of which is necessary for the proper completion of the work, to the dimensions shown on the plans or as ordered, and backfilling, all in accordance with these specifications for the following:
1. The construction of Storm Drainage including: pipe culverts, catch basins, manholes, underdrains and mains.
 2. The removal of drainage structures and appurtenances beyond the limits of roadway and structure excavation;
 3. The removal of miscellaneous items such as abandoned underground tanks, pipelines, etc..

1.02 CLASSIFICATION

1. **Trench Excavation:** Will be allowed only for the construction of the structures and the removals definitely specified above; and no compensation will be made for any other class of excavation, as specified elsewhere herein, that may be necessary for construction or removal.
2. **Rock in Trench:** Rock, insofar as it applies to trench excavation, shall be defined as rock in definite ledge formation, boulders, or portions of boulders, of $\frac{1}{2}$ cubic yard or more in volume, removed as indicated or directed from within the payment lines for trench excavation.

PART 2.00 - MATERIALS

Vacant

PART 3.00 - EXECUTION

3.01 CONSTRUCTION METHODS

- A. Construction methods shall conform to the requirements of Article 2.05.03 of the Standard Specifications.

PART 4.00 - MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. This work will be paid as part of the Contract lump sum price, which includes any rock excavation.

END OF SECTION

SECTION 02118 - GRAVEL FILL

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. This material shall be used as a foundation for structures to replace unstable material in slopes, as a foundation for storm sewers, in shoulders and elsewhere as indicated on the plans or as required by the specifications. It shall consist of gravel conforming to the requirements of these specifications.

PART 2.00 - MATERIALS

2.01 MATERIALS

- A. Gravel fill shall conform to the requirements of Article M.02.01 of the Standard Specifications. Reclaimed aggregate shall not be used.

PART 3.00 - EXECUTION

3.01 CONSTRUCTION METHODS

- A. When gravel fill is used for foundation for structures or to replace rock or unsuitable material in trenches, it shall be deposited in layers not over 6 inches in depth, with each layer thoroughly compacted before the addition of other layers.

PART 4.00 - MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. This work will be paid for as part of the Contract lump sum price.

END OF SECTION

SECTION 02119 - GRAVEL SUB-BASE

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. The Gravel Sub-base shall consist of a clean soil-aggregate mixture of bank or crushed gravel, crusher run stone or any combinations thereof, placed where shown on the plans for roadway sub-base or where directed by the Economic Development Coordinator or designated agent and constructed in accordance with these specifications.

PART 2.00 - MATERIALS

3.01 EXECUTION

- A. Gravel sub-base shall conform to the requirements of Article M.02.02 and M.02.06 Grading "B" of the Standard Specifications. Reclaimed material is not acceptable.

PART 3.00 - EXECUTION

3.01 CONSTRUCTION METHODS

- A. Construction shall be in conformance with Article 2.12.03 of the Standard Specifications.

PART 4.00 - MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. This work will be paid for as part of the Contract lump sum price.

END OF SECTION

SECTION 02160 - PERVIOUS STRUCTURE BACK FILL

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. Pervious structure backfill shall include the furnishing, placing, and compaction of pervious material adjacent to structures.

1.02 MATERIALS

- A. Pervious structure backfill shall conform to the requirements of Article M.02.05 of the Standard Specifications.

PART 3.00 - EXECUTION

3.01 EXECUTION

- A. Requirements of construction methods shall conform to Article 2.16.03 of the Standard Specifications.

PART 4.00 - METHOD AND PAYMENT

4.01 BASIS OF PAYMENT

- A. Pervious structure backfill will be paid for as part of the Contract lump sum price.

END OF SECTION

**SECTION 02202 - ROADWAY EXCAVATION, FORMATION OF
EMBANKMENT AND DISPOSAL OF SURPLUS MATERIAL**

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. Roadway excavation shall consist of the removal and satisfactory disposal, in the manner herein required, of all materials taken from within the limits of the work contracted for, the removal of which is necessary for the construction of the roadbed, sub-grade, driveways, shoulders, slopes, entrances, and other miscellaneous construction to the dimensions and limits shown on the plans or as ordered. It shall also include the formation of embankments, the disposal of surplus or unsuitable material, removal of curbing, concrete or masonry walls, and in the absence of such items in the contract, the clearing and grubbing and the shaping and cleaning of slopes and of shoulders.

PART 2.00 - MATERIALS

Vacant

PART 3.00 - EXECUTION

3.01 CONSTRUCTION METHOD

- A. Construction methods shall conform to the requirements of Article 2.02.03 the Standard Specifications.

PART 4.00 - MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. The removal of all stones and sub-base to the lines and grades on the drawings will be paid for as part of the Contract lump sum price.

END OF SECTION

SECTION 02204 - STRUCTURE EXCAVATION

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. Structure excavation shall include the removal of all material of whatever nature necessary for the construction of culvert, the placing of all necessary fill, except pervious structure backfill, as herein after specified and the wasting of excavated material not required or unsuitable for backfilling or embankment.

Structure excavation shall also include the furnishing of all equipment and materials; the construction of all cofferdams, etc.; the necessary unwatering of same, as may be required for the execution of the work; and the subsequent removal of cofferdams.

1.02 CLASSIFICATION

- A. This excavation shall be classified for the purpose of payment as "Structure Excavation -- Earth" and "Structure Excavation -- Rock" removed as indicated or directed and in accordance with the following definitions:
1. Structure Excavation -- Earth: shall include all materials, other than water or "Structure Excavation -- Rock." The existing box culvert and headwall shall be included as "Structure Excavation -- Earth".
 2. Structure Excavation -- Rock: shall include rock in definite ledge formation, boulders or portions of boulders of one cubic yard or more in volume and masonry structures, except retaining walls, headwalls or box culverts substructures, of one cubic yard or more in volume.

PART 2.00 - MATERIALS

Vacant

PART 3.00 - EXECUTION

3.01 CONSTRUCTION METHODS

- A. Construction methods shall conform to the applicable requirements of Article 2.03.03 of the Standard Specifications.

PART 4.00 - MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. Structure Excavation will be paid as part of the Contract lump sum price.

END OF SECTION

SECTION 02303 - CRUSHED STONE

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. The Contractor shall furnish and place all crushed stone to the grade, depth and locations as shown on the plans. This material shall be carefully placed to avoid damage to existing structures.

PART 2.00 - MATERIALS

2.01 CRUSHED STONE

- A. Crushed stone of the size called for on the plans shall conform to the requirements of Article M.01.01 crushed stone gradation table for the Standard Specifications. Reclaimed material is not acceptable.
- B. Crushed stone shall be free from dust, foreign matter and organic material.

PART 3.00 - EXECUTION

3.01 CONSTRUCTION METHODS

- A. Construction methods shall conform to the requirements of Article 7.28.03 of the Standard Specifications.

PART 4.00 - MEASUREMENT AND PAYMENT

- A. The work will be paid for as part of the Contract lump sum price.

END OF SECTION

SECTION 02426 - LOAMING

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. The work under this Section shall consist of furnishing, placing and shaping loam; or placing, spreading and shaping loam from stockpiles or stripped areas; on the areas shown on the Plans. The loam will be placed to a minimum depth of 4 inches unless otherwise stated on the Plans.

PART 2.00 - MATERIALS

2.01 TOPSOIL

- A. The material shall conform to the requirements of Article M.13.01-1 of the Standard Specifications.

PART 3.00 - EXECUTION

3.01 TOPSOIL

- A. Construction methods will comply with the provisions of Article 9.44.03 of the Standard Specifications. All stones and debris over 1 inch in diameter shall be removed from the loam surface by raking or other approved methods in order to provide the proper bed for seeding or sodding. All surfaces on which loam is to be placed shall be scarified by raking, discing or other approved means to a minimum depth of 2 inches before placing loam. The depth stated in the contract to which the loam is to be placed is that required after final rolling of the material has taken place. On sloped areas the raking or discing shall be done parallel to the contours to minimize erosion. Plant cover or erosion preventing materials shall be established as soon as possible on all bare earth areas to minimize air and stream pollution.
- B. During hauling and spreading operations, the Contractor shall immediately remove any material dumped or spilled on the shoulders or pavement.
- C. It shall be the Contractor's responsibility to restore to the line, grade and surface all eroded areas with approved material and to keep loamed areas in acceptable conditions until the completion of the construction work.

PART 4.00 - MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. Payment for this work will be paid for as part of the Contract lump sum price.

END OF SECTION

SECTION 02435 - TURF ESTABLISHMENT

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. The work included in this item shall consist of providing an accepted uniform stand of established perennial turf grasses by furnishing and placing fertilizer, seed and mulch on all areas to be treated as shown on the plans or where designated by the Town of Sterling.

PART 2.00 - MATERIALS

2.01 MATERIALS

- A. The materials for this work shall conform to the requirements of Section 13.03, 13.04 and 13.05 of the Standard Specifications.

PART 3.00 - MEASUREMENT AND PAYMENT

3.01 CONSTRUCTION METHODS

- A. Construction methods shall conform to the requirements of Article 9.50.03 of the Standard Specifications.

PART 4.00 - MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. This work will be paid for as part of Contract lump sum price.

END OF SECTION

SECTION 02440 - RIP-RAP

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. Rip-rap shall consist of angular shaped stones used to protect foundations of piers, abutments, walls, slopes of embankments and waterways from water damage.

PART 2.00 - MATERIALS

2.01 STONE

- A. The stone for this work shall be the type called for on the plans and shall conform to the requirements of Article M.12.02 of the Standard Specifications.

PART 3.00 - EXECUTION

3.01 CONSTRUCTION METHODS

- A. Construction methods shall conform to the requirements of Article 7.03.03 of the Standard Specifications.

PART 4.00 - MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. This work will be paid for as part of the Contract lump sum price.

END OF SECTION

SECTION 03117 - CATCH BASINS/MANHOLES

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. This item shall include the construction of all catch basins, and manholes all in conformity with the lines, grades, dimensions and details shown on the plans, or as ordered, and in accordance with the provisions of these specifications for the various materials and work, which constitute the completed structure.
- B. Catch Basin frames and covers are to be included as part of the item for catch basins.

PART 2.00 - MATERIALS

2.01 MATERIALS

- A. The materials to be used in the construction shall be those indicated on the plans or ordered by the Owner and shall conform to Article M.08.02 of the Standard Specifications and if precast units are utilized, the concrete shall be cured a minimum of 7 days prior to shipping. Protective compound material shall conform to Sub-article M.03.01.11 of the Standard Specifications. Mortar shall conform to Article M.11.04 of the Standard Specifications. Pervious material shall conform to Article M.02.05 of the Standard Specifications.
- B. Catch Basin frames and grates shall be galvanized in accordance with M.06.03 and the grates shall be Type "A".

PART 3.00 - EXECUTION

3.01 CONSTRUCTION METHODS

- A. Construction methods shall conform to the requirements of Article 5.07.03 of the Standard Specifications.

PART 4.00 - MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. This work will be paid for as part of the Contract lump sum price.

END OF SECTION

SECTION 05003 - MANHOLE FRAMES AND COVERS

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. The work covered under this Section includes the furnishing of all labor, equipment and materials, and performing all operations in connection with furnishing and setting in place the ductile-iron manhole frames with covers for manhole structures, and for catch basins whose tops are to be replaced by manhole frames and covers, complete, in accordance with the Drawings and Specifications, and as directed.

1.02 QUALITY ASSURANCE

- A. Before installation, shop drawings of all frames and covers to be used shall be submitted to the Town of Sterling for approval.

PART 2.00 - MATERIALS

2.01 DUCTILE-IRON FRAMES AND COVERS

- A. Ductile-iron manhole frames with covers shall conform to the requirements of ASTM A536-80.
- B. The Ductile-Iron Frame shall have a clear opening of $24" \pm$ and shall be 4 inches in height. Support webbing shall be evenly spaced on the Frame and 4 bolt holes shall be supplied on the frame for anchoring purposes.
- C. The Ductile-Iron Cover shall have sufficient integral supports to meet or exceed the H-20 loading requirements. The Cover shall also lock into the Frame through an integral locking device.
- D. The Ductile-Frame shall allow increasing of the elevation through the use of a self locking raising ring that permits the utilization of the existing Manhole Cover.
- E. The Ductile Iron Manhole Cover shall have the word storm or drainage cast onto its top.
- F. The frame and cover shall be adjusted to finish grade with concrete blocks and shall be well bedded in cement mortar. The frames shall be encased with cement mortar around the entire perimeter.

PART 4.00 - MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. This item will be paid for as part of the Contract lump sum price.

END OF SECTION
SECTION 05100 HIGH DENSITY POLYETHYLENE PIPE (HDPE)

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. This item shall consist of furnishing and installing new high density polyethylene pipe of the type, size and length called for on the plans or as ordered, at the locations and to the lines and grades designated on the plans and in conformity with these specifications.

PART 2.00 0 MATERIALS

2.01 MATERIALS

- A. The materials for this work shall conform to the following:
1. The pipe shall be high density corrugated polyethylene smooth interior pipe and shall be manufactured in accordance with the most recent AASHTO M294 Type-S specification.
 2. The pipe shall be seamless with annular corrugations on the exterior and a smooth interior waterway. Minimum conveyance factors and stiffness shall be as shown in Table 2.

Table 2
Conduit Flow and Stiffness Properties

	<u>Nominal Diameter</u>			
	<u>12"</u>	<u>15"</u>	<u>18"</u>	<u>24"</u>
Conveyance Factor	46.0	84.1	136.8	293.9
Pipe Stiffness	45.0	42.0	40.0	34.0
	(pii @ 5% deflection)			

3. Pipe joints and fittings shall conform to AASHTO M294 and be constructed of the same material classification as in Table 1. Couplers shall not cover less than one full corrugation on each section of annular pipe.
4. All pipes and fittings shall be approved by the Town as provided within these drawings and specifications. Damaged or defective pipes will not be accepted.
5. The bedding material shall conform to the requirements of Article M.08.01 of the Standard Specifications. Gravel fill shall conform to the requirements of Article M.01.01 of the Standard Specifications.

PART 3.00 - EXECUTION

3.01 CONSTRUCTION METHODS

- A. Construction methods shall conform to the requirements of Article 6.51.03 of the Standard Specifications and to the pipe manufacturer's instructions and specifications.

PART 4.00-MEASUREMENT AND PAYMENT

4.01 METHOD OF MEASUREMENT

- A. This work will be measured for payment by the lump sum.

4.02 BASIS OF PAYMENT

- A. This work will be paid for by the Lump Sum. The price shall include excavation, de-watering, installation, structural bedding, tools, backfill, disposal of surplus material, and labor.

END OF SECTION

SECTION 05105 POLYVINYL CHLORIDE PLASTIC PIPE (PVC)

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. This item shall consist of furnishing and installing polyvinyl chloride pipe for use as drains through the project and at outlets from drainage elements and where shown on the plans or as ordered by the Economic Development Coordinator or designated agent.

PART 2.00 - MATERIALS

2.01 MATERIALS

- A. The materials to be used in the construction shall be those indicated on the plans or ordered by the Owner and The pipe shall meet the requirements of Subarticle M.08.01-20 PVC Pipe or M.08.01-21 PVC Gravity Pipe and shall be Schedule 35, and shall include all fittings, bends, two part glue, and drainage grates as proposed

PART 3.00 - EXECUTION

3.01 CONSTRUCTION METHODS

- A. The pipe, fittings and end treatments shall be placed at locations shown and as indicated on the plans. Pipe shall be secured at the proper locations before placing stone. Where required, couplings and elbows may be used.

PART 4.00 - MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. This work will be paid for as part of the Contract lump sum price.

END OF SECTION

SECTION 05120 - REINFORCED CONCRETE CULVERT END

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. This work shall consist of furnishing and installing reinforced concrete culvert ends conforming to the details shown on the plans on the ends of HDPE . These shall be placed where and as shown on the plans or as directed by the Economic Development Coordinator or designated agent.

PART 2.00 MATERIALS

2.01 REINFORCED CONCRETE CULVERT END

- A. The materials for this work shall conform to Article M.08.01-22. of the Standard Specifications.

PART 3.00 EXECUTION

3.01 CONSTRUCTION

- A. Reinforced concrete culvert ends shall be placed on a prepared bed of the existing suitable ground or on gravel fill as directed by the Economic Development Coordinator or designated agent. The joints shall be sealed as specified in Article 6.51.03 of the Standard Specifications.

PART 4.00 MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. This work will be paid for as part of the Contract lump sum price.

END OF SECTION

SECTION 11000 - CONSTRUCTION SIGNING

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. Under this item the Contractor shall furnish sheet aluminum construction signs and their required portable supports or metal sign posts on the project to conform to the signing requirements stated in the item "Maintenance and Protection of Traffic", as shown on the plans and/or as directed by the Town of Sterling. The Contractor shall furnish a sufficient number of signs to provide the signing patterns for all operations which are being undertaken concurrently.

PART 2.00 - MATERIALS

2.01 MATERIALS

- A. All sign faces shall be reflectorized. Reflective sheeting shall conform to the requirements of Article M.18.09 (Encapsulated Lens). Sheet aluminum sign blanks, metal sign posts and silk screening of sign faces shall conform to the requirements of Article 12.08.02 and 12.08.03 of the Standard Specifications. For this item, a Materials Certificate and a Certificate of Compliance shall be required.

PART 3.00 - EXECUTION

3.01 CONSTRUCTION METHODS

- A. Construction methods shall conform to the requirements of Article 12.20.03 of the Standard Specifications.

PART 4.00 - MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. This item will be paid for as part of the Contract lump sum price.

END OF SECTION

SECTION 11050 - GEOTEXTILE

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. This item shall consist of furnishing and installing geotextile in the locations and to the dimensions shown on the plans as directed or as approved by the Economic Development Coordinator or designated agent and includes the required anchor trench.

PART 2.00 - MATERIALS

2.01 MATERIALS

- A. All Geotextile shall meet the requirements of M.08.01-19 Geotextiles. Materials incidental to and necessary for the installation of the geotextile, such as, but not limited to, sewing thread, staples, pins, etc., shall meet the requirements of the manufacturer of the geotextile.

PART 3.00 - EXECUTION

3.01 CONSTRUCTION METHODS

- A. The geotextile shall be installed at the locations and to the dimensions shown on the plans or as directed by the Economic Development Coordinator or designated agent. Geotextile shall be installed as recommended by the manufacturer for the specific use or purpose intended, or as otherwise approved by the Economic Development Coordinator or designated agent.

PART 4.00 - MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. This item will be paid for as part of the Contract lump sum price.

END OF SECTION