

The following statutes are incorporated into this Contract:

M.G.L.	c.30 s 39F	Payment to Subcontractor
	c.30 s 39I	Deviation from Plans and Specifications
	c.30 s 39J	No Arbitrary Decisions are Final
	c.30 s 39K	Public Building Construction Contracts; Payments
	c.30 s 39L	Construction Work by Foreign Corporations
	c.30 s 39M(b)	Substitution of Equal Products
	c.30 s 39N	Differing Site Conditions
	c.30 s 39O	Equitable Adjustments for Delays
	c.30 s 39P	Decision of Interpretation of Specifications
	c.30 s 39Q	Dispute Settlement by Hearing Officers
	c.30 s 39R	Contractors' Records
	c.44 s 31c	Construction Contracts; Certificate as to Availability of Funds; Effect of Certificate Upon Defense of Insufficiency of Appropriations
	c.82, s 40	The Laying Out, Alteration, Relocation and Discontinuance of Public Ways, and Specific Repairs Thereon
	c.149 s 34	Limitations on Hours of Work
	c.149 s 44J	Advertising Invitations to Bid

SECTION 01110

SUMMARY OF WORK

PART 1 GENERAL

1.1 SUMMARY

- A. Work of the Contract is shown and described in Drawings and Specifications entitled:
Water Main Replacement
Town of Longmeadow, MA
- B. No materials, labor or equipment shall be furnished by the Owner under this Contract.
- C. Obtain all local permits and licenses necessary for the contemplated Work.
- D. Comply with the requirements of all permits issued for all portions of the Work under this Contract. Copies of permits, order of conditions, etc. appended to the document shall become part of this Contract.
- E. All Work shall be completed within the contract time as set forth in the Agreement Section 00500.

1.2 PROJECT SUMMARY

- A. The Work of this Contract includes but is not limited to the following:
 - 1. Construction of new water mains, hydrants, service stubs, and appurtenant work on three streets in Longmeadow.
 - 2. Bituminous concrete pavement repair.
 - 3. Restoration of other items within the project limits disturbed by construction activities.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01140

WORK RESTRICTIONS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Project Management
 - 2. Work Hours
 - 3. Coordination
 - 4. Project meetings

1.2 PROJECT MANAGEMENT

- A. Retain on the Site, a competent, full time Superintendent, satisfactory to the Owner. The Superintendent shall not be changed, except with the consent of the Owner and shall be in full charge of the work. All instructions given to this person by the Engineer or the Owner shall be binding.
- B. The work must be completed in a continuous uninterrupted operation. Use sufficient personnel and adequate equipment to complete all the necessary work requirements within the period of time required by the Agreement.

1.3 WORK HOURS

- A. Unless specifically authorized by the Owner, the Work must be conducted during daylight hours on Monday through Friday, and within the time between 7:00 a.m. and 4:00 p.m. No work is to be done on holidays, Saturdays, Sundays or outside of the work hours described above, without prior written permission of the Owner.

1.4 COORDINATION

- A. Supply to the Owner the telephone/beeper number of a responsible person who may be contacted during off-hours for emergencies 24 hours a day, seven days a week.
- B. Prepare a contact list of phone numbers for all project personnel. Project list should include the Contractor, Engineer, Owner and local personnel including police, fire and ambulance.
- C. All utility shutdowns shall be coordinated with the Owner and the affected utility. No shutdown is to occur without authorization.

1.5 PROJECT MEETINGS

- A. Subject to the Owner's discretion, project meetings will be held on a weekly basis.
- B. Scheduling shall be discussed with all parties to be affected by upcoming work.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01270

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 DIVISION 0 AND DIVISION 1 WORK INCIDENTAL TO THE CONTRACT PRICE

- A. No separate measurement or payment will be made for work called for in Division 0 or Division 1 of the Contract Specifications, unless specifically covered under the Bid Items listed below. All costs associated with this work shall be considered incidental to the Contract Bid Price.
- B. Division 2 through Division 16 work will be measured and paid for at the Contractor's unit bid price or lump sum item cost as indicated on the Bid Form. Those payable work items, and related prices as bid, shall be the basis for all compensation to the Contractor for work performed under this Contract. Work not specifically included as a bid item, but which is required to properly and satisfactorily complete the work is considered ancillary and incidental to the bid item work, and payment for such work is considered to be included in the values as bid for payable items. Compensation for all work shall be made as a measured quantity of work under the appropriate bid items.

1.2 ABANDONMENT OF EXISTING WATER MAINS (ITEM 1.00)

- A. Measurement
 - 1. There shall be no measurement for this Item as this work shall be on a lump sum basis.
- B. Payment
 - 1. Payment of the lump sum bid price for the removal or abandonment of existing water mains shall include cut and caps, valve box abandonment and all incidental work as shown on the Drawings and specified herein, shall be full compensation for all labor, equipment, and materials required for or incidental to this work.
 - 2. If the segment of pipe requiring removal is asbestos cement, then payment shall be made under Item 24.

1.3 BELOW GRADE EXCAVATION – UNSUITABLE MATERIAL (ITEM 2)

- A. Measurement
 - 1. The quantity shall be determined by measurements made in the field based on the actual quantity of earth excavated below invert grade of the pipeline or manhole as authorized by the Engineer.
- B. Payment
 - 1. Payment of the bid price for each cubic yard of below grade excavation shall be full compensation for all excavation, backfill, compaction, removing and disposing of material, placing and removing sheeting or bracing, including all labor, equipment and materials required or incidental to complete the work specified.

1.4 SPECIAL WORK AT WATER MAIN TIE-INS (ITEMS 3)

A. Measurement

1. Measurement for each new water main stub or tie-in of an existing water main to the proposed water main as shown on the Drawings and defined herein shall be on a per unit basis for each tie-in including fittings, nipples, bend, thrust restraint and all labor, materials and equipment incidental thereto. Valves shall be included in item 14.
2. Surface restoration is not included in these items. Surface restoration shall be paid for separately under the applicable bid item.
3. Gate valves are not included in this item and shall be paid for separately under the applicable bid item.

B. Payment

1. Payment of the per unit bid price for each of these special work items shall be full compensation for furnishing and installing all materials required. The unit price shall include all tees, bends, reducers, pipe, couplings, retainer glands and thrust blocks as shown on the Drawings and specified herein, and as required to complete the connection.
2. Also included in these items is all excavation, backfill, compaction, cutting and removing of existing pipe sections, capping abandoned pipe, removal of existing gate boxes on the abandoned mains at each location and all labor, equipment, materials and other appurtenant work required or incidental to completion of these items.

1.5 LOAM AND SEED (ITEM 4)

A. Measurement

1. Measurement for loam and seed shall be on a square yard basis as measured in the field by the Engineer. The length shall be the actual length loamed and seeded. The width shall be limited to that shown on the "Typical Paylines Detail" or the actual width of repair, whichever is less.
2. Measurement for payment under this item shall be for loam and seed work as required for lawn restoration and/or for "lawn quality" restoration of disturbed areas, based on project pay lines. Restoration of all other unpaved areas shall be as "vegetative cover" using salvaged topsoil material and erosion control planting to restore the site to its original condition and/or to establish a satisfactory vegetative cover.
3. Placement of vegetative cover is incidental to the Contractor's excavation and other work on this project. No separate measurement or payment for this work shall be made under this contract.
4. The loaming and seeding required along the edges of pavement overlay shall not be measured or paid for under this item. Placement of this loam and seed is incidental to the Contractor's pavement overlay and other work on this project.

- B. Payment
 - 1. Payment of the bid price for loam and seed shall be full compensation for all labor, equipment, and materials required for or incidental to the work. Loaming and seeding outside of the designated paylines may be required, but will not be paid for under this item.
- 1.6 TEST PIT (ITEM 141.10)
 - A. Measurement
 - 1. Measurement will be based on the actual size of the test pit authorized by the Engineer.
 - B. Payment
 - 1. Payment of the bid price for each cubic yard of excavation work for test pits shall be full compensation for all excavation, backfill, compaction, surface repairs, required measurements, and all labor, equipment and materials required or incidental to complete the test pits.
- 1.7 ORDINARY BORROW (ITEM 150.00)
 - A. Measurement
 - 1. Measurement for ordinary borrow shall be on a cubic yard basis. The depth of ordinary borrow shall be actual depth placed in the completed work, but in no case will this exceed the depth approved by the Engineer. The width shall be the same as the width of the excavation but shall not exceed the limits shown on the "Trench Pay lines Detail" on the Drawings.
 - B. Payment
 - 1. Payment of the bid price for ordinary borrow shall be full compensation for furnishing, hauling, placing, spreading, compacting including all labor, equipment, and materials required for or incidental to the work.
- 1.8 GRAVEL BORROW (ITEM 151.00)
 - A. Measurement
 - 1. Measurement for gravel borrow shall be on a cubic yard basis. The depth of gravel borrow shall be the actual depth placed in the completed work, but in no case shall this exceed the depth approved by the Engineer. The width shall be the same as the width of the excavation but shall not exceed the limits shown on the "Trench Pay lines Detail" on the Drawings.
 - B. Payment
 - 1. Payment of the bid price for gravel borrow shall be full compensation for furnishing, hauling, placing, spreading, compacting, including all labor, equipment and materials required for or incidental to the work.
- 1.9 TYPE 2E EXCAVATABLE CONTROLLED DENSITY FILL (ITEM 153.00)
 - A. Measurement

1. Type 2E controlled density fill to be paid for shall be measured in place in the completed work. The depth of controlled density fill to be paid for will be the actual depth specified or placed in the completed work, but in no case will this exceed the depth ordered by the Engineer. The width to be paid for will be the actual width of the excavation up to the limits shown on the payline details shown on the Drawings. The length shall be that as measured by the Engineer.

B. Payment

1. Payment of the bid price for each cubic yard of controlled density fill shall be full compensation for furnishing, hauling, placing, spreading, and all labor, equipment and other appurtenant work involved in providing the controlled density fill in the areas specified or shown on the Drawings.

1.10 ASBESTOS CEMENT PIPE REMOVAL AND DISPOSAL (ITEM 182.20)

A. Measurement

1. Measurement for the removal and disposal of existing asbestos cement water main at the water main tie-ins or cut and cap locations, or at other locations encountered in the project shall be on a linear foot basis as approved by the Engineer.

B. Payment

1. Payment of the bid price shall be full compensation for the removal, disposal and certificates of disposal for the asbestos cement water main pipe and all labor, equipment and materials required for or incidental to the work.
2. Payment for the removal of existing asbestos cement water mains shall only be made for work within the mainline trench, or as specifically specified at interconnections and cut and cap locations, or at other locations encountered in the performance of the work as approved by the Engineer.

1.11 DUCTILE IRON PIPE AND FITTINGS (ITEM 302.08)

A. Measurement

1. Measurement for ductile iron pipe and fittings shall be on a linear foot basis and shall be along the ground surface above and parallel to the pipeline from the point of beginning to the point of termination. No deductions will be made for the length of valves, fittings and appurtenances. Allowances for the cost of main line fittings and tees shown on the Drawings shall be included in the pipe unit price.

B. Payment

1. Payment of the bid price for ductile iron pipe and fittings shall be full compensation for all excavation, backfill, trench dewatering, disposal of unsuitable material, clearing and grubbing and for providing of all pipes, fittings (including retainer glands), provisions for electrical continuity and appurtenances, disinfection, flushing, testing, thrust blocks, underground warning tape, and all labor, equipment and materials required for or incidental to the work.

1.12 EXTRA DUCTILE IRON PIPE FITTINGS (ITEM 309.00)

A. Measurement

1. Measurement for extra ductile iron fittings authorized by the Engineer, including retainer glands, accessories and couplings not called out on the Drawings, shall be based on the manufacturer's book-listed weight. The weight of concrete thrust blocks shall not be included.

B. Payment

1. Payment of the bid price for each pound of extra ductile iron fittings, retainer gland, accessories or couplings required for the work, but not indicated on the Drawings, shall include all labor, equipment, materials and other appurtenant work required to furnish and install the fitting complete with retainer glands and concrete thrust blocks.
2. Extra fittings and materials not authorized by the Engineer and installed as a result of the Contractor's method or sequence of operations will not be paid for.

1.13 COPPER TUBING FOR WATER SERVICES (ITEM 347.10)

A. Measurement

1. Measurement for ¾ inch, 1 inch diameter Type K copper tubing for water services shall be in-place in the trench as a straight run from the corporation cock to the point of connection to the old service at curb stop or coupling.

B. Payment

1. Payment of the bid price shall be made for each linear foot of Type K copper tubing. Said payment shall be full compensation for all excavation, compaction and backfill, and all labor, equipment, materials and other appurtenant work required for or incidental to complete the installation.

1.14 GATE VALVES AND BOXES (ITEM 350.08)

A. Measurement

1. Measurement for gate valves and boxes shall be a count of the number of items provided.

B. Payment

1. Payment of the bid price shall be full compensation for each gate valve and box provided including all labor, equipment and materials required for or incidental to the work.

1.15 WATER SERVICE CORPORATION (ITEM 363.10)

A. Measurement

1. Measurement for water service corporations shall be a count of the number of water service corporations provided.

B. Payment

1. Payment of the bid price for each water service corporation provided shall be full compensation for all labor, equipment and materials required for or incidental to the work.

1.16 HYDRANT ASSEMBLIES AND HYDRANT BRANCH ASSEMBLIES (ITEM 376.00)

A. Measurement

1. Measurement for hydrant assemblies and hydrant branch assemblies shall be a count of each hydrant assembly or hydrant branch assembly provided and connected to the proposed water main.

B. Payment

1. Payment of the bid price for each hydrant assembly and hydrant branch assembly provided shall be full compensation including the hydrant, main line tee, stone drain pocket, excavation, backfill, dewatering, clearing and grubbing, thrust block, hydrant lateral valve and box, all required 6 inch DI pipe, and all labor, equipment, and material required for or incidental to the work. Included in the bid price shall be the additional hydrant components specified herein. In areas where extensions are required to bring the hydrant to grade, the cost shall be included in the hydrant assembly item.

1.17 REMOVAL OF EXISTING HYDRANTS (ITEM 376.30)

A. Measurement

1. Each existing hydrant that is removed and either delivered to the DPW yard or disposed of shall be counted and paid for under this Item.

B. Payment

1. Payment of the bid price for each existing hydrant removed from the work shall be full compensation for all excavation, backfill and compaction, cutting and capping of the existing branch nipple, removal of the hydrant valve gate box, delivery and stacking at the DPW yard or properly disposed of (at the discretion of the DPW), and all labor, equipment, materials and other appurtenant work related thereto.
2. All surface repairs directly related to the removal of the existing hydrant shall be paid for under the applicable Items.

1.18 WATER SERVICE CURB STOP AND BOX (ITEM 384.00)

A. Measurement

1. Measurement for water service curb stop and box shall be a count of items provided.

B. Payment

1. Payment of the bid price for each water service curb stop and box shall be full compensation for all labor, equipment and materials required for or incidental to the work. Payment of the bid price shall be full compensation for each 1 inch curb stop and box furnished and installed complete in place, including reconnection of existing water service, coupling and all labor, equipment, materials and other appurtenant work required or incidental for a complete installation.

1.19 BITUMINOUS CONCRETE BERM (ITEM 470.00)

A. Measurement

1. Bituminous concrete berm shall be measured in place in the completed work. The length of berm to be paid for shall be the actual length of berm replaced within the paylines shown on the payline details shown on the Drawings.

B. Payment

1. Payment of the bid price for each linear foot of bituminous concrete berm repair including gravel base shall be full compensation for all labor, equipment and materials required for providing bituminous concrete berm repair.

1.20 BITUMINOUS CONCRETE TRENCH PAVEMENT REPAIR FOR ROADS (ITEM 703.00)

A. Measurement

1. Measurement for bituminous concrete trench repair shall be on a square yard basis as measured in the field by the Engineer. The length of the trenches shall be the actual length of the trench repaired. The width shall be the actual width of repair made, but in no case will payment be made for trench repair greater in width than that shown on the "Trench Pay lines Detail" on the Drawings.

B. Payment

1. Payment of the bid price for temporary bituminous concrete, full depth, including gravel base shall be full compensation for furnishing, hauling, placing, spreading, compacting and all labor, equipment and materials required for or incidental to the work.

1.21 MOBILIZATION AND DEMOBILIZATION (ITEM 748.00)

A. Measurement

1. There shall be no measurement for the mobilization and demobilization to this project location as this work shall be on a lump sum basis.

B. Payment

1. Payment of the lump sum bid price shall be paid in two equal installments. The first installment will occur at the time the first pay requisition is submitted when the Contractor has initiated full-time construction activity. The second installation will be paid when the Contractor has completed all construction

activity including final cleanup and punch list items. In no case will the total of both installments exceed 5 percent of the bid price.

1.22 TRAFFIC CONTROL SIGNAGE (ITEM 852.00)

A. Measurement

1. There shall be no measurement for the traffic control signage as this work shall be on a lump sum basis.

B. Payment

1. Payment of the lump sum bid price shall be full compensation for all labor, equipment, and materials required or incidental to the traffic control signage.
2. Payment will be made on a monthly basis as a percentage of the lump sum bid and the amount of work for that particular month.

1.23 PORTLAND CEMENT CONCRETE ROAD BASE REPAIR AND SIDEWALK REPAIR (ITEM 901.00)

A. Measurement

1. Portland cement concrete shall be measured in place in the completed work. The length of the trenches shall be the actual length of the trench repaired. The width to be paid for shall be the actual width of repair made, but in no case will payment be made for trench repairs greater in width than that shown on the payline details shown on the Drawings. (Note: paylines shall be as defined herein. Suggested paylines in DEP CG-8 shall NOT apply).

B. Payment

1. Payment of the bid price for each square yard of Portland cement concrete driveway repair including gravel base shall be full compensation for furnishing, hauling, placing, spreading, compacting, and all labor, equipment and other appurtenant work required for or incidental to providing and maintaining satisfactory trench and surface repairs.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01310

COORDINATION

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Coordinate progress of the Work to minimize interference with the operation of the existing facilities and other utilities in the roadway.
 - 2. Perform all coordination necessary to complete tie-ins to the existing water main.
- B. Related Sections
 - 1. Section 01325 – Scheduling of Construction
- C. Related Work Not Included
 - 1. Operation of existing facilities will be performed by the Owner unless otherwise specified. The Owner will assist in arranging operation of any existing valves and pipelines required by the Contractor to connect to existing pipelines, and no existing valves shall be operated without the Owner's knowledge.

1.2 SUBMITTALS

- A. Submit to the Owner and Engineer all requests for temporary shutdowns of facilities or interruption of operations at least 7 days prior to the beginning of any shutdown. No shutdown shall occur without the approval of the Owner.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 GENERAL

- A. Owner will perform all operations of the existing water distribution system. Owner will assist in arranging operation of any existing facilities or equipment required by the Contractor to connect to existing facilities, and no existing equipment shall be operated without the Owner's knowledge.
- B. Maintain existing facilities in operation unless otherwise specifically permitted in these Specifications or approved by the Owner.
- C. Perform all construction activities so as to avoid interference with operations of the facility and the work of others.
- D. The Owner shall have the authority to order work stopped or prohibited, which would in his opinion, unreasonably result in stopping the necessary functions of the water distribution system. Any costs and/or delays associated with Owner authorized work stoppages due to the Contractor's operation shall be borne by the Contractor.
- E. Owner and Engineer shall be kept fully informed at least one week before the beginning of all work by Contractor which may affect Owner's operations.

3.2 SEQUENCE OF CONSTRUCTION

- A. Constructing the proposed improvements while maintaining existing operations will require a specific sequence of constructing portions of this project. The Contractor will be allowed as much flexibility as possible in scheduling the details of the project. The Contractor shall provide a detailed schedule as required in Section 01325.
- B. The Contractor shall incorporate the following project scheduling requirements into development of the schedule submitted as required in Section 01325:
 - 1. All components of the existing water distribution system must remain in operation throughout construction of the new water mains unless otherwise specified herein.

3.3 SHUTDOWNS

- A. Water service shutdowns as a result of pipeline activities shall be minimized. In the event that an active main must be temporarily shut off, the Contractor shall submit a request to both the Engineer and the Assistant Director of Department of Public Works for Water and Sewer Operations at least three days prior to shut down. An existing main shall not be shut down unless authorized by the Owner. The Contractor shall notify the water system customers about any interruption in service at least three days in advance. An existing main shall not be shut off for more than 6 hours.
- B. The Owner reserves the right to require rescheduling or reactivation of temporary shutdowns if an emergency occurs in the distribution system, such as a major pipeline break or fire.

END OF SECTION

SECTION 01321

COLOR AUDIO-VIDEO DISC DOCUMENTATION SURVEY

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

1. Color video disc of existing surface features.

1.2 DEFINITIONS

- A. Zone of Influence is defined as any area within the immediate construction site which may be affected by equipment traffic, material stock piles, temporary staging areas including a minimum 200 feet along each side of adjoining streets to the construction site.

1.3 SUBMITTALS

- A. Submit a sample disc within 14 days of the Notice to Proceed covering a specific sample route prescribed by the Engineer. Such sample DVD shall cover at least 500 lineal feet and a minimum of 5 minutes surveying time. These DVDs will become the property of the Engineer and will be the basis for the overall quality and conformance with this section for final survey tape.
- B. Submit audio-video disc of preconstruction areas in the manner described in this section. Do not commence with construction activities until the tapes are submitted and approved.

1.4 QUALITY ASSURANCE

- A. Recording shall be done during times of good visibility when there is no precipitation or snow cover. The Owner is not responsible for the removal of snow, leaves, debris or parked vehicles.

PART 2 PRODUCTS

2.1 FORMAT

- A. Audio-video disc shall be Digital Video Disc (DVD). Reprocessed tapes will not be acceptable. Video output from camera(s) used must be capable of producing NTSC-500 lines. Resolution in the Y channel, minimum 500 TV lines at center. Geometric Distortion shall not exceed 2% of picture height at any point in picture area.

2.2 TAPE INFORMATION

- A. Video recordings shall, by electronic means, display continuously and simultaneously generated transparent digital information to include the date and time of recording.

PART 3 EXECUTION

3.1 CONSTRUCTION AUDIO-VIDEO PROCEDURES

A. Perform audio-video recording as follows:

1. Prior to the start of on-site construction activities to depict pre-construction conditions

- B. Audio-video recording shall commence at Station 0+00 and proceed to 100 feet beyond the end of the proposed pipeline route along the pipeline route viewing side to side along the direction of progress.
- C. The average rate of speed in the general direction of the conveyance used during recording shall not exceed 50 feet per minute. Panning and zooming rates shall be controlled sufficiently that playback will produce optimum clarity of the objects being viewed.
- D. Coverage shall include, but not be limited to, the entire roadway pipeline route, existing driveways, sidewalks, curbs, ditches, streets (including condition of paving for full width), intersections, landscaping, trees, culverts, catch basins, head walls, fences, mailboxes, retaining walls, visible utilities and all buildings and structures located within the Zone of Influence. Include existing faults, fractures, defects or other imperfections exhibited by the above-mentioned surface features.
- E. Houses and buildings shall be identified visually by house or building number, when possible, in such manner that the progress of the taping and proposed construction areas may be located by reference to the houses and buildings.
- F. Discs produced under this Contract shall be turned over to the Engineer. Any portion of the disc coverage deemed unacceptable by the Owner or Engineer shall be re-recorded at no additional cost to the Owner.
- G. Discs and cases shall be properly identified by disc number, location, project name, and become the property of the Owner. A record of the contents of each disc shall be supplied by a run sheet identifying each segment in the tape by location, i.e., roll number, street or easement viewing, tape counter number, viewing side, starting point, traveling direction and ending point.

END OF SECTION

SECTION 01325

SCHEDULING OF CONSTRUCTION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Before starting work, submit to Engineer a Schedule of Operations within ten days after the date of the Notice to Proceed. No work shall be started without approval of the schedule. When working on the project, Contractor must carry on his activities with full crews and in an efficient manner, so as to cause the minimum inconvenience to the public.
 - a. The schedule shall reflect the proposed methods, the sequence of work, and the time of completion of various phases of the work within the completion time specified in the Contract.
 - b. The schedule shall be detailed with daily activities and milestone completion dates.
 - c. The schedule shall reflect the completion of all work including punch list work and clean-up.
 - d. The work shall be rescheduled by Contractor if changes in the work scope alter the original schedule or he fails to comply with the original schedule. The revised schedule shall be submitted within 7 days of the receipt of Engineer's request.
 - e. Contractor shall inform Engineer at least two weeks in advance of commencing work under this Contract.
2. Before starting work, Contractor shall submit to Engineer an estimate of rate of contract payments for the project on a monthly basis. If, in the opinion of Engineer, Contractor has deviated significantly from this projection during the course of the project, Contractor shall submit a revised rate of expenditure schedule to Engineer.

END OF SECTION

SECTION 01330

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

1. Product Data
2. Shop Drawings
3. Product Listing and Manufacturers Qualifications
4. Samples
5. Certificates of Compliance

1.2 SUBMITTALS

A. Product Data

1. Product data as specified in individual Sections, include, but are not necessarily limited to, standard prepared data for manufactured products (catalog data), such as the manufacturer's product specification and installation instructions, availability of colors and patterns, manufacturer's printed statements of compliances and applicability, roughing-in diagrams and templates, catalog cuts, product photographs, standard wiring diagrams, printed performance curves and operational-range diagrams, production or quality control inspection and test reports and certifications, mill reports, product operating and maintenance instructions and recommended spare-parts listing, and printed product warranties, as applicable to the Work.

B. Shop Drawings

1. Shop Drawings include, but are not necessarily limited to, custom-prepared data such as fabrication and erection/installation drawings, schedule information, piece part drawings, actual shopwork manufacturing instructions, special wiring diagrams, coordination drawings, individual system or equipment inspection and test reports including performance curves and certification, as applicable to the Work.
2. Submit Shop Drawings at the proper time so as to prevent delays in delivery of materials. Coordinate submittals for related or interdependent equipment; fragmented submittals will not be accepted for review by the Engineer. Advise the Engineer in writing of any deviations from the requirements of the Contract Documents.
3. Check all Shop Drawings regarding measurements, size of members, materials, and details to determine if they conform to the Contract Documents. Drawings found to be inaccurate, not in compliance, or otherwise in error shall be returned to the subcontractors for correction before submission to the Engineer. Drawings that are current shall be marked with the date, name, and approval stamp of the Contractor.

4. All details on Shop Drawings submitted for approval shall show clearly the relation of the various parts to the main members and lines of the structure, and where correct fabrication of the work depends upon field measurements, such measurements shall be made and noted on the Shop Drawings before being submitted for approval.
5. No material or equipment shall be purchased or fabricated until the required Shop Drawings have been submitted and approved. Materials and equipment and the work involved in their installation or incorporation into the Work shall then be as shown in and represented by the Shop Drawings.
6. Until the necessary approval has been given, do not proceed with any portion of the work, the design or details of which are dependent upon the design or details of work, materials, equipment or other features for which approval is required.
7. The Engineer's review and approval of Shop Drawings shall not be construed as a complete check nor does it relieve the Contractor from responsibility for any departures or deviations from the requirements of the Contract Documents unless he has, in writing, called the Engineer's attention to such deviations at the time of submission. The Engineer's review of the shop drawings shall not relieve the Contractor from the responsibility for proper fitting of the Work, or the responsibility of furnishing any work required by the Contract Documents which may not be indicated on the Shop Drawings. The Contractor shall be solely responsible for any quantities shown on the Shop Drawings.
8. Should the Contractor submit for approval equipment that requires modifications to the structures, piping, layout, or other details shown on the Drawings, he shall also submit for approval details of the proposed modifications. If such equipment and modifications are approved, perform all work necessary to make such modifications at no additional cost to the Owner.

C. Product Listing And Manufacturers Qualifications

1. Within 7 calendar days after execution of the Notice to Proceed, submit to the Engineer the names and addresses of the manufacturers and suppliers of materials and equipment to be incorporated into the Work.
2. Within 30 days after Notice to Proceed, submit complete list of major products proposed for use, with specification section number, name of manufacturer, trade name, and model number of each product. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation and reference standards. Specifically identify the products, the anticipated schedule for delivery and storage, and the estimated value thereof for materials which the Contractor intends to request approval for off-site storage.

D. Contractor's Responsibilities

1. Review Shop Drawings, product data, and samples prior to submission and verify and determine:
 - a. Field measurements

- b. Conformance with the Contract Documents. Advise the Engineer in writing of any deviations from the requirements of the Contract Documents.
2. Provide submittal identification and information including:

The date of submission and dates of previous submissions, project title, Contractor identification, Specification section, manufacturer and supplier, identified field dimensions, applicable standards and identification of deviations from Contract Documents.
3. Provide 5 sets of submittals, 2 of which will be retained by the Engineer. A maximum of 3 sets will be returned by the Engineer with notations to the Contractor.
4. Apply the Contractor's stamp, initials, or signature certifying that the submission has been thoroughly reviewed for completeness, compliance with the Contract Documents, coordination with adjacent construction and dimensional compatibility. Items submitted without the stamp or that are incomplete will be returned by the Engineer for rework and resubmission.
5. Provide space for the Engineer's review stamps and comments. The Engineer will review Shop Drawings for design, general methods of construction and detailing.
6. Submittals shall be accompanied by a transmittal form referencing the project name and applicable Specification section. Submittals shall be referenced with consecutive numbering. Resubmittals shall bear the same transmittal number with a sequential letter suffix commencing with "A".
7. Revise and resubmit submittals as required, identify all changes made since last submittal.
8. Distribute copies of reviewed submittals to concerned parties with instructions to promptly report any inability to comply with the provisions or integrate the requirements with interfacing work.

1.3 REVIEW OF SHOP DRAWINGS

- A. Submittals will be returned under one of the following codes:
 1. APP – “Approved” is assigned when there are no notations or comments on the submittal. Equipment or materials may be released for manufacture.
 2. AAN – “Approved as Noted” is assigned when there are notations or comments on the submittal, but the equipment or materials may still be released for manufacture. All notations and comments must be incorporated in the final product.
 3. R&R – “Revise and Resubmit” is assigned when there are extensive notations and comments requiring a resubmittal of the package. It may also be assigned when there is a significant amount of missing material required for the Engineer to perform a complete review.
 4. NA – “Not Approved” is assigned when the submittal does not meet the requirements of the Contract Documents. The entire package must be

resubmitted, revised to bring the submittal into conformance. It may be necessary to resubmit using a different manufacturer/vendor to meet the requirements of the Contract Documents.

5. REV – “Reviewed – No Action Taken” is assigned to submittals that are reviewed but for which there is no approval required by the Engineer. Examples of the type of submittals that receive this stamp include, but are not limited to, design calculations stamped by another Professional Engineer and submittals of the Contractor’s means and methods that have not been expressly specified.

1.4 QUALITY ASSURANCE

A. Certificates Of Compliance

1. Provide sworn certificates from the manufacturer or material supplier that the materials and fabrications provided under the Specification section conform with the Contract Documents.
2. Submit Certificates of Compliance in triplicate.
3. Certificates shall be signed by an officer of the manufacturer’s corporation and witnessed by a Notary Public.

1.5 SEQUENCING

A. General Procedures For Submission And Resubmission Of Shop Drawings, Product Data, and Samples

1. Coordination
 - a. Prepare and submit documentation in advance of fabrication and product manufacturer, so that the installation will not be delayed, other related work can be properly coordinated, and there is adequate time for review and resubmission, if required.
 - b. No extension of time will be authorized due to failure to provide approvable submittals sufficiently in advance of the Work.
 2. Resubmission
 - a. Make corrections and modifications required by the Engineer and resubmit until approved.
 - b. Clearly identify changes made to Shop Drawings and product data and indicate other changes that have been made other than those requested by the Engineer.
 3. Distribution
 - a. Distribute approved Shop Drawings and approved product data to the Project Site and elsewhere as required to communicate the information to Suppliers, Subcontractors, and field personnel.
- B. Samples will be retained by the Engineer on the Site.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01550

TRAFFIC REGULATION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

1. Traffic requirements
2. Traffic officers

B. Payment

1. OWNER is responsible for paying for traffic officers, in the event they are required. CONTRACTOR is responsible for scheduling the traffic officers, with OWNER's approval, and for providing all documentation.
2. OWNER will deduct from monies due CONTRACTOR for the following abnormal and unreasonable expenses:
 - a. CONTRACTOR caused delays in the prosecution of work that result in hiring traffic officers for more hours than would have been required during normal prosecution of work.
 - b. Reconstruction and/or reinstallation of any portions of the work, as a result of improper initial installation, for which traffic officers are required.
 - c. Traffic officers required at a site where CONTRACTOR is not working or outside of CONTRACTOR's standard work day as a result of obstructions to traffic that remain in the traveled way.
 - d. All other incidents resulting from CONTRACTOR'S operations requiring traffic officers that would not normally be encountered during the progress of a well-organized project employing proper construction methods.
 - e. When traffic officers are requested for the convenience of CONTRACTOR and are not otherwise considered necessary to the work.

1.2 REFERENCES

- A. Manual of Uniform Traffic Control Devices, U.S. Department of Transportation

1.3 TRAFFIC REQUIREMENTS

- A. Arrange construction activity so that all streets shall remain open to at least one-way traffic during periods of actual work, and to unimpeded, two-way traffic during all other periods.
- B. Provide a traffic control plan to ENGINEER for approval showing traffic control signs, barrels, cones, traffic officers, including detour signs, meeting the approval of ENGINEER, OWNER and local Police Departments in accordance with the Manual of Uniform Traffic Control Devices.

- C. Determine the location of each day's work and implement the approved traffic control plan. If the plan requires the use of traffic officers, notify the Police Department.
- D. CONTRACTOR shall have no claim of delay if he does not notify the Police Department of his scheduled location in time to arrange for traffic officers.
- E. Hand deliver written notice to individual houses affected by driveway and side road closings or detours a minimum 24 hours in advance. A recommended parking area outside the work limits shall be included in the notice.

1.4 TRAFFIC OFFICERS

- A. Uniformed traffic officers shall be required at locations deemed necessary by OWNER, working in conjunction with local Police and Fire Departments, for the protection of the public.
- B. The Police Chief or his representative, in consultation with OWNER's representative, will determine the number of officers required for the work.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01570

TEMPORARY CONTROLS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Dust control
 - 2. Drainage and erosion control
 - 3. Haybales and siltation fence
- B. Related Sections
 - 1. Section 02920 – Lawns and Grasses

1.2 TEMPORARY DUST CONTROL

- A. Exercise particular care to control dust both during and after construction. A mechanical street sweeper shall be used as needed.
- B. Prevent dust from becoming a nuisance or hazard. During construction, excavated material and open or stripped areas are to be properly policed and controlled so as to prevent spreading of the material.
- C. Control dust during and after construction using calcium chloride and/or salt. The Engineer may direct the Contractor to employ sprinkling of water in lieu of calcium chloride for dust control.
- D. During and after construction, all paved road and driveway surfaces are to be scraped and broomed free of excavated materials on a daily basis. The surfaces are to be hosed down or otherwise treated to eliminate active or potential dust conditions and the natural road or wearing surface is to be exposed.

1.3 DRAINAGE AND EROSION CONTROL

- A. Installed and maintain sediment trapping system.
- B. Discharge surface runoff from any disturbances to the site into silt containment basins. Siltation prevention measures utilizing haybale and geotextile fences for containment shall be taken before discharge to drainage systems.
- C. Provide additional work if necessary to control erosion and siltation throughout the duration of construction activities.

PART 2 PRODUCTS

2.1 HAYBALES

- A. Bales of hay required for siltation control shall be wire tied bales of the type normally used for siltation or erosion control or construction projects.

2.2 FILTER FABRIC

- A. Filter fabric siltation fencing shall be a woven filter fabric having a weight of at least 2.5 ounces per square yard, a thickness of at least 17 mils, a coefficient of permeability of not less than 0.0009 centimeters per second and allows a water flow rate of a minimum 40 gallons per minute per square yard. The material shall have a high sediment filtration capacity, high slurry flow and minimum clogging characteristics. The material shall be equal to 100x as manufactured by Mirafi, Inc., Charlotte, North Carolina.

PART 3 EXECUTION

3.1 EXECUTION

- A. Control of erosion and siltation during the construction is expected to require mulching, haybales, siltation fencing, diversion and control of storm water run-off, ponding areas and similar methods.
- B. Place filtration fabric under catch basin grates.
- C. Control surface waters within the construction area through the use of temporary culverts or other means.
- D. Salvage existing loam and topsoil and stockpile this material for re-spreading where originally removed. On backfilling, grading shall be returned to preconstruction contours as much as possible and the stockpile of loam shall be spread over areas disturbed during construction activities.
- E. Maintain the restored areas until such time as the Work is accepted by the Owner. Maintenance shall include all grading, refertilizing, reseeding, remulching and/or netting which may be necessary.
- F. Seed shall be as specified under Section 02920.

3.2 CLEANING

- A. Remove any sediment that builds up around the haybales or catchbasins.
- B. Catchbasins that collect sediment as a result of the Work shall be thoroughly cleaned.

END OF SECTION

SECTION 01600

CONTROL OF MATERIALS AND EQUIPMENT

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Products and Material
 - 2. Packaging, Handling and Storage of Materials
 - 3. Inspection of Offsite Work

1.2 QUALITY ASSURANCE

- A. Review all contract Drawings and Specifications with respect to specific system characteristics, applicability of materials and equipment for the intended purposes, sizes, orientation, and interface with other systems, both existing and proposed, and certify that the materials and equipment proposed will perform as specified prior to submitting shop drawings.
- B. Provide sworn certificates as to quality and quantity of materials where specified or requested by the Engineer.
- C. Obtain concurrence of the Engineer prior to processing, fabricating, or delivering material or equipment.

1.3 PRODUCTS AND MATERIAL

- A. Use in the Work only new and first quality material, conforming to the requirements of these Specifications and approved by the Engineer. If, after trial, it is found that sources of supply that have been approved do not furnish a uniform product, or if the product from any source proves unacceptable at any time, the Contractor shall furnish approved materials from other approved sources.
- B. Immediately remove defective materials and equipment from the site.

1.4 PACKAGING, HANDLING, AND STORAGE OF MATERIALS

- A. Progressively deliver materials and equipment to the Site so there will be neither delay in progress of the Work nor an accumulation of material that is not to be used within a reasonable time.
- B. Deliver products to the Site in their manufacturer's original container, with labels intact and legible.
 - 1. Maintain packaged materials with seals unbroken and labels intact until time of use.
 - 2. The Engineer may reject as non-complying such material and products that do not bear identification satisfactory to the Engineer as to the manufacturer, grade, quality, source, and other pertinent information.
- C. Except as otherwise approved by the Engineer, determine and comply with the manufacturer's recommendations on product storage, handling, and protection.

Provide manufacturer's documentation on recommended storage procedures when requested by the Engineer.

- D. Familiarize workmen and subcontractors with hazards associated with materials, equipment, and chemicals specified herein and take all necessary safety precautions.
- E. Areas available on the construction site for storage of material and equipment shall be as shown on the Drawings or approved by the Owner.
- F. Store mechanical equipment subject to corrosive damage by the outdoor atmosphere (covered or not) in a heated, secured, insured commercial warehouse facility satisfactory to the Engineer. Equip drive motors with thermostatically controlled strip heaters.
- G. Outdoor storage with plastic, canvas, plywood or other cover will not be allowed except where specific approval for designated items not containing electrical components or bearings is obtained from the Engineer.
- H. No item judged rusty, corroded or otherwise damaged during storage will be accepted. Any electrical or instrumentation item determined by the Engineer to be damaged shall be removed from the Site and replaced by a completely new item in first class condition. Items not properly stored shall not be considered for any partial payment.
- I. Do not store material or equipment in any wetland or environmentally sensitive area. Stockpile sites shall be level, devoid of mature stands of natural vegetation, and removed from drainage facilities and features, wetlands, and stream corridors.
- J. Provide protective and preventive maintenance during storage consisting of manually exercising equipment where required, inspecting mechanical surfaces for signs of corrosion or other damage, lubricating, applying any coatings as recommended by the equipment manufacturer as necessary for its protection and other precautions as necessary to assure proper protection of equipment stored.
- K. Treat ferrous surfaces not receiving finish coats of paint with rust preventive coating, and protect non-ferrous metal work and devices with suitable wrappings.

1.5 INSPECTION OF OFFSITE WORK

- A. Work to be done away from the construction site is subject to inspection on behalf of the Owner during its fabrication, manufacture, testing, or before shipment. Notify the Engineer of the place and time where such fabrication, manufacture, testing, or shipping is to be done. Such notice shall be in writing and delivered to the Engineer in ample time so that the necessary arrangements for the inspection can be made.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION