

MEASUREMENT AND PAYMENT
SECTION 700

ADDENDUM #3

| Ref. No. | Item No. | Unit | Description |
|-----------------------------|-----------------|-------------|---------------------------------------------------------|
| 102 | 1 | CY | Earth Excavation and Grading – Access Road |
| 102 | 2 | CY | Earth Excavation and Screened Gravel BELOW Normal Grade |
| 103 | 3 | CY | Rock Excavation, Disposal and Backfill |
| 104 | 4 | LS | Clearing and Grubbing |
| 106 | 5 | CY | Bank-Run Gravel |
| 110 | 6 | CY | Test Pits |
| 113 | 7 | 1,000 GAL | Water for Dust Control |
| 119 | 8 | LS | Sedimentation Control System |
| 120 | 9 | LS | Maintenance and Protection of Traffic |
| Exh D; 01020 | 10 | ALLOW | Railroad Inspector |
| 121; 01020 | 11 | ALLOW | Trafficmen (City Police) |
| Exh C; 01020 | 12 | ALLOW | Trafficmen (State Police) |
| 121; 01020 | 13 | ALLOW | Trafficmen (Uniformed Flagmen) |
| 01020 | 14 | ALLOW | Temporary Waste Stockpile Area Site Rental |
| 01020 | 15 | ALLOW | Utility Pole Relocation |
| 605 | 16 | SY | Temporary Pavement Replacement (City Roads) |
| 605 | 17 | SY | Permanent Pavement Replacement (City Roads) |
| 612 | 18 | CY | Miscellaneous Concrete |
| 614 | 19 | SY | Turf Establishment |
| 01011 | 20 | LS | Environmental Health and Safety |
| Sec. 6 6.24; 01020;01180 | 21 | ALLOW | Testing Laboratory Services |
| Sec. 5 5.22; 01500 | 22 | MONTH | Field Office for Engineer |
| 01525 | 23 | LS | Temporary Waste Stockpile Area |
| 01563 | 24 | LS | Dewatering, Control and Diversion of Water |
| 02215 | 25 | TON | Disposal of Controlled Materials |
| 02314 | 26 | CY | Controlled Materials Excavation |
| 02316 | 27 | CY | Management of Reusable Controlled Material |
| 106; 02340 | 28 | CY | Stone Crossing |
| 02413 | 29 | LS | Handling Contaminated Groundwater |
| 02433; Exh D | 30 | LF | Pipe Crossing Under Railroad |
| 02512 | 31 | SF | Cement Concrete Sidewalk and Driveway |
| 02514 | 32 | LF | 30” Reinforced Concrete Pipe |
| 02514 | 33 | EA | 30” Reinforced Concrete Culvert End |

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| Ref. No. | Item No. | Unit | Description |
|---------------------------|-----------------|-------------|---------------------------------------------|
| 02529 | 34 | LF | Concrete Curbing |
| 02615 | 35 | LF | 24" PVC Force Main Piping and Appurtenances |
| 02615 | 36 | LF | 30" PVC Force Main Piping and Appurtenances |
| 02615 | 37 | LS | Hydrostatic Testing of Force Main |
| 02620 | 38 | LF | Directional Drilled Force Main #1 |
| 02620 | 39 | LF | Directional Drilled Force Main #2 |
| 02620 | 40 | TON | Disposal of HDD Bore Cuttings |
| 02620 | 41 | 1,000 GAL | Disposal of HDD Drilling Mud |
| 02620 | 42 | EA | HDD Additional Redirect in Rock |
| 02620 | 43 | EA | HDD Additional Redirect in Soil |
| 02620 | 44 | LF | HDD Additional Conductor Casing |
| 02700 | 45 | LF | Permanent Access Road |
| 02900 | 46 | SY | Wetland Mitigation and Enhancement |
| 02910 | 47 | ACRE | Control and Removal of Invasive Vegetation |
| 03400; 11060; 11070 | 48 | EA | Air Valve Manhole |
| 03400; 11060; 11070 | 49 | EA | Junction Vault |
| 03400; 11060; 11070 | 50 | EA | Force Main Drain Manhole |
| 01020; Exh D | 51 | ALLOW | Railroad Track Removal and Replacement |
| Exh D | 52 | CY | Railroad Stone Ballast |
| 01020 | 53 | ALLOW | Water for Force Main Testing |
| Sec. 5 10.23 | 54 | LS | Extended Warranty (Maintenance Bond) |
| Sec. 6 6.14 | 55 | ALLOW | City of Middletown Permits |

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GENERAL

- (a) The following subsections describe the measurement of and payment for the work to be done under the items listed in the BID.
- (b) Each unit or lump sum price stated in the BID shall constitute full compensation as herein specified for each item of work completed in accordance with the plans and specifications.
- (c) The prices for those items which involve excavation shall include compensation for disposal of surplus excavated non-controlled materials (as directed by the Engineer), installation of all necessary trench supports as required by OSHA (see 6.21 of the Special Conditions).
- (d) In all lump sum items which involve excavation, the price shall be based on all excavation in earth. When rock is excavated, the price therefore shall be in addition to the cost of excavating earth, and no deduction shall be made in the amount of earth excavation.
- (e) If changes are made in the design based on the plans and specifications as issued, and should such changes increase or decrease the amount of work to be done, the contract will be adjusted in accordance with the applicable bid items.
- (f) Where work is shown on the drawings or required by the specifications and a bid item is not provided, the cost of that work shall be included in the unit prices bid for other items of work as agreed to by the Engineer and Owner.
- (g) The Engineer has the right to adjust pipe depths shown on the Contract Drawings within the designated pay limits without additional cost to the Owner.
- (h) The prices for those items which involve excavation shall include compensation for maintaining a "dust-free" environment.

Item 1: Earth Excavation and Grading – Access Road

- A. This Item of Work shall consist of excavation and grading of the Permanent Access Road, Stone Crossings, and adjacent side slopes, removal and disposal of surplus non-controlled materials and unsuitable materials excavated within the cut and fill limits of the Permanent Access Road as shown on the Drawings.
- B. This item shall be measured and paid for in accordance with Sections 2.02.04 and 2.02.05 of Form 816.
- C. Rock excavation not included in this Item (see Item 3 below).

Item 2: Earth Excavation and Screened Gravel BELOW Normal Grade

- A. If, in the opinion of the Engineer, the material at or below normal grade is unsuitable for foundation, it shall be removed to such depths and widths within the lines of payment as may be ordered. Normal grade is defined as the bottom of the normal trench along the proposed pipe grade and the bottom of the normal excavation for the base of structures shown on the Contract Drawings.
- B. All such excavations shall be backfilled with Screened Gravel.
- C. The quantity of earth excavation and backfill below normal grade to be paid for shall be equal to the number of cubic yards of unsuitable material excavated, measured to the extent of work done as ordered.
- D. The unit price shall constitute full compensation for furnishing all labor, materials, tools, and equipment necessary and for excavation and disposal of excavated material below normal grade (as directed by the Engineer), and for furnishing, placing and compacting screened gravel in such excavations.

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- E. All work associated with the requirements of this Item, and required and related to the installation of the valve vaults, will be measured and paid for under this Item.

Item 3: Rock Excavation, Disposal and Backfill

- A. This Item is intended to cover rock excavation anywhere within the normal limits of excavation called for on the Contract Drawings and in the Specifications and rock excavation below normal grade. Normal grade is defined as the bottom of the normal trench along the proposed pipe grade, including mainline pipe and the bottom of the normal excavation for the base of structures shown on the Contract Drawings.
- B. Where rock is encountered, it shall be uncovered but not excavated until measurements have been made by the Engineer, unless in the opinion of the Engineer, satisfactory measurements can be made in some other manner.
- C. The quantity of rock to be paid for under this Item shall be the number of cubic yards of rock, measured in place before excavation, within the limits of normal excavation as defined in the plans, unless rock excavation beyond such limits has been authorized in writing by the Engineer, in which case measurement shall be made to the authorized limits.
- D. Excavated rock of acceptable dimension and quality may be used as rip rap in locations where rip rap is indicated on the drawings. Excavated rock not so used and not disposed of in an approved manner shall not be included for payment.
- E. The bidder should include in his bid, under all items involving excavation, the cost of doing the entire excavation as earth; the price for this Item is intended to cover the difference between the cost of rock excavation and the cost of earth excavation. The unit price shall include all labor, materials and equipment necessary for rock excavation; disposal as directed by the Engineer; furnishing, placing and compacting all additional material needed for backfill; and the pre-blast survey.
- F. All work associated with the requirements of this Item, and required and related to the entry and exit pits for installation of the "Pipe Crossing Under Railroad" Section 02433, will be measured and paid for under this Item.

Item 4: Clearing and Grubbing

- A. This Item, being paid for on a lump sum basis, will not be measured for payment.
- B. Payment for this Item will be at the contract lump sum price for Clearing and Grubbing, as listed in the bid which price and payment shall constitute full compensation for all labor, equipment, tools, supplies, materials, handling, hauling, removal and disposal and work incidental and necessary to complete the clearing and grubbing operation and related work as detailed above, all in accordance with the provisions of the drawings and specifications and as directed.

Item 5: Bank-Run Gravel

- A. This item shall be measured in place within the payment lines shown or specified by the Engineer.
- B. This work will be paid for at the contract unit price per cubic yard for "Bank-Run Gravel", complete in place, which price shall include all materials, tools, equipment and labor incidental thereto.
- C. This item is specifically for payment of bank-run gravel used as backfill in sewer trenches in paved roads, as specified in Section 102 of these specifications.
- D. Bank-Run Gravel specifically included in the payment of another item will not be measured or paid under

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this item.

Item 6: Test Pits

- A. Work under this Item shall be measured for payment by the unit "Cubic Yard", complete in place and accepted.
- B. Payment under this Item shall constitute full compensation for excavation, backfill and compaction (gravel in paved areas and areas to be paved; or suitable excavated material in unpaved areas), pavement replacement, including saw cutting and sealing, lawn restoration, curb replacement, driveway and sidewalk replacement, and appurtenant work, complete in place and accepted and all other work incidental and necessary to complete the work as indicated and directed by the Engineer.

Item 7: Water for Dust Control

- A. Work under this Item shall be measured for payment by the actual number of "1,000 GAL" (1,000 gallons) of water used for dust control measures, furnished and spread over the areas and at the times and at the rates of application for each area as directed by the Engineer. The water will be measured in tanks or tanker trucks of predetermined capacity, or by means of satisfactorily installed meters. Quantities of water wasted or applied without authorization will not be paid for.
- B. Payment under this Item shall constitute full compensation for furnishing and spreading the water and for all plant, equipment, labor, tools, other materials and incidental costs necessary to satisfactorily complete the item in accordance with the specifications and as directed.

Item 8: Sedimentation Control System

- A. This Item, being paid for on a lump sum basis, will not be measured for payment.
- B. This Item will be paid for at the contract lump sum price as listed in the bid for "Sedimentation Control System." This price shall be full compensation for all excavation, backfilling, sedimentation control systems including hay bales, silt fence, posts, stakes, geotextile, catch basin sediment filters, erosion control matting, sediment control check dams, periodic and final removal of accumulated silt, disposal of surplus and unsuitable material and all materials, equipment, tools, labor and work incidental to or necessary for completion of the Item.
- C. Payment under this Item shall also include daily inspection and maintenance and/or repair of the sedimentation control system during the life of the Contract or until it is no longer required and is removed as approved by the Engineer.
- D. At the end of the Contract or when the sedimentation control system is no longer needed, as approved by the Engineer, the sedimentation control system shall be completely removed and disposed of by the Contractor. There will be no separate measurement or payment for removing and disposing of the sedimentation control system.

Item 9: Maintenance and Protection of Traffic

- A. This Item, being paid for on a lump sum basis, will not be measured for payment.
- B. This Item will be paid for at the contract lump sum price as listed in the bid for "Maintenance and Protection of Traffic." This price shall include all costs for labor, equipment and services involved in furnishing, erecting, maintaining, moving, adjusting, relocating and storing signs, barricades, traffic cones and traffic delineators as well as all cost of labor and equipment involved in the maintenance of traffic lanes and detours ordered or included in the approved scheme for maintenance of traffic.

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- C. The contract lump sum price for "Maintenance and Protection of Traffic" shall also include furnishing, installing, and removing the material for the temporary traversable slope in those areas where a longitudinal dropdown exists.
- D. If there is no method for payment for the temporary transition in those areas where a transverse dropdown exists, then the contract lump sum price for the "Maintenance and Protection of Traffic" shall also include furnishing, installing, and removing the material for the temporary transition.
- E. The contract lump sum price for "Maintenance and Protection of Traffic" shall also include temporarily relocating existing signs and sign supports as many times as deemed necessary and furnishing, installing, and removing temporary sign supports and foundations if necessary during construction of the project.

Item 10: Railroad Inspector

- A. The method of measurement shall be by review of invoices submitted by the Providence and Worcester Railroad Company to the Contractor documenting the actual number of man-hours spent by inspection personnel directing and maintaining flow of traffic in construction areas. The use of vehicles and associated equipment will not be measured for payment but shall be considered as included in the man-hour invoices submitted.
- B. Comply with Section 01020 "Allowances" of these specifications.
- C. Payment shall be made to cover the actual invoices received by the Contractor for the services of Railroad inspection personnel required for the maintaining and control of traffic, which price shall include all equipment, vehicles, labor, overtime pay, and insurance necessary to perform the work. No markup will be allowed.
- D. Work under this Item will be paid for under the contract stated allowance for this Item, and in accordance with "Section 01020 - Allowances" of these Specifications. The allowance amount may be increased or decreased depending upon the actual expenses incurred and approved by the Owner.
- E. The unit price established for this work Item shall include all compensation, insurance, benefits and any other cost, or liability, incidental to the furnishing of Railroad Inspector.

Item 11: Trafficmen (City Police)

- A. The method of measurement shall be by review of invoices submitted by the municipal Police Department to the Contractor documenting the actual number of man-hours spent by uniformed police officers or private-duty uniformed individuals directing and maintaining flow of traffic in construction areas. The use of Police Department Vehicles, if requested by the Contractor, will be measured for payment by the number of hours the vehicle is used.
- B. Comply with Section 01020 "Allowances" of these specifications.
- C. Payment shall be made to cover the actual payroll invoices received by the Contractor for the services of uniformed police officers required for the maintaining and control of traffic, which price shall include all equipment, City vehicles, labor, overtime pay, and insurance necessary to perform the work. No markup will be allowed.
- D. Work under this Item will be paid for under the contract stated allowance for this Item, and in accordance with "Section 01020 - Allowances" of these Specifications. The allowance amount may be increased or decreased depending upon the actual expenses incurred and approved by the Owner.
- E. The minimum hours for payment for any one policeman, in any one day, shall be four (4) hours, unless otherwise specified. No uniformed officer shall work more than twelve (12) hours in any one day. Overtime

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wages are considered included in the unit price established for this Item.

- F. The unit price established for this work Item shall include all compensation, insurance, benefits and any other cost, or liability, incidental to the furnishing of Trafficmen (Municipal Police) and Police Department Vehicles.

Item 12: Trafficmen (State Police)

- A. The method of measurement shall be by review of invoices submitted by the State Police Department to the Contractor documenting the actual number of man-hours spent by State police officers directing and maintaining flow of traffic in construction areas. The use of State Police Department Vehicles and associated equipment will not be measured for payment but shall be considered as included in the man-hour invoices submitted.
- B. Comply with Section 01020 "Allowances" of these specifications.
- C. Payment shall be made to cover the actual payroll invoices received by the Contractor for the services of State police officers required for the maintaining and control of traffic, which price shall include all equipment, State vehicles, labor, overtime pay, and insurance necessary to perform the work. No markup will be allowed.
- D. Work under this Item will be paid for under the contract stated allowance for this Item, and in accordance with "Section 01020 - Allowances" of these Specifications. The allowance amount may be increased or decreased depending upon the actual expenses incurred and approved by the Owner.
- E. The unit price established for this work Item shall include all compensation, insurance, benefits and any other cost, or liability, incidental to the furnishing of Trafficmen (State Police).

Item 13: Trafficmen (Uniformed Flagmen)

- A. The method of measurement shall be by review of invoices submitted by the Contractor documenting the actual number of man-hours spent by Trafficmen (Uniformed Flagmen) directing and maintaining flow of traffic in construction areas.
- B. Comply with Section 01020 "Allowances" of these specifications.
- C. Payment shall be made to cover the actual payroll costs incurred by the Contractor for the services of Trafficmen (Uniformed Flagmen) required for the maintaining and control of traffic, which price shall include all equipment, labor, overtime pay, approved overhead, and insurance necessary to perform the work. No markup will be allowed.
- D. Work under this Item will be paid for under the contract stated allowance for this Item, and in accordance with "Section 01020 - Allowances" of these Specifications. The allowance amount may be increased or decreased depending upon the actual expenses incurred and approved by the Owner.
- E. The unit price established for this work Item shall include all compensation, insurance, benefits and any other cost, or liability, incidental to the furnishing of Trafficmen (Uniformed Flagmen).

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Item 14: Temporary Waste Stockpile Area Site Rental

- A. The method of measurement shall be by the month as per the leasing agreement between the Contractor and property owner of the WSA site.
- B. Comply with Section 01020 "Allowances" of these specifications.
- C. Payment shall be made to cover the actual monthly costs incurred by the Contractor for use of the WSA site per the leasing agreement between the Contractor and the property owner. Payment for this item shall be released in installments to the Contractor as his payments are made to the property owner. No markup will be allowed.
- D. Work under this Item will be paid for under the contract stated allowance for this Item, and in accordance with "Section 01020 - Allowances" of these Specifications. The allowance amount may be increased or decreased depending upon the actual expenses incurred and approved by the Owner.

Item 15: Utility Pole Relocation

- A. The method of measurement shall be by review of the invoice(s) submitted by utility owner to the Contractor documenting the actual costs for relocating utility poles affected by the Work.
- B. Comply with Section 01020 "Allowances" of these specifications.
- C. Payment shall be made to cover the actual costs incurred by the Contractor for payment to the utility owner for relocating affected utility poles including all equipment, labor, materials, incidentals and disposal as required. No markup will be allowed.
- D. Work under this Item will be paid for under the contract stated allowance for this Item, and in accordance with "Section 01020 - Allowances" of these Specifications. The allowance amount may be increased or decreased depending upon the actual expenses incurred and approved by the Owner.

Item 16: Temporary Pavement Replacement (City Roads)

Item 17: Permanent Pavement Replacement (City Roads)

- A. The quantity to be measured for payment under these Items shall be the actual number of square yards of pavement placed as specified (See Details) and measured along the route of the pipe trench. The width of trench measured for payment shall not exceed the limits shown on the detail drawings.
- B. Payment for Temporary Pavement Replacement shall also include furnishing, placement and compaction of Processed Aggregate Base, at the required width and thickness, as in accordance with the contract documents and details.

No payment shall be made for maintaining temporary pavement as required by the specifications.
- C. Unit price for Permanent Pavement Replacement shall include full compensation for removal and disposal of temporary pavement; furnishing, placing and compacting such additional processed aggregate base course, as is required to bring the base up to final grade, and the permanent pavement.
- D. The unit prices for these Items shall constitute full compensation for furnishing all materials, labor, tools and equipment required to place the pavement as specified.
- E. The unit prices for these Items shall include all cutting or trimming, pavement/base removal, all excavation, pavement repair material (subbase, base and surface), pavement markings, saw cutting, and any additional material or labor required for corrective work necessitated by settlement through the guarantee period of this Contract.

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- F. The unit prices for these Items shall be full compensation for all dust control, materials, equipment, tools, labor and work incidental to or necessary for the completion of the item and the cost of resetting to proposed grade all existing or newly constructed grates, frames, covers, valve boxes, access covers, and other items which must have a fixed relationship to finished grade.
- G. The unit prices for these Items shall include the cost of saw cutting the existing pavement for Permanent Pavement Replacement.

Item 18: Miscellaneous Concrete

- A. Plain portland cement-concrete for pipe encasements, pipe cradles, vertical thrust blocks, stop collars, etc., will be measured by the cubic yard in place, to the limits shown on the drawings and/or as directed by the Engineer, complete and accepted by the Owner.
- B. The quantity of plain portland cement concrete, determined as provided in the preceding paragraph will be paid for at the contract unit price bid per cubic yard for furnishing and placing plain Portland cement-concrete for pipe cradles, pipe encasements, vertical thrust blocks, stop collars, gravel bedding, etc., as listed in the bid; which prices and payment shall constitute full compensation for all equipment, plant, tools, materials, forms, bracing, mixing, delivering, placing, compacting, furnishing, curing and protection, installing miscellaneous materials to be embedded in concrete and for all labor, and incidentals necessary to complete the items in accordance with the specifications, the drawings and as directed by the Engineer. No payment will be made for concrete until it has been satisfactorily cured.
- C. No payment will be made under this Item and Section of the Specifications for plain portland cement-concrete specified or indicated to be paid for under other items of work.
- D. No payment will be made for plain portland cement-concrete not shown on the drawings and not ordered by the Engineer.
- E. This item shall also include reinforcing steel for vertical thrust blocks as shown on the Drawing details or directed by the Engineer and shall conform to Section 612 of these specifications.

Items 19: Turf Establishment

- A. Work under this item shall include furnishing and placement of fertilizer, grass seed and mulch as described in City Specification Section 614.
- B. This work shall be measured and paid as described in Sections 9.50.04 and 9.50.04 of Standard Form 816.
- C. This item shall be used for restoration of areas along new sewer installation and along Permanent Access Road.
- D. The Contractor shall be responsible for the restoration of all damaged areas. Payment will be made for only that restored area within 20' of the centerline of the sewer installation, and within the slope limits of the Access Road.

Items 20: Environmental Health and Safety

Method of Measurement

- A. Immediately after award of the Contract, the Contractor shall submit to the Engineer for acceptance a breakdown of its lump sum bid price for this item detailing:
 - a. The development costs associated with preparing the HASP in accordance with these

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Specifications.

- b. The cost per month for the duration of the Project to implement the HASP and provide the services of the HSM and the HSO.
- B. If the lump sum bid price breakdown is unacceptable to the Engineer; substantiation showing that the submitted costs are reasonable shall be required.
- C. Upon acceptance of the payment schedule by the Engineer, payments for work performed will be made as follows:
 - a. The lump sum development cost will be certified for payment.
 - b. The Contractor shall demonstrate to the Engineer monthly that the HASP has been kept current and is being implemented and the monthly cost will be certified for payment.
 - c. Any month where the HASP is found not to be current or is not being implemented, the monthly payment for the Environmental Health and Safety Item shall be deferred to the next monthly payment estimate. If the HASP is not current or being implemented for more than thirty calendar days, there will be no monthly payment.
 - d. Failure of the Contractor to implement the HASP in accordance with this Specification shall result in the withholding of all Contract payments.

Basis of Payment

- A. This work will be paid for at the Contract lump sum price for “Environmental Health and Safety” which price shall include all materials, tools, equipment and labor incidental to the completion of this item for the duration of the Project to maintain, revise, monitor and implement the HASP. Such costs include providing the services of the HSM and HSO, Contractor employee training, chemical protective clothing (CPC), personal protective equipment (PPE), disposal of PPE and CPC, medical surveillance, decontamination facilities, engineering controls, monitoring and all other HASP protocols and procedures established to protect the Health and Safety for all on-site workers.

Item 21: Testing Laboratory Services

- A. This Item is for payment to the Contractor for testing ordered by the Engineer in accordance with the provisions of Special Conditions Section 6.24 and Section 01020 “Allowances”. Payment will be made based on actual invoice cost plus 5% for tests demonstrating Work in compliance with the Contract Documents. This Item does not include testing of controlled materials.
- B. The allowance amount may be increased or decreased depending upon the actual expenses incurred and approved by the Owner.

Item 22: Field Office for Owner’s Representative

- A. Field Office for Owner will be measured for payment by the “month”.
- B. The unit price for this Item shall include full compensation for providing a trailer, or an office within a structure, which will be used as the field office for representatives of the Owner. All costs in connection with the obtaining and use of an office site and the entire cost of furnishing and equipping the office as specified, electrical charges, local and long distance telephone charges, internet service charges, maintaining the trailer and its removal shall be considered to be included in the cost of this Item.

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Item 23: Temporary Waste Stockpile Area

- A. This work shall be measured for payment at the Lump Sum cost for securing, construction, and management of the WSA.
- B. This work shall be paid for at the Contract Lump Sum, which shall include all materials, tools, labor, equipment, permits, and work needed to secure, construct, decontaminate, and manage the WSA, including all clearing, grubbing, grading, clean-up and site restoration.
- C. All materials, labor and equipment associated with compliance with the General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer) will not be measured separately, but will be considered incidental to this item

Item 24: Dewatering, Control and Diversion of Water

- A. This Item, being paid for on a lump sum basis, will not be measured for payment.
- B. Payment under this Item shall constitute full compensation for dewatering, control and diversion of water required to maintain in a suitable dewatered condition the areas in which excavations and/or construction are to be conducted and for all labor, equipment, plant, materials, supplies, tools, manipulation, maintenance, removal and all incidental costs and appurtenant work necessary to satisfactorily complete the item as specified and as directed.

Item 25: Disposal of Controlled Materials

- A. The work of "DISPOSAL OF CONTROLLED MATERIALS" will be measured for payment as the actual net weight in tons of material delivered to the treatment/recycling/disposal facility. Such determinations shall be made by measuring each hauling vehicle on the certified permanent scales at the treatment/recycling/disposal facility. Total weight will be the summation of weight bills issued by the facility specific to this Project. Excess excavations made by the Contractor beyond the payment limits specified in the Contract Sections (as appropriate) will not be measured for payment and the Contractor assumes responsibility for all costs associated with the appropriate handling, management and disposal of this material.
- B. The disposal of excavated materials, originally anticipated to be controlled materials, but determined by characterization sampling by the Engineer not to contain concentrations of regulated chemicals (non-polluted or "clean" materials) will not be measured for payment under this item but will be considered as surplus excavated materials and shall be handled in accordance with the Contract Sections, as applicable.
- C. Equipment decontamination, the collection of residuals, and the collection and disposal of liquids generated during equipment decontamination activities will not be measured separately for payment.
- D. This work shall be paid for at the Contract unit price, which shall include the loading and transportation of controlled materials from the WSA to the treatment/recycling/disposal facility; the fees paid to the facility for treatment/recycling/disposal; the preparation of all related paperwork; and all equipment, materials, tools, and labor incidental to this work. This unit price will be applicable to all of the Contractor-selected disposal facilities and will not change for the duration of the Project.
- E. This price shall also include equipment decontamination; the collection of residuals generated during decontamination and placement of such material in the WSA; and the collection and disposal of liquids generated during equipment decontamination activities.

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Item 26: Controlled Materials Excavation

- A. The work of Controlled Materials Excavation will be measured for payment by the number of cubic yards of material excavated within the AOEC's and taken to the WSA, and stockpiled within the storage bins for sampling by the Engineer or temporarily stockpiled for later reuse. Material kept in proximity to the site of the excavation and reused as it is generated will not be measured for payment under this item. Excess excavations made by the Contractor beyond the payment limits specified in the Contract will not be measured for payment and the Contractor assumes all costs associated with the appropriate handling, management and disposal of this material.
- B. Equipment decontamination, the collection of residuals, and the collection and disposal of liquids generated during equipment decontamination activities will not be measured separately for payment.
- C. "Controlled Materials Excavation" shall be paid for at the Contract unit price per cubic yard, which shall include all transportation from the excavation site to the final WSA, including any intermediate handling steps; and stockpiling controlled materials at the WSA; and all tools, equipment, material and labor incidental to this work. Disposal of the Controlled Material will be paid for under Item 27, "Disposal of Controlled Materials."
- D. Construction and management of the WSA shall be paid for under Item 25, "Temporary Waste Stockpile Area."
- E. This price shall also include equipment decontamination; the collection of residuals generated during decontamination and placement of such material in the WSA; and the collection and disposal of liquids generated during equipment decontamination activities.
- F. All materials, labor and equipment associated with compliance with the General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer) will not be measured separately, but will be considered incidental to the "Controlled Materials Excavation".
- G. Handling and disposal of contaminated groundwater will be paid for under Item 31, "Handling Contaminated Groundwater."

Item 27: Management of Reusable Controlled Material

- A. "Management of Reusable Controlled Material" shall be measured for payment by the number of cubic yards of material loaded and transported from the WSA and placed at re-fill areas located within the Project limits in accordance with the Contract.
- B. "Management of Reusable Controlled Material" shall be paid for at the Contract unit price per cubic yard, which shall include all materials, equipment, tools and labor necessary to load and transport reusable controlled materials from the WSA to re-fill areas located within the Project limits and to place and compact the reusable material. This price shall include any decontamination of soil handling equipment, and the treatment/recycling/disposal of wastes generated in conjunction with such decontamination.
- C. No separate payment shall be made for consolidating previously tested individual stockpiles that have been deemed reusable, but shall be considered incidental to the work.
- D. The disposal of any reusable controlled material that fails to meet material testing requirements for the intended use in accordance with the Contract requirements, as well as any excess reusable material, shall be paid under Item 27, "Disposal of Controlled Materials."

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Item 28: Stone Crossing

- A. This work will be measured by the actual number of cubic yards of Stone Crossings constructed and accepted by the Engineer.
- B. This work will be paid for at the contract unit price per cubic yard of “Stone Crossing”, complete in place, which price shall include all materials, labor, tools, and equipment incidental and necessary for each type of installation.
- C. This item shall also include furnishing and placement of geotextile and bank-run gravel as shown on the contract drawings.
- D. Earth excavation and grading for this Item shall be included in the measurement and payment for Item 1, Earth Excavation and Grading – Access Road.

Item 29: Handling Contaminated Groundwater

- A. Within fourteen (14) calendar days after addressing the Engineer’s comments on the proposed system(s) for Handling Contaminated Groundwater, the Contractor shall submit to the Engineer for approval a cost breakdown of its lump sum bid price. The submission must include substantiation showing that the cost breakdown submitted is reasonable based on the Contractor's lump sum bid. The cost breakdown shall be in accordance with the following payment schedule:
 - 1. The cost to prepare the design for proposed system(s) for Handling Contaminated Groundwater, including preparation and submittal of all permit registration applications, in accordance with these specifications. Design costs shall not exceed 10% of the total cost of the item.
 - 2. The procurement and installation cost for the proposed system(s) for Handling Contaminated Groundwater in accordance with these specifications. Procurement and installation costs shall not exceed 20% of the total cost of the item.
 - 3. Equipment decontamination and demobilization and restoration of site. Decontamination and demobilization costs shall not exceed 10% of the total cost of the item.
 - 4. The remaining costs for operation, monitoring, permit compliance, sampling and analysis, disposal costs, and maintenance of the proposed system(s), including cleaning of the temporary containment tanks of settled solids, transporting of solids to the WSA, and transportation of the contaminated dewatering wastewater to an off-site permitted treatment/disposal facility in accordance with these specifications shall be divided evenly throughout the duration of the project work involving contaminated groundwater at the discretion of the Engineer.
- B. Increased costs directly related to the Contractor’s operation (i.e. treatment or increased charges due to changes in pH or additional contaminants, treatment and disposal of excess water related to process or waste water, etc.) will not be paid under this item but will be considered a part of the Contractor’s cost for the item under which the work is being performed.
- C. This work will be paid for at the Contract lump sum price for “Handling Contaminated Groundwater” which price shall include: all work and materials involved with handling contaminated groundwater from within GW AOEC and shall include all equipment, materials, tools and labor incidental to removal of the contaminated groundwater from the excavation; conveying contaminated groundwater from the dewatering point to the temporary containment tanks and groundwater treatment facility; treatment; conveying discharge of contaminated wastewater to a sanitary sewer, surface water or off-site disposal at a permitted treatment/disposal facility (including transportation); disposal or recycling of used treatment media (i.e. bag filters and spent carbon); permit applications; disposal and permit fees; POTW fees; electrical costs; sampling and documentation costs; laboratory costs; design and monitoring; mobilization, operation, and

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maintenance of the system; site work; all required equipment decontamination; transportation of solids to the WSA; and equipment demobilization.

- D. Sedimentation control associated with work under this Item will be paid under the appropriate items of the Contract.

Item 30: Pipe Crossing Under Railroad

- A. The quantity to be measured for payment under this Item shall be the actual number of linear feet of steel casing installed complete and in place as specified and measured from end to end of casing. The casing pipe shall be measured to the nearest 0.5 ft.
- B. Payment for work under this Item will be at the contract linear foot price for “Pipe Crossing Under Railroad” at the location and to the limits shown on the plans, and shall include full compensation for furnishing of all plant, labor, tools, equipment, materials and incidentals; mobilization/demobilization; performing all operations in connection with providing the force main pipeline crossing within a steel casing pipe under the railroad as shown on the Drawings and including all necessary excavations (excluding rock excavation for entry and exit pits), backfills, refills and compactions; satisfactory disposal of all surplus and unsuitable materials; sheeting and shoring; casing spacers and end seals; 48” inch steel casing pipe; 30” ductile iron sanitary sewer carrier pipeline between the restrained solid sleeve transition couplings on either side of the railroad; jointing materials; marker signs; replacing or restoring of all existing items of work removed or disturbed as a result of the Contractor’s operations; furnishing, installing, maintaining and removal of all temporary construction and work required by contract operations, construction and controlling authorities; providing all work and precautionary measures necessary to protect persons, property and the work from injury or damage; providing all work necessary for compliance with requirements of ConnDOT and the Providence and Worcester Railroad Company; and for all costs in connection with the construction of the work included under this item and all other related and appurtenant work, complete in place and accepted, in accordance with the specifications and Drawings and the requirements of ConnDOT and the Railroad, and as directed by the Engineer.

Item 31: Cement Concrete Sidewalk and Driveway

- A. Cement Concrete Sidewalks and Driveways will be measured by the actual number of square feet of completed and accepted sidewalk or driveway. The measurement for payment covers only that sidewalk or driveway damaged within 20’ of the centerline of the sewer installation being constructed.
- B. Excavation or backfill will not be measured for payment but the cost therefore shall be included in the price bid for other related items.
- C. Furnishing and installing cement concrete sidewalks and driveways will be paid for at the contract unit price bid per square foot as listed in the bid, complete in place, which price and payment shall be compensation for all excavation, backfill, disposal of surplus material, rolled granular base, fine grading, compaction, concrete, reinforcement, saw cutting where necessary, expansion joints and joint sealant, expansion joint filler, and all equipment, tools, labor and materials incidental thereto.

Item 32: 30” Reinforced Concrete Pipe

Item 33: 30” Reinforced Concrete Culvert End

- A. Work under this item shall conform to Section 02514 of these Specifications.
- B. This work shall be measured and paid in accordance with Sections 6.51.04, 6.51.05, 6.52.04 and 6.52.05 of Form 816.

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Item 34: Concrete Curbing

- A. Work under this item shall conform to Section 02529 of these Specifications.
- B. This work shall be measured and paid in accordance with Sections 8.11.04 and 8.11.05 of Form 816.

Item 35: 24" PVC Force Main Piping and Appurtenances

- A. The quantity to be measured for payment under this Item shall be the actual number of linear feet of pipe installed complete and in place as specified and measured from center of the vertical bend at the transition from Directional Drilled Pipe, along the centerline of the pipe, to the center of the transition coupling outside the Junction Vault as shown on the Drawings. The PVC force main pipe shall be measured to the nearest 0.5 ft.
- B. The unit price for this Item shall include full compensation for earth excavation and trench support; removal and disposal of existing abandoned utilities/structures within the proposed trench limits as necessary; support of existing active utilities/structures within the proposed trench limits as necessary; furnishing, laying, and jointing of force main pipe and fittings, joint restraints, adapters and accessories; concrete thrust blocks at horizontal bends; pipe bedding; marker tape and tracer wire; earthen backfill and compaction; disposal of surplus excavated non-controlled material as required; and all labor, materials, tools, equipment and incidentals necessary for the completion of the Item in accordance with the Contract Documents.
- C. Excavation of unsuitable trench bottom material and screened gravel backfill shall be measured and compensated for under Item 2.
- D. Rock Excavation, disposal and backfill as encountered shall be measured and compensated for under Item 3.

Item 36: 30" PVC Force Main Piping and Appurtenances

- A. The quantity to be measured for payment under this Item shall be the actual number of linear feet of pipe installed complete and in place as specified and shall be measured from the center of the coupling at the DIP/PVC pipe transition outside the Junction Vault, along the centerline of the pipe, to the center of the coupling at the next DIP/PVC pipe transition. The PVC force main pipe shall be measured to the nearest 0.5 ft.
- B. The unit price for this Item shall include full compensation for earth excavation and trench support; removal and disposal of existing abandoned utilities/structures within the proposed trench limits as necessary; support of existing active utilities/structures within the proposed trench limits as necessary; furnishing, laying, and jointing of force main pipe and fittings, joint restraints, adapters and accessories; concrete thrust blocks at horizontal bends; pipe bedding; marker tape and tracer wire; geotextile fabric and trench dams; earthen backfill and compaction; disposal of surplus excavated non-controlled material as required; and all labor, materials, tools, equipment and incidentals necessary for the completion of the Item in accordance with the Contract Documents.
- C. Gravel backfill in paved areas or areas to be paved shall be measured and compensated for under Item 5.
- D. Excavation of unsuitable trench bottom material and screened gravel backfill shall be measured and compensated for under Item 2.
- E. Rock Excavation, disposal and backfill as encountered shall be measured and compensated for under Item 3.

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Item 37: Hydrostatic Testing of Force Main

- A. This Item, being paid for on a lump sum basis, will not be measured for payment.
- B. Payment for this Item will be at the contract lump sum price for “Hydrostatic Testing of Force Main” as listed in the bid which price and payment shall constitute full compensation for furnishing and installing all materials, labor, tools and equipment, and the cost of all incidental work and materials not otherwise separately paid for elsewhere in the Contract Documents, all in accordance with the provisions of the Drawings and Specifications and as directed by the Engineer. No separate payment will be made for any incidental items of work and/or materials that are inherently required to fulfill the intent of this Contract or required as a result of the Contractor’s construction sequencing to complete the work as specified and as indicated.
- C. The cost for locating, excavating, repairing and backfilling leaks and subsequent retesting until successfully passing the hydrostatic test shall be at the sole expense of the Contractor and included in his bid price for this Item of Work.

Item 38: Directional Drilled Force Main Pipe #1

- A. Work under this Item shall be measured by the actual number of linear feet of pipe furnished and installed complete and in place. The length shall be as measured from the center of pilot bore entry point at the ground surface and along the centerline of the pipe to the center of the pilot bore exit point at the ground surface.
- B. The unit price for this Item shall include full compensation for all labor, equipment, materials, tools, and incidentals required for furnishing, assembling and installing twin force mains by horizontal directional drilling (HDD) along the lines and grades shown on the Drawings. Compensation for this Item shall include but not be limited to mobilization/demobilization; excavating, backfilling and compacting of drilling entry and exit pits; furnishing and installing permanent steel conductor casing; grouting the annular space between the casing and carrier pipes; mixing and providing mud/slurry for the HDD process; preparation of drill holes including pilot bores; provision for up to five (5) pilot bore redirects for subsurface obstructions; reaming of pilot bores to sufficient diameter as required to accommodate the force main pipes; tracking, monitoring, and recording vertical and horizontal lines and grades of the pilot bores; monitoring and detecting surface settlement or displacement; monitoring and detecting inadvertent drill fluid release; provision and maintenance of drill fluid and fuel spill cleanup kits; controlling, containing, and providing cleanup of inadvertent drill fluid releases; and post-installation geospatial mapping.
- C. The Contractor shall assume up to ten (10) percent of the bore is through bedrock and shall prepare his work plan and equipment accordingly.

Item 39: Directional Drilled Force Main Pipe #2

- A. Work under this Item shall be measured by the actual number of linear feet of pipe furnished and installed complete and in place. The length shall be as measured from the center of pilot bore entry point at the ground surface and along the centerline of the pipe to the center of the pilot bore exit point at the ground surface.
- B. The unit price for this Item shall include full compensation for all labor, equipment, materials, tools, and incidentals required for furnishing, assembling and installing twin force mains by horizontal directional drilling (HDD) along the lines and grades shown on the Drawings. Compensation for this Item shall include but not be limited to mobilization/demobilization; excavating, backfilling and compacting of drilling entry and exit pits; furnishing and installing permanent steel conductor casing; grouting the annular space between the casing and carrier pipes; mixing and providing mud/slurry for the HDD process; preparation of drill holes including pilot bores; provision for up to five (5) pilot bore redirects for subsurface obstructions; reaming of pilot bores to sufficient diameter as required to accommodate the force main pipes; tracking,

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monitoring, and recording vertical and horizontal lines and grades of the pilot bores; monitoring and detecting surface settlement or displacement; monitoring and detecting inadvertent drill fluid release; provision and maintenance of drill fluid and fuel spill cleanup kits; controlling, containing, and providing cleanup of inadvertent drill fluid releases; and post-installation geospatial mapping.

Item 40: Disposal of HDD Bore Cuttings

- A. Work under this Item shall be measured by the number of tons of subsurface spoils generated by the HDD process.
- B. The unit price for this Item shall include full compensation for all labor, equipment, materials, tools, and incidentals required for handling, removing, transporting and legally disposing of the HDD spoils at the designated area shown on the Drawings.

Item 41: Disposal of HDD Drilling Mud

- A. Work under this Item shall be measured by the number of 1,000 gallons of drill fluid spoils generated by the HDD process.
- B. The unit price for this Item shall include full compensation for all labor, equipment, materials, tools, and incidentals required for handling, removing, transporting and legally disposing of the HDD drilling fluid spoils at the designated area shown on the Drawings.

Item 42: HDD Additional Redirect in Rock

- A. Work under this Item shall be measured by the number of redirected pilot bore drills in excess of the quantity specified in Items 38-39. For purposes of measurement for this Item, a “redirect” shall be defined as an occurrence in which the HDD drill tool encounters while drilling in rock an obstruction that stops the drill progress and the Contractor has attempted in good faith for a minimum of one (1) hour to clear the obstruction, thereby requiring pullback of the drill tool and redirection of the pilot bore around said obstruction.
- B. Payment for this Item at the unit price for each redirected pilot bore shall be full compensation for all labor, equipment, tools, materials and incidentals necessary to pull the drill tool back to a suitable sidetrack location, redirect the drill tool, and return the drill tool to the same measured distance as the point of abandonment of the previous pilot bore.

Item 43: HDD Additional Redirect in Soil

- A. Work under this Item shall be measured by the number of redirected pilot bore drills in excess of the quantity specified in Items 38-39. For purposes of measurement for this Item, a “redirect” shall be defined as an occurrence in which the HDD drill tool encounters while drilling in soil an obstruction that stops the drill progress and the Contractor has attempted in good faith for a minimum of one (1) hour to clear the obstruction, thereby requiring pullback of the drill tool and redirection of the pilot bore around said obstruction.
- B. Payment for this Item at the unit price for each redirected pilot bore shall be full compensation for all labor, equipment, tools, materials and incidentals necessary to pull the drill tool back to a suitable sidetrack location, redirect the drill tool, and return the drill tool to the same measured distance as the point of abandonment of the previous pilot bore.

Item 44: HDD Additional Conductor Casing

- A. Work under this Item shall be measured by the number of linear feet of steel conductor casing furnished and installed, complete in place and accepted, in excess of the quantity specified in Item 46. Measurement for

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this Item shall be from the point at the ground surface of the pilot bore entry along the drill path to the end of the installed casing, in addition to those paid for under Items 47 through 49.

- B. Payment for this Item shall be full compensation for all labor, equipment, tools, materials and incidentals necessary for furnishing, installing, and grouting the steel casing pipe.

Item 45: Permanent Access Road

- A. Work under this Item shall conform to Section 02700 of these Specifications.
- B. Excavation and placement of embankment shall be measured and paid in accordance with Item 1: Earth Excavation and Grading – Access Road.
- C. Preparation of subgrade, being included in the cost of this item will not be measured or paid separately.
- D. Geotextile, being included in the cost of this item will not be measured or paid separately.
- E. Granular fill material, being included in the cost of this item, will not be measured or paid separately.
- F. Permanent access road, including cellular confinement system, shall be measured by the actual length along its centerline, in linear feet, of the completed and accepted road system.
- G. This work will be paid for at the contract unit price per linear foot of “Permanent Access Road”, complete in place, which price shall include all materials, labor, tools, and equipment incidental and necessary for the work described herein.
- H. This item shall also include preparation of subgrade, geotextile and gravel material.

Item 46: Wetland Mitigation and Enhancement

- A. Work under this Item shall conform to Section 02900 of these Specifications.
- B. This work will be measured for payment by the number of square yards of surface area of accepted established wetland plants as specified or by the number of square yards of surface area of seeding actually covered as specified.
- C. This work will be paid for at the contract unit price per square yard for “Wetland Mitigation and Enhancement” which price shall include all materials, maintenance, equipment, tools, labor, and work incidental thereto. Partial payment of up to 60% may be made for work completed, but not accepted.

Item 47: Control and Removal of Invasive Vegetation

- A. Method of Measurement: The control and removal of invasive vegetation will be measured by the number of acres of unwanted vegetation eradicated as required by Section 02910 throughout the project duration. The measurement will be made to the dripline of the vegetation removed measured in-place, prior to removal. Only vegetation specifically designated by the Environmental Scientist in coordination with the Engineer for removal as an invasive species will be measured for payment under this item. All other vegetation removed shall be included in the item “Clearing and Grubbing.”
- B. Basis of Payment: This work will be paid for at the contract unit price per acre for "Control and Removal of Invasive Vegetation." This payment shall include all labor, materials, tools and equipment and incidentals necessary for cutting, treating, removal and off-site disposal of designated invasive plant material, and to kill any remaining parts left in the soil. Off-site disposal of residue shall include the loading, transport, dumping, and fees associated with legal off-site disposal. Payment shall be released incrementally per round

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of treatment as deemed to be completed in accordance with this contract item and to the satisfaction of the Environmental Scientist through consultation with the Engineer.

Item 48: Air Valve Manhole

- A. The quantity to be measured for payment under this Item shall be by the unit “each” for the number of manholes and all accessory components installed complete, in place and accepted.
- B. The unit price for this Item shall include full compensation for earth excavation and trench support; furnish and construct sanitary manholes including screened gravel base and geotextile, manhole base sections, risers, and top sections, joint sealants, manhole steps, grade rings, frame and cover, interior piping and valving; air valve assembly and accessories; pipe supports; backfill and compaction; disposal of surplus excavated non-controlled materials as required; and all labor, materials, tools, equipment and incidentals as necessary for the completion of the Item in accordance with the Contract Documents.

Item 49: Junction Vault

- A. The quantity to be measured for payment under these Items shall be by the unit “each” for the number of junction vault structures installed complete, in place and accepted.
- B. The unit price for this Item shall include full compensation for earth excavation and trench support; furnish and construct precast concrete structure including screened gravel base and geotextile; base sections, risers, and top sections; joint sealants; ladders and safety pole extensions; access doors and safety grates; vent pipes and painting; interior piping, valving, fittings and adapters; air valve assembly and accessories; pipe supports; backfill and compaction; disposal of surplus excavated non-controlled materials as required; and all labor, materials, tools, equipment and incidentals as necessary for the completion of the Item in accordance with the Contract Documents.
- C. The unit price for this Item shall also include ductile iron pipe and transition coupling to within 5 feet from the outside face of the Junction Vault on either side as shown on the Drawings.

Item 50: Force Main Drain Manhole

- A. The quantity to be measured for payment under this Item shall be by the unit “each” for the number of manholes and all accessory components installed complete, in place and accepted.
- B. The unit price for this Item shall include full compensation for earth excavation and trench support; furnish and construct sanitary manholes including screened gravel base and geotextile, manhole base sections, risers, and top sections, joint sealants, manhole steps, grade rings, frame and cover, pipe connection; manhole vacuum testing; backfill and compaction; disposal of surplus excavated non-controlled materials as required; furnishing and installing lateral piping and connection to the 30” main line, gate valve with valve box and accessories; and all labor, materials, tools, equipment and incidentals as necessary for the completion of the Item in accordance with the Contract Documents.

Item 51: Railroad Track Removal and Replacement

- A. The method of measurement shall be by review of invoices submitted by the Providence and Worcester Railroad Company to the Contractor.
- B. Comply with Section 01020 "Allowances" of these specifications.
- C. Payment shall be made to cover the actual costs incurred by the Providence and Worcester Railroad Company to remove and reinstall railroad tracks and ties affected by the Work, including all equipment, labor, materials, incidentals and disposal as required. No markup will be allowed.

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- D. The Contractor shall be responsible for establishing final grade including the railroad bed aggregate.
- E. Work under this Item will be paid for under the contract stated allowance for this Item, and in accordance with "Section 01020 - Allowances" of these Specifications. The allowance amount may be increased or decreased depending upon the actual expenses incurred and approved by the Owner.

Item 52: Railroad Stone Ballast

- A. This work will be measured by the actual number of cubic yards of Railroad Stone Ballast installed and accepted by the Engineer.
- B. This work will be paid for at the contract unit price per cubic yard of "Railroad Stone Ballast," complete in place, which price shall include all materials, labor, tools, and equipment incidental and necessary for the installation. Compensation for this item shall also include Railroad Stone Ballast furnished for installation by others after the railroad bed has been installed and compacted to the final grade elevation as directed by the Providence and Worcester Railroad Company.
- C. Railroad Stone Ballast shall be crushed stone conforming to the requirements of the American Railway Engineering and Maintenance-of-Way Association (AREMA) Gradation Number 4. Railroad Stone Ballast shall be installed and compacted to a layer 6" minimum depth to the finished grade elevation specified by the Providence and Worcester Railroad Company, extending 12'-0" wide horizontally (6'-0" to either side of the railroad centerline), and along the entire length of track that was removed by others for the Work of this Project. Railroad Stone Ballast for subsequent installation by others shall be stockpiled onsite in close proximity to the area of the removed track as directed by the Providence and Worcester Railroad Company.

Item 53: Water for Force Main Testing

- A. This Item shall be measured in tanks or tanker trucks of predetermined capacity, or by means of satisfactorily installed meters. Quantities of water wasted will not be paid for.
- B. Comply with Section 01020 "Allowances" of these Specifications.
- C. Payment shall be made to cover cost of the actual number of 1,000 cubic feet of water, charged at the Owner's usage rate in effect at the time of the Work, for filling and testing the force main in accordance with the Contract Documents. No markup will be allowed.
- D. This Item will be paid for under the contract stated allowance for this Item, and in accordance with Section 01020 – Allowances of these Specifications. The allowance amount may be increased or decreased depending upon the actual expenses incurred and approved by the Owner.

Item 54: Extended Warranty (Maintenance Bond)

- A. This Item, being paid for on a lump sum basis, will not be measured for payment.
- B. Payment for this Item will be at the contract lump sum price as listed in the bid for "Add Alternate No. 1 – Extended Warranty (Maintenance Bond)." The cost shall be for the second year of coverage of the Contractor's guarantee in accordance with the Contract Documents.

Item 55: City of Middletown Permits

- A. The method of measurement shall be review of documentation from the surety or bond and insurance companies submitted by the Contractor.
- B. Comply with Section 01020 "Allowances" of these Specifications.

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- C. Payment shall be made to cover the actual cost of the bond and insurance requirements of the Excavation Permit to be filed with the City of Middletown Department of Public Works and for other permit authorizations as required by the Owner for the Work of this Project. The Owner waives the Excavation Permit fee. No markup will be allowed.

- D. This Item will be paid for under the contract stated allowance for this Item, and in accordance with Section 01020 – Allowances of these Specifications. The allowance amount may be increased or decreased depending upon the actual expenses incurred and approved by the Owner.

END OF SECTION