

STATE OF DELAWARE  
DEPARTMENT OF TRANSPORTATION  
MAINTENANCE AND OPERATIONS



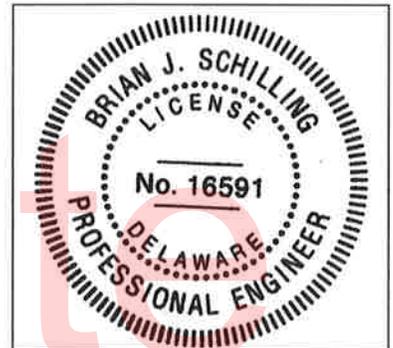
PLANS AND SPECIFICATIONS FOR  
Contract Number: T201603401  
Federal Aid Project Number: N/A  
Sinkhole Repair, North District, Open-End, FY17-FY19

PLANS PREPARED BY: *ML*  
NORTH DISTRICT CONTRACTS ENGINEER

DATE: 4/15/16

DATE RECOMMENDED: 4/15/16

*R. Schilling*  
NORTH DISTRICT DESIGN ENGINEER



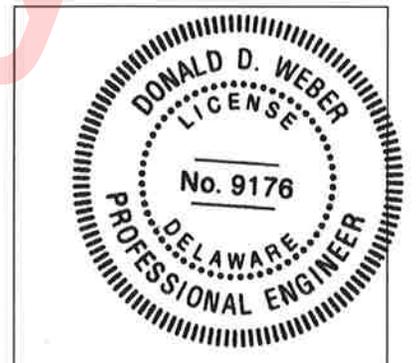
DATE RECOMMENDED: 15 APRIL 2016

*Maureen Elizabeth Mauger*  
NORTH DISTRICT MAINTENANCE ENGINEER



DATE APPROVED: 4/15/16

*Donald D. Weber*  
NORTH DISTRICT ENGINEER



# DELAWARE DEPARTMENT OF TRANSPORTATION

CONTRACT No : T201603401

Sinkhole Repair, North District, Open End, FY17-FY19

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## CONTRACT DESCRIPTION

The purpose of this contract is to repair storm drainage systems where partial or complete failures have occurred. The repair work will include, but not be limited to, the repair or complete replacement of pipes, drainage structures, damaged curb, and associated distressed pavement patching. Some of the drainage system failures have resulted in "cave-ins"/sinkholes of the pavement areas, sidewalk, curb, and/or landscaped areas near the drainage systems. In addition to the repair work, the Contract may include installation of new drainage systems or additional components to existing systems as requested by the Engineer. The work shall be performed on the pipe systems, drainage inlets, curbs, structures, or pavement as directed by the Engineer on the individual work orders.

The specific work sites are not listed herein, but will be assigned as available by the District Maintenance office via work orders.

## GENERAL NOTES

1. All work shall be performed in accordance with the Delaware Department of Transportation Standard Specifications dated August 2001 (as amended by the Supplemental Specifications), the DelDOT Special Provisions, Standard Construction Details, and these project notes.
2. The duration of this open-end contract shall be for a period of three years from the date of initial Notice to Proceed (NTP).
3. An updated Performance Bond shall be submitted at the beginning of each fiscal year. Failure on the part of the Contractor to submit the Performance Bond shall result in the Contract being cancelled.
4. Whenever the word "Contractor" is used in this contract, it shall refer to the person or persons, company or corporation furnishing the services required.
5. Whenever the word "Department" or "Engineer" is used, it shall refer to the person or persons, representing the Delaware Department of Transportation (DelDOT).
6. Tasking of work is contingent upon authorization of State funding.
7. It is anticipated that all work will occur within DelDOT's existing right of way or easement areas. Should the need occur to trespass onto private property; it will be the responsibility of the DelDOT Project Manager to secure such trespass needs.
8. It is anticipated that all work will occur within DelDOT's right of way. Should the need occur to trespass onto railroad property, including the highway-rail crossing; it will be the responsibility of

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the Project Manager to contact the DeIDOT Railroad Coordinator and obtain written authorization before entering.

9. No utility relocation involvement is anticipated. Should any conflicts be encountered during construction requiring adjustment and/or relocation of the agencies' existing facilities, the necessary relocation work shall be accomplished by the respective agencies' forces, as directed by the District Engineer. Any adjustments and/or relocations of municipally owned facilities shall be done by the State's contractor in accordance with the respective agencies' standard specifications as directed by the District Engineer.

10. **Prosecution and Progress of Work:**

The Contractor shall commence work indicated on the work order no later than the third (3rd) business day after issuance unless required materials, access, or authorizations are not available. Non-availability of materials shall be verified by at least three (3) different sources. Verification shall be formal and supplied by the Contractor in writing.

Issuance of each work order constitutes the notice to proceed with the work described on the work order.

If there is a verified non-availability of materials, time charges shall commence on the first (1<sup>st</sup>) working day following the delivery date of materials.

The Contractor may have up to twelve (12) active work orders at any time until all assigned work has been completed. The Contractor is required to have a minimum of two working crews readily available to work on this contract simultaneously, with the ability to provide additional working crews if requested by the Engineer. Each crew is required to have a qualified superintendent as outlined in Section 105.07 of the Standard Specifications and at least two (2) qualified equipment operators

Failure to start assigned work orders in the allowed time constitutes "Failure to Pursue the Work" and subjects the Contractor to Liquidated damages as outlined in Section 108.09 of the Standard Specifications. If work on a specific work order is not completed within the allotted time, Liquidated Damages will be assessed in accordance with Subsection 108.09 and based on the total value of that work order.

Each work order shall be considered a separate unit of work. Upon the substantial completion of the work at an individual location, the Engineer will stop time at that location and perform a semi-final inspection for the work order location in accordance with Subsection 105.20. The Engineer reserves the right to require the Contractor to add Work or make repairs to completed locations until such a location has been accepted by the Department. The Contractor must repair all defects in the work caused by poor workmanship or materials at his/her own expense until the Department accepts the Contract after the Final Inspection.

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A Final Inspection will be completed on an annual basis for work orders completed in a calendar year. Upon satisfactory completion of the Final Punchlist, the Department will accept the location and release the Contractor from responsibility for the Work at that location. If a work order is sufficiently large and complex as determined by the Engineer, a Final Inspection may be held upon the individual completion of that work order.

11. Delete Section 104.05 of the DelDOT Standard Specifications, and replace with the following:

The Department reserves the right to, at any time prior to completion of the contract, issue plan revisions, make adjustments in Contract item quantities, or make such alterations considered necessary to satisfactorily complete the Contract.

The Department reserves the right to increase or decrease the quantities of Pay Items specified in the Contract. Such additions or deletions shall not be cause for an increase or decrease in Contract unit bid prices. The "Change" threshold of plus or minus 25%, as described in Subsection 104.05 of the DelDOT Standard Specifications dated August 2001 shall not apply to this Contract. Quantity increases or decreases of plus or minus 25% or greater shall not be justification for adjustments to unit prices.

The plan revisions and quantity adjustments described above do not invalidate the Contract or release the Contract surety. Payment for these changes shall exclude any amount for loss of anticipated profits alleged to result from the change.

When payment for the Contract work cannot be agreed upon by the Contractor and the Department prior to starting such work ordered, the Department may direct the Contractor to perform the work under Force Account provisions of Subsection 109.04. The Contractor will proceed immediately with the work so ordered and such direction shall neither invalidate the Contract, nor release the surety.

12. Payment will be monthly for the completed work as outlined in Section 109.07.
13. Section 101.91(4) is amended. There will not be a winter shutdown from December 16<sup>th</sup> to March 15<sup>th</sup>. The Department reserves the right to issue work and charge time between these dates.
14. The Contractor shall protect all driveways from damage due to the Contractor's equipment, and shall be responsible for all such damage done by the Contractor's equipment. If the Contractor chooses to excavate a driveway access, then the Contractor will be responsible for maintaining the driveway access by the end of each working day until a permanent access has been installed.
15. The Contractor shall not trespass on private property unless the District has acquired a "Temporary Trespass Agreement" from the property owner. If the work is within a permanent easement, the work shall not begin until the adjacent property owners have been notified. Prior to starting work on private property, the Contractor shall notify affected property owners in writing of the proposed work dates, scope of work, proposed work hours, and DelDOT contact phone number. Compensation for notification shall be incidental to the Contract.
16. No environmental permits are required for this work provided no jurisdictional wetlands or waters are impacted. If there is any question as to whether or not a water or wetland is jurisdictional,

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contact the DelDOT Environmental Section at (302) 760-2264.

17. Underground utilities may be present at all locations. Therefore, all standard practices and procedures regarding utilities shall be followed. The Contractor shall contact Miss Utility of Delaware prior to starting each work order. The Contractor is responsible for the support and protection of all utilities when excavating. The Contractor is responsible for ensuring proper clearances, including safety clearances, from overhead utilities for construction equipment. The Contractor is advised to check the site for access purposes for his equipment, and make arrangements directly with utility companies for field adjustments for adequate clearances if necessary.
18. Work within waters/wetlands shall not begin on locations requiring environmental permits until all applicable permits have been obtained by DelDOT. Confirm permit status with DelDOT Engineer prior to commencement of applicable work.
19. Excavated material not needed on the project shall be removed from the site at the Contractor's expense.
20. Proper disposal of construction related wastes shall be the sole responsibility of the Contractor.
21. Trash, rubbish, debris or brush that hampers repair / maintenance work in this Contract (as determined by the Engineer), shall be removed within the project limits and shall be incidental to Pay Item 763000 (Initial Expense).
22. Grass and soil areas within State right-of-way that have been damaged by equipment during this contract, shall be restored with topsoil, seed and mulch at Contractor's own expense.
23. Pipe failures shall be repaired by one of two methods, or at the discretion of the Engineer. The minimum repair will be to plug lift holes or joint/seams as directed and triple wrap the pipe with a 3 foot wide strip of an approved geotextile material fastened securely around the pipe with three wraps of tie wire. Pipes in the roadway, or in cases of severe joint or pipe dislocation, a concrete collar shall be placed after wrapping of the pipe with geotextile as stated above. The collar shall consist of a double wrap of heavy gauge 4 inch x 4 inch welded wire fabric offset a minimum of 2 inches from the pipe wall with cement brick, and an 8 inch thick concrete collar with a 24 inch lap on each side of the failure. The collar shall surround the length of the pipe that has failed (top, bottom, and sides). Any geotextile, welded wire fabric, mortar for plugging lift holes or seams/joints, lumber for form work or miscellaneous hardware or material required for pipe repairs shall be incidental to Items 208000 (Excavation And Backfilling For Pipe Trenches) and 602603 (High Early Strength Concrete) or applicable repair or replacement pay item. No concrete shall be released or placed until the depth of the excavation and the character of the foundation material, the adequacy of the forms and falsework, and the placing of reinforcement have been inspected and approved by the Engineer. Immediately upon placing, concrete shall be consolidated by means of a vibrator.

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24. Time used for filling water truck(s) will not be considered “actively engaged” and shall not be included in payment of Item 612537(Heavy Cleaning of Drainage Pipe).
25. If it is determined that de-watering is needed on the site of a work order, it shall be at the Contractor’s expense.
26. Clearing and grubbing of weeds, trees and shrubs less than 6 inches in diameter shall be incidental to the applicable repair or replacement item. Grubbing activities performed in wetland areas require environmental permit approvals.
27. Any “test holes” and/or “test pitting” required for the completion of each work order shall be paid for under Item 208000 (Excavation and Backfill for Pipe Trenches).
28. All replacement pipes shall be the same size and material as the pipe that was removed, or as directed by the Engineer.
29. As defined in Section 600, specifically 612.01 and 614.01, work includes all connections [of pipe] to existing drainage inlets and manholes and, as such, is incidental to the respective pipe payment item.
30. Replacement of PCC sidewalk at driveways and entrances shall be a minimum of 6 inches in depth and placed per the PCC Sidewalk Standard Detail, or as directed by the Engineer.
31. Payment for removal and disposal of existing drainage inlets shall be incidental to the unit price bid for the applicable item to be replaced.
32. The Contractor shall provide residents 24-hour prior written notice for all phases of contract work. This notice shall be given to all residents whose property is adjacent to the street on which work is to be performed. Failure to give notice will result in a suspension of work.
33. The Contractor will be advised of work to be performed or deleted via a work order. The work order will indicate the allowable time to perform work. Time to perform the work assigned per work order shall be developed by the following method:

### Legend:

- 4 Days = Startup time, from date of issue, of each new work order location.
- 1 Day = Time to repair one drainage inlet or manhole
- 3 Days = Time to remove and replace one drainage inlet
- 1 Day = Time to repair 27 ft of pipe (each joint wrap and/or collar counts as 14 ft)
- 1 Day = Time to remove and replace 55 ft of pipe
- 1 Day = Time to remove and replace 150 ft<sup>2</sup> of 4 inch or 6 inch sidewalk
- 1 Day = Time to remove and replace 70 ft of curb and/or curb and gutter

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2 Days = Restoration (Topsoil, grass seed, straw mulch, and/or warm-mix patch replacement, sit cleanup)

1 Day = Time to remove and replace 538 ft<sup>2</sup> of warm-mix patching, for warm-mix quantities greater than 108 ft<sup>2</sup>. Warm-Mix Patching quantities less than 108 ft<sup>2</sup> are considered incidental to the work, and shall offer no additional time for completion.

Example: A work order with the following repair items issued to the Contractor on Thursday, June 1.

- A = 1 drainage inlet repair
- B = 1 drainage inlet, remove and replace
- C = 1 drainage inlet hood, remove and replace
- D = 92 ft of pipe repair
- E = 92 ft of pipe removal and replacement
- F = 40 ft<sup>2</sup> of 6 inch sidewalk removal and replacement
- G = 10 ft of curb replacement
- H = 86 ft<sup>2</sup> of warm-mix patching

Formula:

$$\begin{aligned}
 \text{Time To Complete} &= 4 \text{ Days startup} + A(1 \text{ Day/CB Repair}) + B(3 \text{ Days/CB Replacement}) + C(1 \text{ Day/Hood}) \\
 &+ D/(27 \text{ Ft/Day}) + E/(55 \text{ Ft/Day}) + F/(150 \text{ Ft}^2) + G/(70 \text{ Ft/Day}) + H/(538 \text{ Ft}^2/\text{Day}) \\
 &+ 2 \text{ Restoration} \\
 &= 4 \text{ Days startup} + (1 \text{ CB})(1 \text{ Day/CB Repair}) + (1 \text{ CB})(3 \text{ Days/CB Replacement}) + (1 \text{ Hood})(1 \text{ Day/Hood}) \\
 &+ (92 \text{ Ft Pipe Repair})/(27 \text{ Ft/Day}) + (92 \text{ ft of pipe removal-replacement})/(55 \text{ Ft/Day}) + (40 \text{ Ft}^2)/(150 \text{ Ft}^2) + (10 \text{ Ft Curb})/(70 \text{ Ft/Day}) + (86 \text{ Ft}^2)/(538 \text{ Ft}^2/\text{Day}) \\
 &+ 2 \text{ Restoration} \\
 &= 4 + 1 + 3 + 1 + 3.41 + 1.67 + 0.27 + 0.14 + 0 + 2
 \end{aligned}$$

Time To Complete = 16.5 = **17.0 Days**

The first day charged for the work order in this example is Thursday, June 1<sup>st</sup>. Completion of all construction activities is required before the end of Friday, June 23<sup>rd</sup>.

Liquidated damages assessed starting Monday, June 26<sup>th</sup>, and remain in effect until all work is completed and accepted by the Department. For this contract, Saturdays, Sundays, and State Holidays will not be charged, regardless of whether the Contractor decides or is allowed to work.

34. Replacement of drainage inlets that have a depth less than or equal to 5 feet shall be paid at the unit price bid for the applicable item. Replacement of drainage inlets with the depth greater than 5 feet will be negotiated or performed by Force Account procedures.

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35. Replacement of drainage inlets, which includes replacing the footer, box, hood and frame, that have a depth less than or equal to 5 feet shall be paid at the unit price bid for the applicable drainage inlet item. Replacement of drainage inlets with the depth greater than 5 feet will be negotiated or performed by Force Account procedures.
36. Payment for Item 602002, Portland Cement Concrete Masonry Class B, will be made based on the actual measured quantity placed. Epoxy coated reinforcing, bonding agent, smooth bar dowels, ties, inserts, etc. as required by the Engineer shall be incidental to the concrete work.
37. Excavation of roadway materials for patching shall be incidental to the patching pay items being placed.
38. If required during the placement or repair of PCC items, half-inch cork expansion material shall be placed at designated locations as directed by the Engineer. Payment for furnishing and placing the half-inch cork expansion material shall be incidental to the PCC pay items.
39. In locations that include a double grated drainage inlet, the payment for repair shall be item 710004 (Adjusting and Repairing Existing Drainage Inlet(s)). In locations that include a triple grated drainage inlet the payment for repair shall be two (2) times the rate of item 710001 (Adjusting and Repairing Existing Drainage Inlet). Please note that drainage inlet top units are incidental to items 710001 and 710004 as per Section 710.
40. The Contractor shall acquire all necessary materials and equipment prior to starting work at a specific location. The equipment and material shall remain accessible and on-site through to the completion of work at that particular location unless prior approval from the Engineer is given.
41. Grass and soil areas within State right-of-way that have been damaged by equipment during this Contract shall be restored with topsoil, seed and mulch at Contractor's expense.
42. If it is determined that de-watering is needed on the site of a work order, which includes the removal/diverting of all water necessary to complete the work including standing/running water, it shall be at the Contractor's expense.
43. It is the responsibility of the Contractor to supply all necessary incidentals to complete the applicable work, including but not limited to electricity, water, etc. Procuring water, electrical, etc from the work site is prohibited.

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### MAINTENANCE OF TRAFFIC

42. All work shall be performed in a manner that will reasonably provide the least practicable obstruction to all road users, including vehicular, pedestrian, and bicycle traffic, and shall conform to the requirements of the Delaware Manual of Uniform Traffic Control Devices (MUTCD), part 6, including revisions up to the date of advertisement for bids.
43. All shoulder or travel lane closures shall be performed at times directed by the Engineer with direction from the North District Safety Officer. Any deviation from the time restriction must be approved by the North District Engineer and North District Safety Officer prior to the commencement of work.
44. Upon selection of a location, the DelDOT Safety Section must be notified a minimum of three weeks in advance of the work in order to determine the type of Transportation Management Plan (TMP) for the location. Should a Type "B" TMP be required, all time restrictions given in the TMP will be followed. Should a Type "A" TMP be required, above time restrictions will be followed or as directed by the Engineer with direction from the North District Safety Officer.
45. If a road closure is required, the Contractor shall be required to submit the proposed detour route to the DelDOT Safety Officer for approval. Payment for the detour plan preparation shall be included in the bid price for Item 763000 (Initial Expense). The Department will coordinate with the Safety Section and be responsible for the necessary notifications. The detour route requires approval by the Department prior to closure. A two week detour review lead time shall be required for any requested detour. The Contractor shall be responsible for furnishing and maintaining the Maintenance of Traffic apparatus at the closure (i.e. Type III Barricade, Road Closed signs, etc.) and all signs. The Contractor shall be responsible for placement of detour trailblazers. Payment will be under Item 743024 (Temporary Warning Signs and Plaques).
46. The Project Manager shall be responsible for coordinating with the Traffic Section relating to any impacts to Traffic Section facilities (including but not limited to traffic loops, junction wells, etc.) at least four weeks in advance of the start of the activity. Prior to initiating any work on this contract (or sites), the Project Manager shall be responsible for preparing and submitting for approval of the Safety Section, a Maintenance of Traffic Plan. Sufficient time shall be provided for the review and approval of the plan. The Maintenance of Traffic Plan shall include proposed time restrictions on the closure of travel lanes subject to the approval of the Safety Section.
47. The Project Manager is responsible for ensuring any required documents and analysis as part of the adopted Work Zone Safety and Mobility Procedures and Guidelines has been completed prior to any work starting on this contract.
48. Traffic control devices shall be provided and placed in accordance with the Delaware Manual on Uniform Traffic Control Devices (MUTCD). The Contractor shall prepare and submit a Traffic Control Plan for each bridge site to DelDOT for approval. The Traffic Control Plan must clearly indicate orientation of traffic control devices to be used for each site. The plan must be approved

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by the DelDOT Safety Officer and DelDOT Engineer prior to commencement of work on each bridge. Maintenance of Traffic Typical Applications is described in the Delaware MUTCD. The Contractor shall be responsible for determining the applicable Typical Application for each work application. The proposed Traffic Control Plan must be approved by DelDOT a minimum of ten (10) working days prior to commencement of work at each location.

49. No lane closures or shoulder closures will be permitted unless applicable work activity is taking place.
50. No separate payment shall be made for the use of Traffic Cones. Traffic Cones and/or work associated with their use, such as set up, removal, cleaning, etc., shall be incidental to the work for which they protect.
51. The Contractor shall submit a site-specific Traffic Control Plan for approval 14 calendar days before the start of each location. The Traffic Control Plan must be in accordance with the latest revision of the Delaware Manual on Uniform Traffic Control Devices, Part 6, and must clearly indicate orientation of traffic control devices to be used for each site.
52. The Contractor shall be required to have an American Traffic Safety Services Association (ATSSA) certified Traffic Control Supervisor on the project. The ATSSA supervisor may be the Contractor's general superintendent for this project or another ATSSA certified member of the Contractor's project staff. The ATSSA certified Traffic Control Supervisor's responsibility shall be the maintenance of traffic throughout the project. This responsibility shall include, but is not limited to, the installation, operations, maintenance and service of temporary traffic control devices. Also required is the daily maintenance of a log to record maintenance of traffic activities, i.e. number and location of temporary traffic control devices; and times of installation, changes, and repairs to temporary traffic control devices. He/she shall also serve as the liaison with the Department concerning the Contractor's maintenance of traffic. The name and contact information for the ATSSA certified Traffic Control Supervisor shall be provided to the Engineer at the Preconstruction Meeting. A copy of the certifications for the ATSSA certified Traffic Control Supervisors proposed for the project shall be submitted to the Department with the Contractor's bid package. The responsibilities of the ATSSA certified supervisor shall be for the duration of the Open End Contract. Payment for the ATSSA certified traffic control supervisor shall be under Item 743000 (Maintenance of Traffic).
53. The safety measures outlined within this Contract and the Delaware MUTCD are not necessarily sufficient in every instance to guarantee the protection of the traveling public or the persons working on the project. Therefore, the provisions of this Contract do not relieve the Contractor of the sole responsibility for the safety of all persons working within or traveling through the work zone throughout the duration of the project. The Contractor shall implement any additional safety measures that are not expressly required by the Contract and are necessary to ensure the safety of all persons. The Contractor shall submit to the Engineer justification for deviations from the Traffic Control Plan or Traffic Management Plan. Final approval of the deviations or additions shall rest with the Engineer with guidance from the Traffic Safety Section. All costs for this work

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shall be incidental to the applicable maintenance of traffic pay items as listed in the original contract.

54. The use of millings and GABC in the travel way, temporary travel way, high volume entrances and access ramp for the purpose of providing a temporary roadway surface, pothole repair, tapered edge for utilities, butt joints, and longitudinal drop-offs (milling and paving operations) is prohibited unless it is otherwise designated to be used in the contract plans. Use cold patch, bituminous concrete, bituminous concrete wedge, or taper mill, as noted in the Contract Documents or approved by the Engineer. Payment for cold patch, bituminous concrete, or bituminous concrete shall be paid under the bituminous concrete milling item.

Millings or GABC shall be used at the following locations where access to a business residence, or edge drop off needs to be maintained unless otherwise noted in the plans or directed by the Engineer to use bituminous concrete or cold patch. All milling and GABC will be rolled and compacted to help prevent the material from unraveling.

- a. Driveways
- b. Entrances
- c. Low volume access ramps (Identified in the contract documents)
- d. Edge drop-offs adjacent to live roadway (lane, shoulder, or turn lane) and the proposed road construction
- e. Edge of roadway dropoff

Grading and maintaining base course that is being used for roadway wedge/fillet between travel lanes and pavement box, edge of travel way, driveway or entrance access shall be incidental to Item No. 743000 - Maintenance of Traffic. The base course material shall be placed at no greater than the slope specified in table 6G-1 and shall be compacted. Excess base course material shall be pushed ahead and used in the next segment and shall be incidental to the particular base course pay item. No separate payment shall be made for Millings or GABC temporary roadway material (TRM) used to protect edge drop-offs, unless the material is eventually utilized as part of a permanent roadway at which time the material would be paid for under the respective contract material item. Vertical differences shall be corrected in accordance with table 6G-1 of the Delaware MUTCD.

55. Portable Light Assemblies will be required for all night time operations and as directed by the Engineer. Payment for portable lighting shall be under pay item 743005(Furnish And Maintain Portable Light Assembly).
56. The Contractor is to install portable changeable message boards 10 work days prior to construction per location to notify the public of the construction activity. Message and location of the message boards shall be coordinated with the District Safety Officer.

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57. All equipment shall be removed from the job site on a daily basis, except when allowed by the DelDOT approved Traffic Safety Plan, or as approved by the Engineer.
58. The Contractor shall maintain access to and along pedestrian facilities at all times during construction. Earth, stone, and gravel surfaces are not acceptable for providing pedestrian access. Where pedestrian routes are closed or blocked, alternate pedestrian access shall be provided using TA-28 and/or TA-29 of the 2011 Delaware Manual Of Uniform Traffic Control Devices or to the satisfaction of the Engineer. Pedestrian detour routes or alternate pedestrian facilities shall consist of ADA compliant facilities to the level of which exists on the pedestrian route. The cost for any provisions shall be incidental to Item 763000 (Initial Expense).

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**QUANTITY SUMMARY**

ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY
202000	Excavation and Embankment	CY	600.00
206000	Rock Excavation for Structures and Trenches	CY	40.00
208000	Excavation and Backfilling for Pipe Trenches	CY	2,000.00
209006	Borrow, Type F	CY	300.00
210000	Type C Borrow, Trench and Structure Backfill	CY	500.00
211004	Removal of Structures and Obstructions	LF	1500.00
302007	Graded Aggregate Base Course, Type B	CY	400.00
302008	Graded Aggregate Base Course, Type B, Patching	CY	50.00
302011	Delaware No. 3 Stone	TON	25.00
302012	Delaware No. 57 Stone	TON	50.00
401821	WMA, Superpave, Type C, 160 Gyration, Patching	TON	400.00
401822	WMA, Superpave, Type B, 160 Gyration, Patching	TON	50.00
602002	Portland Cement Concrete Masonry, Class B	CY	55.00
602603	High Early Strength Concrete	CY	50.00
605573	Steel Plates, 4'x6'x3/4"	EACH	25.00
612020	RCP, 12" Class IV	LF	200.00
612021	RCP, 15" Class IV	LF	800.00
612022	RCP, 18" Class IV	LF	1,000.00
612023	RCP, 24", Class IV	LF	800.00
612025	RCP, 30", Class IV	LF	75.00
612028	RCP, 48", Class IV	LF	75.00
612033	RCP, 21", Class IV	LF	75.00
612034	RCP, 36", Class IV	LF	75.00
612520	Corrugated Polyethylene Pipe, Type S, 15"	LF	100.00
612523	Corrugated Polyethylene Pipe, Type S, 18"	LF	75.00
612526	Corrugated Polyethylene Pipe, Type S, 36"	LF	75.00
612529	Pipe Video Inspection	LF	40,000.00
612535	Cleaning Drainage Pipe 15-24" Diameter	LF	17,500.00
612536	Cleaning Drainage Pipe Greater than 24" Diameter	LF	5,500.00
612537	Heavy Cleaning of Drainage Pipe	HOUR	250.00
612539	Pressure Grouting Pipe Joints, 15"-24"Diameter	EACH	250.00
612540	Pressure Grouting Pipe Joints, Greater than 24" Dia	EACH	110.00

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612552	Spray Applied Cementitious Mortar For Pipe, 24" - 48"	LF	50.00
612553	Spray Applied Cementitious Mortar For Pipe, Greater Than 48"	LF	50.00
701004	PCC Valley Gutter, 8"	SY	150.00
701010	PCC Curb, Type 1-8	LF	150.00
701020	Integral PCC Curb and Gutter, Type 1	LF	300.00
701021	Integral PCC Curb and Gutter, Type 2	LF	4,500.00
701022	Integral PCC Curb and Gutter, Type 3	LF	300.00
705001	PCC Sidewalk, 4"	SF	6,000.00
705002	PCC Sidewalk, 6"	SF	2,000.00
705007	Sidewalk Surf Detect Warning System	SF	75.00
705008	Curb Ramp, Type 1	SF	150.00
705009	Curb Ramp, Type 2, 3 and/or 4	SF	500.00
708050	Drainage Inlet, 34" x 18"	EACH	10.00
708051	Drainage Inlet, 34" x 24"	EACH	10.00
708052	Drainage Inlet, 48" x 30"	EACH	3.00
708053	Drainage Inlet, 48" x 48"	EACH	3.00
708054	Drainage Inlet, 66" x 30"	EACH	3.00
708060	Replacing Drainage Inlet Grate(s)	EACH	50.00
708061	Replace Drainage Inlet Frame(s)	EACH	50.00
710001	Adjusting and Repairing Existing Drainage Inlet	EACH	200.00
710002	Adjusting and Repairing Existing Manhole	EACH	45.00
710004	Adjust and Repair Existing Double Drainage Inlet(s)	EACH	125.00
712005	Rip Rap, R-4	SY	200.00
712006	Rip Rap, R-5	SY	450.00
712007	Rip Rap, R-6	SY	200.00
712008	Rip Rap, R-7	SY	200.00
712527	Turf Reinforcing Mat	SY	250.00
713003	Geotextiles, Rip Rap	SY	600.00
715001	Perforated Pipe Underdrains, 6"	LF	100.00
741001	Tree Removal 6" to 10.9"	EACH	2.00
741002	Tree Removal 11" to 14.9"	EACH	2.00
741003	Tree Removal 15" to 18.9"	EACH	2.00
741004	Tree Removal 19" to 24.9"	EACH	2.00
741005	Tree Removal 25" to 30.9"	EACH	2.00
741006	Tree Removal 31" to 36.9"	EACH	2.00
741007	Tree Removal 37" to 42.9"	EACH	2.00
741008	Tree Removal 43" to 48.9"	EACH	2.00

**DELAWARE DEPARTMENT OF TRANSPORTATION**

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Sinkhole Repair, North District, Open End, FY17-FY19

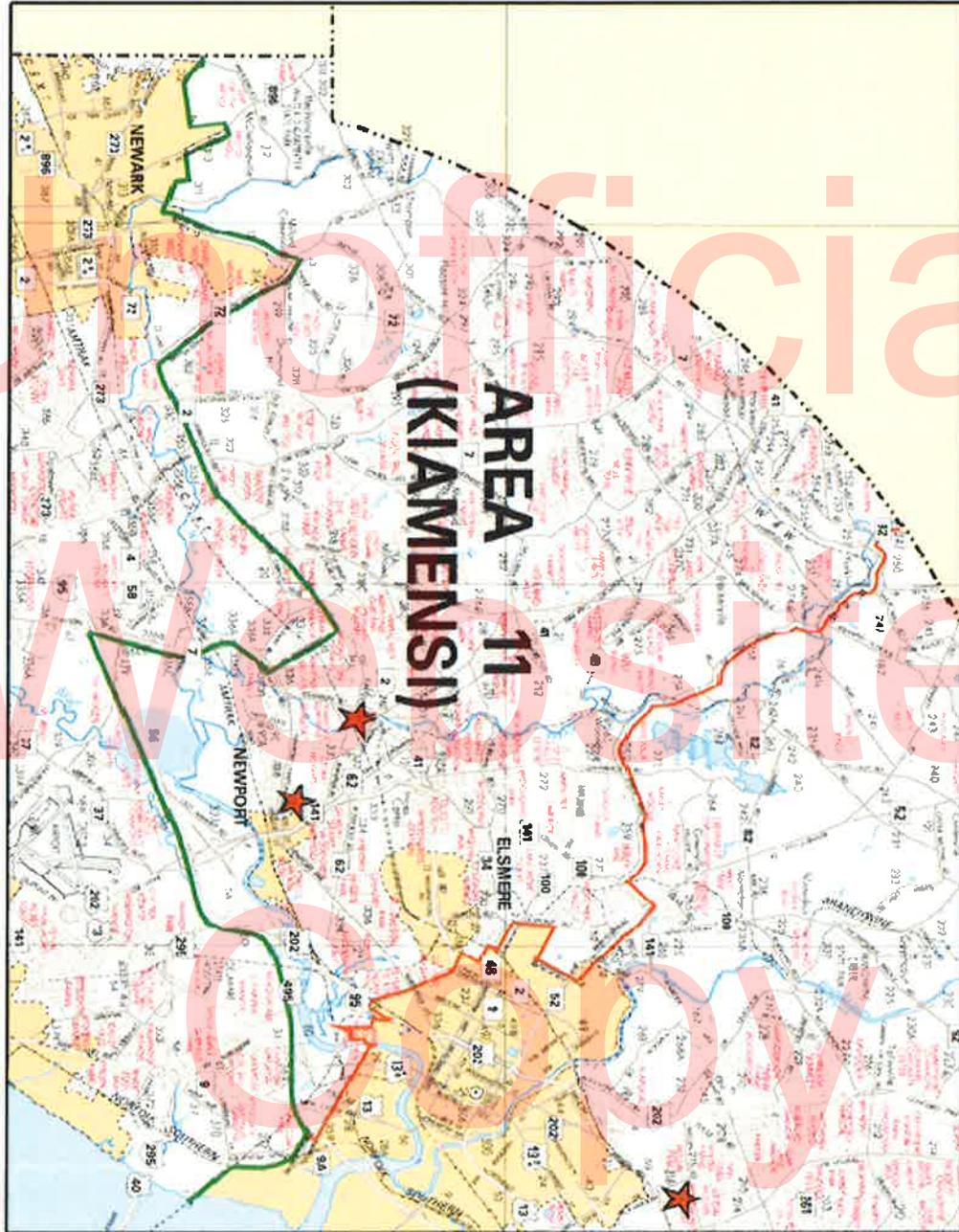
741009	Tree Removal 49" and Above	EACH	2.00
743000	Maintenance of Traffic	LS	1.00
743003	Arrow Panel, Type C	EADY	50.00
743004	Furnish & Maintain Portable Changeable Message Sign	EA-DY	75.00
743005	Furnish & Maintain Portable Light Assembly	EA-DY	20.00
743006	Plastic Drums	EADY	12,000.00
743010	Furnish & Maintain Truck Mounted Attenuator, Type II	EADY	50.00
743023	Temporary Barricade, Type III	LF-DY	5,000.00
743024	Temporary Warning Signs and Plaques	EADY	3,000.00
743050	Flagger, New Castle County, State	HOUR	3,000.00
743062	Flagger, New Castle County, State, Overtime	HOUR	50.00
748506	Permanent Pavement Striping, Epoxy Resin Paint 4"	LF	100.00
758000	Removal of Existing PCC Pavement, Curb, Sidewalk, etc	SY	2,500.00
762001	Saw Cutting, Hot-Mix	LF	12,500.00
762002	Saw Cutting, Concrete, Full Depth	LF	2,500.00
763000	Initial Expense	LS	1.00
905001	Silt Fence	LF	300.00
908003	Topsoil, 4" Depth	SY	15,000.00
908020	Soil Retention Blanket Mulch, Type 5	SY	600.00
908016	Permanent Grass Seeding, Subdivision	SY	15,000.00

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