

STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION



PLANS AND SPECIFICATIONS FOR

Contract Number: T201409001
Federal Aid Project Number: ENHS-2014(17)

Lighting Replacement, Interstate/Expressway, Open End, FY14-FY17



RECOMMENDED:

Pamela G. Steinebach

North District Design Engineer,
Maintenance and Operations

6/16/14

Date



APPROVED:

Donald D. [Name]

North District Engineer,
Maintenance and Operations

6/16/14

Date

CONTRACT DESCRIPTION

The purpose of this open-end contract is to provide the material, equipment and labor for the installation and/or modification of roadway lighting systems along interstates/expressways of I-95, I-495, I-295, and Route 1, including associated ramps in the State of Delaware. The work includes repair and improvements to the lighting systems. The location of work includes interstates and associated ramps of I-95, I-495, and I-295 within New Castle County. In addition, work will include Route 1 and associated ramps from the I-95 interchange to the Dover Air Force Base in both New Castle and Kent counties.

The work activities include, but are not limited to, the following:

- Install new lighting systems to replace existing, including relocation of existing poles and installation of new poles to meet current pole spacing requirements and lighting standards
- Install electric conduit and cable for lighting systems
- Install, replace, repair, or relocate poles, mast arms, luminaires, transformer bases, concrete pole bases, junction wells and other associated items related to lighting system
- Electrical Testing of lighting systems
- Install or modify Control Center panels serving electrical systems for lighting
- Other repairs and improvements to lighting systems along Interstate and ramps

The specific work sites are not listed herein, but will be assigned as available by the Delaware Department of Transportation, North District Maintenance office.

PROJECT NOTES

GENERAL NOTES:

1. Construction of this contract shall conform to Delaware Department of Transportation Standard Specifications dated August 2001, as amended by the Supplemental Specifications, the Special Provisions, drawing details and 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. The contract time can be extended for up to one (1) year. If it is determined that a contract extension is needed and agreed upon by both parties, unit prices for all pay items during the extension shall remain the same as bid in the original Contract.
3. The Performance Bond shall be submitted at the beginning of the 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", "Engineer", or "Project Manager" is used, it shall refer to the person or persons, representing the Delaware Department of Transportation (DelDOT).
6. Tasking of work for Fiscal Years 2015, 2016, and 2017 (beginning July 1, 2014) and later is contingent upon authorization of Federal funding.
7. 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 on Uniform Traffic Control Devices, Part 6, including revisions up to the date of advertisement for bids.
8. The work shall be scheduled via work orders from the Department. The work order will indicate the items and quantities of work, property owner notification requirements, and the time allotted to perform the work. Any questions during construction shall be referred to the Engineer or his representative. The time allotted to perform the work shall be negotiated prior to issuance of the work order. The Department's field personnel are not authorized to change the scope of work or other Contract requirements as defined in the Contract documents and the site specific work order.
9. 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 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 (1st) working day following the delivery date of materials.

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. The Engineer will make payment monthly for the completed invoices as outlined in Section 109.07. 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. If the work is satisfactorily completed, the Engineer will release the Contractor from maintenance responsibility for that location. The Engineer reserves the right to require the Contractor to add Work or make repairs to completed locations at the Engineer's expense 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.

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.

10. Payment will be monthly for the completed work as outlined in Section 109.07.
11. Section 101.91(4) of the DelDOT Standard Specifications is amended. There will not be a winter shutdown from December 16th to March 15th. The Department reserves the right to issue work and charge time between these dates.
12. Clearing and grubbing of trees, shrubs and other vegetation less than six (6) inches in diameter within ten (10) feet of any lighting structure shall be incidental to the applicable repair, replacement or excavation Pay Item. There shall be no separate payment for clearing and removal of trees, shrubs and vegetation less than six (6) inches in diameter within the area of the lighting structure. Grubbing activities performed in wetland areas require environmental permit approvals prior to commencement of work.
13. Excavated material not needed on the project shall be removed from the site at the Contractor's expense.

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14. Proper disposal of construction related wastes shall be the sole responsibility of the Contractor, and shall be performed in accordance with all applicable State regulations.
15. 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).
16. 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.
17. 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, contact the DelDOT Environmental Section at (302) 760-2264.
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. 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.
20. 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.
21. 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 Project Manager to secure such trespass needs.

LIGHTING NOTES:

22. The Contractor shall make final electrical connections of all electrical components installed, as necessary to provide a fully functional lighting system. Payment for final connections shall be incidental to the bid price for applicable electrical cable pay items.

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23. The following items removed from the work site shall remain the property of DeIDOT, and shall be carefully removed by the Contractor, and delivered to DeIDOT Maintenance Yard located at 39 E. Regal Blvd, Newark, DE 19713. No additional payment will be made for this work.

- a. Light pole standards and mast arms
- b. Transformer bases (metal)
- c. Metal Service Cabinets for electric service panels
(including all panels and gear within cabinets)
- d. Luminaires (with lamps)
- e. Junction Wells
- f. Lids and rings of Junction Wells

Each item listed above may be designated for re-use at another location along the Interstate, as directed by the Engineer, or as indicated on the Contract Plans.

The Contractor shall be responsible for any damages to the above listed material items during removal and transport process. The Contractor shall reimburse the Department, or replace the Item if damaged.

24. Existing junction wells that are designated for removal, but are not to be reinstalled in new position, shall be either returned to DeIDOT for ownership and storage, or shall be properly disposed of by the Contractor, at the discretion of the Engineer. The DeIDOT Inspector shall determine the destination of each existing junction well removed. Payment for transport shall be incidental to the bid price for the applicable pay item for removal of junction wells.
25. Electrical conduit, cable and all other components of electrical systems shall be installed in accordance with the applicable requirements of National Electric Safety Code and National Electric Code (NFPA).
26. Patching of hot mix and graded aggregate base course within roadway (including shoulders and travel lanes) shall be performed to match existing full depth pavement section with respect to course thickness and pavement structural number.
27. Excavation of roadway materials for patching shall be incidental to the patching items being placed.
28. 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.
29. When performing spall repairs on vertical concrete surfaces under Item 602586 (Rehabilitation of Concrete Structure), the Product Data Sheet for proposed material shall state that the material is suitable for repairs on vertical surfaces.

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30. All electrical work performed and all material provided shall be in accordance with the National Electric Code of the National Fire Protection Association, and in accordance with the National Electric Safety Code. All electrical work shall also be performed in accordance with all local laws and ordinances governing such work. The applicable code shall be considered the minimum requirements for the electrical work. If there is a conflict between the requirements specified in the contract documents and the Code, the more stringent requirement shall apply as determined and approved by the Engineer.
31. The Contractor shall locate the conduit runs in a manner that avoids conflict with all existing and proposed features as approved by the Engineer.
32. Work includes furnishing labor, material, equipment and services necessary and incidental to proper completion and final connections of the electrical lighting systems. Minor items, accessories and devices necessary for completion and proper operation of any system, but not specifically listed in the specification, shall be considered incidental to each applicable pay item.
33. Luminaires installed in this contract shall comply with Title 7, Chapter 71a of the Delaware Code.
34. All costs for removal and transport of existing luminaires shall be incidental to the applicable pay items for removal and/or installation of lighting poles or mast arms.
35. Terminate all conduits entering metal service cabinets, metal junction boxes with locknuts and bonding bushings. Costs shall be incidental to the applicable enclosure pay item (service panel, junction well, or other). All galvanized steel conduits shall be properly bonded with ground wire in accordance with National Electric Code and National Electric Safety Code requirements.
36. All fused connections shall be made in the transformer base. Splices in junction boxes or pull boxes shall not be fused.
37. All costs associated with connecting proposed conduit to existing junction wells or existing conduits shall be incidental to the Pay Item of the conduit being installed.
38. Each work crew shall consist of a foreman who is a Journeyman Electrician and/or has a minimum of five years experience in related work and sufficient personnel to complete the work.
39. The Contractor shall perform Electrical Testing at each location where work is performed. Electrical Testing shall be performed in accordance with the requirements of Special Provision 746653 (Electrical Testing). All costs for electrical testing for each location shall be incidental to applicable pay items for electrical cable installation. There shall be no separate payment for electrical testing.
40. Master Electrician-Special
The Contractor shall provide a Delaware-licensed Master Electrician-Special, who shall be directly responsible for workmanship as provided in Title 24, Chapter 14 of the Delaware Code. The Master Electrician-Special shall certify all of the work performed.

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41. Color coding shall be provided throughout the entire network for service, feeder, branch and control conductors. Each phase shall be an independent color. Conductors shall have factory impregnated color throughout their entire length. Phase taping is not permitted.
42. The Contractor shall guarantee all work to be free from defects for a period of one year from time of owner acceptance. Any defects occurring during this period shall be corrected by the Contractor at no additional cost to the Department.
43. Unless otherwise noted, conductors shall run un-spliced, continuous from point of service to light pole base, and from light pole base to light pole base.
44. When performing new service installations under Item 746516 (Service Installation), all new electric service connections to Delmarva Power utilities shall be inspected and certified (with sticker of approval) by the authorized State of Delaware Inspection Agency.
45. The Contractor shall not trespass on private property unless the Department 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 of the proposed work dates.
46. Prior to commencement of work at each site, contact Bill Thatcher (DelDOT North District Maintenance Manager) for coordination of all work on lighting systems. He may be reached at (302) 894-6300.
47. Metal transformer bases and anchor bases installed for support of light poles shall conform to breakaway requirements of most recent version of AASHTO Roadside Design Guide and all other applicable AASHTO publications.
48. When replacing metal transformer base (at base of pole), caps over mounting bolts shall be installed. Payment for the caps shall be incidental to the applicable pay item for replacement of the transformer base.
49. Metal transformer bases will be used for support of light poles at ground level. Anchor bases or other types of bases will be utilized on top of bridge parapet walls. Exceptions will be identified by the Department on a site specific basis.
50. Lock-washers will be installed on metal transformers bases at connection bolts and anchor bolts, in addition to other connection hardware shown on drawing details for this Contract.
51. Concrete pole bases shall be constructed in accordance with DelDOT Standard Construction Detail T-5, and in accordance with Special Provision 746852 (Pole Base, Type 6).

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52. High Pressure Sodium lamps shall be included in the bid price for all luminaires provided in this Contract.
53. Furnish and install expansion joint fittings for conduit embedded in concrete parapets of Viaduct (BR 748, 748N, 748S). Remove existing concrete from parapet as required to secure expansion fitting to conduit that is free from deterioration and corrosion. The bid price under Pay Item 746884 (Expansion Fitting for Electrical Conduit) shall include removal of concrete a maximum distance of four (4) linear-feet longitudinally along the parapet wall for each expansion fitting. Replace deteriorated conduit as required. New conduit material and diameter shall match existing. Repair and lap splice reinforcing steel damaged during concrete removal as required to restore structural integrity of the parapet to the satisfaction of the Engineer. If additional concrete removal is required to reach conduit that is not deteriorated, then prices shall be negotiated for additional work beyond the four (4) foot threshold. The concrete patching material for parapet shall conform to Special Provision 602586. However, there shall be no separate payment for this patching work. The concrete patching work shall be included in the bid price for Pay Item 746884. Payment for all of the above described work shall be under Pay Item 746884, including concrete removal, concrete patching, reinforcing steel splicing/restoration, conduit replacement, conduit splicing, expansion fitting, bonding jumper, and all accessories and incidentals necessary to complete the installation of expansion fitting. Payment for removal and replacement of existing joint sealant material at exterior surface of parapet joint opening shall be paid under separate pay items. Existing joint sealant material at exterior surface of parapet joint openings shall be removed at locations on bridge structures as directed by the Engineer. Removal of sealant material is necessary for the Engineer to visually inspect the condition of the electrical conduit embedded in the parapet, and to determine if further repair work is required under separate pay items. Payment for installation of joint sealant material at parapet joint openings shall be paid under Item 605653 (Closed-Cell Joint Seal) or 605692 (Silicone Joint Seal), as directed by the Engineer. Removal of the existing joint sealant material shall be incidental to Items 605653 and 605692.
54. Installation of lighting poles, mast arms, metal transformer base and entire lighting structure shall conform to wind load requirements and all other design criteria as stated in most recent version of AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals". Prior to commencement of work, the Contractor shall submit computations demonstrating that all proposed lighting standard components conform to wind & fatigue load requirements as stated in the AASHTO design criteria. The computations shall be signed and sealed by a structural engineer licensed in the State of Delaware.
55. All special provisions in the Contract relating to removal or relocation of existing lighting poles or mast arms shall apply to all lengths of poles and mast arms currently in place on the Interstate/Expressways and ramps.
56. Contractor is responsible for ensuring compatibility of connections for all components installed in the lighting standard system, including mast arms, davit arms, lighting poles, metal transformer bases, metal anchor bases, luminaires, concrete pole bases, hardware connection accessories and all incidentals.

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57. When Lighting Davit Arms are designated to be furnished and installed by Contractor on poles furnished by DeIDOT, the davit arms furnished by the Contractor shall be compatible with the poles furnished by DeIDOT.
58. Where the term "transformer base" is stated in this Contract, the term shall refer to any metal transformer base or metal anchor base requiring work in this Contract.
59. In locations where aluminum anchor bases are to be furnished and installed by Contractor (see drawing detail), payment shall be under Item 746650 (Aluminum Transformer Base). All specification requirements listed in Special Provision 746650 shall apply to both the aluminum anchor base and aluminum transformer base.
60. For this Contract, the terms "mast arm" and "davit arm" are used interchangeably, and shall be considered the same.

MAINTENANCE OF TRAFFIC NOTES:

61. 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.
62. All travel lane closures on interstates/expressways and ramps shall be performed at night between 8:00 PM to 5:00 AM, Sunday night to Friday morning. Each night-time travel lane closure shall be re-opened prior to 5:00 AM on the following morning. Day-time travel lane closures are restricted to between 9:00 AM and 3:00 PM. These work hours may be extended but would need approval by the District Engineer for specific locations. All lane closures on interstates shall be approved by the DeIDOT Traffic Safety Officer. 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. The Maintenance of Traffic Plan shall include proposed time restrictions on the closure of travel lanes subject to the approval of the Safety Section.
63. No lane closures will be permitted on holidays or holiday weekends, unless approved by the Engineer with consultation with the Safety Section. This requirement applies to all roads impacted in this Contract.
64. 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.
65. 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.

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66. 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 work location to DelDOT for approval. The Traffic Control Plan must clearly indicate orientation of traffic control devices to be used for each. The plan must be approved 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 submitted to DelDOT a minimum of ten (10) working days prior to commencement of work at each location.
67. No lane closures or shoulder closures will be permitted unless applicable work activity is taking place. Use of Typical Applications (TA) shall be reviewed by traffic safety section.
68. All repair/maintenance equipment shall be removed from the job sites on a daily basis, except when approved by the Engineer. Contractor shall follow guidelines set forth by the Delaware MUTCD for storage of materials.
69. 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 763000 (Initial Expense).
70. A truck mounted attenuator, Type II (Item 743010) shall be required on roads for shoulder work, travel lane work and for other operations as outlined in the Delaware MUTCD, or as directed by the Engineer.
71. If the construction activity results in a vertical difference or drop-off along, adjacent to, or across a travel way, the Contractor shall eliminate or remedy this hazard by the methods detailed in Table 6G-1 of the Delaware Manual on Uniform Traffic Control Devices (DEMUTCD), or as directed by the Engineer.

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72. Payment for relocation and re-positioning of Traffic Control devices shall be incidental to the respective unit price Pay Items for Maintenance of Traffic included in this Contract. There shall be no additional compensation for relocation or re-positioning of traffic control devices.
73. Costs for adjustment in position of traffic control devices due to variances from the standard Maintenance of Traffic (MOT) typical application numbers, or for any other reason, shall be included in the unit price for each respective MOT pay item.
74. All permanent warning signs shall be retro-reflective, and constructed of rigid material complying with NCHRP 350 and/or MASH requirements.
75. 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. All costs for this work shall be incidental to the applicable maintenance of traffic pay items as listed in the original contract.
76. The Department reserves the right to stop the Contractor's operations, if in the opinion of the Engineer the Contractor's operations are not in compliance with the Delaware MUTCD, the specifications, or the Plans. The Department also reserves the right to stop the Contractor's operations if the Engineer deems the operations to be unsafe.
77. The Department will not make payment to the Contractor for any and all temporary traffic control devices where the Contractor sets up temporary traffic control to perform work, but fails to perform any work.
78. If a road closure is required at ramp locations, the Contractor shall be required to submit the proposed detour route to the DelDOT Safety Officer for approval. A two week lead time is required for detour plan reviews. Payment for detour plan preparation shall be included in the bid price for Item 743000. The Contractor shall also coordinate the closure with the Department. The Department will coordinate with the Safety Section and be responsible for the necessary emergency notifications. The detour route requires approval by the Department prior to closure. 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 advance-warning signs. The Contractor shall be responsible for placement of detour trailblazers. The Contractor shall be responsible for placement of detour trailblazers. Payment for detour trailblazers shall be under Item 743024, Temporary Warning Signs and Plaques. If necessary, the Engineer will assign the detour route.

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79. Any existing signs that conflict with any temporary or permanent construction signs shall be covered by the Contractor as needed, or as directed by the Engineer. The Contractor shall stake out locations of permanent warning signs in the field and receive approval from the Engineer for the location and method of mounting prior to ordering the signs. The Contractor, with the Engineer, shall inventory all existing signs within the Contract limits. Signs that must remain in place during the project shall be maintained by the Contractor. Any other existing signs shall be removed and properly stored by the Contractor to prevent loss or damage. Immediately prior to the final inspection, the Contractor and the Engineer shall again inventory the traffic signs and account for any lost or damaged signs. The Contractor shall replace or reimburse the Department for any lost or damaged signs.
80. Immediately prior to the implementation of any lane or roadway closures, the Engineer shall notify the DelDOT TMC at (302) 659-4600. Notifications shall also be given to the TMC when the closure is lifted. The Engineer shall notify the TMC and the DelDOT Safety Officer if lane closures cannot be removed prior to the end of the allowable work hours.
81. Any deficiencies related to temporary traffic control that are reported to the Contractor in writing shall be corrected within 24 hours or as directed by the Engineer. Corrective actions on severe deficiencies shall be taken immediately unless otherwise directed by the Engineer. Failure to comply will result in non-payment for those devices that are found to be deficient for the duration of the deficiency. Serious deficiencies that are not corrected immediately could result in possible suspension of work until items identified are brought back into compliance and/or the holding of the pay estimate until the serious deficiencies are corrected.
82. Temporary traffic control devices used on all State maintained roads in Delaware shall conform to the Delaware MUTCD. All devices shall be crashworthy in accordance with the National Cooperative Highway Research Program (NCHRP) Report 350, USDOT Federal Highway Administration, and American Association of State Highway and Transportation Officials (AASHTO) requirements. The Contractor shall submit certifications for temporary traffic control devices used specifically on this project at or prior to the pre-construction meeting. The devices shall be approved by the Engineer and DelDOT Safety Officer prior to use, and shall be maintained in good condition for the duration of the Contract. The Certifications must state the traffic control devices meet the NCHRP, FHWA and AASHTO criteria.
83. If the Contractor does not complete the contract work within the contract completion time as listed on the Work Order (including approved time extensions), the Contractor shall be responsible for providing the necessary temporary traffic control devices that are required to complete any remaining work. The cost of such temporary traffic control shall be borne by the Contractor. No additional payment will be made to the Contractor to maintain traffic in accordance with the Delaware MUTCD, specifications, and these Project Notes. Temporary traffic control items shall include, but not be limited to, warning signs, barricades, plastic drums, P.C.C. safety barrier, flaggers, traffic officers, arrow panels, message boards, portable light assemblies and portable impact attenuators.

QUANTITY SUMMARY

ITEM #	ITEM DESCRIPTION	UNIT	Quantity
202000	Excavation and Embankment	CY	20.00
206000	Rock Excavation for Structures and Trenches	CY	50.000
209001	Borrow, Type 'A'	CY	15.000
209003	Borrow, Type 'C'	CY	50.000
210000	Furnishing Borrow Type 'C' for Pipe, Utility Trench, and Structure Backfill	CY	110.00
251000	Silt Fence	LF	1,500.00
302007	Graded Aggregate Base Course, Type B	CY	25.00
401667	WMA, Superpave, BCBC, 160 Gyrations, PG 64-22 Patching	TON	10.00
401821	WMA, Superpave Type C, 160 Gyrations, PG 64-22 Patching	TON	10.00
401822	WMA, Superpave Type B, 160 Gyrations, PG 64-22 Patching	TON	10.00
503001	Patching P.C.C. Pavement, 6' to 15', Type A	SY	150.00
503006	Dowel Bars	EA	24.00
503501	Crack and Joint Sealing, Less then 3/4" Wide	LF	200.00
602572	Repairing Existing P.C.C. Structures	LB	300.00
602586	Rehabilitation of Concrete Structures	CF	10.00
605653	Closed Cell Joint Seal	LF	50.00
605692	Silicone Joint Seal	LF	50.00
701020	Integral PCC Curb and Gutter, Type 1-8	LF	60.00
705002	P.C.C. Sidewalk, 6"	SF	450.00
720603	Remove and Reset Galvanized Steel Post and Offset Block	EA	30.00
720613	Reset Guardrail End Treatment Attenuator, Type 1	EA	2.00
720624	Remove and Reinstall W-beam for Guardrail	EA	50.00
732002	Topsoil 6" depth	SY	2,500.00
734013	Permanent Grass Seeding, Dry Ground	SY	15,000.00
743000	Maintenance of Traffic	LS	1.00
743003	Arrow Panel, Type C	EA-DY	302.00
743004	Furnish and Maintain Portable Changeable Message Sign	EA-DY	302.00
743005	Furnish and Maintain Portable Light Assembly	EA-DY	300.00

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743006	Plastic Drums	EA-DY	6,000.00
*743007	Traffic Officers	HOUR	24.00
743010	Furnish and Maintain Truck Mounted Attenuator, Type II	EA-DY	302.00
743023	Temporary Barricades, Type III	EA-DY	100.00
743024	Temporary Warning Signs and Plaques	EA-DY	2,500.00
743059	Flagger, New Castle County, Heavy Construction, Federal	HR	300.00
743060	Flagger, Kent County, Heavy Construction, Federal	HR	200.00
743071	Flagger, New Castle County, Heavy Construction, Federal, Overtime	HR	30.00
743072	Flagger, Kent County, Heavy Construction, Federal, Overtime	HR	30.00
744519	Relocation of Existing Junction Well	EA	15.00
744520	Conduit Junction Well, Type 1, 20"x20" Precast Concrete	EA	100.00
744523	Conduit Junction Well, Type 4, 20"x42.5" Precast Concrete	EA	50.00
744530	Conduit Junction Well Type 11, Precast Concrete/Polmer Lid - Frame	EA	10.00
744531	Conduit Junction Well Type 14, Precast Concrete/Polmer Lid - Frame	EA	10.00
744533	Furnish and Install Frame and Lid for Junction Well, Type 1	EA	5.00
744534	Furnish and Install Frame and Lid for Junction Well, Type 4	EA	5.00
744541	Furnish and Install Frame and Lid, for Junction Wells Types 11	EA	5.00
744542	Furnish and Install Frame and Lid, for Junction Well, Type 14	EA	5.00
744544	Adjust or Repair Existing Conduit Junction Well	EA	15.00
744545	Bonding & Grounding Existing Junction Well	EA	10.00
745576	Supply of 2" SDR-13.5" HDPE Conduit	LF	100.00
745578	Bridge Mounted Galvanized Steel Conduit	LF	600.00
745601	Furnish & Install up to 3" Flexible Metallic Liquidtightconduit	LF	200.00
745602	Furnish & Install up to 4" Schedule 80 HDPE Conduit (Bore)	LF	1,200.00
745603	Furnish & Install up to 4" Schedule 80 PVC Conduit (Open Cut)	LF	30.00
745604	Furnish & Install up to 4" Schedule 80 PVC Conduit (Trench)	LF	22,000.00
745605	Furnish & Install up to 4" Schedule 80 PVC Conduit (Structure)	LF	100.00
745606	Furnish & Install up to 4" Galv Steel Conduit (Trench)	LF	7,000.00
745607	Furnish & Install up to 4" Galv Steel Conduit (Bore)	LF	600.00
745608	Furnish & Install up to 4" Galv Steel Conduit (Open Cut)	LF	200.00
745609	Furnish & Install up to 4" Galv Steel Conduit (Structure)	LF	300.00
745610	Furnish & Install up to 4" Nonmetallic Pole Riser Shield	LF	150.00
746515	Insulated Ground Cable, 1/#6	LF	600.00

DELAWARE DEPARTMENT OF TRANSPORTATION

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746516	Service Installation	EA	20.00
746564	Insulated Ground Cable, 1/#4	LF	600.00
746566	Cables, 1/#1 AWG	LF	5,000.00
746567	Cables, 1/#1/0 AWG	LF	1,000.00
746590	Furnish and Install Ground Rod	EA	100.00
746594	Luminaire, HPS, 250 Watt	EA	75.00
746595	Aluminum Lighting Standard, 40' pole	EA	70.00
746605	Insulated Ground Cable, 1/#10	LF	500.00
746614	Pole Base Extension	CF	125.00
746622	Cables, 1/#4/0 AWG	LF	850.00
746650	Aluminum Transformer base	EA	60.00
746651	Access cover for transformer base	EA	65.00
746815	Installation of Luminaire	EA	150.00
746817	Cables, 1/#2/0 AWG	LF	1,000.00
746832	Supply and Installation of Weatherhead 3", On Steel Pole	EA	15.00
746852	Pole Base Type 6	EA	200.00
746883	Partial Removal of Concrete Pole Bases and Cabinet Foundations	CY	15.00
746884	Expansion Fitting for Electrical Conduit	EA	55.00
746885	Remove and Reinstall Lighting Pole, Mast Arm, and Metal Transformer base	EA	75.00
746886	Removal of Metal Transformer Base	EA	40.00
746887	Installation of Metal Transformer Base	EA	110.00
746888	Aluminum Lighting Single Davit Arm, 8' Arm Spread	EA	20.00
746889	Aluminum Lighting Single Davit Arm, 12' Arm Spread	EA	30.00
746890	Aluminum Lighting Single Davit Arm, 15' Arm Spread	EA	20.00
746907	F & I 1-Conductor #2 AWG Stranded Copper		5,000.00
746908	F & I 1-Conductor #4 AWG Stranded Copper	LF	14,000.00
746909	F & I 1-Conductor #6 AWG Stranded Copper	LF	52,000.00
746910	F & I 1-Conductor #8 AWG Stranded Copper	LF	7,000.00
946911	F & I 1-Conductor #10 AWG Stranded Copper	LF	20,000.00
746926	Furnish & Install Electrical Utility Service Equipment 120/240	EA	2.00
746939	Traffic Control Device Equipment Turn On, Pick Up, Removal & Maintenance, Type I	EA	5.00
746940	Traffic Control Device Equipment Turn On, Pick Up, Removal & Maintenance, Type II	EA	5.00
746941	Traffic Control Device Equipment Turn On, Pick Up, Removal & Maintenance, Type III	EA	5.00
746942	Installation of Lighting Pole, w/Arm and Luminaire	EA	30.00

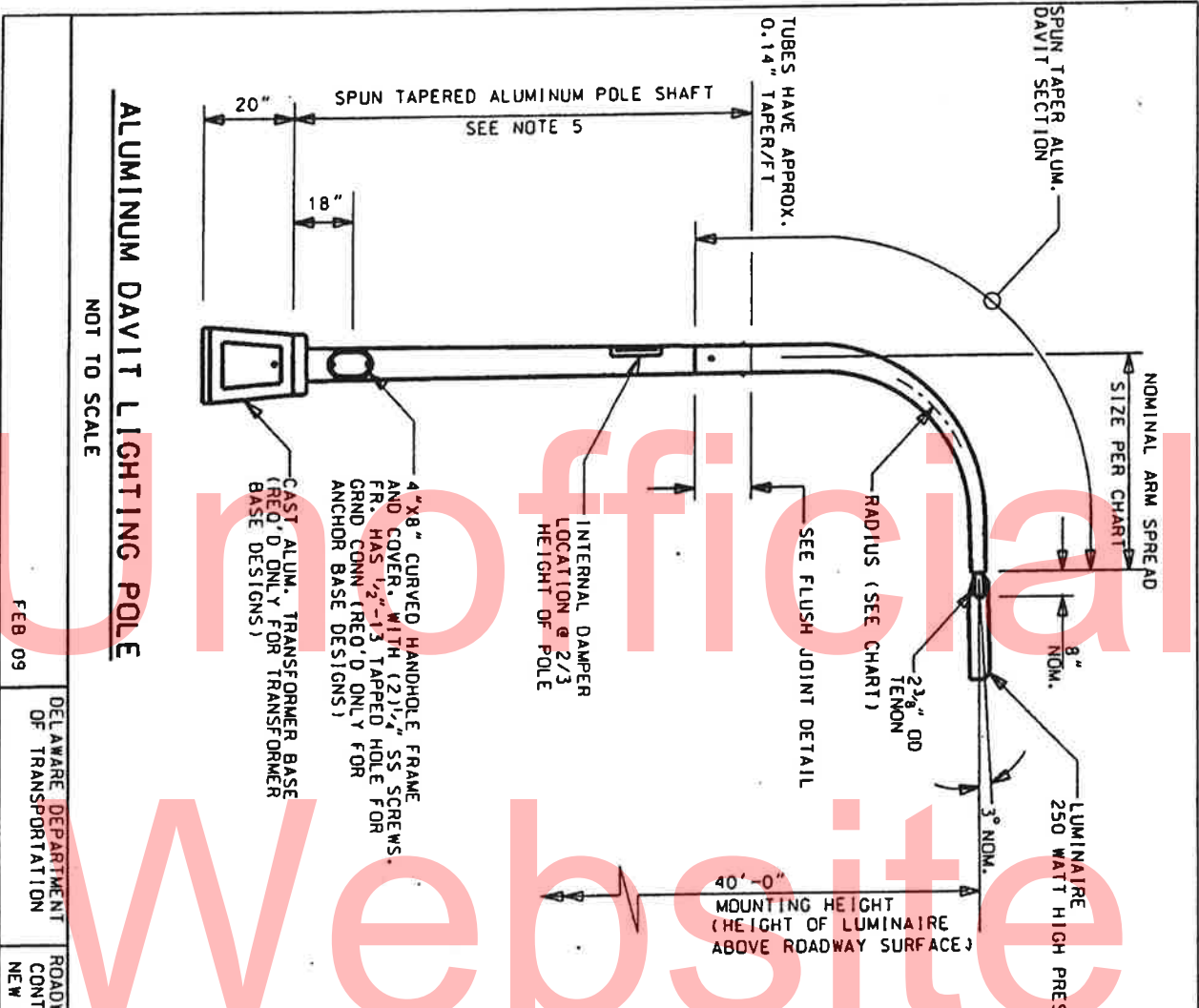
DELAWARE DEPARTMENT OF TRANSPORTATION

CONTRACT No : T201409001 Lighting Replacement, Interstate/Expressway, Open End, FY14-FY17

747509	Lighting Control Center, 200A, 277/480V	EA	2.00
747510	Lighting Control Center, 200A, 240/480V	EA	2.00
747513	Lighting Control & Distribution Enclosure (120/240; 100 AMP)	EA	2.00
747514	Cabinet Base, Type F	EA	1.00
747515	Cabinet Base, Type M	EA	1.00
747516	Cabinet Base, Type P	EA	15.00
747517	Cabinet Base, Type R	EA	15.00
748536	Epoxy Resin Black 6"	LF	200.00
748548	Epoxy Resin White/Yellow 6"	LF	200.00
758000	Removal of Existing PCC Pavement, Curb and Sidewalk	SY	20.00
762001	Saw cutting, Hotmix	LF	100.00
762002	Saw cutting, Concrete, Full Depth	LF	100.00
763000	Initial Expense	LS	1.00

Note: *Fixed Price

Official
 Website
 Copy



MOUNTING HEIGHT	DAVIT ARM SPREAD	OUTER DIAMETER (POLE BOTTOM SECTION)	WALL THICKNESS (POLE BOTTOM SECTION AND DAVIT ARM SECTION)	RADIUS (DAVIT SECTION)	TUBE SIZE (DAVIT SECTION)
8'	8'	10" (BOTTOM) 6" (TOP)	0.188"	5'-6"	6.00" x 2.90" x 1.5"-6"
12'	12'	10" (BOTTOM) 6" (TOP)	0.188"	5'-6"	6.00" x 2.90" x 1.9"-6"
15'	15'	10" (BOTTOM) 6" (TOP)	0.188"	5'-6"	6.00" x 2.90" x 2.2"-6"

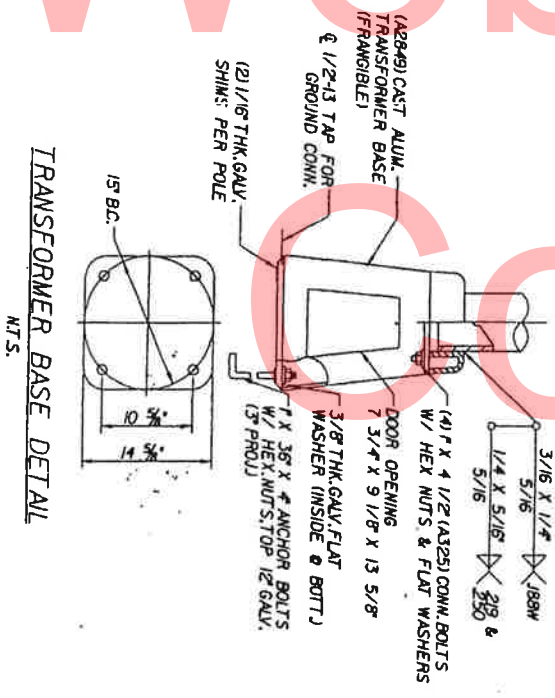
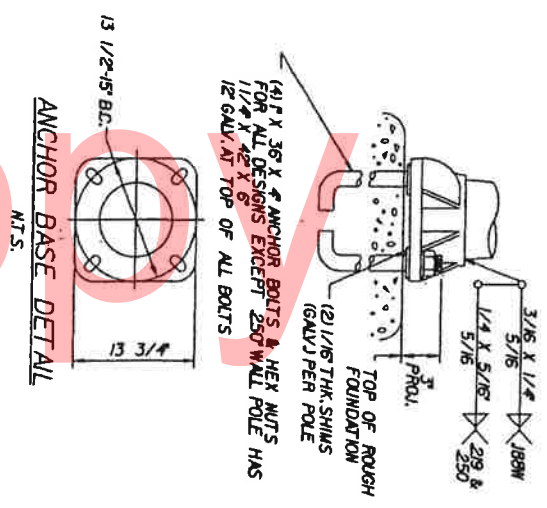
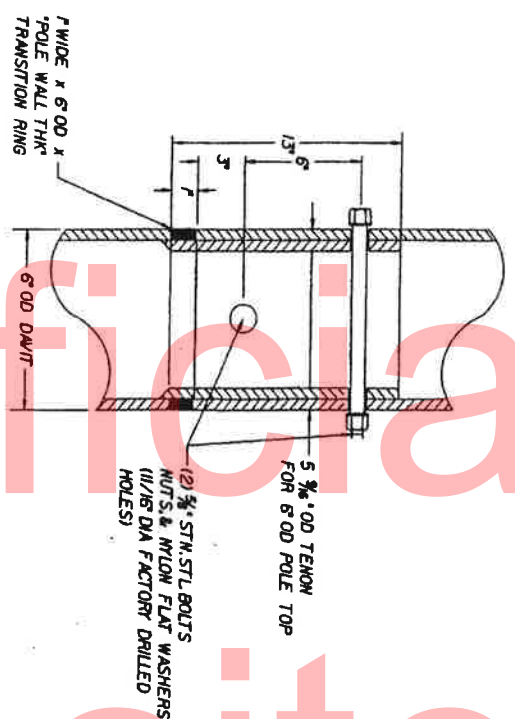
MOUNTING HEIGHT OF LUMINAIRE ABOVE SURFACE OF ROAD

- NOTES:
1. HEAT TREAT POLE & DAVIT TO -T6 TEMPER AFTER WELDING
 2. FINISH - POLE & DAVIT SHALL BE SATIN FINISH,
 3. POLISHED AND WRAPPED DESIGN FOR LIGHTING POLE, DAVIT ARM, TRANSFORMER BASE, AND ALL ASSOCIATED CONNECTIONS SHALL MEET THE REQUIREMENTS OF AASHTO. DESIGN SHALL MEET THE REQUIREMENTS OF THE CURRENT VERSION OF AASHTO WIND ZONE AND WIND SPEED DESIGN CRITERIA.
 4. METAL TRANSFORMER BASE SHALL MEET THE BREAKAWAY REQUIREMENTS OF MOST RECENT VERSION OF AASHTO AND ALL OTHER APPLICABLE FEDERAL AND STATE PUBLICATIONS
 5. DUE TO VARYING ELEVATIONS OF ROADWAY AND EMBANKMENT, IT MAY BE NECESSARY TO MODIFY THE POLE SHAFT DIMENSION TO MAINTAIN THE NOMINAL FIXTURE MOUNTING HEIGHT OF 40'-0" ABOVE THE ROADWAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THESE MEASUREMENTS.

ALUMINUM DAVIT LIGHTING POLE

NOT TO SCALE

Unofficial Website



FEB 09	DELAWARE DEPARTMENT OF TRANSPORTATION	ROADWAY LIGHTING REPLACEMENT, 1-95 CONTRACT 29-090-01 NEW CASTLE COUNTY	LIGHTING DETAILS	SHEET 2
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