

STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION



TRAFFIC SECTION

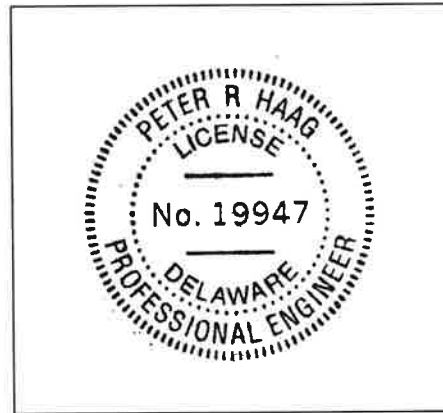
SPECIFICATIONS FOR

DOT2106 – TRAFFIC_MAINT
EMERGENCY HIGHWAY ITS AND TRAFFIC MAINTENANCE



RECOMMENDED:


Traffic Operations Engineer



APPROVED:


Chief of Traffic Engineering

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CONTRACT DESCRIPTION

This contract is to provide the material, equipment and labor for the maintenance and alteration of signalized intersections, signal coordination systems, pedestrian signals, and other traffic components or devices statewide. The work includes both on-call emergencies and maintenance repairs. The specific work sites are not listed herein, but will be assigned as available by the Delaware Department of Transportation Traffic Section. Most assigned tasks are anticipated to be completed within one Working Day.

This is a non-exclusive contract. Although the Contract may include tasks in all three counties of Delaware, other Contractors may be performing work related to Traffic Signals and other facilities operated and maintained by DelDOT's Traffic Division. Such work by others is not associated with this contract.

PROJECT NOTES

1. STANDARDS

All work will be done in accordance with the Delaware Department of Transportation Standard Specifications for Road and Bridge Construction, dated August 2020, as amended by the Supplemental Specifications; Standard Construction Details including all revisions up to the date of advertisement; Project Specific Plan Details; the Special Provisions; the most current edition of the Delaware MUTCD; and any plans included in specific work orders. If during the course of the Contract, changes to the standards are made and are to be implemented on this Contract, the Department will send the changes to the Contractor in advance of requiring their use.

2. CONTRACTOR REQUIREMENTS

A. Master Electrician Special

The Contractor shall provide a Delaware-licensed Master Electrician Special, who shall be qualified to direct work near energized primary circuits up to 34 KV and who shall be directly responsible for the workmanship as provided in Title 24, Chapter 14 of the Delaware Code. This Master Electrician - Special shall certify all of the work performed. The name, qualifications, and copy of the license shall be submitted and approved by the Engineer prior to beginning work on the contract.

B. Point of Contact

Upon award of the contract, the Contractor shall submit to the Engineer the name of a principle point of contact for the project including home and cell telephone numbers and/or pager number.

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C. Deployment of Multiple Crews

Contractor crews may be required to be deployed to perform work at multiple work sites throughout the state simultaneously. The work locations and number of crews to be deployed shall be coordinated with the Engineer on a weekly basis.

D. Crew Composition

A crew shall consist of a foreman who is a Journeyman Electrician and/or has a minimum five years of experience in related work and sufficient personnel to complete the work, unless an exception is granted in writing by the Engineer. The minimum size of any crew is two people. A loop installation crew and a restoration crew do not need a Journeyman Electrician or someone with five years of experience as the foreman. Crews for aerial work must have a Journeyman Electrician as the foreman. Names and qualifications of all proposed Journeyman Electricians shall be submitted for approval prior to beginning work on the contract.

E. Contractor's Equipment and Resources

The Contractor shall provide a complete list of equipment and materials that will be available to perform the tasks outlined in this contract. All self-propelled equipment and vehicles shall be identified with the Contractor's company name, location of home office (city and state), phone number, and the electrical registration number of Licensed Master Electrician Special. This shall include any leased or rented equipment or vehicle that is in use for this contract for 14 or more continuous calendar days. Said information shall be visible on 2 (two) opposing sides of the equipment or vehicle. All equipment assigned to the contract shall be equipped with safety devices meeting the requirements of the Delaware MUTCD. The Contractor must have the capability of providing as many as 4 each bucket and/or line trucks concurrently if required at large intersections, such as those involving a suspended box span.

The Department reserves the right to inspect the Contractor's facilities, equipment, materials, and resources that will be available to perform the tasks outlined in this contract. The Department shall provide the Contractor with notification a minimum of seven (7) days prior to such an inspection.

F. Applicable Standards

All work performed under this contract shall comply with all applicable National Electrical Code, National Electrical Safety Code and industry and Bellcore standards to the extent not precluded by these specifications. Construction methods and techniques used by the Contractor shall be in accordance with the recommended practices and procedures published by leading industry manufacturers and trade associations, such as Bellcore Blue Book of Construction Practices.

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The Contractor shall also follow all applicable local laws and standards. The Contractor shall be aware of all standards and their application within Delaware. Ignorance or lack of knowledge shall not be an excuse for improper work to occur. Any work constructed in violation of any applicable code shall be corrected and re-installed properly at the Contractor's expense.

3. BIDDING PROCEDURE AND CONTRACT AWARD

The Delaware Department of Transportation will accept bids on Contract No. DOT2106.02-TRAFFIC_MAINT. The Department may award contracts to multiple contractors, based upon the lowest responsive, responsible bids received for the contract.

4. ALTERATIONS IN QUANTITIES

The quantities given in the proposal are approximate only, and will be the basis for comparing bids. Depending on fund availability, the Department reserves the right to increase or decrease the quantities of any and all items specified in this contract. Such additions or deletions shall not be cause for an increase or decrease in any contract unit bid prices, regardless of whether or not an item is classified as a "Major Item" (10 percent of the total contract value) as defined in Standard Specification 101.46. Negotiated prices will be the preferred method of establishing payment for new items added to the contract. Force Account payment, per Standard Specification 109.4 may be utilized if negotiated prices prove to be unsuccessful. Negotiated prices for new unit items will remain in effect for the remaining term of the contract.

5. ASSIGNMENT OF WORK

Work will be assigned to the Contractor on a work order basis by the Department. All work order assignments will be at the discretion of the Engineer. Issuance of each work order constitutes the notice to proceed with the work described on the work order. Actual work shall begin on each task no later than seven (7) Calendar Days following assignment of the task.

The Engineer shall establish the location of the work sites, and the order in which the work sites are to be pursued. The Department may direct the Contractor to suspend work at a particular location and reassign crews due to emergencies or other high priority work at no additional cost to the Engineer.

6. LIQUIDATED DAMAGES

Liquidated damages as defined in Sections 108.8 and 108.9 of the Standard Specifications will not be assessed on this contract. However, failure of the Contractor to begin work assignments within the 7 Calendar Day timeframe listed in Item 7 above, or failure to diligently pursue work assignments, may result in DelDOT crews performing the work with

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those itemized costs deducted by use of a negative change order from payments due the Contractor.

If applicable, verification of non-availability of materials from at least three (3) independent sources shall be supplied by the Contractor in writing to the ITS Maintenance Supervisor immediately after the receipt of a work order or at such time as they are notified that anticipated materials will not be available as scheduled. If there is a verified non-availability of materials, no penalty shall be assessed unless the Contractor fails to complete the revised work order in a timely manner.

7. PROSECUTION AND PROGRESS OF WORK

Work assignments will be issued to the Contractor in the form of a letter along with all necessary sketches, engineering drawings and any additional special provisions required. At times, depending upon the nature and complexity of the work assignments, field meetings may be necessary at certain site locations.

The Contractor shall have sufficient work forces and Bid Item materials in stock to perform any issued assignment.

8. EMERGENCY WORK

Emergency services must be available 24 hours per day 7 days per week without exception during the period of this contract. The Contractor shall have the following continuously available; a work crew and at least one pole line vehicle capable of setting the largest pole required by this contract and one separate aerial vehicle capable of lifting 2 workers and their tools to the working height of that pole in each area. The Contractor shall have under his control an inventory of materials normally supplied under the terms of this contract for immediate use under this provision. The Contractor's Supervisor shall mobilize and be on-site to evaluate conditions within 2 hours of notification. The Contractor's essential crew shall mobilize, be on-site with equipment and operational (including Maintenance of Traffic set-up) within 3 hours of initial notification. Should the Contractor fail to provide the crews, equipment, and materials required under this provision within the 3 hours, DelDOT crews may perform the work with those itemized costs deducted by use of a negative change order from payments due the Contractor. All pay items that are not "supply only" and that are used for after-hours emergency work will be allowed a 15 percent surcharge.

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9. NIGHT WORK

The Department may require Night Work to minimize traffic conflicts on some work sites. The Contractor should anticipate night time operations being required for work above, or affecting traffic lanes on multi-lane, high volume locations. All pay items which are not “Provide only” that are used for Night Work shall be allowed a 15 percent surcharge. Type II truck mounted attenuators, plastic drums, temporary barricades Type III, temporary warning signs, message boards, arrow panels, and portable light assemblies shall be paid under separate items in this contract for their use and shall not be subject to the 15 percent surcharge for night work.

Night work shall be defined as work being performed from the hours of 8:00 p.m. to 6:00 a.m.

Construction work started prior to night work hours that carries over into those hours shall not be paid as night work unless authorized by the Engineer in writing before work is started.

10. INSPECTION AND PROJECT CONTROL

Upon the completion of each individual work assignment, the foreman and inspector shall reconcile the quantities of work completed.

Method for Contractor’s Invoice Submission – All work for this contract will be paid per assignment upon receipt of an invoice from the contractor in accordance with the following schedule:

The contractor will submit one invoice per work assignment at the completion of the assignment.

All invoices shall contain the following information. Failure to include any of the information on the invoice may result in the invoice being returned to the contractor.

- Contractor name, address and federal ID number.
- Project location, Department contract and/or Federal Aid contract numbers.
- Invoice number and date.
- Inspector Daily Report (IDR)
- Material Certifications, Source of Supply and Bill of Lading
- The following statement:

In accordance with Chapter 8, Title 17 of the Delaware Code (Annotated Revised 1974, and as amended), the undersigned contractor certifies that payment to all Subcontractors and/or suppliers has been made as required and as detailed on the “Proof of Payment” form (CN-91). It is understood that no subsequent payment will be made to the Contractor until the “Proof of Payment” form for the previous pay period has been submitted and received by DelDOT’s DBE Office.

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Signature

Date

Title

All invoices must be accompanied by the inspector’s daily reports (IDR), all Material Certifications, Bill of Lading and source of supply for all materials used. Any discrepancy between measured quantities and contractor’s quantities must be resolved prior to submitting an invoice for payment.

The contractor may request an exception to this policy in writing to the project engineer due to circumstances beyond his control such as project shutdowns and/or revisions.

11. MAINTENANCE OF TRAFFIC

The only payment for maintenance of traffic shall be the separate pay items identified in the bid tabs. No separate payment will be made for the use of traffic cones. Traffic cones and/or the work associated with their use, such as set up, removal, cleaning, etc. shall be incidental to the work for which they protect.

For those items that are paid on an Each-Day basis, only one such payment will be made per day per unit, even if the item is used in multiple work sites or work orders in the same day. This applies to items such as plastic drums and truck mounted attenuators, but is not limited to these items.

Work hours may be restricted on some work orders as dictated by traffic volumes and/or roadway conditions.

All traffic control devices shall be in new or refurbished condition, shall comply with the Delaware MUTCD and with NCHRP Report 350 or MASH and shall be approved by the Engineer before installation. Traffic control devices shall be maintained in good condition for the duration of use.

The Contractor shall maintain vehicular, bicycle and pedestrian traffic through the project’s work zones in a manner that will reasonably provide the least practicable obstruction to all road users and provide paths for all road users, including, but not limited to, the passage through the work zone of persons with disabilities in accordance with the Americans with Disabilities Act of 1990 (ADA) Title II, paragraph 35.130.

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 4 weeks in advance of the start of the activity. Prior to initiating

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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.

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.

12. BASIS OF PAYMENT

The Contractor may bill the Department when the work order is completed. Payment will be issued to the Contractor monthly on a mutually agreed upon date.

Payment of said invoice shall not relieve the Contractor from obligations incurred in warranting the quality of the workmanship and materials, or for restoration at the work site. A One Year Warranty on all materials, installation, and workmanship will be in effect for each work location starting on the acceptance date of each individual location. Specific work items may carry a longer Warranty Period. In these cases, the longer of one year or the otherwise specified warranty period will govern for those particular items. The Contractor shall provide contact information for an employee responsible for arranging any warranty work during the one year period. Any repairs required during the warranty period, including Maintenance of Traffic Items, shall be provided at no additional cost to the Department. Should any emergency repairs be required during the warranty period to work that was originally performed under this contract, contact will immediately be made with the Contractor and a response to the site of the emergency must be made within 3 hours of the time of contact. Should the Contractor be unable to respond to the emergency within the 3 hour timeframe, then the Department will pursue other means to make the repairs and deduct the costs from the Contract by means of a “negative” change order. Final acceptance as evidenced in writing after the completion of the entire contract or at such time as practical determination of the quality of the workmanship and materials can be made by the Engineer, will be necessary before any bonds or parts of bonds will be released.

13. ELECTRICAL TESTING BY DELDOT

The Contractor is advised that DelDOT may, at their discretion, perform independent electrical testing of the highway lighting system, signal system, and/or related electrical work items.

The Intelligent transportation system (ITS) is comprised of all Contract items for traffic control devices including but not limited to, conduits, junction wells, cables, load centers, transformers, cabinet pads, pole bases, poles, signal heads, pedestrian heads, and service installations.

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The ITS will be considered defective if any of the following conditions are discovered by visual inspection or by inspection with testing equipment within the warranty period:

1. Defective lamps, LED's, or ballasts
2. Failure to operate, in whole or in part.
3. Power wire grounding less than ten megaohms.
4. Shifts in pole and/or foundation alignment.
5. Short circuits or open circuits anywhere within the system.
6. Deterioration of finishes, plating, or paint not normal and customary in the environment in which the equipment is installed.
7. Settlement of trench backfill.
8. Defective fuses.
9. Defective or improperly installed splices.

These conditions listed shall not be considered all inclusive.

The Department reserves the right to conduct initial and periodic ITS inspections after the Contractor has completed work. The initial inspection will be to determine if initial performance requirements are met. Periodic reviews may be conducted through the warranty period to determine the sustained ability of the system to meet the stated performance requirements.

All defective areas identified by the Department during initial or periodic inspections shall be documented and the information will be shared with the Contractor. Necessary repairs or replacements shall be made by the Contractor at no additional cost to DelDOT. All ITS repairs shall begin immediately following the notice to the Contractor of the defect unless weather limitations prevent the corrective work. The Department shall be given notification before the Contractor begins corrective work and shall be allowed full access to the areas being repaired.

When requirements, responsibilities, and Providing of materials are outlined in the details and notes on the Plans and in the paragraphs preceding the "Basis of Payment" paragraph in the Standard Specifications or Special Provisions, no interpretation shall be made that such stipulations are excluded because reiteration is not made in the "Basis of Payment" paragraph.

14. GENERAL WORK ELEMENTS

- A. Backfill in trenches, around forms and junction wells, or at any other place shall be completed thoroughly, using a power tamper, in lifts of not more than 8 inches loose measurement as it is being placed, in accordance with Standard Specification Subsection 607.3.5. Any paving material or fill removed for trenching shall be replaced in kind.
- B. At the Contractor's expense, all holes and trenches shall be protected from accidental entry by vehicles and pedestrians with steel plates or other approved materials as required by the Engineer. Should the Contractor fail to provide adequate protection

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to the surroundings of a work site or should the operations be carried out in such a way as to allow or cause damage to any roadway, street, sidewalk, the property of any utility, or other private or public property, and should the repair not be undertaken in a timely manner, then it may be necessary for the Department to protect the area and/or make the repair. If so, the cost shall be deducted from monies due the Contractor.

- C. All concrete, including pole bases and cabinet bases, shall be finished to match any adjacent concrete. If no match is required, the surface area shall be broom finished and edged.
- D. No ground rod shall be driven into earth without a proper protective cap to prevent damage to the threads. If the threaded end of the sectional ground rod is damaged, it will be replaced at the expense of the Contractor.
- E. Material substitutions must be submitted in writing to the Engineer at least 10 calendar days prior to use in order to allow time for review and approval by the Engineer. Faxes or e-mails are not acceptable methods of submission. A scanned, signed letter in "pdf format" will be acceptable.
- F. Work within waters/wetlands shall not begin on locations requiring environmental permits until all applicable permits have been obtained by the Department.
- G. Traffic signal loops shall be installed within one week of receipt of work order unless otherwise directed by the Engineer.
- H. If seeding is required for restoration of a work area, the cost shall be incidental to Item 908001, Topsoil. If topsoil is not required, the cost of seeding shall be incidental to the item requiring restoration.
- I. Signal heads, pedestrian signal indications, and signs that are in place, but not in service, shall be entirely covered with opaque burlap with costs incidental to the various maintenance of traffic items.

15. MATERIALS

- A. Damaged

Once the Department transfers material or equipment to the Contractor, any damage to or loss of that material or equipment which occurs from handling or transport, or from any other source or way, shall be the sole responsibility of the Contractor and the value thereof shall be deducted from any monies due the Contractor.

- B. Supplied By or Returned To the Department

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The Department's Sign Shop, 14 Sign Shop Road, Dover, DE 19901, and/or the Department's Canal District Shop, 250 Bear-Christiana Road, Bear, DE 19701 are the sites where items to be supplied by the Department are available and where items to be returned are to be delivered. Any reference in the Plans or Special Provisions to the Dover Sign Shop shall, for this contract, mean either the Dover Sign Shop or the Canal District Shop according to the direction provided by the Engineer.

C. Supplied By the Contractor

All materials supplied by the Contractor shall be new and unused and, where applicable, all materials and equipment supplied shall be UL approved. Catalog cuts and/or shop drawings shall accompany all requests for material source approval. 6 sets of such requests shall be sent to DelDOT's Traffic Sign Shop (att'n ITS Maintenance Manager). Following initial review by Traffic, 5 sets of the submittal will be forwarded to DelDOT's Materials and Research Section for final approval. Following their review and approval, 2 sets will be returned to the Contractor, one set will be retained by Materials and Research, and 2 sets will be returned to DelDOT's Traffic Sign Shop. If more approved copies are desired, the Contractor may elect to submit extras for review.

D. Transportation

Materials and/or equipment shall be transported in a legal fashion and shall be protected from damage or loss.

16. EROSION AND SEDIMENT CONTROL

The provisions of Section 110 of the Standard Specifications on erosion and sediment control apply to this contract. Those areas that have been disturbed for signal work shall be restored immediately after the ground disturbing portion of the work has been completed. Restoration of long runs of conduit for fiber optic installation shall be restored at the end of each work day. Silt fences will not be required.

17. RIGHT OF WAY

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.

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 the project manager to contact the railroad chief engineer and obtain written authorization before entering.

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The Contractor shall give a one (1) week notice to the Property Owner when any fixture, shrub, or other object must be removed from the Right of Way or Easement area. If the Owner has not attempted to salvage this property, the Contractor shall remove it without obligation. Compensation shall be incidental to the Contract.

18. ENVIRONMENTAL

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.

19. UTILITIES

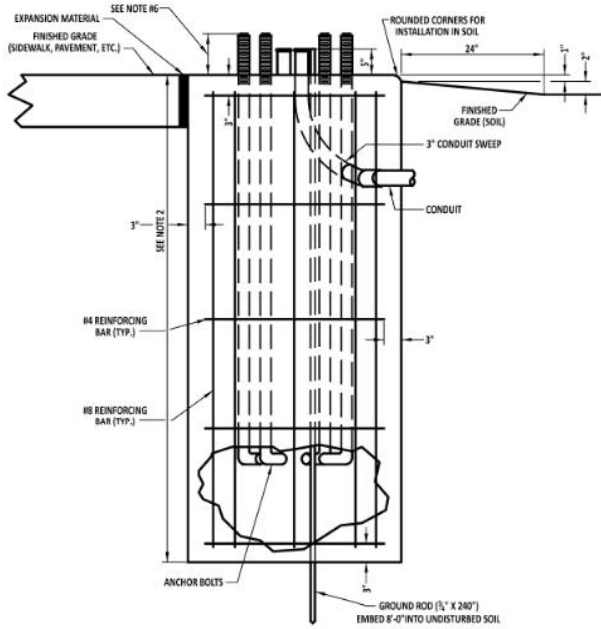
No Utility relocation involvement is anticipated. Should any conflicts be encountered during construction requiring adjustment and/or relocation of the agencies' existing facilities, the necessary relocation work shall be accomplished by the respective agencies' forces, as directed by the Engineer. Any 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 Engineer.

20. PRICE ADJUSTMENT

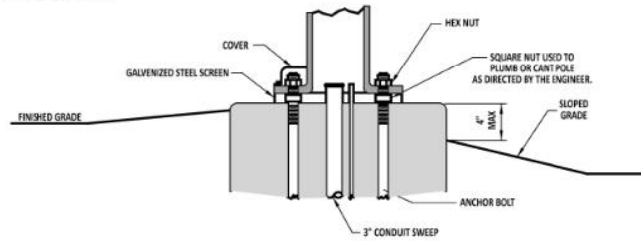
There are no Price Adjustments authorized on this contract.

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TYPICAL SECTION (BASES 1, 2, 2A, 2B, 3, 3A, AND 3B)



TYPICAL INSTALLATION (BASES 1, 2, 2A, 2B, 3, 3A, AND 3B)

NOTE:

1. SEE POLE BASE DATA CHART ON DETAIL T-5, SHEET 3 OF 4, FOR POLE BASE DIMENSIONS.
2. STRAIN POLES AND MAST ARMS UP TO 60' SHALL USE 2 1/2" ANCHORS BOLTS, SUPPLIED BY THE DEPARTMENT.
3. MAST ARMS FROM 70'-90' SHALL USE 2 1/2" ANCHOR BOLTS, SUPPLIED BY THE DEPARTMENT.
4. ALL OTHER POLE BASES NOT LISTED SHALL ADHERE TO MANUFACTURER AND DEPARTMENT STANDARDS.
5. PER MANUFACTURER SPECIFICATIONS AND DETAILS, THE CONTRACTOR SHALL ENSURE THAT THE FOLLOWING LENGTH OF THREADS ARE EXPOSED PER EACH POLE TYPE:
 - STRAIN: 10 1/2"
 - B (MAST): 8 1/2"
 - C (MAST): 11 1/4"
 - CAMERA: 7"
 - LIGHTING: 4 1/2"
6. MAXIMUM EXPOSED FOUNDATION DEPTH OF 4" AT FINISHED GRADE TO APPROACHING TRAFFIC.

SPECIFICATION
 834001
 834002
 834003
 834512
 834513
 834514
 834515

CATEGORY CODE ITEMS
 POLES, MAST ARMS, POLE BASES

APPROVED

CHIEF OF TRAFFIC ENGINEERING



DELAWARE
 DEPARTMENT OF TRANSPORTATION
 TRAFFIC CONSTRUCTION DETAILS
 POLE BASE DETAIL

DETAIL NO.

T5-2

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22. ITEM NUMBERS BY CATEGORY

To assist locating a particular item, the item numbers included in this contract have been divided into categories, as shown in the following table.

ITEM	DESCRIPTION	UOM	QTY
CABINETS AND CABINET BASES			
835001	Cabinet Base Type F	EA	1
835002	Cabinet Base Type M	EA	4
835003	Cabinet Base Type P	EA	10
835004	Cabinet Base Type R	EA	2
835502	Cabinet Base Type K (HIB)	EA	3
847004	Lighting Control and Distribution Enclosure (100AMP)	EA	20
CABLE AND SPLICES			
832001	Provide & Install #4/0 AWG Stranded Copper	LF	500
832002	Provide & Install #3/0 AWG Stranded Copper	LF	750
832003	Provide & Install #2/0 AWG Stranded Copper	LF	1,000
832006	Provide & Install 1- conductor #2 AWG Stranded Copper	LF	2,500
832007	Provide & Install 1- conductor #4 AWG Stranded Copper	LF	1,700
832008	Provide & Install 1- conductor #6 AWG Stranded Copper	LF	5,700
832009	Provide & Install 1- conductor #8 AWG Stranded Copper	LF	25,000
832010	Provide & Install 1- conductor #10 AWG Stranded Copper	LF	5,000
832025	Provide & Install 4- conductor #18 AWG Shielded Opticom Cable	LF	6,500
832026	Provide & Install 1- conductor #14 AWG Stranded Copper	LF	1,000
832027	Provide & Install 2-Conductor #14 AWG Aluminum Shielded Cable	LF	20,000
832029	Provide & Install #8/2 wire UF W/ground	LF	20,000
832031	Provide & Install #6 Triplex Aluminum Service Cable	LF	2,000
832032	Provide & Install 14/4 Traffic Control Cable	LF	2,000
832033	Provide & Install 14/9 Traffic Control Cable	LF	20,000
832034	Provide & Install 14/16 Traffic Control Cable	LF	20,000
832500	Splicing of Electrical Cable Underground	EA	800
832501	Splicing of Electrical Cable Above Ground	EA	250
832502	Triplex Splice	EA	1,000
832504	Provide & Install #8 THHN Stranded Copper	LF	3,000
832505	Provide & Install #6 AWG Solid Copper	LF	10,000
832506	Provide & Install #1/0 AWG Stranded Copper	LF	1,500
832507	Provide & Install 14/5 Traffic Control Cable	LF	10,000
832509	Install CAT5E Video Detector Cable	LF	3,000

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ITEM	DESCRIPTION	UOM	QTY
832510	Provide & Install CAT5E Video Detector Cable	LF	2,000
846001	Provide & Install Loop Wire 1-conductor # 14 AWG encased in ¼" Flexible Tubing in a Loop Sawcut	LF	10,000
846002	Provide & Install a 1-1/2 inch Galvanized Rigid Metal Conduit Detector Sleeve with Loop Wire	LF	1,000
	CONDUIT		
831501	Provide and Install 4" Schedule 80 PVC Conduit (Open Cut)	LF	800
831502	Provide and Install 3" Schedule 80 PVC Conduit (Open Cut)	LF	500
831503	Provide and Install 2-1/2" Schedule 80 PVC Conduit (Open Cut)	LF	300
831504	Provide and Install 2" Schedule 80 PVC Conduit (Open Cut)	LF	250
831505	Provide and Install 1" Schedule 80 PVC Conduit (Open Cut)	LF	200
831512	Provide and Install 1" Schedule 80 PVC Conduit (Trench)	LF	200
831513	Provide and Install 2" Schedule 80 PVC Conduit (Trench)	LF	500
831514	Provide and Install 2-1/2" Schedule 80 PVC Conduit (Trench)	LF	3,000
831515	Provide and Install 3" Schedule 80 PVC Conduit (Trench)	LF	1,800
831516	Provide and Install 4" Schedule 80 PVC Conduit (Trench)	LF	1,500
831517	Provide and Install 1" Schedule 80 PVC Conduit (On Structure)	LF	300
831518	Provide and Install 2" Schedule 80 PVC Conduit (On Structure)	LF	400
831519	Provide and Install 2-1/2" Schedule 80 PVC Conduit (On Structure)	LF	450
831520	Provide and Install 3" Schedule 80 PVC Conduit (On Structure)	LF	1,000
831521	Provide and Install 4" Schedule 80 PVC Conduit (On Structure)	LF	1,200
831522	Provide and Install 1" Galvanized Steel Conduit (Trench)	LF	200
831523	Provide and Install 2" Galvanized Steel Conduit (Trench)	LF	500
831524	Provide and Install 2-1/2" Galvanized Steel Conduit (Trench)	LF	3,000
831525	Provide and Install 3" Galvanized Steel Conduit (Trench)	LF	1,800
831526	Provide and Install 4" Galvanized Steel Conduit (Trench)	LF	1,500
831527	Provide and Install 1" Galvanized Steel Conduit (Bore)	LF	100
831528	Provide and Install 2" Galvanized Steel Conduit (Bore)	LF	250
831529	Provide and Install 2-1/2" Galvanized Steel Conduit (Bore)	LF	350
831530	Provide and Install 3" Galvanized Steel Conduit (Bore)	LF	500
831531	Provide and Install 4" Galvanized Steel Conduit (Bore)	LF	750
831532	Provide and Install 1" Galvanized Steel Conduit (Open Cut)	LF	200
831533	Provide and Install 2" Galvanized Steel Conduit (Open Cut)	LF	300
831534	Provide and Install 2-1/2" Galvanized Steel Conduit (Open Cut)	LF	400
831535	Provide and Install 3" Galvanized Steel Conduit (Open Cut)	LF	1,000
831536	Provide and Install 4" Galvanized Steel Conduit (Open Cut)	LF	1,500
831537	Provide and Install 1" Galvanized Steel Conduit (On Structure)	LF	300
831538	Provide and Install 2" Galvanized Steel Conduit (On Structure)	LF	400
831539	Provide and Install 2-1/2" Galvanized Steel Conduit (On Structure)	LF	450

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ITEM	DESCRIPTION	UOM	QTY
831540	Provide and Install 3" Galvanized Steel Conduit (On Structure)	LF	1,000
831541	Provide and Install 4" Galvanized Steel Conduit (On Structure)	LF	1,200
831542	Provide and Install 2" HDPE SDR-13.5 Conduit (Bore)	LF	1,000
831543	Provide and Install 2-1/2" HDPE SDR-13.5 Conduit (Bore)	LF	500
831544	Provide and Install 3" HDPE SDR-13.5 Conduit (Bore)	LF	1,500
831545	Provide and Install 4" HDPE SDR-13.5 Conduit (Bore)	LF	3,000
831560	Provide and Install 1-1/2" Schedule 80 PVC Conduit (Open Cut)	LF	200
831561	Provide and Install 1-1/2" Schedule 80 PVC Conduit (Trench)	LF	300
831562	Provide and Install 1-1/2" Schedule 80 PVC Conduit (On Structure)	LF	350
831563	Provide and Install 1-1/2" Galvanized Steel Conduit (Open Cut)	LF	200
831564	Provide and Install 1-1/2" Galvanized Steel Conduit (Trench)	LF	300
831565	Provide and Install 1-1/2" Galvanized Steel Conduit (Bore)	LF	200
831566	Provide and Install 1-1/2" Galvanized Steel Conduit (On Structure)	LF	300
831569	Provide & Install Second and Subsequent Additional 1" PVC Conduits in Trench or Open Cut	LF	100
831570	Provide & Install Second and Subsequent Additional 1-1/2" PVC Conduits in Trench or Open Cut	LF	150
831571	Provide & Install Second and Subsequent Additional 2" PVC Conduits in Trench or Open Cut	LF	200
831572	Provide & Install Second and Subsequent Additional 2-1/2" PVC Conduits in Trench or Open Cut	LF	300
831573	Provide & Install Second and Subsequent Additional 3" PVC Conduits in Trench or Open Cut	LF	500
831574	Provide & Install Second and Subsequent Additional 4" PVC Conduits in Trench or Open Cut	LF	1,000
831575	Provide & Install Second and Subsequent Additional 2" HDPE 13.5 SDR Conduit Conduits in Trench or Directional Bore	LF	500
831576	Provide & Install Second and Subsequent Additional 2-1/2" HDPE 13.5 SDR Conduit Conduits in Trench or Directional Bore	LF	500
831577	Provide & Install Second and Subsequent Additional 3" HDPE 13.5 SDR Conduit Conduits in Directional Bore	LF	500
831578	Provide & Install Second and Subsequent Additional 4" HDPE 13.5 SDR Conduit Conduits in Directional Bore	LF	1,000
831579	Provide & Install Second and Subsequent Additional 1" Galvanized Steel Conduit in Trench or Open Cut	LF	100
831580	Provide & Install Second and Subsequent Additional 1-1/2" Galvanized Steel Conduit in Trench or Open Cut	LF	100
831581	Provide & Install Second and Subsequent Additional 2" Galvanized Steel Conduit in Trench or Open Cut	LF	200
831582	Provide & Install Second and Subsequent Additional 2-1/2" Galvanized Steel Conduit in Trench or Open Cut	LF	300

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ITEM	DESCRIPTION	UOM	QTY
831583	Provide & Install Second and Subsequent Additional 3" Galvanized Steel Conduit in Trench or Open Cut	LF	500
831584	Provide & Install Second and Subsequent Additional 4" Galvanized Steel Conduit in Trench or Open Cut	LF	1,000
831585	Provide & Install Second and Subsequent Additional 1" Galvanized Steel Conduit in Directional Bore	LF	100
831586	Provide & Install Second and Subsequent Additional 1-1/2" Galvanized Steel Conduit in Directional Bore	LF	200
831587	Provide & Install Second and Subsequent Additional 2" Galvanized Steel Conduit in Directional Bore	LF	250
831588	Provide & Install Second and Subsequent Additional 2-1/2" Galvanized Steel Conduit in Directional Bore	LF	300
831589	Provide & Install Second and Subsequent Additional 3" Galvanized Steel Conduit in Directional Bore	LF	500
831590	Provide & Install Second and Subsequent Additional 4" Galvanized Steel Conduit in Directional Bore	LF	750
	ELECTRIC SERVICE		
835500	Provide & Install Additional Disconnect Switch	EA	10
842005	Removal of Electrical Service on Wood or Metal Pole	EA	10
842501	Provide & Install Electrical Utility Service Equipment 120/240 (100 AMP)	EA	100
842502	Provide & Install Electrical Utility Service Equipment 120/240 (200 AMP)	EA	100
	JUNCTION WELLS		
830001	Conduit Junction Well, Type 1, Precast Concrete	EA	250
830002	Conduit Junction Well, Type 4, Precast Concrete	EA	50
830003	Conduit Junction Well, Type 5, Precast Concrete	EA	14
830004	Conduit Junction Well, Type 7, Precast Polymer Concrete	EA	10
830008	Adjust or Repair Existing Conduit Junction Well	EA	40
830009	Relocation of Existing Conduit Junction Well	EA	20
830011	Provide & Install Frame and Lid, for Junction Well, Type 1	EA	7
830012	Provide & Install Frame and Lid, for Junction Well, Type 4	EA	4
830013	Provide & Install Frame and Lid, for Junction Well, Type 5	EA	2
830015	Provide & Install Precast Polymer Cover for Junction Well, Type 7	EA	4
833001	Bonding & Grounding Existing Junction Well	EA	100

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ITEM	DESCRIPTION	UOM	QTY
	MISCELLANEOUS		
763655	Performance & Payment Bond, Open End Signal Contract	LS	1
	MAINTENANCE OF TRAFFIC		
802003	Arrow Panels, Type C	EA-DY	200
803001	Provide & Maintain Portable Changeable Message Board	EA-DY	280
804001	Provide & Maintain Portable Light Assembly (Flood Lights)	EA-DY	100
805001	Plastic Drums	EA-DY	6,000
806001	Traffic Officers	HR	800
808002	Provide & Maintain Truck Mounted Attenuator, Type II	EA-DY	200
808501	Provide and Maintain Straight Boom Lift, Up to 80', 4WD (Daily)	EA-DY	110
810001	Temporary Warning Signs and Plaques	EA-DY	1,600
811001	Flagger, New Castle County, State	HR	500
811002	Flagger, Kent County, State	HR	170
811003	Flagger, Sussex County, State	HR	340
811013	Flagger, New Castle County, State, Overtime	HR	50
811014	Flagger, Kent County, State, Overtime	HR	17
811015	Flagger, Sussex County, State, Overtime	HR	35
813001	Temporary Barricades, Type III	LF-DY	2,400
813500	Pedestrian Channelizing Barricade System	LF/DY	700
813501	Temporary Sidewalk – Type 2	LF	250
813502	Relocate Temporary Sidewalk – Type 2	LF	500
813503	Temporary Pedestrian Pathway	SY	200
	POLES, MAST ARMS, POLE BASES		
833002	Provide & Install Ground Rod	EA	150
834001	Pole Base Type 3	EA	50
834002	Pole Base Type 3A	EA	50
834003	Pole Base Type 3B	EA	50
834004	Pole Base Type 3C	EA	50
834005	Pole Base Type 4A	EA	50
834006	Pole Base Type 6	EA	50
834007	Pole Base Extension	CF	25
834008	Sheeting for Pole Base	EA	25
834511	Pole Base Type 4B	EA	50
834512	Pole Base Type 1	EA	4
834513	Pole Base Type 2	EA	6
834514	Pole Base Type 2A	EA	6

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ITEM	DESCRIPTION	UOM	QTY
834515	Pole Base Type 2B	EA	6
836001	Installation of Steel Pole (Less than 40')	EA	250
836002	Installation of Steel Pole (Equal to or Greater than 40')	EA	50
836500	Installation of Steel Mast Arm Pole with Single Mast Arm Greater than 70'	EA	10
836502	Provide and Install Pedestal Pole	EA	250
836504	Installation of Steel Mast Arm Pole with Single or Twin Mast arms up to 60'	EA	250
836505	Provide 10' Pedestal Pole	EA	4
836506	Provide 14' Pedestal Pole	EA	6
836507	Provide Pedestal Pole Transformer Base	EA	8
839002	Cutting of Wood Pole	EA	200
839500	Provide and Install Wood Pole, Class II (Heavy) – 30'	EA	100
839501	Provide and Install Wood Pole, Class II (Heavy) – 40'	EA	100
839502	Provide and Install Wood Pole, Class II (Heavy) – 50'	EA	10
839503	Provide and Install Wood Pole, Class III – 30'	EA	4
839504	Provide and Install Wood Pole, Class III – 40'	EA	6
839505	Provide and Install Wood Pole, Class III – 50'	EA	8
841001	Provide and Install Weatherhead, up to 3", on Steel Pole	EA	12
	SIGNAL HEADS, PEDESTRIAN BUTTONS, EMERGENCY PREEMPTION		
834519	Installation of Solar Panel	EA	50
834520	Installation of Rectangular Rapid Flashing Beacon (Single)	EA	20
834521	Installation of Rectangular Rapid Flashing Beacon (Double)	EA	20
837001	Provide & Install 8" LED Signal Head Section, Rigid Mount	EA	7
837002	Provide & Install 12" LED Signal Head Section, Rigid Mount	EA	500
837003	Provide & Install 8" LED Signal Head Section, Span Mount	EA	10
837004	Provide & Install 12" LED Signal Head Section, Span Mount	EA	500
837005	Provide & Install 8" LED Traffic Signal Head Indication Module	EA	4
837006	Provide & Install 12" LED Traffic Signal Head Indication Module	EA	100
837007	Provide & Install Signal Head Backplate	EA	100
837008	Provide & Install 16" LED Countdown Pedestrian Signal	EA	500
837009	Provide & Install 16" LED Pedestrian Signal Head Indication Module	EA	20
837010	Provide & Install Pedestrian Pushbutton with Sign	EA	500
837011	Realign or Slide Existing Signal Head or Opticom Detector	EA	500
837501	Installation & Removal of Traffic Signal Head Indication/LED Module	EA	100
837502	Installation & Removal of Pedestrian Signal Head Indication/LED Module	EA	100

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ITEM	DESCRIPTION	UOM	QTY
837503	Provide 8" LED Signal Head Section	EA	15
837504	Provide 12" LED Signal Head Section	EA	90
837505	Provide 8" LED Traffic Signal Head Indication Module	EA	45
837506	Provide 12" LED Traffic Signal Head Indication Module	EA	120
837507	Provide 16" LED Countdown Pedestrian Signal Head	EA	120
837508	Provide 16" LED Countdown Pedestrian Signal Head Indication Module	EA	120
844001	Provide & Install Opticom Emergency Preemption Detector	EA	250
	SIGNS		
819016	Installation of 4" diameter hole, less than or equal to 6"	EA	100
819017	Installation of 4" diameter hole, greater than 6"	EA	100
822500	Install Overhead Sign	SF	100
823001	Installation of Sign on Span Wire or Mast Arm	SF	50
823003	Removal of Sign on Span Wire or Mast Arm	EA	50
837509	Provide Pedestrian Pushbutton with Sign	EA	60
837510	Provide Signal Head Backplate	EA	80
	SOIL		
908001	Topsoil	TON	300
908020	Erosion Control Blanket Mulch	SY	3,000
908021	Turf Reinforcement Matting, Type 1	SY	800
908514	Providing Sod	SY	300
	SPAN, MESSENGER, AND GUY WIRE		
838001	Provide & Install Span Wires, 7/16"	LF	4,000
838002	Provide & Install Span Wires, 1/4"	LF	1,000
838003	Provide & Install Dead End Messenger Wire Attachment	EA	20
838006	Adjustment of Span or Messenger Wire	EA	10
838008	Transfer of Existing Span or Messenger Attachment	EA	50
838009	Removal of Messenger Wire, Cable & Hardware	LF	1,000
838500	Removal of Span Wire Attachment	EA	10
840001	Provide & Install Down Guy & Anchor	EA	50
	REMOVAL		
830010	Removal of Existing Junction Well	EA	20
831011	Removal of Conduit from Wood Pole	LF	200
832035	Removal of Cable from Conduit or Traffic/Lighting Pole	LF	5,000
834501	Removal of Concrete Pole Bases and Cabinet Foundations	CY	100

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ITEM	DESCRIPTION	UOM	QTY
836005	Remove Steel Pole (Equal to or Greater than 40')	EA	10
836006	Remove Pedestal Pole	EA	200
836503	Remove Steel Pole (Equal to or Greater than 15' and less than 40')	EA	250
837500	Removal of Signal or Pedestrian Head from Pole or Pedestal	EA	50
838503	Removal of Cable from Messenger Wire	LF	120
838504	Removal of Signal Head or Opticom Detector from Span Wire or Mast Arm	EA	50
839003	Removal of Wood Pole	EA	10
840005	Removal of Down Guy and Anchor	EA	50
840006	Removal of Overhead Guy	EA	2
842500	Removal of Pedestrian Pushbutton on Wood or Metal Pole	EA	100
847001	Installation or Removal of Pole or Post Mounted Cabinet	EA	40
847002	Installation or Removal of Base or Pad Mounted Cabinet	EA	40
850011	Removal of Luminaire	EA	1,000
	LIGHTING		
834504	Light Standard Attachments	EA	100
834506	Removal of Street Lighting System	EA	100
850011	Removal of Luminaire	EA	50
850517	Installation of Luminaire	EA	100
850520	Luminaire (LED), 150 Watts HPS Equivalent	EA	150
850521	Luminaire (LED), 250 Watts HPS Equivalent	EA	150
850522	Luminaire (LED), 400 Watts HPS Equivalent	EA	50
850523	Luminaire (LED), 640 Watts HPS Equivalent	EA	50
850524	LED Wall Pack, 250 Watts HPS Equivalent	EA	5
850525	LED Wall Pack, 400 Watts HPS Equivalent	EA	5
850526	LED Wall Pack, 75 Watts HPS Equivalent	EA	10
850527	LED Wall Pack, 150 Watts HPS Equivalent	EA	5
851001	Aluminum Lighting Standard with Single Davit Arm, 30' Pole	EA	50
851003	Aluminum Lighting Standard with Single Davit Arm, 40' Pole	EA	50
851502	Aluminum Lighting Single Davit Arm, 8' Arm Spread	EA	50
851503	Aluminum Lighting Single Davit Arm, 12' Arm Spread	EA	50
851504	Aluminum Lighting Single Davit Arm, 15' Arm Spread	EA	50
851506	Aluminum Lighting Standard, 30' Pole	EA	100
851507	Aluminum Lighting Standard, 40' Pole	EA	100
851509	Aluminum Lighting Standard with Single Davit Arm, 30' Pole	EA	100
851520	Aluminum Lighting Single Davit Arm, 10' Arm Spread	EA	100
851522	Aluminum Lighting Single Davit Arm, 20' Arm Spread	EA	100