



STATE OF DELAWARE  
**DEPARTMENT OF TRANSPORTATION**  
800 BAY ROAD  
P.O. BOX 778  
DOVER, DELAWARE 19903

JENNIFER COHAN  
SECRETARY

**VIA OVERNIGHT DELIVERY**

August 10, 2018

Contract No. DOT1802.01  
Emergency Highway ITS and Traffic Maintenance  
Statewide

Ladies and Gentlemen:

Enclosed is Addendum No. 4 for the referenced contract consisting of the following:

1. The Bid Proposal Cover, revised, to be substituted for the same page in the Proposal.
2. Three (3) pages, Table of Contents, pages iv, vii and viii, revised, to be substituted for the same pages in the Proposal.
3. Two (2) pages, Special Provisions 808500, 844504, 844505, 844506, 844507, 844508 and 844509, page 46 has been revised and page 93, has been deleted from the Proposal.
4. Two (2) pages, Special Provisions 844520, 844521, 844522, 844523, 844524, 844525, 844526, 844527, 844528 and 844529, page 92A and 92B, have been added to the Proposal.
5. The following Bid Pages have been revised, 1-9 and 25-28. Bid Page 29 has been added.
6. The following Plan Sheets have been added: 837.001-01, 837.001-02, 837.002-01, 837.003-01 and 837.003-02.
7. Expedite File Disc, Amendments No. 1.

Please note the revisions listed above and submit your bid based upon this information.

Sincerely,

*~signature on file~*

Robert A. Kovacs  
Competitively Bid Contracts Coordinator  
Delaware Department of Transportation

STATE OF DELAWARE



DEPARTMENT OF TRANSPORTATION

BID PROPOSAL

for

CONTRACT DOT1802.01

FEDERAL AID PROJECT NO. Various

Emergency Highway ITS and Traffic Maintenance

STATEWIDE

ADVERTISEMENT DATE: June 25, 2018

COMPLETION TIME: 1,095 Calendar Days

SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION  
DELAWARE DEPARTMENT OF TRANSPORTATION  
AUGUST 2016

Bids will be received in the Bidder's Room at the Delaware Department of Transportation's Administration Building, 800 Bay Road, Dover, Delaware prior to 2:00 P.M. local time ~~July 24 31~~, **August 7 21, 2018**

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~~808500 - FURNISH AND INSTALL STRAIGHT BOOM LIFT, UP TO 80', 4WD (HOURLY)~~  
**808501 - FURNISH AND INSTALL STRAIGHT BOOM LIFT, UP TO 80', 4WD (DAILY)**

**Description:**

The contractor shall supply a straight boom lift, up to 80', with 360° platform rotation for easy boom positioning and self-leveling platform. Booms can be raised, lowered, and extended horizontally while the work platform remains stable and straight. The lift shall maneuver and steer in any direction, even while the platform is extended. A 4WD model is required for all Department tasks and site conditions. Hydrostatic drive, positive traction, oscillation axles and proportional controls shall be provided. The contractor may use lifts equipped with 6' articulating jib extensions or rotating jib models.

Other requirements are as follows:

- Axle-based 4WD for terrain mobility
- Analog-based control system
- Directional-sensing drive-and-steer
- All operators shall be CDL Approved

**Method of Measurement:**

Straight boom lifts will be measured as the actual number of lifts units used per hour or per day. An hourly rate consists of a usage of time (mobilized on site and operational) within 1 hour to 6 hours. A day consists of any approved usage within 6 to 24 hours of time (mobilized on site and operational). Each lift will be measured only once per task (hourly or daily), regardless of how many times it is relocated to complete a task.

The plastic drums required for this item will be measured as the actual number of plastic drums acceptably furnished, installed and maintained each day under the appropriate contract item.

The Department shall not compensate contractor for down-time due to mechanical failure or replacement of lift to complete task.

**Basis of Payment:**

Price and payment constitutes full compensation for mobilization, completing task, maintaining in a safe manner, and demobilization at the contract unit price each hour or each day and for all labor, tools, equipment and necessary incidentals to complete the work.

3/09/2018

- 844504 - FURNISH AND INSTALL MICROWAVE DETECTION DEVICE**
- 844505 - FURNISH AND INSTALL VIDEO DETECTION DEVICE**
- 844506 - FURNISH AND INSTALL THERMAL DETECTION DEVICE**
- 844507 - FURNISH VIDEO DETECTION DEVICE**
- 844508 - FURNISH THERMAL DETECTION DEVICE**
- 844509 - FURNISH MICROWAVE DETECTION DEVICE**

**Description:**

This work consists of furnishing and installing the specified microwave, thermal or video detection device on an existing pole mast arm or other rigid support in accordance with the locations, notes, and details on the Plans and as directed by the Engineer. This work consists of furnishing the specified microwave, thermal or video detection device to the Departments Traffic Section.

**Materials:**

Unless specified otherwise, the microwave, thermal or video detection device, and all necessary hardware shall be furnished by the Department. These materials can be obtained from the Department's Dover Sign Shop. The Contractor shall inform the Department two working days prior to picking up the microwave or video detection device, and other related hardware. Where the detection device installation is part of the work of relocating an existing microwave, thermal or video detection device on a project, the detection device and related hardware shall be that which is removed from the existing rigid support.

**Construction Methods:**

The microwave or video detection device shall be installed in accordance with manufacturer's specifications or as directed by the engineer.

**Method of Measurement:**

The quantity of microwave or video detection devices will be measured as the number of microwave, thermal or video detection devices furnished and/or installed in accordance with the specifications, complete, in place, tested, and accepted.

**Basis of Payment:**

The quantity of microwave, thermal or video detection devices will be paid for at the Contract unit price per each microwave, thermal or video detection device. Price and payment shall constitute full compensation for furnishing or furnishing and installing the detection device, including hardware, labor, tools, equipment, and all other incidentals necessary to complete the item.

4/24/2018

- 844520 - INSTALL MICROWAVE DETECTION DEVICE
- 844521 - INSTALL VIDEO DETECTION DEVICE
- 844522 - INSTALL THERMAL DETECTION DEVICE
- 844523 - INSTALL ROADWAY WEATHER INFORMATION SYSTEM (RWIS)
- 844524 - INSTALL WEIGH-IN-MOTION SYSTEM (WIMS)
- 844525 - RELOCATE MICROWAVE DETECTION DEVICE
- 844526 - RELOCATE VIDEO DETECTION DEVICE
- 844527 - RELOCATE THERMAL DETECTION DEVICE
- 844528 - RELOCATE ROADWAY WEATHER INFORMATION SYSTEM (RWIS)
- 844529 - RELOCATE WEIGH-IN-MOTION SYSTEM (WIMS)

Description:

844520, 844521, 844522, 844523 and 844524 - This work consists of installing the specified microwave detection device, video detection device, thermal detection device, RWIS or WIMS on an existing pole mast arm or other rigid support as applicable, including on average, 500 feet of homerun cable from the device to the traffic signal cabinet in accordance with the locations, notes, and details on the Plans and/or as directed by the Engineer. All connections to equipment within the signal cabinet will be undertaken by DelDOT forces.

844525, 844526, 844527, 844528 and 844529 - This work consists of carefully removing to avoid any damage, the specified existing microwave detection device, video detection device, thermal detection device, RWIS or WIMS from its current location on a project, and installing the removed microwave detection device, video detection device, thermal detection device, RWIS or WIMS on an existing pole mast arm or other rigid support as applicable, including on average 500 feet of homerun cable from the device to the traffic signal cabinet at another location on the same project in accordance with the locations, notes, and details on the Plans and/or as directed by the Engineer. All connections to equipment within the signal cabinet will be undertaken by DelDOT forces. At the direction of the DelDOT Inspector or Engineer, these items may also include the complete removal without damage to the devices and delivery to the DelDOT Sign Shop in Dover, Delaware.

Materials:

Unless specified otherwise, the microwave, thermal or video detection devices, the RWIS and WIMS components with their applicable cables, all necessary hardware, including mounting hardware where applicable, shall be furnished by the Department. These materials can be obtained from the Department's Sign Shop in Dover. The Contractor shall inform the Department two working days prior to picking up the microwave detection device, video detection device, thermal detection device, RWIS and WIMS components and all related hardware.

Unless specified otherwise, where the detection device, RWIS or WIMS installation is part of the work of relocating an existing microwave detection device, video detection device, thermal detection device, RWIS or WIMS on a project, the detection device, RWIS components, WIMS components, and related hardware shall be those which are removed from the existing location.

Construction Methods:

The microwave detection device, video detection device, thermal detection device, RWIS and WIMS shall be installed in accordance with manufacturer's specifications and/or as directed by the engineer.

Method of Measurement:

844520, 844521, 844522, 844523 and 844524 - The quantity of microwave detection devices, video detection devices, thermal detection devices, RWIS or WIMS will be measured as the number of video detection devices, thermal detection devices, RWIS or WIMS installed at specified locations in accordance with the specifications and/or as directed by the engineer, complete, in place, tested, and accepted.



844525, 844526, 844527, 844528 and 844529 - The quantity of microwave detection devices, video detection devices, thermal detection devices, RWIS or WIMS will be measured as the number of video detection devices, thermal detection devices, RWIS or WIMS removed without damage and installed at specified locations (or returned to the DelDOT Sign Shop) in accordance with the specifications and/or as directed by the engineer, complete, in place, tested, and accepted.

Basis of Payment:

844520, 844521, 844522, 844523 and 844524 - The quantity of microwave detection devices, video detection devices, thermal detection devices, RWIS or WIMS will be paid for at the Contract unit price per each microwave detection device, video detection device, thermal detection device, RWIS or WIMS. Price and payment shall constitute full compensation for picking up all devices and components from the Department's Dover Sign Shop, installing the detection device/system, including hardware, labor, tools, equipment, and all other incidentals necessary to complete the item.

Unless specified otherwise, any miscellaneous electrical cables, junction wells, conduits and like materials not included with the materials and components furnished by the Department, but which become necessary to complete the item will be paid for under separate items under this contract.

844525, 844526, 844527, 844528 and 844529 - The quantity of microwave detection devices, video detection devices, thermal detection devices, RWIS or WIMS will be paid for at the Contract unit price per each microwave detection device, video detection device, thermal detection device, RWIS or WIMS. Price and payment shall constitute full compensation for removal without damage to microwave detection device, video detection device, thermal detection device, RWIS or WIMS and installing the detection device/system, including hardware, labor, tools, equipment, and all other incidentals necessary to complete the item, or returning the item to the DelDOT Sign Shop. Moving the removed devices/components to the new location on the same project, and if required, storing the removed devices/components if necessary, for future installation on the same project shall be incidental to the price of the item.

Unless specified otherwise, the contractor shall supply and install new electrical cables to replace any cables deemed unsalvageable by the inspector or his/her representative from the existing devices/systems. Any such replacement will be paid for under separate items under this contract.

8/1/2018

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE: 1  
DATE:

CONTRACT ID: DOT1802.01 PROJECT(S): DOT1802

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS CTS	BID AMOUNT DOLLARS CTS
SECTION 0001 TRAFFIC MAINTENANCE				
0010	763503 TRAINEE	1080.000 HOUR	0.80000	864.00
0020	763655 PERFORMANCE AND PAYMENT BOND, OPEN-END SIGNAL CONTRACT	LUMP	LUMP	10000.00
0030	802003 ARROW PANELS TYPE C	50.000 EADY		
0040	803001 FURNISH AND MAINTAIN PORTABLE CHANGEABLE MESSAGE SIGN	70.000 EADY		
0050	804001 FURNISH AND MAINTAIN PORTABLE LIGHT ASSEMBLY (FLOOD LIGHTS)	25.000 EADY		
0060	805001 PLASTIC DRUMS	1500.000 EADY		
0070	806001 TRAFFIC OFFICERS	200.000 HOUR	75.00000	15000.00
0080	808002 FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	50.000 EADY		
0090	808501 FURNISH AND MAINTAIN STRAIGHT BOOM LIFT, UP TO 80', 4WD (DAILY)	100.000 EADY		

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE: 2  
DATE:

CONTRACT ID: DOT1802.01

PROJECT(S): DOT1802

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CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0100	810001 TEMPORARY WARNING SIGNS AND PLAQUES	 400.000   EADY				
0110	811001 FLAGGER, NEW CASTLE COUNTY STATE	 125.000   HOUR				
0120	811002 FLAGGER, KENT COUNTY, STATE	 50.000   HOUR				
0130	811003 FLAGGER, SUSSEX COUNTY, STATE	 85.000   HOUR				
0140	811013 FLAGGER, NEW CASTLE COUNTY, STATE, OVERTIME	 50.000   HOUR				
0150	811014 FLAGGER, KENT COUNTY, STATE, OVERTIME	 17.000   HOUR				
0160	811015 FLAGGER, SUSSEX COUNTY, STATE, OVERTIME	 35.000   HOUR				
0170	813001 TEMPORARY BARRICADES, TYPE III	 2400.000   LFDY				
0180	813501 TEMPORARY SIDEWALK, TYPE 2 (BOARDWALK)	 250.000   LF				
0190	813502 RELOCATE TEMPORARY SIDEWALK - TYPE 2	 500.000   LF				

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE: 3  
DATE:

CONTRACT ID: DOT1802.01

PROJECT(S): DOT1802

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CONTRACTOR : \_\_\_\_\_

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0200	813503 TEMPORARY PEDESTRIAN PATHWAY	200.000 SY				
0210	822500 INSTALL OVERHEAD SIGN	50.000 SF				
0220	823001 INSTALLATION OF SIGN ON SPAN WIRE OR MAST ARM	40.000 SF				
0230	823003 REMOVAL OF SIGN ON SPAN WIRE OR MAST ARM	30.000 EACH				
0240	830001 CONDUIT JUNCTION WELL, TYPE 1, 20" X 20" PRECAST CONCRETE	250.000 EACH				
0250	830002 CONDUIT JUNCTION WELL, TYPE 4, 20" X 42-1/2" PRECAST CONCRETE	50.000 EACH				
0260	830003 CONDUIT JUNCTION WELL, TYPE 5, 24" X 16" PRECAST CONCRETE	14.000 EACH				
0270	830004 CONDUIT JUNCTION WELL, TYPE 7, 36" X 60" PRECAST POLYMER CONCRETE	10.000 EACH				
0280	830008 ADJUST OR REPAIR EXISTING CONDUIT JUNCTION WELL	40.000 EACH				
0290	830009 RELOCATION OF EXISTING JUNCTION WELL	20.000 EACH				

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE: 4  
DATE:

CONTRACT ID: DOT1802.01 PROJECT(S): DOT1802

All figures must be typewritten.

CONTRACTOR : \_\_\_\_\_

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0300	830010 REMOVAL OF EXISTING JUNCTION WELL	20.000 EACH				
0310	830011 FURNISH AND INSTALL FRAME AND LID FOR JUNCTION WELL, TYPE 1	7.000 EACH				
0320	830012 FURNISH AND INSTALL FRAME AND LID FOR JUNCTION WELL, TYPE 4	4.000 EACH				
0330	830013 FURNISH AND INSTALL FRAME AND LID FOR JUNCTION WELL, TYPE 5	2.000 EACH				
0340	830015 FURNISH AND INSTALL PRECAST POLYMER COVER FOR JUNCTION WELL, TYPE 7	4.000 EACH				
0350	831011 REMOVAL OF CONDUIT FROM WOOD POLE	200.000 LF				
0360	831501 FURNISH AND INSTALL 4" SCHEDULE 80 PVC CONDUIT (OPEN CUT)	375.000 LF				
0370	831502 FURNISH AND INSTALL 3" SCHEDULE 80 PVC CONDUIT (OPEN CUT)	250.000 LF				
0380	831503 FURNISH AND INSTALL 2-1/2" SCHEDULE 80 PVC CONDUIT (OPEN CUT)	100.000 LF				

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE: 5  
DATE:

CONTRACT ID: DOT1802.01

PROJECT(S): DOT1802

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0390	831504 FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT (OPEN CUT)	 75.000  LF				
0400	831505 FURNISH AND INSTALL 1" SCHEDULE 80 PVC CONDUIT (OPEN CUT)	 50.000  LF				
0410	831512 FURNISH AND INSTALL 1" SCHEDULE 80 PVC CONDUIT (TRENCH)	 50.000  LF				
0420	831513 FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT (TRENCH)	 125.000  LF				
0430	831514 FURNISH AND INSTALL 2-1/2" SCHEDULE 80 PVC CONDUIT (TRENCH)	 750.000  LF				
0440	831515 FURNISH AND INSTALL 3" SCHEDULE 80 PVC CONDUIT (TRENCH)	 450.000  LF				
0450	831516 FURNISH AND INSTALL 4" SCHEDULE 80 PVC CONDUIT (TRENCH)	 375.000  LF				
0460	831517 FURNISH AND INSTALL 1" SCHEDULE 80 PVC CONDUIT (ON STRUCTURE )	 75.000  LF				
0470	831518 FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT (ON STRUCTURE )	 100.000  LF				

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

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CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0480	831519 FURNISH AND INSTALL 2-1/2" SCHEDULE 80 PVC CONDUIT (ON STRUCTURE)	120.000 LF				
0490	831520 FURNISH AND INSTALL 3" SCHEDULE 80 PVC CONDUIT (ON STRUCTURE )	250.000 LF				
0500	831521 FURNISH AND INSTALL 4" SCHEDULE 80 PVC CONDUIT (ON STRUCTURE )	300.000 LF				
0510	831522 FURNISH AND INSTALL 1" GALVANIZED STEEL CONDUIT (TRENCH)	50.000 LF				
0520	831523 FURNISH AND INSTALL 2" GALVANIZED CONDUIT (TRENCH)	125.000 LF				
0530	831524 FURNISH AND INSTALL 2-1/2" GALVANIZED STEEL CONDUIT (TRENCH)	750.000 LF				
0540	831525 FURNISH AND INSTALL 3" GALVANIZED STEEL CONDUIT (TRENCH)	450.000 LF				
0550	831526 FURNISH AND INSTALL 4" GALVANIZED STEEL CONDUIT (TRENCH)	375.000 LF				

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CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0560	831527 FURNISH AND INSTALL 1" GALVANIZED STEEL CONDUIT (BORE)	25.000 LF				
0570	831528 FURNISH AND INSTALL 2" GALVANIZED STEEL CONDUIT (BORE)	65.000 LF				
0580	831529 FURNISH AND INSTALL 2-1/2" GALVANIZED STEEL CONDUIT (BORE)	90.000 LF				
0590	831530 FURNISH AND INSTALL 3" GALVANIZED STEEL CONDUIT (BORE)	125.000 LF				
0600	831531 FURNISH AND INSTALL 4" GALVANIZED STEEL CONDUIT (BORE)	190.000 LF				
0610	831532 FURNISH AND INSTALL 1" GALVANIZED STEEL CONDUIT (OPEN CUT)	50.000 LF				
0620	831533 FURNISH AND INSTALL 2" GALVANIZED STEEL CONDUIT (OPEN CUT)	75.000 LF				
0630	831534 FURNISH AND INSTALL 2-1/2" GALVANIZED STEEL CONDUIT (OPEN CUT)	100.000 LF				
0640	831535 FURNISH AND INSTALL 3" GALVANIZED STEEL CONDUIT (OPEN CUT)	250.000 LF				



DELAWARE DEPARTMENT OF TRANSPORTATION  
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CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0650	831536 FURNISH AND INSTALL 4" GALVANIZED STEEL CONDUIT (OPEN CUT)	LF 375.000				
0660	831537 FURNISH AND INSTALL 1" GALVANIZED STEEL CONDUIT (ON STRUCTURE)	LF 75.000				
0670	831538 FURNISH AND INSTALL 2" GALVANIZED STEEL CONDUIT (ON STRUCTURE)	LF 100.000				
0680	831539 FURNISH AND INSTALL 2-1/2" GALVANIZED STEEL CONDUIT (ON STRUCTURE)	LF 125.000				
0690	831540 FURNISH AND INSTALL 3" GALVANIZED STEEL CONDUIT (ON STRUCTURE)	LF 250.000				
0700	831541 FURNISH AND INSTALL 4" GALVANIZED STEEL CONDUIT (ON STRUCTURE)	LF 300.000				
0710	831542 FURNISH AND INSTALL 2" HDPE SDR-13.5 CONDUIT (BORE)	LF 250.000				
0720	831543 FURNISH AND INSTALL 2-1/2" HDPE SDR-13.5 CONDUIT (BORE)	LF 125.000				

DELAWARE DEPARTMENT OF TRANSPORTATION  
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CONTRACTOR : \_\_\_\_\_

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0730	831544 FURNISH AND IN STALL 3" HDPE SDR-13.5 CONDUIT (BORE)	 375.000  LF				
0740	831545 FURNISH AND INSTALL 4" HDPE SDR-13.5 CONDUIT (BORE)	 750.000  LF				
0750	831560 FURNISH AND INSTALL 1-1/2" SCHEDULE 80 PVC CONDUIT (OPEN CUT)	 50.000  LF				
0760	831561 FURNISH AND INSTALL 1-1/2" SCHEDULE 80 PVC CONDUIT (TRENCH)	 75.000  LF				
0770	831562 FURNISH AND INSTALL 1-1/2" SCHEDULE 80 PVC CONDUIT (ON STRUCTURE)	 90.000  LF				
0780	831563 FURNISH AND INSTALL 1-1/2" GALVANIZED STEEL CONDUIT (OPEN CUT)	 50.000  LF				
0790	831564 FURNISH AND INSTALL 1-1/2" GALVANIZED STEEL CONDUIT (TRENCH)	 75.000  LF				
0800	831565 FURNISH AND INSTALL 1-1/2" GALVANIZED STEEL CONDUIT (BORE)	 50.000  LF				

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

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CONTRACTOR : \_\_\_\_\_

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2090	842502 FURNISH AND INSTALL ELECTRIC UTILITY SERVICE EQUIPMENT 120/240 (200 AMP)	 100.000 EACH				
2100	844001 FURNISH AND INSTALL OPTICOM EMERGENCY PREEMPTION DETECTOR	 40.000 EACH				
2110	844520 INSTALL MICROWAVE DETECTION DEVICE	 20.000 EACH				
2120	844521 INSTALL VIDEO DETECTION DEVICE	 20.000 EACH				
2130	844522 INSTALL THERMAL DETECTION DEVICE	 5.000 EACH				
2140	844523 INSTALL ROADWAY WEATHER INFORMATION SYSTEM (RWIS)	 5.000 EACH				
2150	844524 INSTALL WEIGH-IN-MOTION SYSTEM (WIMS)	 5.000 EACH				
2160	844525 RELOCATE MICROWAVE DETECTION DEVICE	 20.000 EACH				
2170	844526 RELOCATE VIDEO DETECTION DEVICE	 20.000 EACH				
2180	844527 RELOCATE THERMAL DETECTION DEVICE	 5.000 EACH				

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

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CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2190	844528 RELOCATE ROADWAY WEATHER INFORMATION SYSTEM (RWIS)	 5.000 EACH				
2200	844529 RELOCATE WEIGH-IN-MOTION SYSTEM (WIMS)	 5.000 EACH				
2210	846001 FURNISH AND INSTALL LOOP WIRE 1-CONDUCTOR #14 AWG ENCASED IN 1/4" FLEXIBLE TUBING IN A LOOP SAWCUT	 2250.000 LF				
2220	846002 FURNISH AND INSTALL A 1-1/2 INCH GALVANIZED RIGID METAL CONDUIT DETECTOR SLEEVE WITH LOOP WIRE	 250.000 LF				
2230	847001 INSTALL OR REMOVAL OF POLE OR POST MOUNTED CABINET	 4.000 EACH				
2240	847002 INSTALL OR REMOVAL OF BASE OR PAD MOUNTED CABINET	 4.000 EACH				
2250	847004 LIGHTING CONTROL AND DISTRIBUTION ENCLOSURE (120/240;100 AMP)	 20.000 EACH				
2260	850011 REMOVAL OF LUMINAIRE	 50.000 EACH				
2270	850517 INSTALLATION OF LUMINAIRE	 40.000 EACH				

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

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CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2280	850520 LUMINAIRE (LED), 150 WATTS, HPS EQUIVALENT	 10.000 EACH				
2290	850521 LUMINAIRE (LED), 250 WATTS, HPS EQUIVALENT	 100.000 EACH				
2300	850522 LUMINAIRE (LED), 400 WATTS, HPS EQUIVALENT	 10.000 EACH				
2310	850523 LUMINAIRE (LED), 640 WATTS, HPS EQUIVALENT	 50.000 EACH				
2320	850524 LED WALL PACK, 250 WATTS HPS EQUIVALENT	 5.000 EACH				
2330	850525 LED WALL PACK, 400 WATTS HPS EQUIVALENT	 5.000 EACH				
2340	850526 LED WALL PACK, 75 WATTS HPS EQUIVALENT	 10.000 EACH				
2350	850527 LED WALL PACK, 150 WATTS HPS EQUIVALENT	 5.000 EACH				
2360	851001 ALUMINUM LIGHTING STANDARD WITH SINGLE DAVIT ARM, 30' POLE	 100.000 EACH				
2370	851003 ALUMINUM LIGHTING STANDARD WITH SINGLE DAVIT ARM, 40' POLE	 50.000 EACH				

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

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CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2380	851502 ALUMINUM LIGHTING SINGLE DAVIT ARM, 8' ARM SPREAD	 50.000 EACH				
2390	851503 ALUMINUM LIGHTING SINGLE DAVIT ARM, 12' ARM SPREAD	 50.000 EACH				
2400	851504 ALUMINUM LIGHTING SINGLE DAVIT ARM, 15' ARM SPREAD	 50.000 EACH				
2410	851506 ALUMINUM LIGHTING STANDARD, 30' POLE	 100.000 EACH				
2420	851507 ALUMINUM LIGHTING STANDARD, 40' POLE	 100.000 EACH				
2430	851509 ALUMINUM LIGHTING STANDARD WITH SINGLE TRUSS ARM, 30' POLE	 100.000 EACH				
2440	851520 ALUMINUM LIGHTING SINGLE DAVIT ARM, 10' ARM SPREAD	 100.000 EACH				
2450	851522 ALUMINUM LIGHTING SINGLE DAVIT ARM, 20' ARM SPREAD	 100.000 EACH				
2460	908001 TOPSOIL	 25.000 TON				
2470	908020 EROSION CONTROL BLANKET MULCH	 750.000 SY				

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

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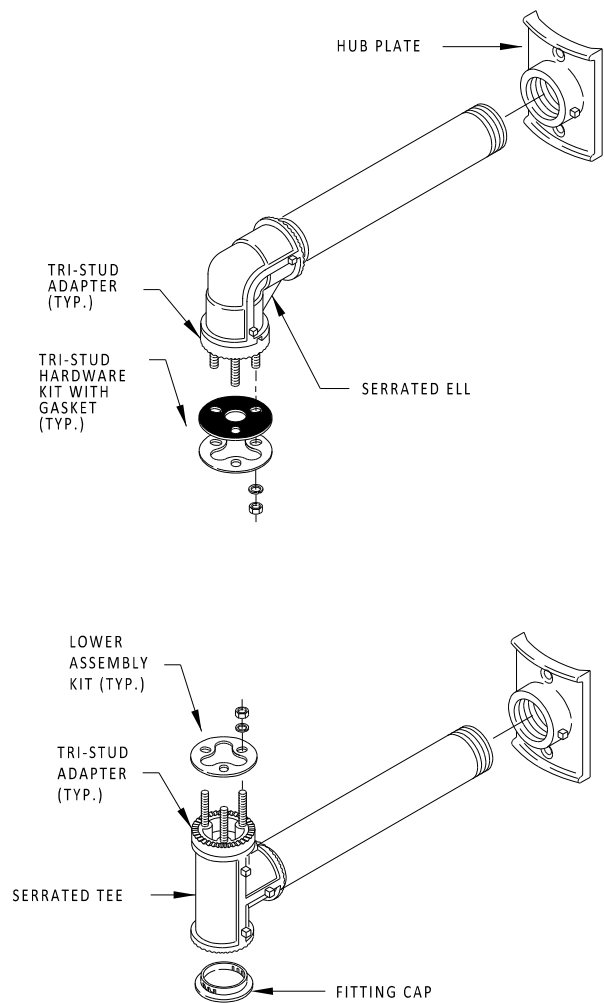
CONTRACT ID: DOT1802.01

PROJECT(S): DOT1802

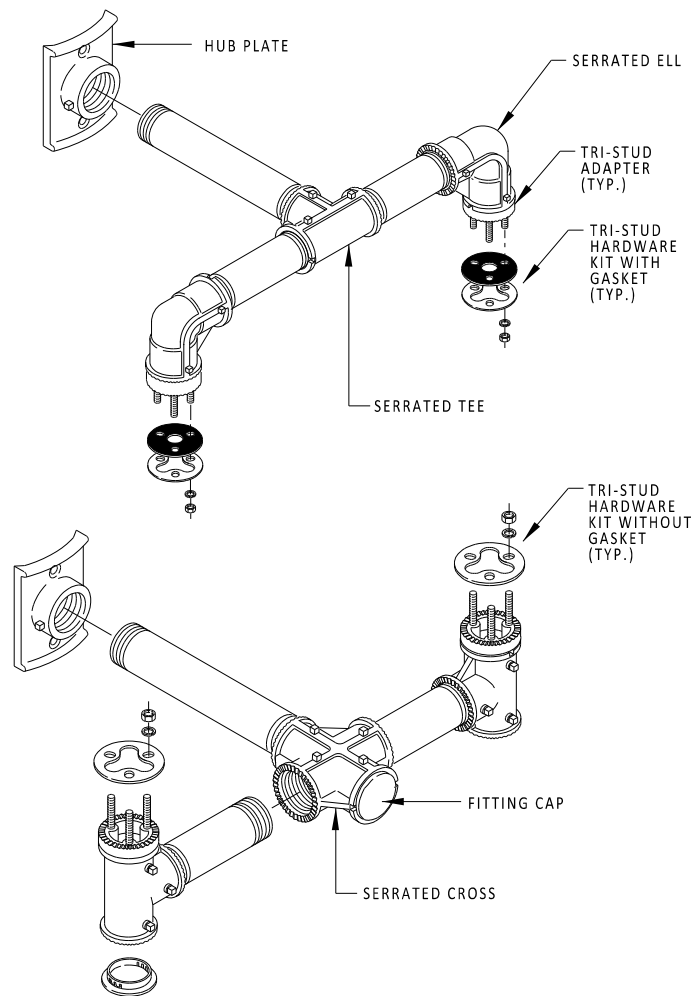
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CONTRACTOR : \_\_\_\_\_

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2480	908021 TURF REINFORCEMENT MATTING, TYPE 1	200.000 SY				
2490	908514 FURNISHING SOD	125.000 SY				
	SECTION 0001 TOTAL					
	TOTAL BID					



**ONE-WAY SIDE POLE MOUNTING**



**TWO-WAY SIDE POLE MOUNTING**

**NOTES:**

1. THE TOP HUB PLATE SHALL BE ROTATED UPWARD WHEN THE SIGNAL HEAD IS MOUNTED ON A WOOD POLE.
2. A 1" DIA. HOLE SHALL BE DRILLED IN THE METAL POLE FOR WIRING AT BOTTOM PLATE.
3. THE UPPER ARM SHALL CONSIST OF A SERRATED ELL, 12" NIPPLE, GASKET AND TRI-STUD ADAPTER.
  - THE SERRATED ELL SHALL HAVE A SERRATED 72 TOOTH BOSS ON ONE END WITH TRI-STUD MOUNTING. THE OUTSIDE DIAMETER OF THE SERRATION SHALL NOT EXCEED 2 3/8". THE NON-SERRATED END OF THE ELL SHALL BE NOTCHED TO ACCEPT A SEPARATE SERRATED LOCKRING. THE ELL SHALL BE THREADED 1 1/2" NPS ON BOTH ENDS. THE ELL SHALL HAVE A MINIMUM 3/8" WIDTH BOSS THAT EXTENDS THE ENTIRE LENGTH OF BOTH SIDES, ON ONE SIDE OF THE BOSS AT EACH END OF THE ELL SHALL BE A 1/4" - 20 THREADED OPENING FOR A SETSCREW.
  - A 1 1/2" X 12" EXTRUDED NIPPLE SHALL HAVE 1 1/2" NPS THREADS ON BOTH ENDS. THE NIPPLE SHALL HAVE A "BRUSHED" FINISH.
4. THE LOWER ARM SHALL CONSIST OF A SERRATED TEE, 12" NIPPLE AND TRI-STUD ADAPTER.
  - THE SERRATED TEE SHALL BE FABRICATED LIKE THE ELL EXCEPT THE TEE IS TO HAVE SERRATIONS ON TWO (2) THREADED OPENINGS 90° APART. THE NON-SERRATED END SHALL COME STANDARD WITH A PLASTIC KNOCKOUT PIN.
  - THE 1 1/2" X 12" NIPPLE SHALL BE THE SAME AS ABOVE.
5. FOR WOOD POLE MOUNTING:
  - ATTACHMENT STRAPS FOR WOOD POLE SHALL BE 3/4" WIDTH, TYPE 201, STAINLESS STEEL.
  - ATTACHMENT BOLTS FOR WOOD POLE SHALL BE STAINLESS STEEL 3/8" DIA. x 2 1/2" LENGTH.
6. ALL HARDWARE SHALL BE YELLOW COATED.

SPECIFICATION  
837001  
837002  
837008  
837503  
837504  
837507

CATEGORY CODE ITEMS  
**SIGNAL HEADS**

APPROVED \_\_\_\_\_

CHIEF TRAFFIC ENGINEER



ADDED NEW SHEET

**DELAWARE  
DEPARTMENT OF TRANSPORTATION**

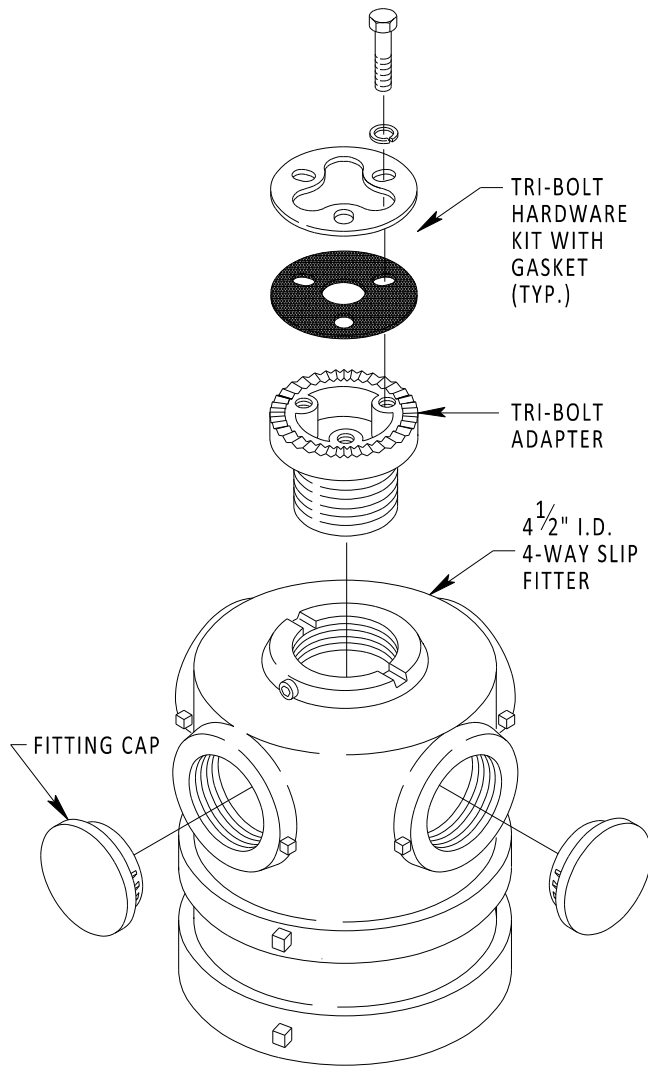
TRAFFIC CONSTRUCTION DETAILS

**SIDE POLE MOUNTING FOR  
VEHICULAR AND PEDESTRIAN SIGNAL HEADS**

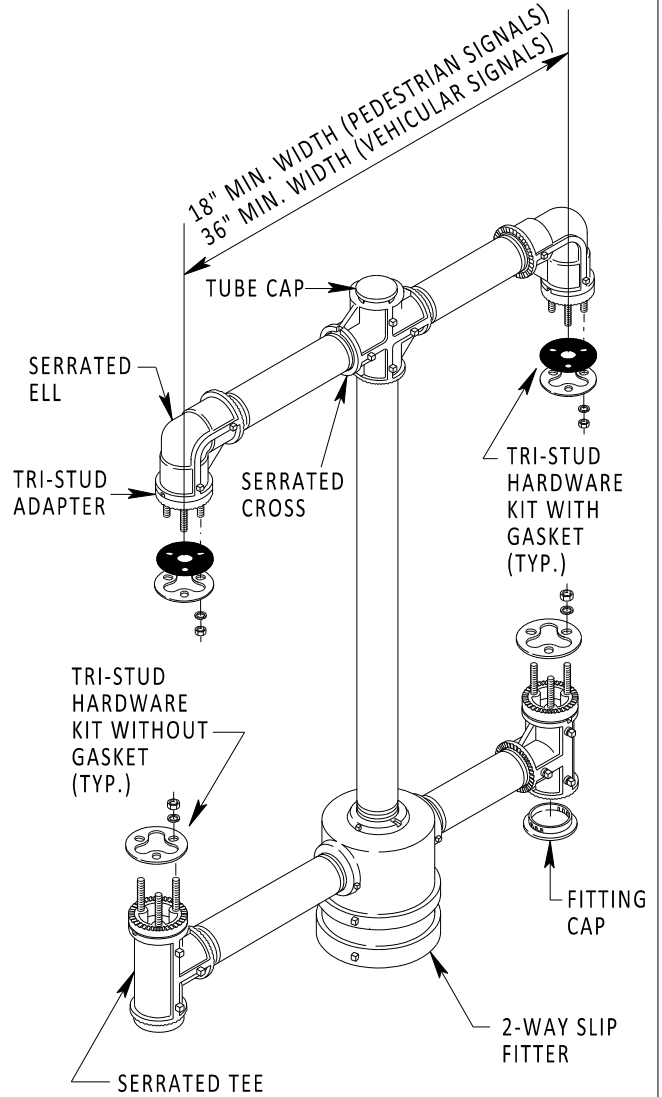
DETAIL NO.

DE 837.001-01





TOP POLE MOUNTING FOR ONE,  
TWO, THREE & FOUR-WAY SIGNAL



TOP POLE MOUNTING  
FOR TWO-WAY SIGNAL

**NOTES:**

1. ALL CAST MOUNTING HARDWARE SHALL BE ALODINE FINISHED ALUMINUM.
2. ALL BOLTS SHALL BE STAINLESS STEEL.
3. ALL HARDWARE SHALL BE YELLOW COATED.

SPECIFICATION 837001 837002 837008 837503 837504 837507	CATEGORY CODE ITEMS <b>SIGNAL HEADS</b>	
APPROVED _____ CHIEF TRAFFIC ENGINEER		
		4 ADDED NEW SHEET

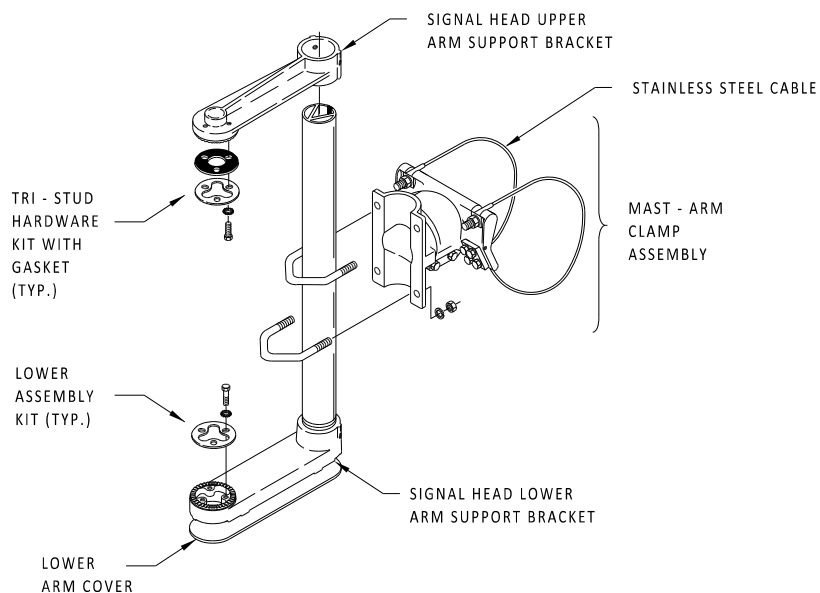
**DELAWARE  
DEPARTMENT OF TRANSPORTATION**

TRAFFIC CONSTRUCTION DETAILS

**TOP POLE MOUNTING FOR  
VEHICULAR AND PEDESTRIAN SIGNAL HEADS**

**DETAIL NO.**

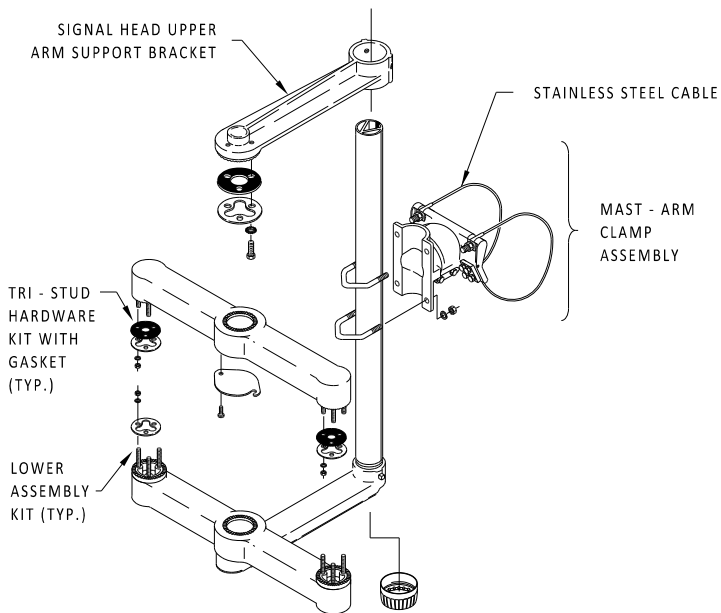
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**ONE-WAY, THREE OR FOUR - SECTION  
8" OR 12" SIGNAL HEADS**

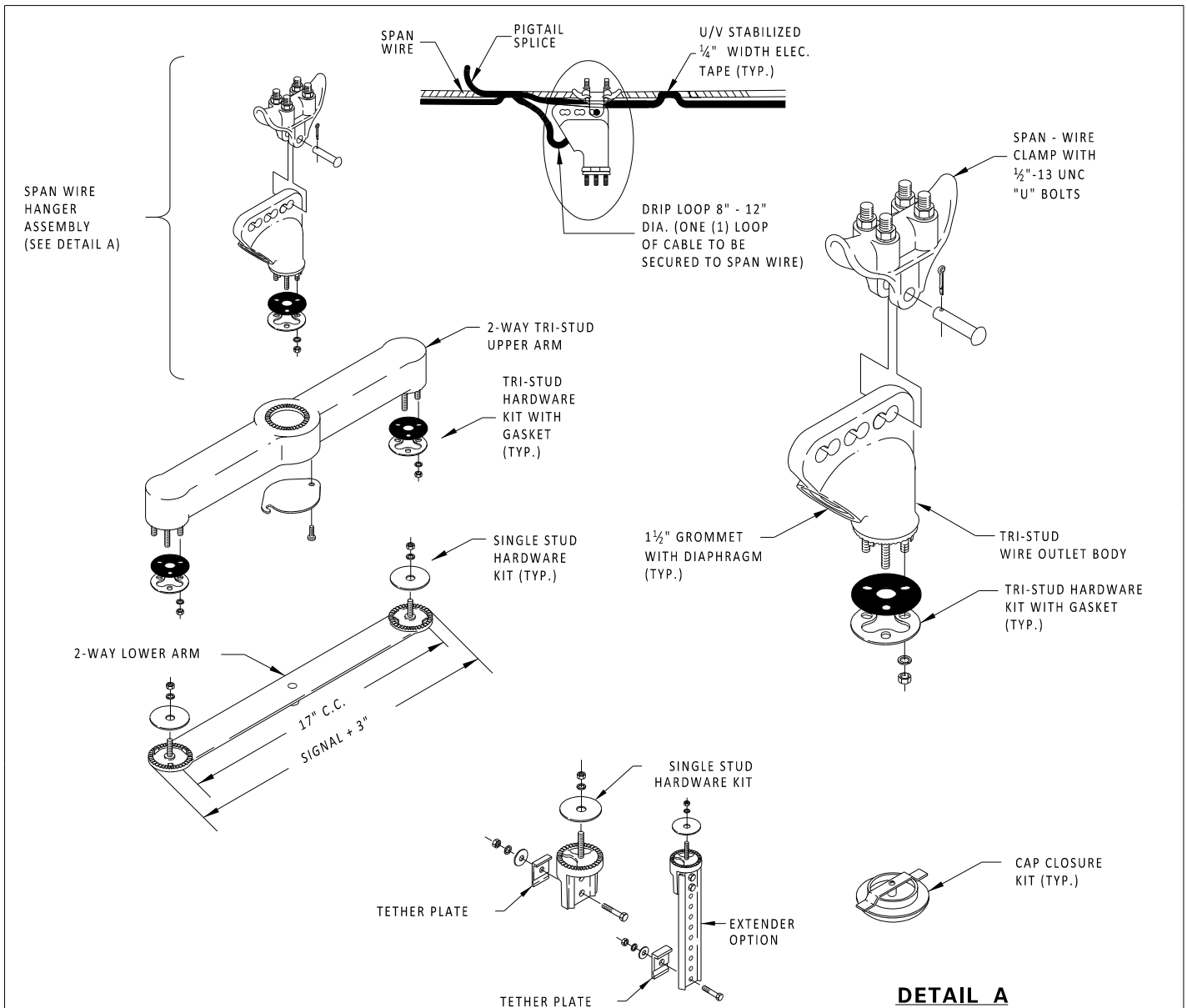
**NOTES:**

1. ALL CAST MOUNTING HARDWARE SHALL BE ALUMINUM WITH ALODINE FINISH.
2. ALL BOLTS SHALL BE STAINLESS STEEL.
3. BRACKET SHALL ADJUST IN FOUR DIRECTIONS.
4. UPPER AND LOWER ARMS SHALL BE CAST FROM 319 ALUMINUM ALLOY.
5. VERTICAL SUPPORT TUBE SHALL BE DOUBLE GUSSETED "C" SHAPED AND EXTRUDED FROM 6063 - T6 ALUMINUM ALLOY.
6. MAST ARM CLAMP ASSEMBLY SHALL BE CAST FROM 356 - T6 ALUMINUM ALLOY.
7. STRANDED CABLE SHALL BE STAINLESS STEEL, FABRICATED IN ONE PIECE.
8. CUT VERTICAL SUPPORT TUBE TO PROJECT 1" ABOVE SIGNAL HEAD TOP SUPPORT BRACKET.
9. WHEN ASSEMBLED, THE RECEIVING AND INDENTED PORTION OF THE CLAMP ASSEMBLY SHALL CONSIST OF TWO MIRRORED HALVES. THE CLAMP ASSEMBLY SHALL BE INVERSELY TIGHTENED AROUND THE MAST ARM OR POLE.
10. THE PROTRUDING PORTION OF THE CLAMP ASSEMBLY, WHICH FITS IN THE RECEIVING AND INDENTED PORTION, SHALL HAVE AN INTEGRALLY CAST FLANGE TO PREVENT SEPARATION FROM THE RECEIVING AND INDENTED SECTION.
11. ALL HARDWARE SHALL BE YELLOW COATED.



**ONE-WAY, FOUR OR FIVE - SECTION  
8" OR 12" SIGNAL HEADS**

SPECIFICATION 837001 837002 837503 837504	CATEGORY CODE ITEMS <b>SIGNAL HEADS</b>	<b>DELAWARE DEPARTMENT OF TRANSPORTATION</b> TRAFFIC CONSTRUCTION DETAILS <b>SIGNAL HEAD MOUNTING DETAILS RIGID MOUNT</b>	
APPROVED _____ CHIEF TRAFFIC ENGINEER			
	 ADDED NEW SHEET	<b>DETAIL NO.</b> DE 837.002-01	

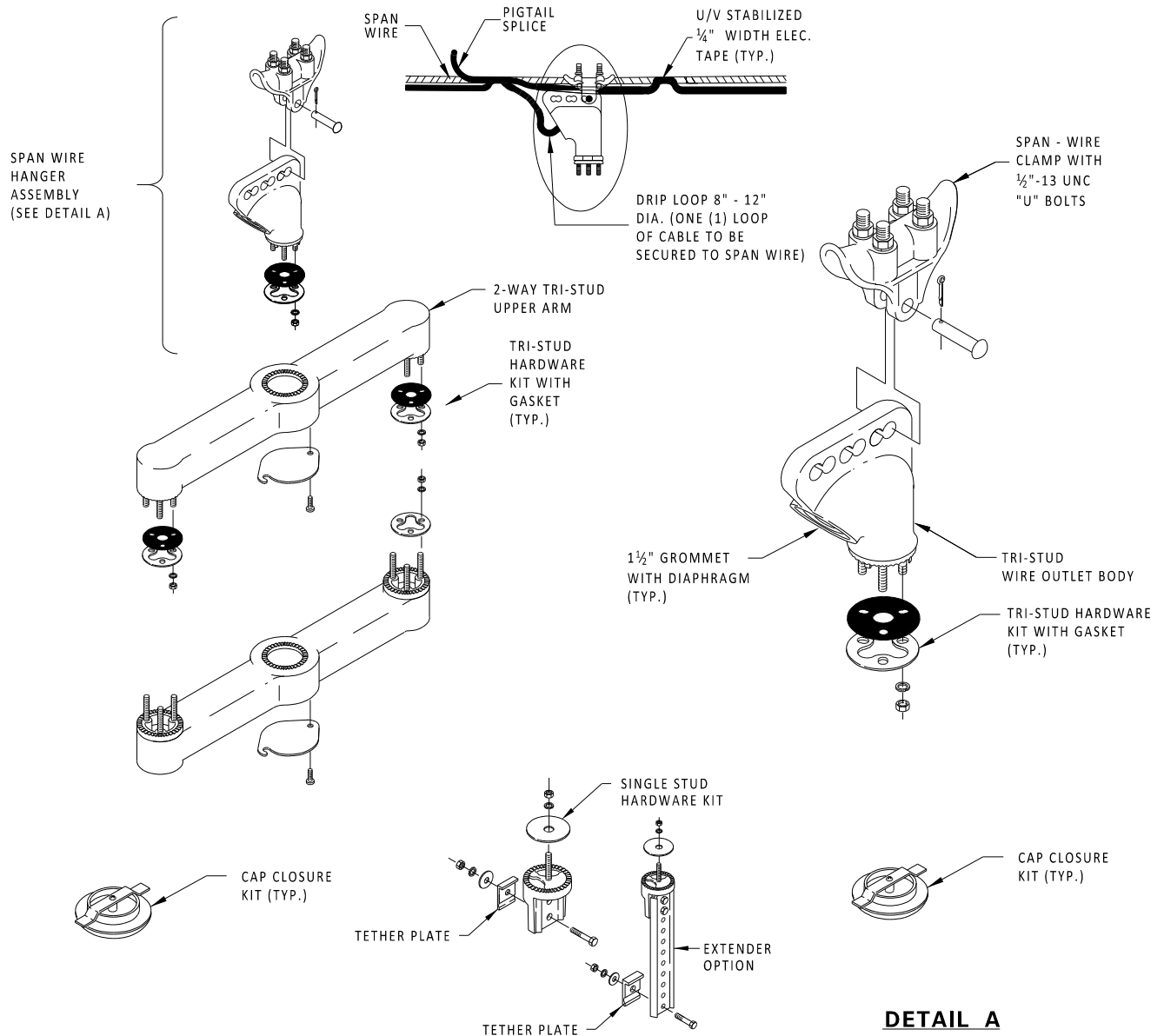


**INVERTED "T" SIGNAL HEAD SPAN WIRE ASSEMBLY**

**NOTES:**

1. UPPER AND LOWER - ARM SHALL HAVE 17" CENTER-TO-CENTER SIGNAL MOUNTING DIMENSION.
2. UPPER - ARM SHALL HAVE A MINIMUM 1 1/2" OPENING THROUGHOUT FOR EASE OF WIRING AND INSTALLATION.
3. UPPER - ARM ATTACHMENT END SHALL BE SERRATED AND HAVE THREE (3) SIGNAL CENTERING BOSSES EXTENDING 3/16" FROM SERRATIONS.
4. UPPER ARM SHALL HAVE SERRATIONS AT SIGNAL ATTACHMENT END, AND TOP CENTER OPENING SHALL HAVE 72 TOOTH DESIGN (TO WATCH SIGNAL HEAD).
5. UPPER - ARM SHALL HAVE THREE (3) STAINLESS STEEL STUDS WHICH SHALL BE CAST INTO EACH SIGNAL ATTACHMENT END. THE STUDS SHALL BE 5/16" - 18 AND EXTEND 1 1/2" BEYOND THE SERRATION (+ 1/8").
6. UPPER - ARM SHALL HAVE 3 1/2" CENTER OPENING TO ALLOW FOR WIRE ACCESS.
7. UPPER - ARM CENTER OPENING SHALL HAVE AN INSPECTION COVER THAT IS CAPABLE OF BEING OPENED WITHOUT THE REMOVAL OF ANY SCREWS. THE COVER SHALL ROTATE ABOUT THE AXIS OF ONE END AND BE SECURED AT THE OTHER END.
8. LOWER - ARM SHALL HAVE HALF CIRCLE SERRATIONS ON BOTTOM FOR TETHER HARDWARE.
9. ORIENT WIRE OUTLET BODY IN SAME DIRECTION AS SIGNAL FACES.
10. ALL HARDWARE SHALL BE YELLOW COATED.



SPECIFICATION 837003 837004 837503 837504	CATEGORY CODE ITEMS <b>SIGNAL HEADS</b>	<b>DELAWARE</b> <b>DEPARTMENT OF TRANSPORTATION</b>  TRAFFIC CONSTRUCTION DETAILS <b>SIGNAL HEAD MOUNTING DETAILS</b> <b>SPAN WIRE MOUNTING FOR 3 OR 5</b> <b>SECTION VEHICULAR SIGNAL HEADS</b>
APPROVED _____ CHIEF TRAFFIC ENGINEER	ADDED NEW SHEET	
		<b>DETAIL NO.</b> <span style="float: right;">DE 837.003-01</span>



**"T" SIGNAL HEAD SPAN WIRE ASSEMBLY**

**NOTES:**

1. UPPER AND LOWER - ARM SHALL HAVE 17" CENTER-TO-CENTER SIGNAL MOUNTING DIMENSION.
2. UPPER - ARM SHALL HAVE A MINIMUM 1 1/2" OPENING THROUGHOUT FOR EASE OF WIRING AND INSTALLATION.
3. UPPER - ARM ATTACHMENT END SHALL BE SERRATED AND HAVE THREE (3) SIGNAL CENTERING BOSSES EXTENDING 3/16" FROM SERRATIONS.
4. UPPER ARM SHALL HAVE SERRATIONS AT SIGNAL ATTACHMENT END, AND TOP CENTER OPENING SHALL HAVE 72 TOOTH DESIGN (TO WATCH SIGNAL HEAD).
5. UPPER - ARM SHALL HAVE THREE (3) STAINLESS STEEL STUDS WHICH SHALL BE CAST INTO EACH SIGNAL ATTACHMENT END. THE STUDS SHALL BE 3/16" - 18 AND EXTEND 1 1/2" BEYOND THE SERRATION (+ 1/8").
6. UPPER - ARM SHALL HAVE 3 1/2" CENTER OPENING TO ALLOW FOR WIRE ACCESS.
7. UPPER - ARM CENTER OPENING SHALL HAVE AN INSPECTION COVER THAT IS CAPABLE OF BEING OPENED WITHOUT THE REMOVAL OF ANY SCREWS. THE COVER SHALL ROTATE ABOUT THE AXIS OF ONE END AND BE SECURED AT THE OTHER END.
8. LOWER - ARM SHALL HAVE HALF CIRCLE SERRATIONS ON BOTTOM FOR TETHER HARDWARE.
9. ORIENT WIRE OUTLET BODY IN SAME DIRECTION AS SIGNAL FACES.
10. ALL HARDWARE SHALL BE YELLOW COATED.

SPECIFICATION	837003 837004 837503 837504	CATEGORY CODE ITEMS	<b>SIGNAL HEADS</b>
APPROVED	_____		
	CHIEF TRAFFIC ENGINEER		
		ADDED NEW SHEET	

**DELAWARE  
DEPARTMENT OF TRANSPORTATION**

TRAFFIC CONSTRUCTION DETAILS  
**SIGNAL HEAD MOUNTING DETAILS  
SPAN WIRE MOUNTING FOR 4  
SECTION "T" VEHICULAR SIGNAL HEADS**

DETAIL NO.

DE 837.003-02