

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

JOSH STEIN GOVERNOR J.R. "JOEY" HOPKINS Secretary

March 13, 2025

MEMORANDUM TO:	Mandatory Pre-Bid Attendees
FROM:	Jennifer A. Sour Division Contract Engineer Jennifer a. Sour B213233052CA46B
SUBJECT:	Pre-Bid Minutes/Addendum#1 for Proposal MG00459 – Tree Clearing/Cutting as needed in Alamance, Caswell,

On March 11, 2025, a Mandatory Pre-bid Conference was held at the North Carolina Department of Transportation's Office located on 1584 Yanceyville Street in Greensboro, NC. The following people were in attendance:

Guilford, Orange and Rockingham Counties.

Jennifer A. Sour	Division Contract Engineer
Abdou Salami Yaya	TEA
Daniel Dagenhart	Division Bridge Program Manager
Matt Sargalis	Division Utility Coordinator
Cody Lungrin	Division Utility Coordinator
Van Hodges	Division Utility Inspector.
Robert Keeling	Dougs Disaster Relief
Brian Knowles	Carlson's Landscaping
Zach Howell	Carlson's Landscaping
Dylan Greene	Greene's Enterprises LLC
Greg Roberson	Need A Tree Cut LLC
Jeffrey McKinney Sr	North Piedmont Services
Jeff McKinney Jr	J and M Construction Co.
Jonathan Stevens	Asplundh Tree
Gray Stevens	Asplundh Tree
Trey Kirkpatrick	Triangle Grading

The meeting for MG00459 began promptly at 1:00 pm.

Jennifer Sour opened the meeting. She made note that the pre-bid meeting attendance is mandatory and the company must sign the attendance roster in order for their bid to be accepted. It was also noted that the Contractor will need to sign their Addenda in the

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proposal as acknowledgment of receipt of the minutes and that they will need to submit the minutes with their bid.

Jennifer reviewed the following parts of the contract:

- Contract Time for ID/IQ. This is a <u>non-exclusive</u> renewable contract that is available April 16, 2025, and lasts until April 15, 2026.
- Burning Restrictions
- Notification of Work
- Tree Clearing
- Stump Griding
- Removal and Disposal Noted that the Contractor is responsible for disposing of debris if it is removed from the site. The debris must be disposed of in an approved State site. The Dump Bill is the contractor's responsibility.
- Briefly discussed EC items may be needed in the contract

Jennifer turned the meeting over to Van Hodges.

Van discussed two sample projects on the overhead projector as well as a sample photograph of a work site. He noted from the photo that the average work site will require the contractor to clear a 30-foot area (15 foot on each side of a set stake, straight up from ground to tree tops) for the utility company to move utilities. Each work site will be marked prior to work and quantities will be given for that work site.

NCDOT is hoping to have five to ten projects available, however we do not have a set number of projects that will be available to the contractor, nor do we know the size of any given project. From experience, bridge projects have ranged from 0.5 acres to 1 acre, while larger construction projects have been over one acre.

Work form RA3 will be signed daily by the NCDOT and contractor.

Van opened the meeting up for questions.

QUESTIONS AND ANSWERS:

- Q: Why are we coming in for the meeting?
- A: NCDOT asked contractors to attend the meeting, since the first attempt to let this contract resulted in a large difference in pricing and types of contractors.
- Q What type of contract is this?
- A This is a tree cutting/clearing contract, not an erosion control contract. NCDOT is requesting bids from contractors to clear on average a 30' area for utilities to be relocated.
- Q How are we bidding on the quantities if they are not guaranteed?
- A True, all quantities are not guaranteed. Each work site will be different and require different pay items. The intent is to have a cost for every item as a contingency.
- Q It would be better to have a set location. Can you give us a set location?

- A Although it would be ideal to provide a set area of work the intention of the contract is to have a contractor that is available as needed. This will allow the NCDOT to perform work when required and not require NCDOT advertise for each worksite.
- Q Are we required to grind the stump to the ground?
- A Stump Grinding is a contingency item. We will use this in some situations, as dictated by environmental policy.
- Q I have not done Erosion Control in the past. How do we install erosion control and how do we know how to bid the items?
- A Most contractors will subcontract this work, rather than self-perform the work. If the work is given to a subcontractor they must be qualified to perform erosion control.
- Q I am concerned about the Erosion Control quantities, the limited quantities aren't guaranteed, and I don't know how to bid, ie: low or actual?
- A NCDOT cannot tell you how to bid on the quantities for the project. Yes, these are contingency items, but NCDOT would advise you bid appropriately. A contingency item is in place because NCDOT sees a need for this item on a work site. Note: Erosion Control is a priority in areas were water may be impacted.
- Q How will we know when and what size tree you are paying for at a work site?
- A Typically, Trees will be measured if we are working in someone's yard. However, there may be a work site that does not fit the acreage measurement. NCDOT will work with the contractor if we feel that the work area may require more intensive clearing than anticipated.
- Q Why aren't there time limits for work?
- A The contractor is advised to refer to page G-4 of the contract, Mobilization and Liquidated Damages for ID/IQ, paragraph three. The Contractor shall mobilize and <u>complete the work within the time specified on the Work</u> <u>Order</u>. When work becomes available the Engineer will contact the Contractor, and a work order will be discussed and agreed upon. The Engineer will speak to the Contractor if he is moving to slow to complete the work in a timely manner as this work is essential to get the utilities relocated.
- Q Can the contractor work holidays?
- A Holiday restrictions are in effect for Primary and secondary roads. However, the Engineer may allow work that is not impeding traffic and does not require a road/shoulder closure, ie: work is not with the roadway, if it is located in a rural area.

ADDENDA ITEMS:

While preparing the minutes for the mandatory pre-bid meeting, it was discovered that a few items needed correction:

• Existing Page R-2: Notification of Work – This item has been removed as it conflicts with information on page G-2, Work Order Assignment (Multiple Awards) for ID/IQ.

- Existing Page R-4: Burning Restrictions This item has been removed as it is a duplicate and appears on page R-2.
- Existing Page R-2: Tree Clearing This item has been modified.

Pleased remove existing pages R-1 thru R-15 and replace with the enclosed pages numbered R-1 thru R-14..

ROADWAY

PROJECT SPECIAL PROVISIONS

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Roadway Project Special Provisions

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BURNING RESTRICTIONS:

(7-1-95)

Open burning is not permitted on any portion of the right-of-way limits established for this project. Do not burn the clearing, grubbing or demolition debris designated for disposal and generated from the project at locations within the project limits, off the project limits or at any waste or borrow sites in this county. Dispose of the clearing, grubbing and demolition debris by means other than burning, according to state or local rules and regulations.

200, 210, 215

TREE CLEARING:

(12-24-24)(Rev 3-13-25)

Description

Perform tree clearing within the limits established by the clearing method required and as directed by the engineer. The Contractor shall use mechanical equipment to clear trees, brush, and limbs within the established limits. The Contractor shall **cut trees and brush as close to natural ground as possible** in the clearing operation or with approval by the engineer.

The Contractor shall use hand tools i.e. chainsaws, bush axes, etc. to cut trees or brush within the designated buffer zones. Bush hogs and other mechanical clearing equipment may only be used within the designated buffer zones, with prior approval of the engineer. All work shall conform with Section 401 and 404 of the Clean Water Act and as directed by the Engineer.

The Engineer will designate all areas of growth or individual trees that shall be preserved due to their desirability for landscape or erosion control purposes. When the trees to be preserved are located within the construction limits, they will be shown in the plans or designated by the Engineer.

Prevent limb, bark or root injuries to trees, shrubs or other types of vegetation that are to remain growing and prevent damage to adjacent property. Repair scarred areas in accordance with generally accepted horticultural practice. Where plants are damaged by any construction operations to such an extent as to destroy their value for shade or other landscape purposes, cut and dispose of them.

Measurement and Payment

Tree Clearing that is directed by the Engineer and is performed on areas outside the limits originally staked or beyond the limits of the right of way or easements or within environmentally sensitive areas shown on the original plans will be measured and paid at the contract unit price per acre. All measurements of clearing will be made horizontally.

Payment will be made under:

Pay Item Tree Clearing (0 - 0.5 acres) Tree Clearing (0.5 - 2.0 acres) Tree Clearing (2+ acres) Pay Unit Acre Acre Acre DIV 7

SP2 R05

(12-24-24)

Description

Grinding of stumps may be required at certain locations as directed by the Engineer. Stumps shall be ground in accordance with accepted industry practices to a minimum depth of six (6) inches below the elevation of the surrounding area. Removal of any debris shall be the responsibility of the Contractor.

R - 3

Measurement and Payment

Stump Grinding as directed by the Engineer and performed on areas outside the limits originally staked or beyond the limits of the right of way or easements or within environmentally sensitive areas shown on the original plans will be measured and paid at the contract unit price per hour. Stump grinding will be measured per hour and will start the moment that the stump grinding process commences and stop at the time the stump is ground to the level directed by the Engineer.

Removal and disposal of debris will be considered incidental to the tasks involved in the process of stump grinding and no payment will be made for this item.

Payment will be made under:

Pay Item Stump Grinding **Pay Unit** Hour

REMOVAL AND DISPOSAL

Removal and Disposal of all trimmings, laps, brush, or debris produced by the above operations (tree clearing and stump grinding) shall be the responsibility of the Contractor or as determined by the Engineer. When chipping is used to dispose of trimmings, the Engineer may approve the spreading of chips along certain sections of highway right of way. All other debris must be removed from highway right of way before payment is made. No burning or burying of debris will be allowed on highway right of way. If debris is removed, the Contractor will be responsible for disposing of the debris in a State approved site and will be responsible for the Dump Bill.

GRAVEL CONSTRUCTION ENTRANCE

(12-24-24)

Revise the *Standard Specifications* as follows:

Page16-3, Article 1607-3 CONSTRUCTION METHODS, line 8, add the following after the first paragraph:

Completely remove all entrance material including pipes and return the entrance footprint to the original contours and elevations within 14 days of the completion of the clearing operation.

DIV 7

DIV 7

<u>CONES:</u> (3-19-24)

1135

SP11 R35

Revise the *Standard Specifications* as follows:

Page 11-11, Article 1135-3 CONSTRUCTION METHODS, lines 19-20, delete the third sentence of the first paragraph, "Do not use cones in the upstream taper of lane or shoulder closures for multi-lane roadways.".

FLAGGERS:

(12-17-24)

1150

SP11 R50

Revise Section 1150 of the Standard Specification as follows:

Page 11-13, Article 1150-1, DESCRIPTION, add the following after line 31:

Alternatively, at the discretion of the Contractor, the Contractor may furnish, install, place in operation, repair, maintain, relocate, and remove remotely controlled Automated Flagging Assistance Devices (AFAD) or Temporary Portable Traffic Signal units (PTS units) to assist, supplement, or replace human flaggers for one-lane, two-way traffic maintenance during construction in accordance with this provision and the *Standard Specifications*.

For the purpose of this provision, an "approach" refers to a single lane of traffic moving in one direction toward a point of control or work zone. Flaggers, AFAD and PTS units are only used to control one lane of approaching traffic in a specific direction.

Page 11-13, Article 1150-2, MATERIALS, add the following after line 34:

Provide documentation to the Engineer that the AFAD or PTS units meets or exceeds the requirements of this special provision and is on the NCDOT APL or ITS and Signals QPL.

(A) Automated Flagging Assistance Devices (AFAD)

(1) AFAD General

Cover the automated gate arm with Department approved Type VII, VIII or IX retroreflective sheeting of vertical alternating red and white stripes at 16 inch intervals measured horizontally. When the gate arm is in the down position the minimum vertical aspect of the arm and sheeting shall be 4 inches. The retroreflectorized sheeting shall be on both sides of the gate arm. With the AFAD parked or positioned 2 feet outside or in a location deemed acceptable for the lane being controlled, the gate arm shall reach at least to the center of the lane but shall not exceed the width of the lane being controlled.

Design the system to be fail-safe. Provide a conflict monitor, malfunction monitoring unit, or similar device that monitors for malfunctions and prevents the display of conflicting indications. This system shall be electronic and operated by remote control.

(2) AFAD Type I System: RED/YELLOW

Provide a Red/Yellow AFAD with at least one set of CIRCULAR RED and CIRCULAR YELLOW lenses in a vertical configuration that are 12 inches in diameter. The bottom of the housing (including brackets) shall be at least 7 feet (2.1 meters) above the pavement.

This system is required to have yellow 12 inch aluminum or polycarbonate vehicle signal heads with 10 inch tunnel visors, backplates, and Light Emitting Diode (LED) modules. Provide signal heads, backplates, and LED modules listed on the ITS and Signals QPL available on the Department's website.

Provide an automated gate arm on the AFAD that descends to a down position across the approaching lane of traffic when the steady CIRCULAR RED lens is illuminated and then ascends to an upright position when the flashing CIRCULAR YELLOW lens is illuminated. The automated gate arm is to be designed such that if a motorist pulls underneath the gate arm while lowering, no damage to the vehicle occurs.

A STOP HERE ON RED (R10-6 or R10-6a) sign shall be installed on the right-hand side of the approach at the point at which drivers are expected to stop when the steady CIRCULAR RED lens is illuminated.

To stop traffic, the AFAD shall transition from the flashing CIRCULAR YELLOW lens by initiating a <u>minimum 5 second steadily illuminated</u> CIRCULAR YELLOW lens followed by the CIRCULAR RED lens.

Once the CIRCULAR RED lens is displayed, the system is to have <u>a minimum 2</u> <u>second delay</u> between the time the steady CIRCULAR RED is displayed and the time the gate arm begins to lower. The maximum delay between CIRCULAR RED and the time the gate arm lowers is 4 seconds. To permit stopped road users to proceed, the AFAD shall display the flashing CIRCULAR YELLOW lens and the gate arm shall be placed in the upright position.

Ensure the system monitors for a lack of yellow or red signal voltage, total loss of indication in any direction, presence of multiple indications on any approach and low power conditions.

Additional sets of CIRCULAR RED and CIRCULAR YELLOW lenses located over the roadway or on the left side of the approach and operated in unison with the primary set, may be used to improve visibility of the AFAD. If the set of lenses is located over any portion of the roadway that can be used by motor vehicles, the bottom of the housing (including brackets) shall be at least 15 feet (4.6 meters) above the pavement.

(3) AFAD Type II System: STOP/SLOW

Provide STOP/SLOW signs that are octagonal in shape, made of rigid material, and at least 36 inch x 36 inch in size. Letters shall be a minimum of 8 inches high. The STOP face shall have a red background with white letters and border.

The SLOW face shall be diamond shaped, orange, or yellow background with black letters and border. Cover both faces in a Department approved Type VII, VIII or IX retroreflective sheeting. The minimum mounting height for the sign faces shall be 7 feet above the pavement to the bottom of the sign.

The AFAD's STOP/SLOW signs shall be supplemented with active conspicuity devices by incorporating a stop beacon (red lens) and a warning beacon (yellow lens). The stop beacon shall be no more than 24 inches above the STOP face. Mount the warning beacon no more than 24 inches above or beside of the SLOW face. Except for the mounting locations, the beacons shall conform to the provisions of Chapter 4L of the MUTCD and have 12 inch signal lenses.

Strobe/flashing lights are an acceptable alternative to flashing beacons. If utilized, they shall be either white or red flashing lights located within the STOP face and white or yellow flashing lights within the SLOW face and conform to the provisions of Chapter 6D of the MUTCD. If used, the lens diameter shall be a minimum of 5 inches with a minimum height of 6 inches. Equip strobes/flashing lights for both dual and quad flash patterns.

Type B warning lights shall not be used in lieu of the beacons or the strobe lights.

The faces of the AFADs STOP/SLOW sign may include louvers. If louvers are used, design the louvers such that the aspect of the sign face to approaching traffic is a full sign face at a distance of 50 feet or greater.

A WAIT ON STOP (R1-7) sign and a GO ON SLOW (R1-8) sign shall be displayed to traffic approaching the AFAD. Position signs on the same support structure as the AFAD. Both signs shall have black legends and borders on white Type III sheeting backgrounds. Each of these signs shall be rectangular in shape and be at least 24 inch x 30 inch size with letters at least 6 inches high.

Provide an automated gate arm on the AFAD that descends to a down position across the approaching lane of traffic when the STOP face is displayed and then ascends to an upright position when the SLOW face is displayed.

The automated gate arm is to be designed such that if a motorist pulls underneath the gate arm while lowering, no damage to the vehicle occurs.

A STOP HERE ON RED (R10-6 or R10-6a) sign shall be installed on the right-hand side of the approach at the point at which drivers are expected to stop when the STOP face is displayed.

When approaching motorists are to proceed, display the SLOW face and the warning beacon or strobes are to flash on the AFAD. When approaching motorists are will be stopped, display the STOP face and the stop beacon or strobes are to flash on the AFAD.

To stop traffic, the AFAD will transition from the SLOW face to the STOP face by initiating a minimum 5 second change cycle. First, the warning beacon is to be steadily illuminated for the change cycle. If strobes are used in lieu of a warning beacon, they are to be placed in the quad flash pattern. At the end of the change cycle,

the STOP face is to be displayed with the stop beacon flashing and the warning beacon or strobes are to stop flashing. Once the STOP face is displayed, the system is to have <u>a minimum 2 second delay</u> between the time the STOP face is displayed and the time the gate arm begins to lower. The maximum delay between the time the STOP face is displayed and the time the gate arm lowers is 4 seconds.

To permit stopped road users to proceed, the gate arm shall be placed in the upright position and the AFAD shall display the SLOW face and the warning beacon or strobes are to flash in the dual flash pattern.

Do not flash the stop beacon when the SLOW face is displayed, and do not flash the warning beacon when the STOP face is displayed.

(B) Portable Traffic Signals (PTS) Units

Provide PTS units with at least one set of CIRCULAR RED, CIRCULAR YELLOW, and CIRCULAR GREEN lenses in a vertical configuration that are 12 inch diameter aluminum or polycarbonate vehicle signal heads with 10 inch tunnel visors, backplates, and Light Emitting Diode (LED) modules. All signal heads, tunnel visors, and backplates shall be yellow in color.

The bottom of the housing (including brackets) shall be at least 7 feet above the pavement for single set units. Additional signal heads on units with more than one signal head shall be capable of extending over the travel lane.

Communication Requirements

All PTS units within the signal set up systems shall maintain communication at all times by either hardwire cable or wireless radio link communication. If the hardwire cable communication is utilized the communication cable shall be deployed in a manner that will not intrude in the direct work area of the project or obstruct vehicular and pedestrian traffic. Utilize radio communication with 900MHz frequency band and frequency hopping capability. The radio link communication system shall have a minimum range of 1 mile.

Fault Mode Requirements

Revert PTS units to a flashing red mode upon system default unless otherwise specified by the Engineer. Equip the PTS units with a remote monitoring system. Where cell communication availability exists, the remote monitoring system shall adhere to the remote monitoring system section of this provision.

Remote Monitoring System

The remote monitoring system (RMS) shall be capable of reporting signal location, battery voltage / battery history and system default. Provide a password protected website viewable from any computer with internet capability for the RMS. In the event of a system default, the RMS shall provide specific information concerning the cause of the system default (i.e. red lamp on signal number 1). Equip the RMS with a mechanism capable of

immediately contacting a minimum of three previously designated individuals via text messaging and/or email upon a default.

The running program operating the PTS units shall be always available and viewable through the RMS website. Maintain a history of the RMS operating system in each signal including operating hours and events and the location of the PTS units.

Trailer / Cart

The AFAD and PTS units may be mounted on either a trailer or a moveable cart system.

Finish all exterior metal surfaces with Federal orange enamel per AMS-STD-595, color chip ID# 13538 or 12473 respectively with a minimum paint thickness of 2.5 mils (64 microns). Design and test the AFAD or PTS units trailer / cart to withstand an 80 MPH wind load while in the operational position. Provide independent certification that the assembly meets the design wind load.

Equip the AFAD or PTS units with leveling jacks capable of stabilizing the unit in a horizontal position when located on slopes 6:1 or flatter.

Equip trailers in compliance with North Carolina Law governing motor vehicles and include a 12-volt trailer lighting system complying *with Federal Motor Carrier Safety Regulations 393*, safety chains and a minimum 2 inch ball hitch.

Provide a minimum 4 inch wide strip of fluorescent conspicuity sheeting retroreflective sheeting to the frame of the trailer. Apply the sheeting to all sides of the trailer. The sheeting shall meet the ASTM requirements of Type VII, VIII or IX.

Power System

Design the systems to operate both with and without an external power source. Furnish transmitters, generators, batteries, controls and all other components necessary to operate the device.

Provide equipment that is solar powered and supplemented with a battery backup system that includes a minimum 110/120 VAC powered on-board charging system capable of powering the unit for 7 continuous days with no solar power. Each unit shall also be capable of being powered by standard 110/120 VAC power sources, if applicable.

Locate batteries and electronic controls in a locked, weather and vandal resistant housings.

Page 11-14, Article 1150-3, CONSTRUCTION METHODS, add the following after line 11:

Flaggers shall have a path to escape an errant approaching vehicle at all times, unimpeded by barrier, guardrail, guiderail, parked vehicles, construction materials, slopes steeper than 2:1, or any other obstruction at all times. If an unimpeded path cannot be maintained, the Contractor shall use AFAD or PTS units in lieu of a flagger.

Provide documentation to the Engineer prior to deploying the device that the AFAD or PTS units operator(s) are qualified flagger(s) that have been properly trained through an NCDOT approved

training agency or other NCDOT approved training provider and that the qualified flagger(s) have received manufacturer training to operate that specific device. This training shall include proper installation, remote control operation, central control systems and maintenance of the AFAD or PTS units. The training shall take place off the project site where training conditions are removed from live traffic. The documentation shall include the names of the authorized trainer, the trainees, the device on which they have been trained and the date of the training. Provide updated documentation to the Engineer prior to deploying any additional operators.

Install advance warning signs and operate AFADs in accordance with the attached detail drawings in this provision.

Install advance warning signs and operate PTS units in accordance with *NCDOT Roadway Standard Drawings* No. 1101.02, Sheet 17.

AFAD and PTS units shall only be used in situations where there is only one lane of approaching traffic in the direction to be controlled. At no time shall an AFAD unit controlling traffic through the work area be placed in an autonomous mode and/or left unattended.

Signal timing and operation of PTS units shall be field verified and accepted by the Engineer before use.

Use AFAD or PTS units in locations where queueing from the AFAD or PTS units will extend to within 150 feet of a signalized intersection or railroad crossing. Do not be use AFAD and PTS units as a substitute for or a replacement for a continuously operating temporary traffic control signal as described in Section 6F.84 of the MUTCD.

If used at night, illuminate each AFAD or PTS units as described in Section 6D of the MUTCD.

Provide a complete AFAD or PTS units that is capable of being relocated as traffic conditions demand.

If AFADs or PTS units become inoperative, be prepared at all times to replace the unit with the same type and model of AFAD or PTS units, revert to human flagging operations or terminate all construction activities requiring the use of the AFAD or PTS units until the AFAD or PTS units become operative or qualified human flaggers are available.

When the work requiring the AFAD or PTS units is not pursued for 30 minutes or longer, power off each AFAD or PTS units. Removed the AFAD or PTS units from the travel lane and relocated to a minimum of 5 feet from the edge line. AFAD gate arms shall be in the upright position. Remove all traffic control devices from the road, place two cones by each AFAD or PTS units and all signs associated with the lane closure operation shall be removed or laid down. At the end of each workday, remove all AFADs or PTS units from the roadway and shoulder areas.

Ensure the system's wireless communication links continuously monitor and verify proper transmission and reception of data used to monitor and control each AFAD or PTS units. Ensure ambient mobile or other radio transmissions or adverse weather conditions do not affect the system.

In the event of a loss of communications, immediately display the flashing RED or STOP indication on all AFAD or PTS units.

AFAD Specific Construction Methods

The flagger/operator controlling the AFAD units shall be on the project site at all times. If multiple AFAD units are used, one AFAD unit shall be the Main AFAD unit and all other units shall be remote AFAD units. Ensure that each device meets the physical display and operational characteristics as specified in the MUTCD.

Multiple AFAD units may be controlled with **one** flagger/operator when the AFAD units meet each of the following requirements:

(1) AFAD units are spaced no greater than the manufacturer's recommendations.

(2) Both AFAD units can be seen at the same time from the flagger/operator's position, or the AFAD is operating on its own secure network with malfunction detection and notification to the flagger/operator.

(3) The flagger/operator has an unobstructed view of approaching traffic in both directions from the flagger/operator position or the AFAD is operating on its own secure network, with cameras that provide the flagger/operator an unobstructed view of approaching traffic from both directions. The flagger/operator may control the AFAD units from a pilot vehicle.

If any of the above requirements are not met, flagger/operator control each AFAD unit.

AFAD operators may either control traffic at side streets or driveways between the AFAD units or operate the pilot car while operating the AFAD system if approved by the Engineer. AFAD units must continue to be within clear sight of the operator during these work activities.

Page 11-14, Article 1150-4, MEASUREMENT AND PAYMENT, add the following after line 24:

Each AFAD or PTS unit will be measured and paid for as *Flaggers* paid by day in accordance with Article 1150-4 of the *Standard Specifications*. Where the pay item for *Flaggers* is not included in the original contract then no separate payment will be made for this item and payment will be included in the lump sum price bid for *Temporary Traffic Control* found elsewhere in this contract. Each approach controlled by AFAD or PTS units will be measured and paid as one flagger, irrespective of the number of devices used. If multiple PTS units are required to control a single approach, these units will collectively be considered as replacing one flagger.

No separate measurement or payment will be made for AFAD or PTS unit operators, as the cost of such including their training and operational costs shall be included in the unit or lump sum price for *Flaggers* or *Temporary Traffic Control*. Such price and payment also includes the relocation, maintenance, and removal during repair periods of AFAD or PTS units as well as the signal controller, communication, vehicle detection system, traffic signal software of PTS units and any other incidentals necessary to complete the work.





WATTLE DEVICES: (1-1-24)

1642

SP16 R01

Page 16-23, Subarticle 1642-2(B) Wattle, lines 10-12, delete and replace with the following:

(B) Wattle and Wattle Barrier

Wattles shall meet Table 1642-1.

TABLE 1642-1 100% CURLED WOOD (EXCELSIOR) FIBERS - WATTLE		
Minimum Diameter	12 inches	
Minimum Density	2.5 pcf +/- 10%	
Net Material	Synthetic	
Net Openings	1 inch x 1 inch	
Net Configuration	Totally Encased	
Minimum Weight	20 lb +/- 10% per 10 foot length	

Coir Fiber Wattles shall meet Table 1642-2.

TABLE 1642-2100% COIR (COCONUT) FIBERS WATTLE		
Property	Property Value	
Minimum Diameter	12 inches	
Minimum Density	3.5 pcf +/- 10%	
Net Material	Coir Fiber	
Net Openings	2 inch x 2 inch	
Net Strength	90 lb	
Minimum Weight	2.6 pcf +/- 10%	

Wattle Barriers shall meet Table 1642-3.

TABLE 1642-3100% CURLED WOOD (EXCELSIOR) FIBERS – WATTLE BARRIER		
Property	Property Value	
Minimum Diameter	18 inches	
Minimum Density	2.9 pcf +/- 10%	
Net Material	Synthetic	
Net Openings	1 inch x 1 inch	
Net Configuration	Totally Encased	
Minimum Weight	5 pcf +/- 10%	

TABLE 1642-4 100% COIR (COCONUT) FIBERS WATTLE BARRIER		
Property	Property Value	
Minimum Diameter	18 inches	
Minimum Density	5 pcf +/- 10%	
Net Material	Coir Fiber	
Net Openings	2 inch x 2 inch	
Net Strength	90 lb	
Minimum Weight	10 pcf +/- 10%	

Coir Fiber Wattle Barriers shall meet Table 1642-4.

Pages 16-24 & 16-25, Article 1642-5 MEASUREMENT AND PAYMENT, lines 42-47 & lines 1-2, delete and replace with the following:

Wattle will be measured and paid for by the actual number of linear feet of wattles which are installed and accepted. Such price and payment will be full compensation for all work covered by this section, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to install the *Wattle*.

Coir Fiber Wattles will be measured and paid for by the actual number of linear feet of coir fiber wattles which are installed and accepted. Such price and payment will be full compensation for all work covered by this section, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to install the *Coir Fiber Wattles*.

Wattle Barrier will be measured and paid as the actual number of linear feet of wattle barrier installed and accepted. Such price and payment will be full compensation for all work covered by this provision, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to install the *Wattle Barrier*.

Coir Fiber Wattle Barrier will be measured and paid as the actual number of linear feet of coir fiber wattle barrier installed and accepted. Such price and payment will be full compensation for all work covered by this provision, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to install the *Coir Fiber Wattle Barrier*.

Page 16-25, Article 1642-5 MEASUREMENT AND PAYMENT, after line 9, delete and replace "____ Wattle Check" with "Wattle".

Page 16-25, Article 1642-5 MEASUREMENT AND PAYMENT, after line 9, delete and replace "____ Wattle Barrier" with "Wattle Barrier".

Page 16-25, Article 1642-5 MEASUREMENT AND PAYMENT, after line 9, add the following:

Pay Item Coir Fiber Wattle Coir Fiber Wattle Barrier **Pay Unit** Linear Foot Linear Foot