# TRAFFIC CONTROL DEVICES

## GENERAL

| Job Element | Date | Project Inspector's Signature |
|---|---|---|
| Explains in general terms Section 700 – General regarding the items of work common to signing, signals, and lighting. | | |
| Explains the general grounding procedures for electrical traffic control devices. | | |
| Verifies that the Contractor has submitted the correct electrical equipment based on the shop drawings. | | |

# TRAFFIC CONTROL DEVICES

## GENERAL

General description of how competencies were completed:

Trainee's Comments:

Project Inspector's Comments:

# TRAFFIC CONTROL DEVICES
## GENERAL

## *CQIP CHECKLIST*

| ***SECTION*** | ***QUESTIONS*** |
|---|---|
| 700.04(c)3 | Have foundation designs for signal poles and overhead sign structures been furnished by the Contractor? |
| 700.04(e)2 | Has the location of each pole, post, and sign structure been established by the Contractor with a stake bearing the number or identification designated on the plans? |
| 700.04(e)3 | If a pole, overhead sign structure, or span wire is located within 10 feet in any direction of an electric power line, did the Contractor notify the Engineer immediately? |
| 700.04(e)4 | Has a noncorrosive metal tag been permanently attached to each signal, pedestal and lighting pole, overhead sign structure, and I-beam steel sign post (except U-channel sign post) approximately 30 inches above the foundation? |
| 700.04(e)5 | Are hand holes provided on poles, and are they located on the side away from traffic? |
| 700.04(e)6 | Are the hand holes at least 3 inches by 5 inches and provided with a cover and gasket? |
| 700.04(f) | Are breakaway support systems installed in lighting and pedestal poles when required by the plans in accordance with this section? |
| 700.04(g) | Is a Megger test run by the Contractor when required? |
| 700.04(h) | After installation, was each conduit tested for obstructions in the presence of the Engineer? |
| 700.04(h1) | When accessible to the public, was PVC or fiberglass conduit covered with a protective shield for a distance of at least 8 feet above finished grade? |
| 700.04(j) | When disturbed by the installation of equipment, was sidewalk replaced in accordance with the section on Sidewalks along existing joint lines? |

# TRAFFIC CONTROL DEVICES

## TRAFFIC SIGNS

| Job Element | Date | Project Inspector's Signature |
|---|---|---|
| Locates signs on a set of plans. | | |
| Describes the different types of signs based on shape (not in R & B Specifications). | | |
| Verifies that the reflective sheeting used in traffic signs complies with Section 247 (Reflective Sheeting). | | |
| Verifies that the message on **three (3)** different signs comply with the MUTCD. | | |
| Describes the proper handling of new and relocated signs during transport and storage. | | |
| Maintains necessary record-keeping related to sign placement. | | |

# TRAFFIC CONTROL DEVICES

## TRAFFIC SIGNS

General description of how competencies were completed:

Trainee's Comments:

Project Inspector's Comments:

# TRAFFIC CONTROL DEVICES
## TRAFFIC SIGNS

### *CQIP CHECKLIST*

| ***SECTION*** | ***QUESTIONS*** |
|---|---|
| 701.02 | Did the reflective sheeting used in traffic signs conform to the requirements of the Materials Section 247, Reflective Sheeting? |
| 701.03(a2) | Are sign panels smooth, flat, and free from metal burrs and splinters and fabricated of aluminum 0.100 inch in thickness? |
| 701.03(a3)1 | Was the prohibition on joints, splices, or laps on sign panels less than 16 square feet in area, except for one factory splice from the roll or for sign panels fabricated with fluorescent prismatic lens orange sheeting, adhered to? |
| 701.03(a3)2 | When more than one width of sheeting, except fluorescent prismatic lens orange, has been applied to a sign panel, do sheeting edges form a vertical butt joint or overlap <=3/8 inch or overlap>3/8 shingle style for horizontal joints? |
| 701.03(a3)3 | Are the finished sign panels free from cracks, gaps, streaks, wrinkles, blisters, discoloration, buckles, and warps and have a smooth surface of uniform color? |
| 701.03(a4) | Do all of the messages, symbols, and other features of the sign message conform to the requirements of the MUTCD? |
| 701.03(a6) | Are lines of message and features straight and properly spaced with letters, numerals, and borders smooth and free of irregular edges? |
| 701.03(a7) | Has the complete outer edge, splices, messages, and borders of the signs been sealed? |
| 701.03(b)(c) | Have all new or relocated signs been transported, stored, and protected in accordance with the requirements of these sections? |
| 701.03(d)1 | When sign panels are installed prior to their need, was a porous cloth cover rendering the message nonvisible placed over the sign panel and properly secured? |
| 701.03(d)2 | Is damage to reflective sheeting repaired in accordance with the requirements of this section? |

# TRAFFIC CONTROL DEVICES

## TRAFFIC SIGNALS
### (TRAFFIC SIGNALIZATION)

| Job Element | Date | Project Inspector's Signature |
|---|---|---|
| Interprets the special symbols on the signalization plans. | | |
| Explains how the Contractor properly performs the demonstration test at a signalized intersection. | | |
| Explains the Phase I and Phase II testing procedures after the Contractor has completed the demonstration test at a signalized intersection. | | |
| Enters the correct records related to the measurement and payment of **at least one traffic signal.** | | |

# TRAFFIC CONTROL DEVICES

## TRAFFIC SIGNALS
### (TRAFFIC SIGNALIZATION)

General description of how competencies were completed:

Trainee's Comments:

Project Inspector's Comments:

# TRAFFIC CONTROL DEVICES

## TRAFFIC SIGNALS
## (TRAFFIC SIGNALIZATION)

### *CQIP CHECKLIST*

| ***SECTION*** | ***QUESTIONS*** |
|---|---|
| 703.01 | Are the traffic signals being installed in accordance with the specifications, plans, or as directed by the Engineer? |
| 703.02(1) | Has the manufacturer provided certification from an independent testing lab that controller model, auxiliary equipment, and flasher conform to NEMA environmental and test procedures and any exceptions stated herein unless otherwise specified? |
| 703.02(2) | Are controllers furnished completely housed in a waterproof cabinet? |
| 703.02(3) | Has the Contractor furnished the manufacturer's instructions for installing and maintaining the equipment? |
| 703.02(4) | Does the Contractor furnish the Department 3 copies of the timing data and documents used in calculating the timings 60 days prior to timing implementation? |
| 703.02(5) | Did the Contractor request the final timing plan at least 90 days in advance of implementation? |
| 703.02(d3) | Has the Contractor installed 2 blue and white prints of the circuit diagram inside the controller cabinet and furnished 3 additional copies to the Engineer? |
| 703.02(e1) | Are cast aluminum signal heads used for span wire installations, free-swinging mast arm installations, and pedestal-mounted installations that use only slipfitters? |
| 703.02(e2) | Are traffic signal backplates specifically manufactured for the type and brand of signal heads used to ensure proper fit with a border width of 5 inches, of one piece construction, and without louvers? |
| 703.02(e3) | Do standard signal head sections conform to the ITE Standard for Vehicle Traffic Control Signal Heads and Section 238, Electrical and Signal Components? |

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|---|---|
| 703.02(e4) | Do selective view traffic signal head sections conform to the requirements of Section 238, Electrical and Signal Components? |
| 703.02(e5) | Do pedestrian signal heads conform to ITE Standards for Pedestrian Traffic Control Signal Indications and Section 238, Electrical and Signal Components? |
| 703.02(e6) | Do Lane-use control signal heads conform to ITE Standards for Lane-Use Traffic Control Signal Heads and Section 238, Electrical and Signal Components? |
| 703.03(a)1 | Did the Contractor obtain approval from the Engineer at least 48 hours prior to discontinuing operation of an existing signal? |
| 703.03(a)2 | Does the Contractor provide necessary traffic control for maintenance of traffic, as approved by the Engineer, while modifying or replacing existing traffic signals? |
| 703.03(a)3 | Has the Contractor furnished the Engineer with the name and telephone number of the supervisory employee responsible for responding to repair calls during non-working hours? |
| 703.03(a)4 | Does the Contractor repair signal malfunctions within four hours from the time of notification? |
| 703.03(e) | Have new or modified signal heads been covered with a durable, non-transparent cover until put into operation? |
| 703.03(e1)1 | Has the Contractor verified the location and alignment of each signal head for orientation to its approach lane(s) prior to installing the signal conductor cable? |
| 703.03(e1)2 | Is the bottom of the housing of all pedestal or bracket-mounted signal faces adjacent to the pavement at least 8 but not more than 15 feet above the sidewalk or pavement grade at the center of the roadway? |
| 703.03(e1)3 | Is the lowest point of the signal head assembly, including backplates and tether wire attachments, at least 15 feet for mast arm and 16 feet for span wire installations above the pavement grade at center of roadway? |
| 703.03(e2)1 | Are pedestrian signal heads mounted with the bottom of the lower signal unit at least 7 but no more than 10 feet above the sidewalk? |

| | |
|---|---|
| 703.03(e2)2 | When mounted on the same support, are pedestrian indications mounted below vehicular indications and are they at least 1 foot apart? |
| 703.03(g) | Has the Contractor submitted a detailed drawing for the Engineer's written approval if detector locations vary more than (+/-) 2 feet from plan location? |
| 703.03(g2)1 | Are inductive loop detectors not installed in pavement that has been open cut, repaired, or rebuilt in a manner where the pavement structure is not sound and continuous? |
| 703.03(g2)2 | Were Megger tests performed before and after sealant installation in accordance with the requirements of this section? |
| 703.03(h) | Do rigging details conform to the requirements of this section? |
| 703.03(i)1 | Does the Contractor conduct a demonstration test of each signalized intersection for 30 continuous days? |
| 703.03(i)2 | Have Phase I & II tests of the traffic control signal system master controller and system coordination been conducted upon completion of the demonstration test for each signalized intersection? |
| 703.03(i)3 | Did the Contractor furnish the Department written certification that the system control equipment has been installed in accordance with the manufacturer's specifications? |

# TRAFFIC CONTROL DEVICES

## PAVEMENT MARKINGS AND MARKERS

| Job Element | Date | Project Inspector's Signature |
|---|---|---|
| Explains the different types and classes of pavement markings. | | |
| Applies the weather limitation to **two (2)** types of pavement markings. | | |
| Explains the different types of pavement markers. | | |
| Measures either a pavement line marking or a pavement marker for the correct payment parameter. | | |
| Accurately records either pavement marking or pavement marker information. | | |

# TRAFFIC CONTROL DEVICES

## PAVEMENT MARKINGS AND MARKERS

General description of how competencies were completed:

Trainee's Comments:

Project Inspector's Comments:

*700 SERIES*

# TRAFFIC CONTROL DEVICES

## PAVEMENT MARKINGS AND MARKERS

### *CQIP CHECKLIST*

| ***SECTION*** | ***QUESTIONS*** |
|---|---|
| 704.02(1) | Does the Contractor use an approved inventory tracking system and provide copies of certified delivery tickets for all pavement marking materials? |
| 704.02(2) | Do all materials conform to the requirements of this section? |
| 704.03(1) | Did the Contractor have a certified Pavement Marking Technician present during pavement marking operations? |
| 704.03(2) | Were pavement marking installations completed within the time limits given in this section for new and resurfaced roadways? |
| 704.03(3) | Did the Contractor install and maintain Type D markings within the same time limits if intended markings could not be placed with the required time limits? |
| 704.03(a)01 | Are the pavement markings white or yellow for the specific location as required by the MUTCD or as specified by the Engineer? |
| 704.03(a)02 | Are pavement markings installed in accordance with Table VII-1 unless otherwise recommended by the manufacturer and approved by the Engineer? |
| 704.03(a)03 | Did the Contractor furnish a copy of the manufacturer's installation recommendations to the Engineer? |
| 704.03(a)04 | Did the Contractor, in the presence of the Engineer, perform quality control testing for application thickness and glass bead rate at the beginning of each workday and every three hours thereafter? |
| 704.03(a)05 | Was Form C-85: Pavement Marking, Contractors Daily Log and Quality Control Report, maintained according to the requirements of this section? |
| 704.03(a)06 | Were crosswalks and stop lines installed using Type B, Class I or IV markings? |

704.03(a)07 Were solid lines or skip lines installed using Type A or Type B markings as specified?

704.03(a)08 Were pavement message markings installed using Type B, Class I, IV, or VI markings?

704.03(a)09 Did the Contractor protect the public from damage attributed to pavement marking operations?

704.03(a)10 Did the Contractor prepare the roadway surface in accordance with this section immediately prior to the installation of pavement markings?

704.03(a)11 Was the pavement surface dry at time of application with no material being applied within 24 hours following rain or other inclement weather?

704.03(a)12 Were liquid markings applied so as to prevent splattering and overspray and protected from traffic until track free?

704.03(a)13 Were pavement markings applied evenly and have a uniform application and appearance, exhibit good workmanship, and appear clearly visible at all times?

704.03(a)14 Were glass beads applied at the specified rate and evenly distributed over the entire surface of the marking?

704.03(a)15 Were beads applied to the surface of liquid markings, unless otherwise noted, by a dispenser that is equipped with a synchronized cut-off control and attached to the applicator?

704.03(a1) Were Type A markings installed according to the requirements of this section?

704.03(a2)1 Did non-truck mounted equipment conform to the requirements of this section for thermoplastic, polyester, and epoxy resin application?

704.03(a2)2 Were Type B markings, which include Thermoplastic, Polyester Resin, Epoxy Resin, and Preformed Tape, installed according to the requirements of this section?

704.03(c1)1 Were snow plowable raised pavement markers installed in accordance with this section?

704.03(c1)2 Was the installed height of snow plowable raised pavement markers approximately ½ inch above the pavement surface?

704.03(c2)1 Were recessed pavement markers installed in accordance with this section?

704.03(c2)2 Was the installed top of the marker flush with or no more than 1/16 below the pavement surface?

704.03(c3) Were raised pavement markers installed in accordance with section?

# TRAFFIC CONTROL DEVICES

## LIGHTING SYSTEMS
### (ELECTRICAL WORK & CONDUIT)

| Job Element | Date | Project Inspector's Signature |
|---|---|---|
| Describes the three (3) different types of lighting systems. | | |
| Verifies that the Contractor correctly follows the procedures when de-energizing any portion of the electrical system. | | |
| Applies the correct measurement and payment methods to a luminaire system and a control center. | | |

# TRAFFIC CONTROL DEVICES

## LIGHTING SYSTEMS
### (ELECTRICAL WORK & CONDUIT)

General description of how competencies were completed:

Trainee's Comments:

Project Inspector's Comments:

# TRAFFIC CONTROL DEVICES

## LIGHTING SYSTEMS
### (ELECTRICAL WORK & CONDUIT)

*CQIP CHECKLIST*

| ***SECTION*** | ***QUESTIONS*** |
|---|---|
| 705.03(1) | Does the Contractor verify or locate the origin of the power source and verify voltage when modifying, removing, or relocating existing electrical systems? |
| 705.03(2) | Does the Contractor notify the Engineer at least 48 hours in advance of his anticipated time of de-energizing any portion of the electrical system? |
| 705.03(a) | Are the luminaires for roadway lighting installed in accordance with this section? |
| 705.03(b) | Are sign luminaries installed in accordance with this section? |
| 705.03(c) | Are high-mast luminaire assemblies installed in accordance with this section? |
| 705.03(d) | Are ballasts installed in accordance with this section? |
| 705.03(e) | Are control centers installed in accordance with this section? |
| 705.03(f) | Are electrical components tested in accordance with this section? |