Section 10.00

GENERAL CLAUSES FOR HIGHWAY ILLUMINATION AND TRAFFIC SIGNAL PROJECTS

*This section is supplemented and amended as follows:*

**Article 10.00.03—Plans:**

 *In the first paragraph, replace the 2nd, 3rd, and 4th sentences with the following:*

 The Contractor shall digitally mark, in red, any changes on the Plan(s) using a pdf program. Markups shall also include field-obtained GPS coordinates for installed span pole, mast arm assembly, controller, and light standard locations.

The GPS technology used shall provide coordinates that are within 12 inches of accuracy.

Coordinates provided are to be as accurate as possible for locations where satellite coverage is compromised by tree canopies, buildings, etc.

 The Contractor shall submit the digital pdf file(s) to the Engineer and to DOT.TrafficElectrical@ct.gov, for Traffic Signals, prior to requesting the Functional Inspection.

 Also prior to requesting the Functional Inspection, the Contractor shall deliver to the Engineer the following:

 *In* Subarticle 1*, replace* “Four (4) paper prints” *with* “Three (3) paper prints and one electronic PDF file sent to DOT.SignalLab@ct.gov” [of schematics and wiring diagrams…].

 *Add* Subarticle 4 *as follows:*

1. Digital field pictures, in .JPG format and labeled appropriately, of the following constructed items:
	1. Signals heads facing each approach. The pictures are to be taken along each intersection approach in order to observe the relation between the signal faces and the approach centerline, lane line(s), and edge line.
	2. Inside of hand holes
	3. Inside of the controller cabinet
	4. Traffic foundations (Span poles, Mast Arm Assemblies, Controller Cabinet, Light Standards, Pedestals)
	5. Video detector locations and mountings
	6. Utility Clearances from span wire and MAAs
	7. Screen shots of detection zones

**Article 10.00.10****—Tests: Preliminary and Final:**

*In* Subarticle **2. Traffic Signal Projects, a) Detector Acceptance Test,** *add the following:*

**4. 360-Degree Video Detection System Tests:** The following tests shall be performed on all traffic signals with 360-Degree Video Detection Systems. The test results shall be recorded and submitted to the Engineer prior to the functional inspection of the traffic signal. Refer to the "Quality Best Practices" attached to the special provision for Item #1112287A “360 DEGREE VIDEO DETECTION PROCESSOR.”

**a) Cabinet Grounding Test:** The cabinet ground shall be tested with a clamp-on ground meter in accordance with the detection system manufacturer's recommendations to ensure a ground reading of a maximum of 25 Ohms. The results of this test shall be recorded.

**b) AC Power Test:** The AC outlet for the processor shall be checked with a digital voltmeter according to the detection system manufacturer's recommendations to ensure that all three connections for the outlet are properly connected and to verify that the AC voltage from the line to neutral and the line to ground is 120VAC. The results of this test shall be recorded.

**c) Ethernet Cable Test:** Each Ethernet cable shall be tested with a digital Ethernet cable tester in accordance with the detection system manufacturer's recommendations to ensure the cable length does not exceed 300 feet, and ensure a Real World Certification of at least 100 MB. The results of this test shall be recorded.

**d) Drain Wire Resistance Test:** Each Ethernet cable drain wire shall be checked with a digital voltmeter in accordance with detection system manufacturer's recommendations to ensure that the resistance between the drain wire grounding post and the cabinet ground rod equals 0 Ohms. The results of this test shall be recorded.

*In* Subarticle **2. Traffic Signal Projects, b) Intersection Acceptance Test, 3. Functional Inspection**, *in the first paragraph, after the 2nd sentence* (“A qualified representative… …during the Functional Inspection.”)*, add the following:*

 Prior to the Functional Inspection, the Contractor shall verify with the CTDOT Traffic Signal Lab that each detection camera is operating properly. In instances where the existing traffic control equipment is being revised or replaced, the verification with the CTDOT Traffic Signal Lab shall be prior to the required Preliminary Functional Test. The Contractor shall have a bucket truck with crewon Site during the Functional Inspectionto make any necessary aerial signal and detection equipment adjustments as directed by the Engineer.

 *In the same Subarticle, after the fourth paragraph, add the following:*

 Upon the successful completion of the Functional Inspection and once all corrections and adjustments resulting from the Functional Inspection are completed, the Contractor shall update as-built plans and pictures to reflect any changes made and submit as required in Article 10.00.03 within 7 days of the completion of the 30-day test.

Article 10.00.12—Negotiations with Utility Company:

 *Add the following:*

 The Contractor shall notify utility companies a minimum of 30 days prior to required work or services. Refer to special provision Section 1.07 – Legal Relations and Responsibilities for the list of utility companies and representatives.

 The Contractor shall perform all work in conformance with Rules and Regulations of the Public Utility Regulatory Authority (PURA) concerning Traffic Signals attached to Public Service Company Poles. The Contractor is cautioned that there may be energized wires in the vicinity of the specified installations. In addition to ensuring compliance with NESC and OSHA regulations, the Contractor and/or its Sub-Contractors shall coordinate with the appropriate utility company for securing/protecting the Site during the installation of traffic signal mast arms, span poles or illumination poles.

 When a span is attached to a utility pole, the Contractor shall ensure the anchor is in line with the proposed traffic signal span wire. More than 5-degree deviation will lower the holding strength and is not allowed. The Contractor shall provide any necessary assistance required by the utility company and ensure the anchor and guy have been installed and properly tensioned prior to attaching the span wire to the utility pole.