

730 GENERAL REQUIREMENTS FOR TRAFFIC SIGNAL AND HIGHWAY LIGHTING SYSTEMS

Traffic signals, highway lighting, and highway electrical systems are integral parts of roadway design and construction. Attention to electrical inspection and quality control can eliminate costly corrective measures and frequent maintenance costs after completion of the work. Once the hardware and equipment have been installed, many of the installation details will not be visible. The only evidence of incorrect procedures may be decreased reliability during the operation of the system. It is extremely important that the Resident Engineer has trained and skilled Electrical Inspectors assigned to inspect the electrical portions of the contract.

The Regional Traffic Signal/Lighting Section will provide the Electrical Inspector for the project. This Inspector will act as a technical advisor to the Resident Engineer during the phase of the project that deals with traffic signals, highway lighting, and electrical devices. The Inspector will report directly to the Resident Engineer unless other lines of responsibility have been prescribed by the Resident Engineer. When an Electrical Inspector is assigned to a construction project, he or she will be primarily responsible for the inspection of electrical systems to ensure compliance with the contract documents, codes, and regulations governing the installation and operation of electrical systems.

The Electrical Inspector's work begins as soon as the final construction plans are received. A copy of the Project Plans should be forwarded to the Electrical Inspector for the project, who should carefully review the Project Plans and inform the Resident Engineer of any discrepancies or omissions that are evident. Such a thorough review can avoid costly change orders or potential claims. During construction, the Electrical Inspector will check certifications, perform all inspection related to electrical items, and submit the proper documentation on all electrical pay items as directed by the Resident Engineer.

Traffic Signal Activation and Final Cleanup

Before the Inspector can recommend activating and accepting any traffic signals or other electrical work, he or she should be satisfied that all required work is completed. The following **inspection guidelines** should be reviewed in order to provide the Inspector with an accurate appraisal of the work performed:

- Were signal circuits tested with 120-volt power applied to each signal wire at the pull box and in front of control cabinet by the Contractor in the presence of the Inspector?
- Has the Inspector coordinated the activation date with the Electrical Inspection Supervisor, Traffic Group, who in turn will schedule the Department or local agency's technician to connect the field wire inside the control cabinet and set up the timing of the controller and activation?
- Is the roadway striping and signing done or coordinated with the District for the same day of activation?
- Has the Contractor arranged for traffic control for the day of the activation?
- Does the Contractor have sufficient personnel and equipment for the activation?
- Were stop signs removed after signal was activated?
- Are signal heads aimed for proper alignment?
- Is all grouting completed?
- Is all touch-up painting completed?
- Was all patching or replacement of AC or PCC completed?
- Did the Contractor clean up and remove all construction rubbish and equipment from the highway right-of-way?
- Was existing landscaping and grading restored to the original or an acceptable condition?
- Were all final measurements and quantities recorded and submitted to the Resident Engineer?
- Were as-built plans completed and submitted?

- Was salvaged equipment dismantled and stockpiled or delivered?
- Was any salvage equipment that was damaged or destroyed by the Contractor replaced?
- If the Department or local agency loaned equipment or material to the Contractor, was it returned?
- Did the Contractor furnish and deliver to the project office all manufacturer's warranties and guarantees?

730-4 Equipment List and Drawings

The specifications require that the Contractor submit six copies of a complete materials list at the Pre-construction Conference. This list shall contain all required information listed in the Project Plans and Special Provisions and shall be reviewed and approved prior to ordering materials. The Contractor should be notified of the review time requirements and the possibility that it may be necessary for some items to be resubmitted.

Shop drawings for signal and lighting equipment are required and must be submitted for review and approval before ordering this equipment. These shop drawings must include all pertinent information related to providing a fully functional system. Such information may include photometric data sheets, optical details, and wiring diagrams.