

## **CHAPTER 2**

### **Pre-construction**

#### **2.1 General**

Every contract construction project is a cooperative venture between the Department and a Contractor and sometimes a third party. The best way to begin is when all parties know what is expected from the Plans and Specifications. A Pre-construction Conference will help all parties involved understand their obligations and expectations. Inspection personnel should work with the Contractor to complete the job quickly while complying with the Plans and Specifications, without sacrificing the quality of work or materials. Employees of the Contractor should cooperate with the Department by complying with the contract documents willingly.

#### **2.2 Site Inspection**

Prior to the letting of a project, prospective bidders should inspect the project location in the company of the Project Manager or his representatives who should be very careful to give all prospective bidders the same information. Prospective bidder's questions must be requested in writing and in sufficient time to allow for a reply to reach him before the submission of his bid. Oral explanations or instructions given before receiving bids on the project are not binding. More details relating to Plans, Specifications and Project Site Inspections are listed in the Specification Subsection 00120.15. The Inspector assigned to the project should accompany the Project Manager on the Site Inspections.

# CHAPTER 1

## Purpose

### 1.1 GENERAL

The objective of this manual is to provide Project Managers and Inspectors with information to assist in successful installation and completion of traffic signals and other highway electrical projects in compliance with the contract documents. Potential problem areas and possible results of poor workmanship are also discussed. The manual is intended for use as a practical handbook, in no way modifying the Plans or Specifications. In case of conflict between this manual and any of the contract documents, the priority stated in subsection 00150.10 of the Specifications will be used.

***00150.10(a) Order of Precedence - The Engineer will resolve any discrepancies between these documents in the following order of precedence:***

- ***Contract Change Orders;***
- ***Special Provisions;***
- ***Agency-prepared drawings specifically applicable to the Project and bearing the Project title;***
- ***Reviewed and accepted, stamped Working Drawings;***
- ***Standard Drawings;***
- ***Approved Unstamped Working Drawings;***
- ***Supplemental Specifications;***
- ***Standard Specifications; and***
- ***All other contract documents not listed above***

This manual is not intended to replace or supersede contract documents. This manual assumes that Preliminary Engineering and Design Engineering have been done correctly.

To properly perform their duties and responsibilities, users of this manual will find it necessary to refer to other publications or sources of information.

## **2.3 Coordination with Other Agencies**

**Close coordination with any agency that may be involved with, or affected by the project should be a primary concern of the Project Manager and Inspector. This coordination will in most cases involve communication with these agencies at least three times; (1) during the location/design phase, (2) at the pre-construction meeting and possibly during construction, and (3) at project completion. The agency which will take over maintenance of the signal should be contacted and invited to attend the signal turn-on and the final inspection. That agency should also be told (in writing) at what time their responsibility will begin. This responsibility is detailed in Section 00990.70 of the Specifications.**

## **2.4 Coordination with Agency Electrical Crew & Permits**

**It is critical that the Project Manager/Inspector coordinates supplemental inspection with agency electricians and electrical permitting agencies (see 00170.02). According to Oregon Law it is required that specific parts and pieces of the installation be ONLY installed by a licensed electrician. Agency electricians and electrical permitting agencies must also verify these installations before the project proceeds or is completed. Pay close attention to the electrical permitting agencies requirements and timelines described in the required permits. Failure to comply with permits will add significant time and cost to the project.**

**Later in this document, the parts, pieces and installations requiring an electrician to install, as per the Electrical Board, will be listed.**

## **2.5 Pre-construction Conference**

**An agenda for a Pre-construction Meeting is covered in Specification Subsection 00180.42. The meeting should be well planned and reviewed beforehand.**

The time for the meeting should be agreed upon with the contractor, local law enforcement agencies, concerned governmental agencies, emergency units (fire, EMS, etc.), utility and/or pipeline owners (if involved), railroads, and possibly others as necessary. The erosion and traffic control plans should be submitted at this time.

A roster of all present should be made, and detailed notes should be taken during the meeting. The planned sequence and phases of work should be covered in detail by the Contractor.

A request for a list of *all employees and their electrical license number* should be done at this time (see 00960.30). This list must be received before work commences on the project.

Names and phone numbers of all those who may be called in an emergency should be made available here. An excellent method of making notes is to use tape recordings with individuals identifying themselves prior to speaking.

## 2.6 Traffic Control Plan

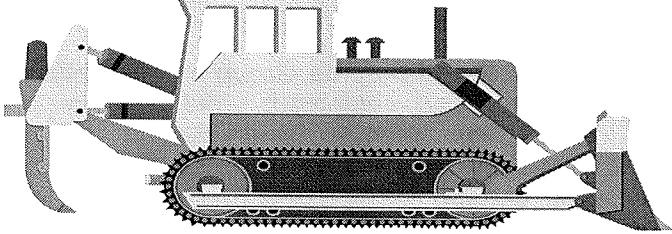
Temporary Protection and Direction of Traffic should be covered in detail by the Project Manager during the pre-construction meeting. If the Contractor wishes to use a different plan he must submit it to the Project Manager for review and approval by the Department to confirm adherence to the MUTCD. The Department's and Contractor's Responsible Persons should be named, their duties should be outlined, and close cooperation should be initiated during the pre-construction meeting.

Inspections of the project relating to conformance to the Traffic Control Plan should be made in both a formal and informal basis both day and night.



## 2.7 Utilities

### Call Before You Dig



- (a) Location/Design Stage - In this stage of the project all known owners of utilities within the limits of the project should be contacted and detailed locations of these utilities incorporated into the plans.

After all known utilities are plotted on the plans, a site inspection should be made to determine if there may be obvious errors or new utilities not listed in the plans. Cuts and patches in pavement, curbs, and sidewalk; conduit vent-pipes, valve boxes and manholes are some indicators of buried lines. A general note in the plans should be used to reinforce the Contractor is responsible for the safety and protection of all utilities during the conduct of his operations.

- (b) Construction Stage - During the construction stage, notifying the utility companies of planned work in the area of their lines may save much time and expense by preventing damage to lines. Many utility companies prefer to expose their own lines if necessary. Any unknown utilities discovered during construction should be accurately mapped, the location plotted on the As-Constructed Plans for future reference, and the locations given to the District Maintenance Office. If any utility locations are found to be different from that shown on the plans, then the As-Constructed Plans should indicate the actual location, and the utility owner should be notified of the findings.

## **2.8 Materials Submittals**

### **(a) Materials Approved on Previous Projects**

The Traffic Standards Group has compiled lists of materials and equipment used on prior projects. These lists "Blue & Green Sheets" are updated frequently and are available on our Internet web site. Call the Traffic Signal Engineer (503) 986-3596) for the most recently updated set of lists if you can't download them from that site. They are available on ODOT's web site at <http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/signals.shtml>

The "Submittals for Field Qualification Equipment and Materials"(Blue Sheets) list contains those items normally qualified by the Project Manager. Brand names and model numbers are listed for most types of equipment. The contractor can submit two copies, appropriately marked, to satisfy the requirements of Standard Specifications Section 00960.02. The pages are pre-stamped for qualification, and include an inspector sign-off box (manufacturer's quality compliance certificate).

The "Submittals for Conditional Qualification Equipment and Materials" (Green Sheets) list contains those items normally accepted for environmental and functional testing by the Traffic Signal Services Unit. Brand names and model numbers are listed for most types of equipment. The contractor submits three copies, appropriately marked, for conditional qualification by the Project Manager.

Read the instructions included in the "blue" and "green" sheets carefully. New updated instructions are printed with the sheets. Please follow these instructions. "Blue" sheets sent in for listed items will be returned to the Project Manager for qualification. This delays the qualification process.

**(b) Catalogue Cut Sheets**

If the product is not listed in the "blue" and "green" sheets the Contractor shall submit to the Project Manager catalogue cut sheets (1 set) for the equipment and materials which he proposes to install. The sheets shall identify the product intended to be used. The item shall be listed by manufacturer's name, size and identifying number, when it is necessary or customary in the trade to identify such materials. Such sheets shall be supplemented with data as may be required, including but not limited to detailed scale drawings and wiring diagrams of any nonstandard or special equipment. The Inspector should check these sheets before making payment for any materials on hand but not in place.

When a Contractor submits a catalog cut sheet for approval which has more than one piece of equipment or material on it, the contractor shall mark which particular item is being considered. Mail/Fax cut sheets to ODOT Traffic Signal Engineer for verification and qualification of material(s). Submittals of poor copies that are not clearly marked will be returned for correction.

**(c) Pre-qualified materials**

Lists of some pre-qualified materials are included in the Special Provisions and the Qualified Products List. Except for signal poles, pre-qualified materials do not have to be submitted to Traffic Standards Group for further qualification. Pole drawings must be stamped by an Oregon Registered Professional Engineer and pre-qualified pole drawings must bear a "reviewed" stamp from both ODOT Traffic Structures and ODOT Traffic Standards.