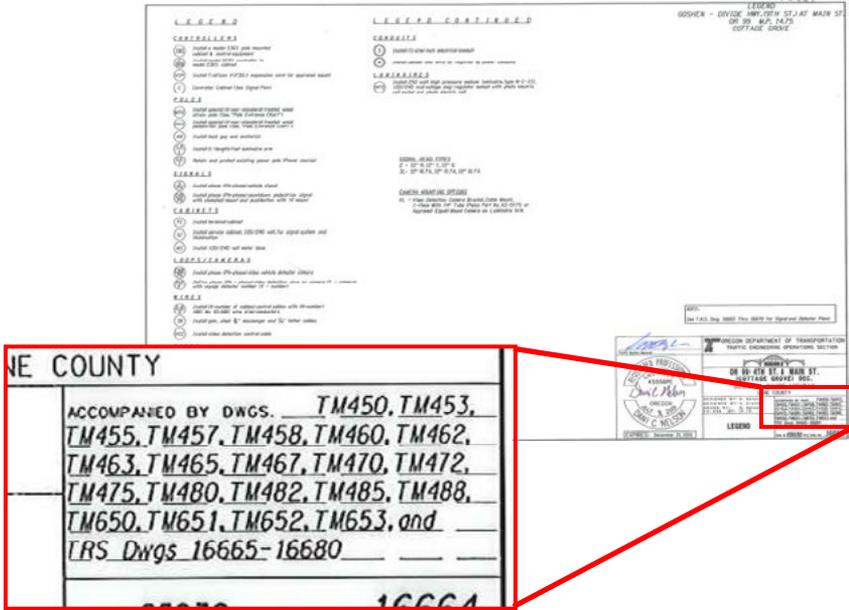


# Standard Drawings

Each project will contain a list of applicable traffic signal standard drawings to be used, shown on first plan sheet of the signal plan set:



The applicable Standard Drawings should be contained within the contract plans, but they can also be downloaded as a PDF file from the following website:

[http://www.oregon.gov/ODOT/HWY/ENGSERVICES/pages/traffic\\_drawings.aspx](http://www.oregon.gov/ODOT/HWY/ENGSERVICES/pages/traffic_drawings.aspx)

## Traffic 400 - Signals

TRAFFIC 400 - SIGNALS					
2008 Specifications			2008 Specifications		
NEW Entire Series - pdf			Entire Series - pdf		
1 June 14 - 30 Nov 14			1 Dec 13 - 31 May 14		
Number	File Type	Description   Baseline Report	Number	File Type	
TM450	<a href="#">dgn</a>   <a href="#">pdf</a>	Mast Arm Pole Details	TM450	<a href="#">dgn</a>   <a href="#">pdf</a>	
TM452	<a href="#">dgn</a>   <a href="#">pdf</a>	Strain Pole Details	TM452	<a href="#">dgn</a>   <a href="#">pdf</a>	
TM455	<a href="#">dgn</a>   <a href="#">pdf</a>	Temporary Signal Details	TM455	<a href="#">dgn</a>   <a href="#">pdf</a>	
TM457	<a href="#">dgn</a>   <a href="#">pdf</a>	Vehicle, Pedestrian Signal and Push Button Mounting Option Details	TM457	<a href="#">dgn</a>   <a href="#">pdf</a>	

Effective Date of Dwg. (Older versions available on-line in the archives)

PDF File for each drawing

Baseline report for each drawing

PDF File for each drawing

Std. Drawing & Specifications

# List of Traffic Signal Related Standard Drawings

## TM400 Series: Signals

- TM450 – Mast Arm Pole Details
- TM452 – Strain Pole Details
- TM455 – Temporary Signal Pole Details
- TM457 – Vehicle, Pedestrian Signal and Push Button Mounting Option Details
- TM458 – Pedestrian Ramp Placement Details
- TM460 – Vehicle Signal Details
- TM462 – Adjustable Signal Head Mounting Details
- TM463 – Spanwire Mounting Details
- TM465 – Overhead Sign, Fire Preemption, and Photoelectric Control Details
- TM467 – Pedestrian Signal and Pedestrian Push Button Details
- TM470 – Color Code Charts
- TM472 – Traffic Signal Junction Boxes/Hand Holes
- TM475 – Loop Details
- TM480 – Loop Entrance Details
- TM482 – Controller Cabinet & Foundation Details
- TM485 – Service Cabinet and Service Cabinet Wiring Details
- TM488 – Terminal Cabinet Detail
- TM490 – Crosswalk Closure Detail
- TM492 – Ramp Meter Pedestal Details
- TM495 – LED PTR Signs and Details
- TM497 – Ramp Meter Layout and Details

## TM600 Series: Sign, Illumination, and Signal Support Structures

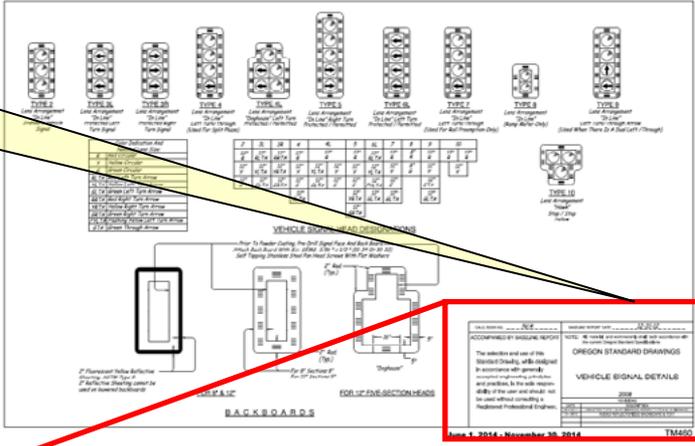
- TM650 – Traffic Signal Supports General Details & Design Criteria
- TM651 – Traffic Signal Supports Notes and Reactions
- TM652 – Traffic Signal Supports Steel Details
- TM653 – Traffic Signal Supports Foundation Requirements
- TM660 – Traffic Strain Pole Supports General Details & Design Criteria
- TM661 – Traffic Strain Pole Supports Notes, Reactions, and Details

## TM800 Series: Temporary Traffic Control

- TM870 – Bridge Construction (Using Signals, 1 lane, 2-way)

Standard Drawings are updated twice a year, once in January and once in July. The effective date of the standard drawing is updated at each revision, **EVEN IF THERE ARE NO CONTENT CHANGES**. Check the title block of the standard drawing to find out if any content revisions have occurred. The baseline report for each drawing (found on-line) also provides info on content changes.

Standard Drawing Title Block



Std. Drawing & Specifications

CALC. BOOK NO. <u>    N/A    </u>	BASELINE REPORT DATE <u>    12-31-12    </u>						
ACCOMPANIED BY BASELINE REPORT  The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.	NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications  <b>OREGON STANDARD DRAWINGS</b>  <b>VEHICLE SIGNAL DETAILS</b>  <b>2008</b>						
	REVISIONS <table border="1"> <thead> <tr> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>06-2011</td> <td>DELETED TYPE 1 &amp; 4R SIGNALS, ADDED TYPE 9 &amp; 10 SIGNALS</td> </tr> <tr> <td>12-2012</td> <td>ADDED REFLECTORIZED BACKBOARD &amp; TEXT</td> </tr> </tbody> </table>	DATE	DESCRIPTION	06-2011	DELETED TYPE 1 & 4R SIGNALS, ADDED TYPE 9 & 10 SIGNALS	12-2012	ADDED REFLECTORIZED BACKBOARD & TEXT
DATE	DESCRIPTION						
06-2011	DELETED TYPE 1 & 4R SIGNALS, ADDED TYPE 9 & 10 SIGNALS						
12-2012	ADDED REFLECTORIZED BACKBOARD & TEXT						
<b>June 1, 2014 - November 30, 2014</b>	<b>TM460</b>						

Effective Date (reference to the bid date of the project)

Date & description of any content revisions

**ALWAYS CHECK THE STANDARD DRAWINGS FOR CONTENT CHANGES PRIOR TO USE!**

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# Specifications & Special Provisions

## General

Standard Specifications are contained in a published book that is updated roughly every 5 to 10 years. Each edition of the Standard Specifications lists the year that it is produced for easy identification. Each project will list state the specific edition to be used.

Special Provisions are specific to each project; they add, modify, or delete information that is contained in the standard specifications or standard drawings. The Engineer of Record will produce the special provisions for each project from Special Provision Boiler Plates. There are several different reasons why the Engineer of Record may need to add modify or delete information in the Standard Specifications:

- Correcting typos or errors
- Adding unique features to project (i.e. ornamental pole treatments)
- Deleting information that is not relevant to the project
- Limiting construction methods or materials that may be used (i.e. requiring polycarbonate material for vehicle signal heads or requiring horizontal directional drilling instead of open trenching)
- A change in standards

Note that in specification 00150.10(a) Order of Precedence, the Standard Specifications are near the bottom of the list because they are updated on infrequent basis and are typically generic (to make them useful for the majority of installations). Special Provisions, on the other hand are near the top of the list because they are specific to each project.

The Standard Specifications and Special Provision Boiler Plates can be found at the following website:

<http://www.oregon.gov/ODOT/HWY/SPECS/Pages/index.aspx>

**ALWAYS CAREFULLY READ THE SPECIAL PROVISIONS FOR YOUR PROJECT!**

## List of Traffic Signal Related Specification Sections

The specifications are organized by sections. The following section lists the major specification sections that are related to traffic signals. As noted in the list below in parenthesis, the major specification sections related to traffic signals may reference additional specifications for certain components of the work.

- 00225: Work Zone Traffic Control (references numerous other sections)
- 00902: Crosswalk Closure Barricades
- 00950: Removal of Electrical Systems
- 00960: Common Provisions for Electrical Systems (references 00440 & 00442)
- 00962: Metal Illumination & Traffic Signal Supports (references 00440 & 02560)
- 00963: Signal Support Drilled Shafts (references 00440 and 02510)
- 00965: Camera Poles and Foundations (references 02560)
- 00970: Highway Illumination (references 00960, 00962, & 02926)
- 00990: Traffic Signals (references 00960, 00962, 02920, 00963, & 02925)
- 02920: Common Electrical Materials
- 02925: Traffic Signal Materials

## Specification Division Format

Each section of the specifications is organized by divisions. There are ten divisions:

- XXXXX.00 = Description (work scope & definitions)
- XXXXX.10 = Materials (material properties & testing requirements)
- XXXXX.20 = Equipment (unique equipment requirements)
- XXXXX.30 = Labor (unique labor requirements/qualifications)
- XXXXX.40 = Construction (sequence of construction & end product requirements)
- XXXXX.50 = Temporary (unique temporary measures that are required)
- XXXXX.60 = Maintenance (maintenance & repair responsibilities)
- XXXXX.70 = Finishing and Clean-up (restoration responsibilities & warranties)
- XXXXX.80 = Measurement (components that are to be measured for payment)
- XXXXX.90 = Payment (bid items for which payment will be made)

# Using Standard Specifications & Special Provisions

Both the Standard Specifications and the Special Provisions are required to properly inspect the project. The example below shows how the two documents are used together to make a complete project specific specification.

## **Standard Specification 02925.64(b):**

### 02925.64 Vehicle Signal

(b) Visors – Construct visors of sheet aluminum alloy 3003-H16 (ASTM B 209), nominal thickness 16 gauge or polycarbonate. Visors shall be of one piece construction and attach to the signal housing doors with Type 304 or 316 stainless steel screws. Provide 8 inch lenses with a 7 inch visor and 12 inch lenses with a 9 ½ inch visor. Signal housing doors, with visors attached, shall be capable of being opened a minimum of 90 degrees.



## **Special Provision 02925.64(b):**

02925.64(b) Vehicle Signal Visors – In the first sentence, remove “sheet aluminum alloy 3003-H16 (ASTM B 209), nominal thickness 16 gauge or”.



## **Combining the two = Complete & Useable Specification on Project:**

### 02925.64 Vehicle Signal

(b) Visors – Construct visors of ~~sheet aluminum alloy 3003-H16 (ASTM B 209), nominal thickness 16 gauge or~~ polycarbonate. Visors shall be of one piece construction and attach to the signal housing doors with Type 304 or 316 stainless steel screws. Provide 8 inch lenses with a 7 inch visor and 12 inch lenses with a 9 ½ inch visor. Signal housing doors, with visors attached, shall be capable of being opened a minimum of 90 degrees.

## Measurement and Payment

The last two divisions of each specification section contain information on measurement and payment. Read payment section (XXXXX.90) closely to determine what IS included and what is NOT included in the bid item payment.

Bid Item	Spec. No.	Measurement (XXXXX.80)	Payment (XXXXX.90)
Temporary Traffic Signal	00225	None	Lump Sum (per specific intersection)
Portable Temporary Traffic Signal	00225	Unit	Each
Removal of Electrical Systems (method "A")	00950	None	Typically no separate payment
Removal of Electrical Systems (Method "B")	00950	None	Lump Sum (per specific intersection)
36" Diameter Signal Support Drilled Shaft	00963	Length	Foot
42" Diameter Signal Support Drilled Shaft	00963	Length	Foot
Traffic Signal Installation	00990	None	Lump Sum (per specific intersection)
Traffic Signal Modification	00990	None	Lump Sum (per specific intersection)
Detector Installation	00990	None	Lump Sum (per specific intersection)
Ramp Meter Installation	00990	None	Lump Sum (per specific intersection)
Interconnect System	00990	None	Lump Sum (entire project)
Flashing Beacon Installation	00990	None	Lump Sum (per specific intersection)
Automatic Traffic Recorder Installation	00990	None	Lump Sum (per specific intersection)

Note: Work **DETAILED** on the signal plan is included in the traffic signal lump sum bid item. Work **REFERENCED** on the signal plan is **NOT** included in the lump sum bid item. This typically applies to signs:

- Guide signs/street name signs are only referenced on the signal plans and therefore measured and paid for under the signing bid items.
- Standard regulatory signs are usually detailed (showing substrate, size, sheeting type, sign design, & mounting info) on the signal plans and therefore measured & paid for under the traffic signal lump sum bid item.

Typical anticipated items for traffic signal work include:

- Electrical Power Hook-up
- ITS & communication equipment