Chapter 18
STANDARD DRAWINGS AND STANDARD DETAILS

Contents

18 STANDARD DRAWINGS AND STANDARD DETAILS

18.1 Standard Drawings

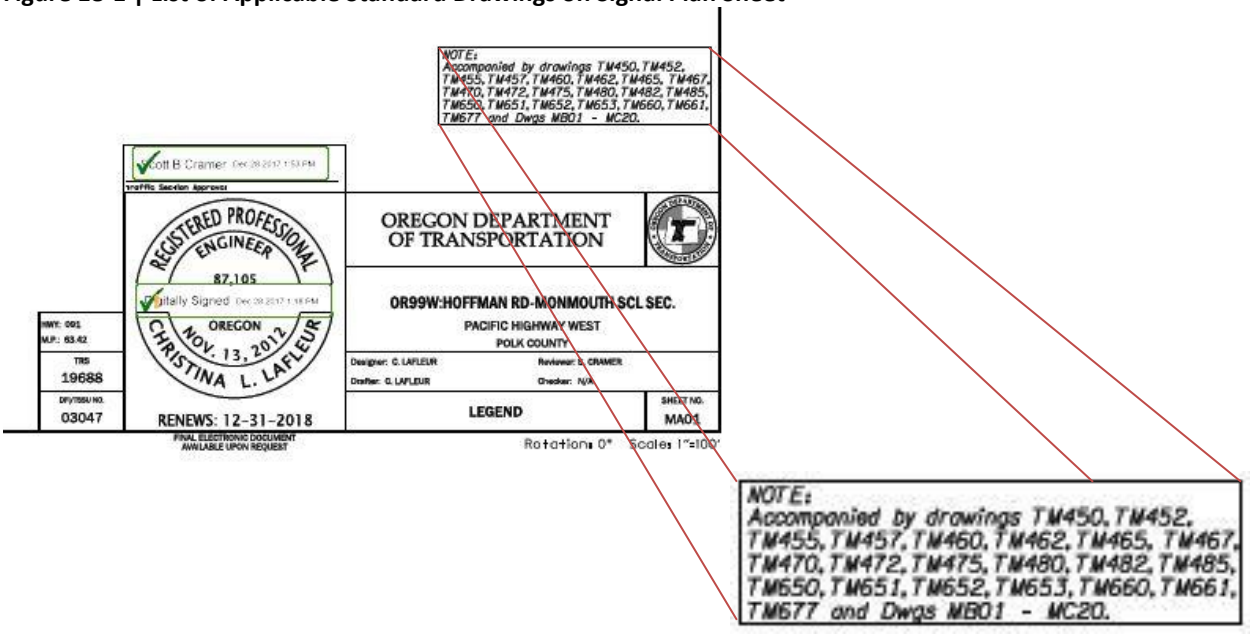
Standard Drawings provide micro detail construction information for typical installations and are referenced by the contract plans via the signal plans. The designer is responsible for selecting the appropriate standard drawings that are applicable to the project. The applicable signal related standard drawings are listed only on the first sheet of the signal plan set. See Figure 18-1. The entire set of applicable standard drawings for the whole project is shown in the main index (usually the second sheet of the contract plans). It is a good idea to check the main index to ensure signal related standard drawings were listed correctly.

The standard drawings that are applicable to signal design are found in the TM400 series (signal design) and TM600 series (traffic structures). Standard drawings for temporary work zones (temp. bridge signals) are found in the TM800 series (work zone).

Standard Drawings cannot be modified by the designer. However, if a standard drawing doesn't quite work for a particular project due to a non-typical condition, the standard drawing content can be used to create a "Details" plan sheet that is then signed and sealed by engineer of record.

The home website for all Standard Drawings and Standard Details is:
http://www.oregon.gov/ODOT/Engineering/Pages/Standards.aspx

Figure 18-1 | List of Applicable Standard Drawings on Signal Plan Sheet



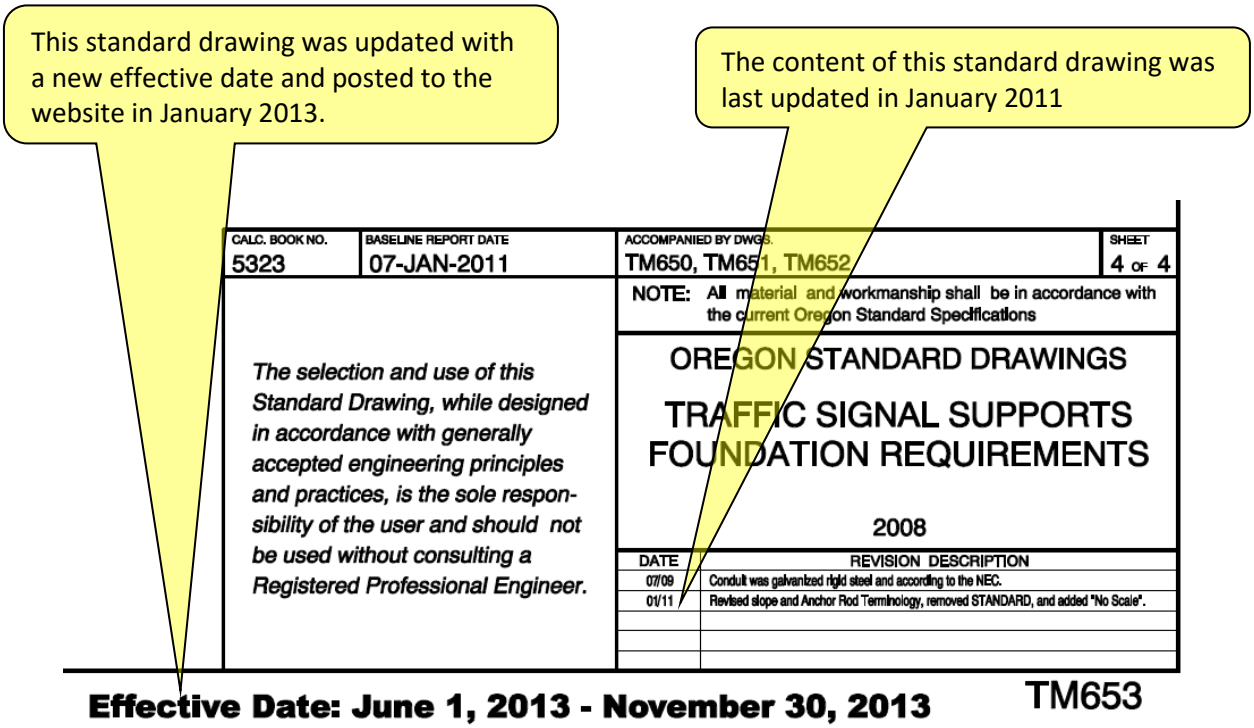
18.1.1 Effective Dates and Updates

An effective date is placed on each Standard Drawing. The bid date of the project will be within the range of the effective date. This assists with identifying the correct drawing for the project. The standard drawings used on the project are valid for the life of the construction.

Standard drawings are maintained by the Traffic-Roadway Section and are updated twice a year, once in January and once in July. At each revision update, every standard drawing will get a new effective date, regardless of any content changes. If any content changes are made, they will be listed and dated in the standard drawing title block. See Figure 18-2. Always check to make sure the standard drawing effective date falls within the project bid let date and be aware of the status of content changes. The effective dates for each revision update are shown below:

- January update – effective date from June 1 to November 30
- July update – effective date from December 1 to May 31 of the following year

Figure 18-2 | Standard Drawing Effective Date and Content Change Information



18.1.2 Baseline Reports

Each standard drawing has been signed and sealed by an ODOT Engineer of Record and are backed by engineering analysis, calculations, and/or other justification to support the content contained within. The engineering analysis, calculations, assumptions and other information used in the development of the standard drawing is documented in the baseline report. See Figure 18-3 showing baseline information in the standard drawing title block and Figure 18-4 for an example of a baseline report. If content changes are made during the revision update periods, the baseline report is also updated.

The baseline reports are available online and the signal designer should review the baseline reports to ensure proper application of the standard drawings on the project.

Figure 18-3 | Standard Drawing Baseline Report Info in Title Block

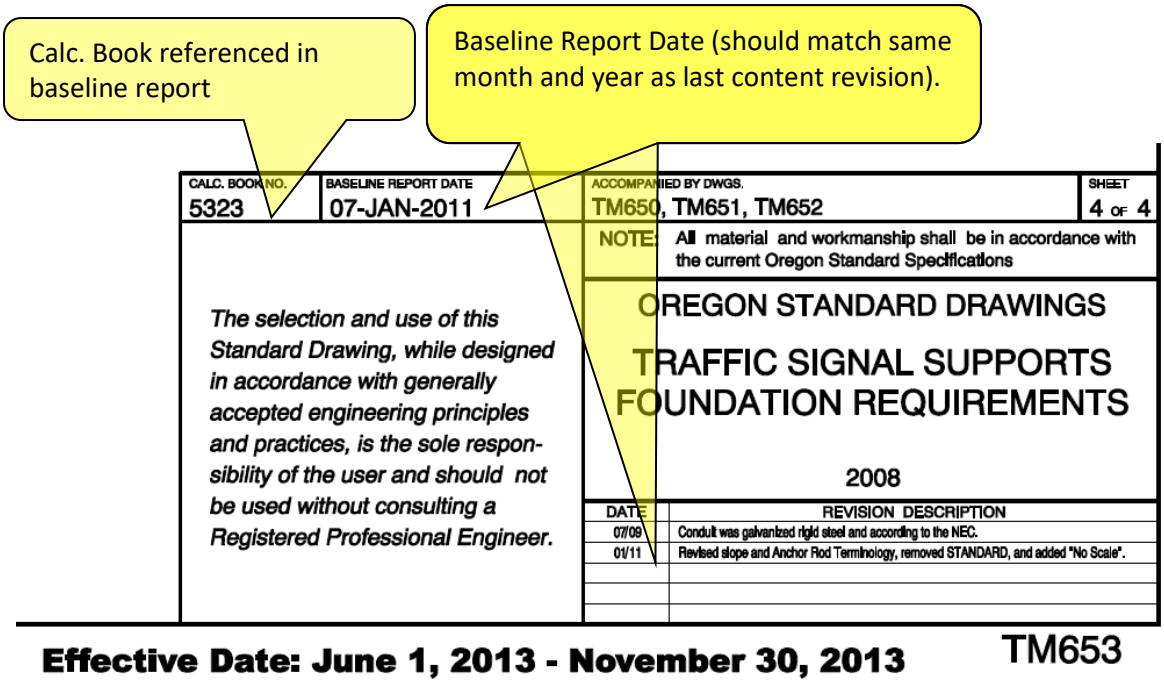


Figure 18-4 | Baseline Report Example

TM653 Standard Drawing Baseline Report

Date: January 7, 2011

Technical Owner: Scott U. Jollo, P.E.

Standard Drawing Number: TM653

Drawing Title: Traffic Signal Supports Foundation Requirements

Origination Date: 2008

REGISTERED PROFESSIONAL ENGINEER 51012PE OREGON JANUARY 12, 1999 SCOTT U. JOLLO
EXPIRES: 06/30/2011

Background Information, Including Reference Material:

AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals with 2001, 2002, 2003, and 2006 Interims

The Standard drawing Calculation book 5323 contains additional design information and calculations that pertain to the Signal Pole Foundation design.

The following is a list of the revisions that have been made to the drawing:

1. June 30, 2005 – TM 653, Standard Traffic Signal Supports Foundation Requirements (both English & Metric), was created by the Traffic Structures group.
2. June 30, 2006 – Added callout to PLAN – TOP OF FOOTING DETAIL stating that "Signal Arm Center Line can be oriented in a direction relative to top of footing". By allowing the foundation to be rotated, right of way issues might be avoided.
3. June 30, 2006 – Added Strain Pole Types column and Mastarm to Pole Types column in the Standard Foundations table.
4. June 30, 2006 – Added foundation note "Shafts 7, 8, and 9 do not include torsion rebar". The torsion reinforcement is not required for these strain poles because the torsion to moment ratio is low enough to not require the torsion rebar.
5. June 30, 2007 – Modified Stand Foundations table by removing required footing depths and modifying associated table notes. The increased loading conditions in conjunction with variable soil strength parameters required geotechnical exploration and foundation design in the preliminary design phase to produce more accurate foundation depths.
6. June 30, 2007 – Removed Soil Types definitions.

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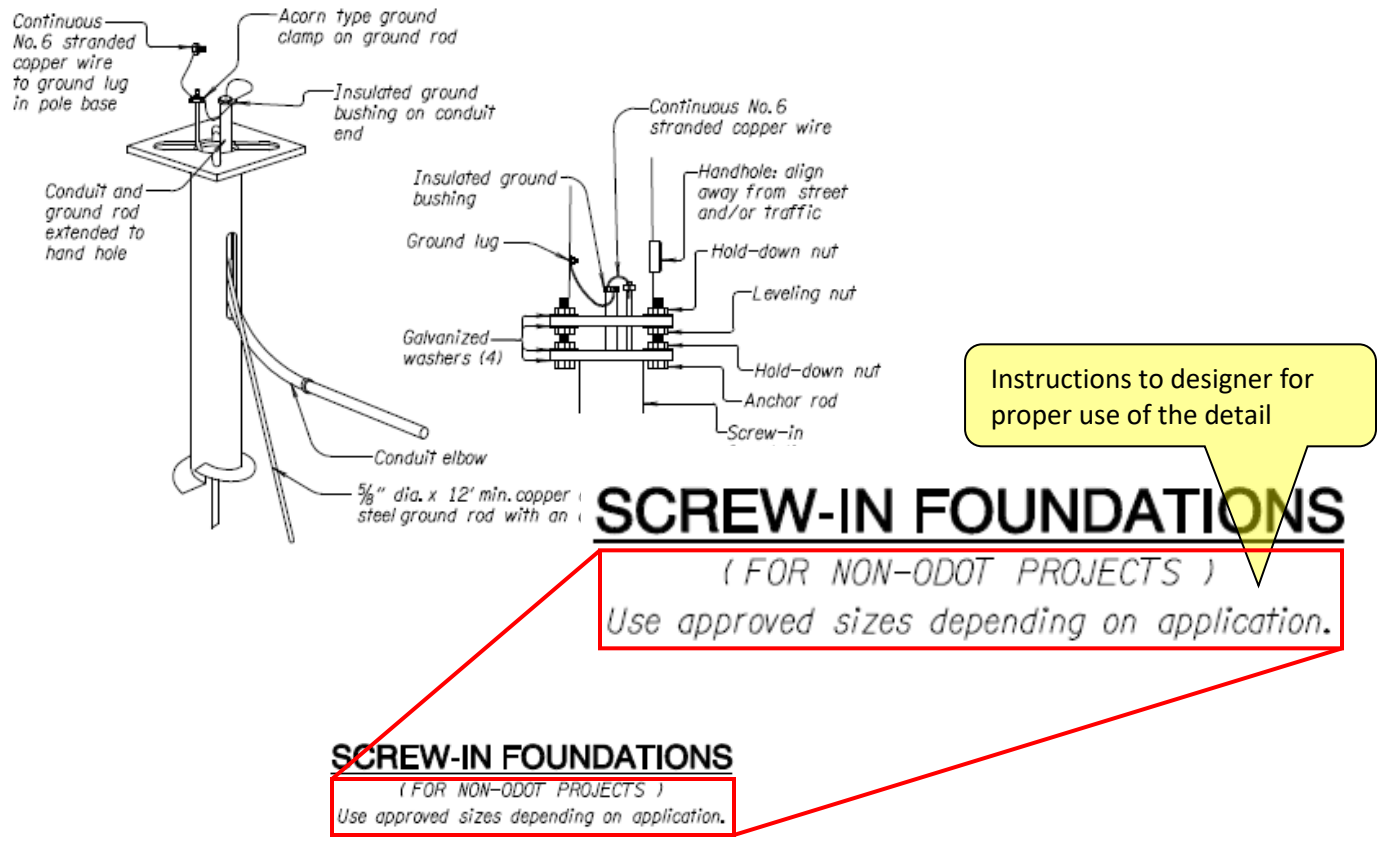
18.2 Standard Details

Standard Details typically contain construction installation information that:

- Is used infrequently,
- Is used on non-state highway roadways,
- Requires modification based on the project specific location, and/or
- Is brand new/unproven technology that needs refinement prior to becoming a standard drawing

Standard Details are used by the designer to create a project specific "details" plan sheet that will be included in the project contract plans set and stamped by the Engineer of Record. The Standard Details can, and should be modified by the designer to fit the unique, project specific requirements. Often there are notes to the designer in the Standard Detail containing further information on the appropriate use and modification of the Detail. See Figure 18-5. There are no baseline reports for standard details.

Figure 18-5 | Standard Detail – Notes to the Designer



Standard Details are maintained and updated by the Traffic-Roadways Section and can be updated at any time, so the designer should always download a copy from the web site to ensure the most up-to-date detail. The Standard Details from DET4400 to DET4499 are used for signal design.