

# Chapter 7

## Design Tools

### 7.1 General Information

Detailed **plan notes, modified special provisions, and/or technical special provisions** must be provided by the designer for all items **not covered by existing specifications**. *Plan notes are not acceptable as a substitute for specifications*. Plan notes are intended to work *with* the specifications, and are not intended to supersede the specifications. Plan notes must not:

- Change the specifications
- Conflict with the specifications
- Duplicate the specifications
- Change the pay item description

When existing specifications are not applicable, coordinate specification revisions with the District Specifications Office. Every effort should be made to avoid conflicts, as plan notes are overridden by some specifications and take precedence over others. In either case, plan notes must *never* conflict with specifications. Details necessary for complete information include:

- Description of item
- Materials
- Construction and installation
- Method of measurement
- Basis of payment

Modified Special Provisions are also known as “MSPs”. Technical Special Provisions are also known as “Tech Specs” or “TSPs”. In general, the difference is:

- MSPs: used to modify existing specification sections
- TSPs: used when no specification section exists

For additional information on various types of specifications, refer to the **Specifications Handbook** at <http://www.fdot.gov/programmanagement/specs.shtm>. Contact the District Specifications Office with any project related specifications concerns.

**NOTE: Refer to the FDOT Design Manual (FDM), Topic 625-000-002, for additional guidelines on using plan notes. It is located online at <http://www.fdot.gov/roadway/FDM>** Contact the Roadway Design Office with any questions, comments, or corrections regarding these notes. Similar guidance is in the Structures Detailing Manual, 5.1, F.

Pay item descriptions must remain as shown in the BOE and provided from the various system reports. This is the description used for the contract bid documents through final payment. See Chapter 6 for requesting pay items when project specific needs require other descriptions.

## 7.2 Specification Flags

Several letters or “flags” are used on the Master Pay Item list and Summary of Pay Items to indicate when a non-standard specification and/or Plan detail is **likely needed**. Flags are listed, with further guidance below:

- A= Approvals needed
- B= BOE guidance
- D= Developmental Spec
- E= Estimates Use Only
- G= Generic Item
- T= Technical Special Provision
- M= Maintenance use only
- P= Plan Details
- R= Permit
- S= Modified Special Provision

**Approvals:** Contact the monitor for approval on each project. Additional information is provided in the BOE details for the pay item.

**BOE Guidance:** Specification flag(s) may depend on multiple factors, as described in the BOE details for the pay item group.

**Developmental Specification:** Developmental Specifications must be requested from the District Specifications Office, for approval by the CO Specifications Office, on a project by project basis. Follow the instructions on the Specifications Office’s developmental specifications page at

<https://www.fdot.gov/programmanagement/OtherFDOTLinks/Developmental/Default.shtm>

**Estimates Use Only:** These items are intended for estimating/accounting use. For additional information, see BOE guidance for the pay item number.

**Generic Item:** See Chapter 6 for details

**Technical Special Provision (TSP):** Specification preparation assistance is available at <https://www.fdot.gov/programmanagement/PackagePreparation/Default.shtm> While TSPs are project specific, coordinate with the District Specifications Office, as past specifications may be available.

**Maintenance Use Only:** Selected pay items are available for use on Maintenance Contracts only, due to maintenance specification changes that provide for separate payment and/or method of measurement.

**Plan Details:** While all pay items have selected plan details showing the quantities, locations, and/or dimensions, this flag is used to identify pay items with additional information required, per the specification.

**Permit:** Pay item is used for work required by a permit, normally issued by an environmental or water management agency. These pay items should NOT be used unless addressed in the permit.

**Modified Special Provision:** Modified specifications must be coordinated with the District Specifications Office. Additional guidance is available at <https://www.fdot.gov/programmanagement/PackagePreparation/Default.shtm>

Refer to the details for the specific pay item group in the Basis of Estimates for additional information.

## 7.3 Choosing between Specifications and Plan Details

When trying to decide between Specifications and Plan Details, there are several quick questions to consider:

1. What is the **work to be completed**?
2. What are the **material requirements**? What are the testing criteria?
3. How is this to be **installed**? What are the performance requirements?
4. Will the item be **measured** in the field, or paid by plan quantity?
5. What work/materials are included with, or excluded from, this **payment**?

**When is a Plan Note sufficient?** When the quick questions above are answered by the specifications, a plan note is sufficient. This frequently occurs when the specification indicates “use xxx, unless otherwise shown in the plans.” Remember, plan details/drawings show dimensions and location; they alone are not a substitute for complete specifications.

**When is a Specification Required?** If the above quick questions are not answered by the existing specifications, a non-standard specification is required. The Designer is responsible for ensuring that all pay items are completely covered within the contract documents (specs, standards, and/or plans).

### A complete specification includes:

**Description:** A Description of the work to be completed may be in the form of a drawing/plan detail, words in a specification, or both.

**Material requirements:** Materials may be identified in the specifications, design standards, by reference to ASTM or other testing criteria, or by notes in the plans. Consider long-term material requirements, such as UV protection or other coatings.

**Construction:** Either installation methods or performance requirements may be given. Some products may be installed “in accordance with manufacturer’s instructions.”

**Method of Measurement:** Describe HOW the item will be measured, as well as whether it will be paid by plan quantity or field measured. The standard text normally includes the “furnish and install” operation. When working with “install only” items, ensure that the pick-up/delivery instructions are included. For “relocate” items, clearly identify original and final location, as well as clean-up work at the original location and incidental items needed at the final location. “Remove” items should clearly identify whether contractor takes ownership (dispose) or the Department retains ownership (stockpile- within right of way, or delivered to maintenance yard). Additional operations are explained in the **BOE, Chapter 10**.

Special/Custom items should only be used when there is a significant deviation from the standard item of work; existing specs and/or standards do not apply. Complete specifications are needed. Note: Minor changes may be noted in the plans, using standard pay items, as long as conflicts are not created within the contract documents. Coordinate proposed specification changes with the District Specifications Office.

**Basis of Payment:** Payment is often “full compensation for all work specified” for a complete and accepted installation.

## 7.4 Plan Details and Pay Item Notes

**FDM 2020 edition:** FDM Chapters 304 and 307 address the Summary of Quantities sheets in the plans, along with standard pay item notes. When a plan note is necessary, locate it where it is most relevant. For roadway items, this would be on the roadway summary of quantities, along with standard pay item notes. For other component plans, this would be on the summary of quantities sheet(s), or near the item detail/drawing.

From the **FDM 311.1 General Notes:**

*General notes provide information and direction to the contractor by clarifying design details or construction practices. General notes are project-specific and must not restate, broaden or curtail requirements in the Standard Specifications or Standard Plans.*

**FDM 2021 edition:** Ensure that notes do not duplicate or conflict with specifications.

### 7.4.1 Choosing between Plan Details, Pay Item Notes, and Summary Box Design Notes Column

The Design Notes column of the summary box is used to show information that is location and/or payment specific. Do not use the design notes column for specification details, such as material requirements. Refer to Chapter 8 for additional guidance.

Plan or Pay Item notes should be coordinated with the District Specifications and Estimates Offices. They should not be used in conflict with specification text for Measurement and Payment. Refer to the ***FDOT Design Manual (FDM)*** for additional guidance.

### 7.4.2 Pay Item Notes

Pay item notes that begin “Payment includes...” should be moved to the appropriate specification’s Basis of Payment. Do not use a pay item note to change or duplicate the specification, without approval of the District Specifications Engineer.

## 7.5 Plan Quantity Concept

Plan Quantity Measurement is defined in 9-1.3 of the specifications. Estimated quantities must be calculated and documented as accurately as possible. Plan Quantity pay items shall not include contingencies in the quantity calculation.

## 7.6 Federal Funding

### 7.6.1 Projects with Federal Funds

When any project with federal funds is let together with a state funded project, also known as “strung projects”, all projects within the contract become “federalized”, i.e. they must comply with all applicable federal laws, rules, and regulations related to the federalized contract. In addition, the Federal-aid project may become the lead project.

Details are available in the *FDOT Design Manual (FDM)*. Contact the District Estimates Engineer for additional guidance.

### 7.6.1 Federal Participation at the Pay Item Level

On a project with federal funds, all items will “participate” in the funding, unless specifically noted otherwise. Summarized from FHWA, all items of work, including preventative maintenance, which are intended to extend the useful life of the highway will be eligible for participation in federal funds.

Items of “routine maintenance” are not eligible for participation in federal funds. Examples of “routine maintenance” include litter removal and mowing.

For construction contracts, most items will be loaded as participating. Pay Items specifically noted in the *Basis of Estimates (BOE)* as “non-participating” will default to “non-participating”. Do not change the participating/non-participating field, unless specifically instructed by the District Estimates Office.

## 7.7 Proprietary Products

### 7.7.1 Procedure

Proprietary products, identifying a specific brand, product, and/or model, must follow the Proprietary Product Procedure No 630-020-005. Details are available from Product Evaluation at <http://www.fdot.gov/programmanagement/ProductEvaluation/Default.shtm>

### 7.7.2 Specifications

Specifications associated with Proprietary Products must follow current specification instructions, available at <http://www.fdot.gov/programmanagement/specs.shtm> Ensure that Method of Measurement and Basis of Payment are addressed in the contract documents.

### 7.7.3 Pay Items

Pay items for proprietary products will normally follow existing pay item guidance for the applicable item(s).

- if the item is currently covered by an existing pay item, the proprietary product will continue to use the existing item
- If the item is covered by a project specific or developmental pay item, the proprietary product will use the applicable pay item

As with all pay items, if the proprietary product is expected to have significantly higher or lower cost, a project specific pay item may be requested.

### Chapter 7 Revision History

**11-1-20:** Updated header dates for 2021 edition. Formatted text in 7.2. Added 2021 FDM guidance to 7.4.

**4-17-20:** Added “S” code for specification type. Expanded guidance in 7.2.

**11-1-19:** Updated header dates for 2020 edition. Added 7.4.2 for pay item notes.

**12-1-18:** Updated header dates for 2019 edition. Added text for pay item descriptions. Added 7.7 for Proprietary Products.

**8-8-18:** Updated 7.1 and 7.4 references from PPM to FDM chapters.

**10-23-17:** Updated header dates for 2018 edition. Updated PPM reference and web page to FDM. Updated General Notes quote from 2018 FDM.

**8-12-16:** Added PPM reference to 7.4 for active voice wording. Updated web links to fdot.gov.

**5-9-16:** Updated 7.2 to include B value.

**2-1-16:** Updated header dates for 2016 edition. Updated PPM reference in 7.4.

**12-30-14:** Updated header dates for 2015 edition. Added third paragraph to 7.1 to define Tech Specs and refer to specs web page. Corrected missing text from last sentence of 7.6.1.

**5-14-14:** Updated 7.2 to include developmental specs.

**1-14-14:** Updated header dates for 2014 edition. Updated “Spec Type” flag list. Included Quick Reference information into section 7.3. Updated hyperlink.

**2-20-13:** Updated header dates for 2013 edition.

**12-30-11:** Added 7.5 to include Plan Quantity information, per Estimates Bulletin 11-06.

**11-23-11:** Updated header dates for 2012 edition.

**10-17-11:** Added 7.4 to detail pay item notes, along with PPM guidance.

**4-21-11:** Updated header date. Moved text from “Quick Reference” to new section 7.3. The “Quick Reference” content will also be available as a separate file online.

**11-23-10:** Updated header dates for 2011 edition. Added color to “Quick Reference” page.

**5-14-10:** Updated “Quick Reference” page.

**10-30-09:** Updated header dates for 2010 edition.

**9-16-09:** Changed chapter title from Plan Notes to Design Tools. Added section for Tech Spec and other flags. Added “Quick Reference” page.

**10-1-08:** Updated header dates for 2009 edition.

**5-28-08:** Deleted notes; refer to PPM for current information for: Key Sheet Notes, Typical Section Notes, Summary of Quantities Sheet Notes, Plan and Profile Sheet Notes, Pay Item Footnotes, Drainage Map Notes, and Utility Adjustment Sheet Notes.