



Florida Department of Transportation

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ROADWAY DESIGN BULLETIN 16-03

DATE: May 12, 2016

TO: District Directors of Transportation Operations, District Directors of Transportation Development, District Design Engineers, District Construction Engineers, District Geotechnical Engineers, District Structures Design Engineers, District Maintenance Engineers, District Roadway Design Engineers, District Traffic Operations Engineers, Program Management Engineers, District Materials Engineers

FROM: Michael Shepard, P.E. 
State Roadway Design Engineer

COPIES: Brian Blanchard, Phillip Gainer, Tim Lattner, David Sadler, Rudy Powell, Amy Tootle, Bruce Dana, Gregory Schiess, Trey Tillander, Mark Wilson, Daniel Scheer, Robert Robertson, John Krause, Dan Hurtado, Jeffrey Ger (FHWA), Nick Finch (FHWA), Rafiq Darji (FHWA)

SUBJECT: Key Sheet

The format and content of Key Sheet has remained relatively unchanged since the period of full size mylar plans, that were reproduced on a blueline copier. The purpose of this bulletin is to introduce format changes on the Key Sheet that reflect current practices and requirements. *Exhibit KS-1*, which is found in the *Plans Preparation Manual (PPM), Volume 2, Chapter 3*, has been updated to reflect these changes, and is attached to this bulletin for reference. The major changes are:

- Formal name change for the Design Standards and the referencing of the Design Standards Revisions.
- Removal of the Project Length Box.
- Combining the titles “Submit Shop Drawings”, “Plans Produced By” and “Engineer of Record” into a single title block.
- Change in location of the Construction Contract Number, FDOT Project Manager name, Strung Project note, and the “REVISIONS” header.

REQUIREMENTS

1. Replace *PPM, Volume 2, Section 3.2* with the following:

3.2 Key Sheet

3.2.1 Financial Project ID, Federal Funds, County Name and State Road Number

The Financial Project ID is the main number identifying each individual project within the Department. Place the number immediately under the heading "CONTRACT PLANS" in the top center of the sheet. When the project involves Federal funds, place the words "(Federal Funds)" under the Financial Project ID. Place the county name and roadway section number associated with the Straight Line Diagrams under the Financial Project ID or "(Federal Funds)". Place the roadway section number within parentheses. Place the state road number under the county name and roadway section number. A description of project limits may be placed under the state road number; e.g. "Crim Boulevard to Washington Street".

On projects which have one set of contract plans, but multiple Financial Project ID's, place all of the Financial Project ID's immediately under the heading "CONTRACT PLANS" on the Key Sheet. On all other sheets, show only the lead Financial Project ID in the title block.

3.2.2 Construction Contract Number, Fiscal Year and Sheet Number

Show the Construction Contract Number in the "Construction Contract No." box (lower right corner) on all component Key Sheets. Show the fiscal year for which the Letting is scheduled in the "Fiscal Year" box; i.e. enter 17 for a project that has a Letting date during the July 2016 to June 2017 fiscal year.

The Key Sheet of each component of the plans set will be numbered as the first sheet of that component.

3.2.3 Project Location Map and North Arrow

Place the project location map in the center of the key sheet with a north arrow on the right side of the map. Orient the map so that the north arrow points toward the top of the sheet. If the north arrow cannot be oriented toward the top of the sheet, then orient the map so that the north arrow points to the right. Show the project location map only on the lead component Key Sheet.

The map consists of a reproduced portion of one or more county maps showing the project location. County maps in MicroStation (*.dgn) format or in Portable Document Format (PDF) can be downloaded from the [County General Highway Maps](#) web page.

A utility to download the county map and clip out the project location area is provided in the *FDOT Engineering/CADD Systems Software*.

The intent of the project location map is to provide enough information so that the project location is easily understood. Show Section, Township, and Range lines and numbers to provide clarity and scale to the project location map. Show county, city and urban limits where applicable.

Designate roads by name and State Road number or U.S. Highway number. Show the name of the next incorporated city at the edge of the map to which these roads lead. Use standard symbols as shown in the *Design Standards, Index 002* and FDOT Engineering/CADD Systems Software.

Indicate project location using a heavy solid line of substantial width. It is sometimes advantageous to show station numbers at regular intervals, particularly with city street projects. Flag and station the following:

- Begin and end project limits. Provide milepost, correct to three decimals, under the project stations.
- Begin and end limits of bridges and bridge culverts. When an existing structure is being replaced, indicate the proposed structure and not the existing.
- Station equations
- Project exception limits (mileposts excluded from project)
- Rail crossings within the limits of construction, including name of railroad, DOT/AAR crossing number, and railroad milepost.

Calculate the end milepost by adding the distance in miles between begin and end project to the begin milepost. Plans are to be prepared using stationing in linear feet. A project may be prepared using mileposts when linear foot stationing is unavailable. All station information is to be consistent with the station information entered into the Work Program Administration system during final design. See *Volume 1, Section 14.2*.

When several projects are covered by the same set of plans, flag and station begin and end project limits for each Financial Project ID.

Show a small-scale state map at the upper right portion of the lead component Key Sheet and indicate the location of the project thereon. The map may be shown on other component Key Sheets, but is not required.

3.2.4 Contract Plans Components

The Roadway plans are typically the lead component of the contract plans. List all component plans included in the contract plans in the upper left corner of the lead component Key Sheet in the following

order:

1. Roadway
2. Signing and Pavement Marking
3. Signalization
4. Intelligent Transportation Systems (ITS)
5. Lighting
6. Landscape
7. Architectural
8. Structures
9. Toll Facilities

When sheets covering items such as signing and pavement markings, signalization, ITS, lighting and landscape are included and numbered consecutively within the roadway plans, do not show these as a component of the contract plans.

Another component (e.g. structures, signals, landscaping), may become the lead component when there are no roadway plans. Any sheets incidental to the project typically found within the roadway plans or other component plans (e.g. traffic control plans, signing and pavement marking), may be included in the lead component and numbered consecutively. Sheet number prefixing is not required for the lead plans set; i.e. "IT-#" is not required for ITS Plans when they are the lead component.

See the [*Structures Manual, Volume 2 – Structures Detailing Manual*](#) when Structures plans become the lead component.

3.2.5 Index of Roadway Plans

Place an index of roadway plan sheets on the left side of the key sheet. Each component Key Sheet will have an index of sheets contained in that component.

Assemble roadway plans in the following order:

1. Key Sheet
2. Signature Sheet
3. Summary of Pay Items
4. Drainage Map
5. Interchange Drainage Map
6. Typical Section

7. Summary of Quantities
8. Summary of Drainage Structures
9. Optional Materials Tabulation
10. Project Layout
11. Project Notes
12. Roadway Plan-Profiles
13. Traffic Monitoring Site
14. Special Profiles
15. Back-of-Sidewalk Profiles
16. Interchange Layout
17. Ramp Terminal Details
18. Intersection Layout/Details
19. Drainage Structures
20. Three-Sided/Box Culvert Details
21. Outfall/Lateral Ditch Plan-Profiles
22. Outfall/Lateral Ditch Cross Sections
23. Special Details
24. Cross Section Pattern
25. Roadway Soil Survey
26. Cross Sections
27. Stormwater Pollution Prevention Plans (SWPPP)
28. Temporary Traffic Control Plan
29. Utility Adjustments
30. Project Network Control Sheet
31. Selective Clearing and Grubbing
32. Developmental Design Standards
33. Signing and Pavement Marking Plans*
34. Signalization Plans*
35. ITS Plans*
36. Lighting Plans*
37. Landscape Plans*
38. Mitigation Plans
39. Miscellaneous Structures Plans

* When separate component plans are not included in the contract plans.

40. Toll Facilities*

The roadway plans may require insertion of sheets that were prepared early, or prior to the design process; i.e. early works. These sheets may be identified and numbered with the following prefixes:

CTL-# Project Network Control Sheets

GR-# Soil Survey and Report of Core Borings normally associated with the roadway plans set (including miscellaneous structures but excluding bridges and walls)

TR-# Tree Survey Sheets

UTV-# Verified Utility Locate Sheets

Place these sheets at the end of the numbered sequence of the index of roadway plan sheets with an asterisk and include a note below the index as shown in *Exhibit KS-1*.

No plans sheets other than those listed above are to be separated from the component plans.

3.2.6 Professional Responsibility

An Engineer of Record (EOR) is the lead Florida licensed professional engineer in charge of the preparation of the component plans set. Place in the lower right corner the name and license number of the EOR. Also show the name and address of the engineering business or agency where the EOR is employed. Include the consultant contract number, certificate of authorization number and vendor number when plans are prepared by an engineering business.

For non-engineering professionals that are in charge of the preparation of the component plan set, change title to “Licensed Professional of Record.” Include similar information that applies to their profession.

Place the name of the FDOT Project Manager below the EOR information. Show only the FDOT Project Manager at this location, except for:

- When the plans are prepared by Department Personnel, the name of the FDOT Project Engineer may be placed immediately below the name of the FDOT Project Manager.
- When appropriate, the GEC Project Manager may be placed immediately below the FDOT Project Manager.

3.2.7 Governing Design Standards and Standard Specifications

Show the governing *Design Standards* and *Standard Specifications for Road and Bridge Construction* on the lead component Key Sheet as shown on *Exhibit KS-1*. Do not show this reference on other component Key Sheets. For requirements of the Structures General Notes, see the *Structures Detailing Manual, Section 5.2*.

The *Design Standards* are published annually, as an *eBook* posted on the Roadway Design Office web site. The release of the *Design Standards eBook (DSeB)* is announced by *Design Bulletin* which specifies the effective date for implementation.

When *Design Standards Revisions (DSRs)* are released by *Design Bulletin*, the engineer must determine which *DSRs* apply to the project and reference them as shown on *Exhibit KS-1*. If there are no applicable *DSRs*, the note regarding *DSRs* is not required.

3.2.8 Developmental Design Standards

Insert *Developmental Design Standards (DDSs)* at the end of each component plan set as applicable. When included in the structure component plans, insert *DDSs* before existing bridge plans if they are present. List *DDSs* below the “Index of Sheets” for the plans component in which they are included, as shown in Exhibit KS-1. Follow the process shown in the “Developmental Design Standards Usage Process for Design-Bid-Build Projects” located in the link provided on the top of the [Developmental Design Standards](#) website for requesting and using a *DDS*.

3.2.9 Revisions

The process and requirements for completing plan revisions are provided in *Chapter 20, Volume 1*.

Show a complete record of all plans revisions on the lead component Key Sheet under the “REVISIONS” header located below the project location map. Include the component (such as roadway, structures, signing and pavement marking), the sheet number revised, and the date when the sheet was revised. Show the unique numbered symbol that corresponds to the Revision Number on the Revision Memo and modified sheets as well.

Show revisions to the Key Sheet in the Key Sheet Revisions block placed below the project location map and to the right of the “REVISIONS” header. List the revision date and a brief description of the revision. The Key Sheet Revisions block is only used to record changes to the Key Sheet other than recorded revisions under the “REVISIONS” header. A new Lead Key Sheet is required when any plan sheet is revised.

If a sheet is being deleted, note this under the “REVISIONS” header, and revise the Index of Sheets to show “(Deleted)” next to the deleted sheet. Record the change to the Index of Sheets in the Key Sheet Revisions block.

If there are no revisions to the plans, the “REVISIONS” header is not required. If there are no Key Sheet revisions, the Key Sheet Revisions block is not required.

3.2.10 Strung Projects

Contract Plans that are independently prepared but are let in the same construction contract are referred to as strung projects. For each set of contract plans that are to be strung, place the strung project note on the lead component Key Sheet as shown in *Exhibit KS-1*. Show the strung project note only on the lead component Key Sheets.

List revisions to any strung project on the lead component Key Sheet of the lead project under the “Revisions” Header, under the respective Financial Project ID.

BACKGROUND

The Governing Design Standards and Standard Specifications notes were revised to accommodate referencing of Design Standards Revisions in lieu of appending them to the plans. This effort led to questioning other elements of the Key Sheet to identify needed revisions to reflect current practices.

The “Length of Project” box has a history of generating comments on how it is populated and its application on interchange and intersection projects. This led to questioning the use and purpose of the data contained in the box. Numerous FDOT offices and users of the plans were interviewed and there was no identified need for the data, and no objection to its removal. Two Districts were recently asked by Central Office to submit plans without the “Length of Project” box as pilot projects. Comments were received that the box provided a convenient location to get an understanding of the scope of work, however the desired information is easily obtainable from the stationing and flagging provided on the project map.

On recent lettings it was noted that some plans included the construction contract number on component Key Sheets, and some did not. The State Construction Office prefers to show the number on all component Key Sheets to aid in their tracking system. Based on this request, a construction contract number box was added to the lower right corner of all Key Sheet.

Historically, there have been three title blocks on the right side of the Key Sheet. The first title block is “submit shop drawings to”. The shop drawing process outlined in *PPM Volume 1, Chapter 28* and the Standard Specifications indicate that shop drawings are to be submitted to the EOR indicated in the plans which makes the first title block unnecessary. The second title block is “plans produced by”, which is typically the agency or firm that employs the EOR. The third title block is the EOR information. It was determined that combining the three title blocks into a single EOR title block effectively provides all the desired information in a more succinct manner.

The Strung Project note has been moved to the top right corner of the Key Sheet (above the state outline) to provide consistency in its location and placement

The FDOT Project Manager name has been moved to above the sheet number box to make room for the “REVISIONS” list and the Key Sheet revision block.

IMPLEMENTATION

The requirement for changing the name of the Governing Design Standards to “FY 2016-17 Design Standards eBook” is to be implemented on all plan sets beginning with the July 2016 letting.

Other requirements contained in the bulletin are to be implemented on all plan sets beginning with the January 2017 letting. These requirements may be implemented on projects let prior to January 2017 where implementation will not adversely impact production schedules.

These requirements will be included in the next release of the FDOT CADD Software.

CONTACT

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Attachment: Exhibit KS-1

CONTRACT PLANS COMPONENTS

- ROADWAY PLANS
- SIGNING AND PAVEMENT MARKING PLANS
- SIGNALIZATION PLANS
- INTELLIGENT TRANSPORTATION SYSTEMS PLANS
- LIGHTING PLANS
- LANDSCAPE PLANS
- ARCHITECTURAL PLANS
- STRUCTURE PLANS
- TOLL FACILITIES PLANS

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2	SIGNATURE SHEET
3	SUMMARY OF PAY ITEMS
4	DRAINAGE MAP
5 - 6	TYPICAL SECTIONS
7	TYPICAL SECTION DETAILS
SQ-1 - SQ-6	SUMMARY OF QUANTITIES
8	SUMMARY OF DRAINAGE STRUCTURES
9	OPTIONAL MATERIALS TABULATION
10	PROJECT LAYOUT
11	PROJECT NOTES
12 - 15	ROADWAY PLAN-PROFILES
16	TRAFFIC MONITORING SITE
17	SPECIAL PROFILES
18	INTERSECTION LAYOUT/DETAILS
19 - 25	DRAINAGE STRUCTURES
26 - 32	BOX CULVERT DETAILS
33	LATERAL DITCH PLAN-PROFILES
34	LATERAL DITCH CROSS SECTIONS
35	SPECIAL DETAILS
36	ROADWAY SOIL SURVEY
37 - 47	CROSS SECTIONS
48	STORMWATER POLLUTION PREVENTION PLAN
49 - 52	TEMPORARY TRAFFIC CONTROL PLANS
53 - 57	UTILITY ADJUSTMENTS
58 - 62	SELECTIVE CLEARING AND GRUBBING
CTL-1 - CTL-5*	PROJECT NETWORK CONTROL SHEETS

DEVELOPMENTAL DESIGN STANDARDS (DDS):
D450 HIGH-TENSION CABLE BARRIER

* These sheets are included in the Index of Roadway Plans only to indicate that they are part of the Roadway Plans. These sheets are contained in a separate digitally signed and sealed document.

GOVERNING DESIGN STANDARDS:

Florida Department of Transportation, FY2016-17 Design Standards eBook (DSeB) and applicable Design Standards Revisions (DSRs) at the following website:
<http://www.dot.state.fl.us/rddesign/DesignStandards/Standards.shtm>

APPLICABLE DSRs: DSR400-01, DSR410-01, DSR411-01

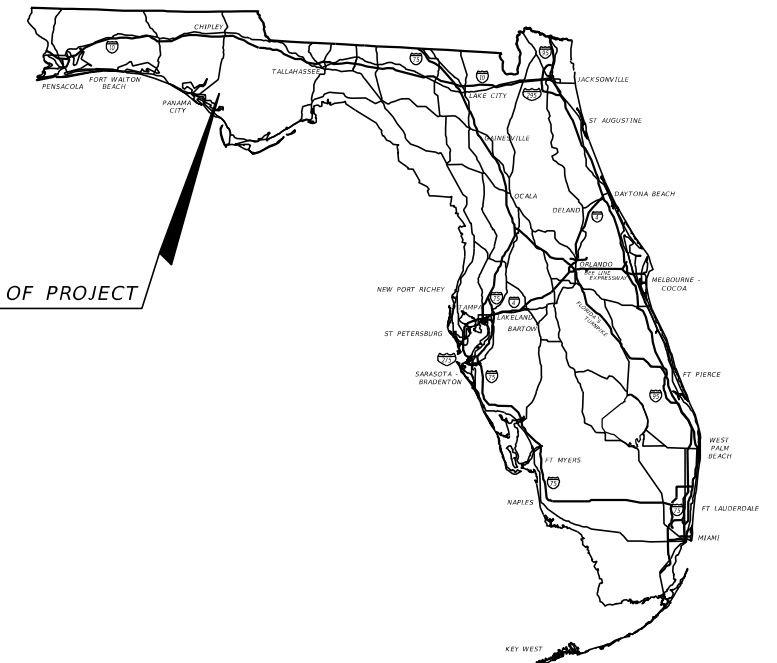
GOVERNING STANDARD SPECIFICATIONS:

Florida Department of Transportation, July 2016 Standard Specifications for Road and Bridge Construction at the following website:
<http://www.dot.state.fl.us/programmanagement/Implemented/SpecBooks>

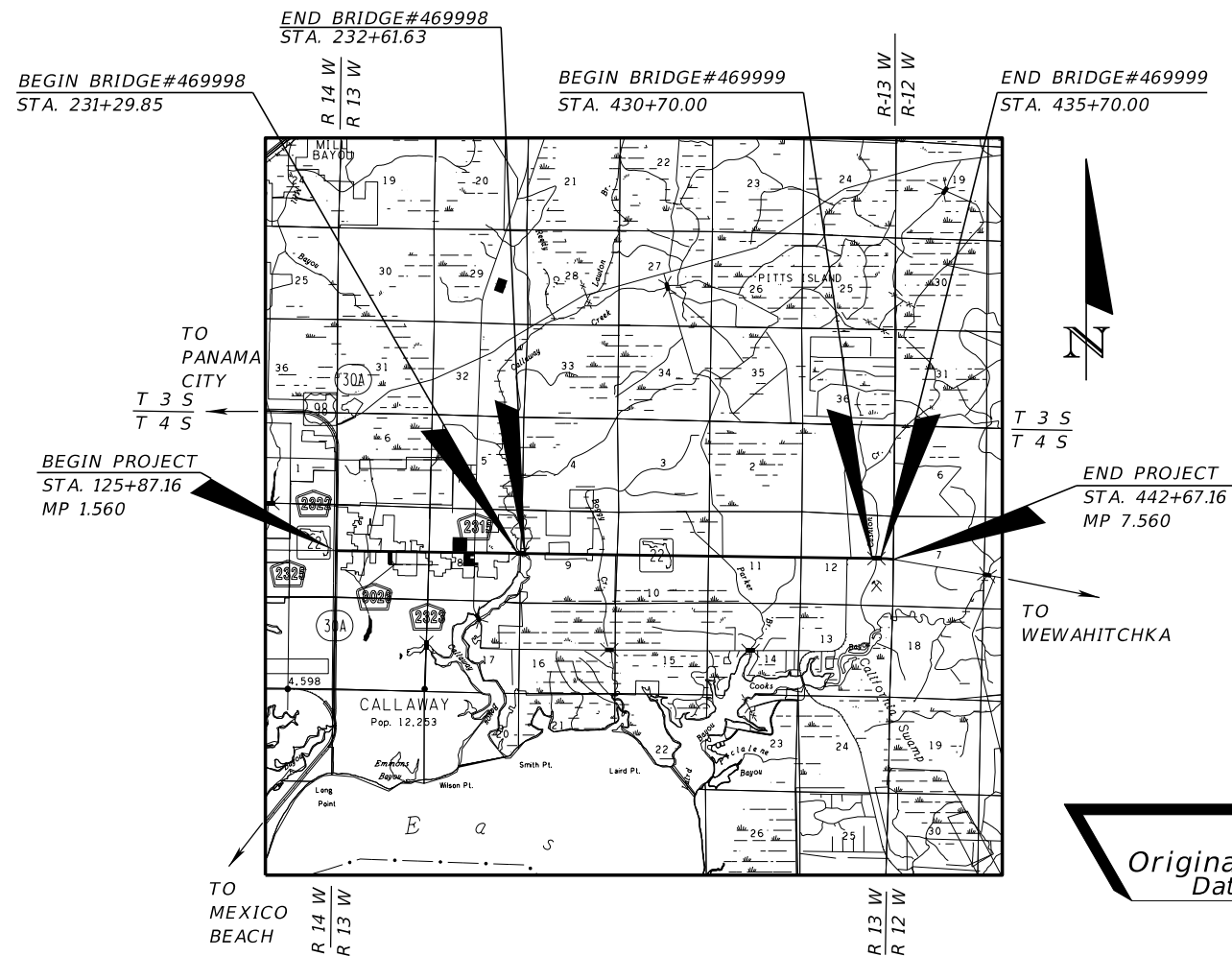
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

CONTRACT PLANS

FINANCIAL PROJECT ID 123456-1-52-01
(FEDERAL FUNDS)
BAY COUNTY (46080)
STATE ROAD NO. 22



LOCATION OF PROJECT



KS-1:
Original Key Sheet
Date: May 2017

REVISIONS:

KEY SHEET REVISIONS	
DATE	DESCRIPTION

**ROADWAY PLANS
ENGINEER OF RECORD:**

LUKE S. WALKER, P.E.
P.E. NO.: 99991
ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32301
CONTRACT NO.: C0000
VENDOR NO.: 99-999999
CERTIFICATE OF AUTHORIZATION NO.: 12345

FDOT PROJECT MANAGER:

BEN K. UWAIBI, P.E.

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO.
T0000	17	1