CHAPTER 1

GENERAL

CHAPTER 1 GENERAL

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INTRODUCTION

ROADWAY DESIGN GUIDELINES AND STANDARD DRAWINGS

Roadway Design Guidelines (RDG) and Standard Drawings have been created to ensure that there is consistency in TDOT projects across the state. The Roadway Design Guidelines and Standard Drawings indicate the current recognized design standards for new construction or reconstruction of existing highways and shall be utilized while giving due regard to topography, natural conditions, availability of road material, and prevailing traffic conditions.

Throughout these guidelines you will see the following terms used. To clarify the meanings intended in this guide by the use of these terms, the following definitions apply:

- **Designer** – HQ Design, Project Development, or Consultant Designer
- **Design Manager** – HQ Design, Project Development, or Consultant Design Manager
- **Design Team** – HQ Design, Project Development, or Consultant Design Manager and Consultant
- **Technical Report** – Transportation planning reports (i.e. Transportation Investment Reports (TIR), Transportation Planning Report (TPR)) developed by the Strategic Transportation Investments Division.

All forms mentioned throughout this chapter can be found on the Roadway Design - TDOT Documents webpage.

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SECTION 1 – PROJECT INFORMATION

1-100.00 PROJECT RECORDS

It is essential for every Designer to create and maintain a detailed history of the design process for each of their projects. Information in the project records may be used if a problem arises during or after construction of the project. For example, records may be referenced after a flood causes property damage or for other legal claims in court. Examples of records to be kept are described in Chapter 1-102.00 Project Folder.

1-101.00 PROJECT SCOPE AND CHANGES IN SCOPE

As a project develops, the designer shall contact the Strategic Transportation Investments Division (STID) (TDOT.STID.R1@tn.gov, TDOT.STID.R2@tn.gov, TDOT.STID.R3@tn.gov, TDOT.STID.R4@tn.gov) and Program Development and Scheduling Office (TDOT.PDSO@tn.gov) if the scope of the project as defined in the technical report and/or MPO TIP cannot be met. This includes all horizontal and vertical elements that would result in a design exception request, and/or other variations from the original scope such as typical section changes, additional right-of-way needs, project termini, etc. When designers submit estimates (see Chapter 1-402.00 Submittal of Estimates and all subsections), the Designer shall request the monetary value of the estimate from the Bid Analysis and Estimating Office. If the estimate increases by more than 10% from the original technical report, the Strategic Transportation Investments Division and Program Development and Administration Division shall be contacted. If a scope change requires a modification to the PPRM project description, the Environmental Division shall be contacted.

1-102.00 PROJECT FOLDER

Each Designer will be required to maintain an up-to-date digital project folder that contains information on the project for all three phases of development (Preliminary, Right-of-Way (R.O.W.), and Construction). The typical roadway design project folder shall consist of information kept in chronological order by dates and divided into categories. The following are the categories and examples of the types of information that may be found in each:

1. Deliverable Requests and Reports:
    - Traffic data request and report
    - Initial Studies request and corresponding letters and reports
    - Additional survey requests
    - Environmental documents
2. Correspondence:
    - Funding letters

- Departmental emails and correspondence including any notes taken from verbal conversations
- Outside agency emails and correspondence including any notes taken from verbal conversations

3. Field Reviews\Public Meetings:
    - Letters sent for invitations or appointments for field reviews or public meetings
    - Field review reports including sign in sheet for Preliminary, Site, R.O.W., Constructability, Construction, and Final Field Review (all reviews that are applicable to project)
    - Documentation related to Public Meetings
4. Calculations:
    - Pavement quantities
    - Sight distance
    - Guardrail - length of need
    - Drainage - including any reports exported from approved drainage programs
    - Erosion Control
    - Grading Report (See *Chapter 2-709.00*, *Grading Report*)
5. Estimated Quantities Excel file

For each project, a folder shall be made for each of the categories and then placed in an Adobe PDF Portfolio or zip file. At Construction turn-in, the Designer shall place the Adobe Portfolio or zip file containing the entire project folder onto FileNet with the naming convention: nnnnnn-nn-ProjectFolder.pdf or nnnnnn-nn-ProjectFolder.zip. The nnnnnn-nn-ProjectFolder.pdf/ nnnnnn-nn-ProjectFolder.zip file will become a complete "Design Records" file and a part of the legal documents substantiating the final Construction Plans. It is the responsibility of the Designer or Design Manager (for Consultant designed projects) to maintain the project folder until the construction project is complete.

Upon receipt of the Notice of Completion from the Regional Operations Office, the Designer or Design Manager shall upload any additional project information pertaining to the project (revisions, requests, correspondence with Operations and/or HQ Construction Division, etc.) that has occurred since the initial construction turn-in with the naming convention nnnnnn-nn-ProjectFolder-Addendum.pdf/nnnnnn-nn-ProjectFolder-Addendum.zip.

1-103.00 CHARGING TIME TO PROJECTS

For all new projects or projects with design currently being charged to the Preliminary Engineering NEPA (PE-N) number, Designers shall charge design work to the Preliminary Engineering NEPA (PE-N) number through preliminary plans development. Preliminary plans development is defined as all design work prior to issuing plans for R.O.W. acquisition or for utilities only, as covered under the TDOT/FHWA Preliminary Design Agreement. Once plans are

submitted for R.O.W. acquisition or for utilities only, Designers shall begin charging design work to the Preliminary Engineering Design (PE-D) number.

Designers and Managers are reminded that a task profile ID, which is the TX number for the timesheet, will need to be set up in Edison for the Preliminary Engineering NEPA (PE-N) number and PE-D number at the appropriate stage to ensure that time is charged to the correct funding source. The Design Manager shall request the task profile ID numbers. If there is a child PIN associated with the project, check with the Program Development Scheduling Office to determine what number should be used to charge time.

1-104.00 PDF PLAN SHEET SIZE

PDF plans shall be full-size plans. It is essential that the correct plan size be used when making the PDFs to ensure that printing of the plans will be to scale. Plans Assembly personnel must combine plan sets from several divisions during the Letting phase. Personnel in this group can refuse PDFs that are not the correct size. If approved TDOT sheet borders are used as discussed in *Chapter 1-202.01, Sheet Borders*, the PDFs will be the correct size for 34" X 22" which shows as 33" X 21" on the PDF size and 32" X 21" for cross section sheets in Adobe Acrobat.

For further guidance, refer to the document Creating PDFs from DGNs.pdf located on the Standard Design CADD Files and Documents webpage.

1-105.00 FILENET PROJECT DELIVERABLES

Designers and Design Managers are responsible for archiving project development records for all new construction, reconstruction, and resurfacing projects on the Design folder on the FileNet server utilized by the Department. Unless specified otherwise, when this document refers to FileNet uploads, it is referring to the Design folder. For guidance in creating a composite plan set in the *.pdf format refer to the document Creating PDFs from DGNs.pdf located on the Standard Design CADD Files and Documents webpage.

FileNet archiving shall include all projects with the most recently completed deliverable or plan set, estimate file, approved design exception, and Traffic Management Plan on the FileNet server. A complete plan set (including cross-sections) in PDF format shall include all roadway plan sheets normally found in the deliverable. The project design files (*.dgn, *.sht, *.tin, *.xlsm, and *.gpk) will be archived with a software program having the capability of making a compressed (*.zip) file. This compressed (*.zip) file shall not be password protected.

For further guidance, refer to the FileNet Project Deliverables document located on the Roadway Design Guidelines webpage. This document lists the project deliverables and plan sets that shall be loaded on the FileNet server.

1-105.01 PRELIMINARY FIELD REVIEW FILENET SUBMITTAL PACKAGE

Preliminary Field Review plans shall include all items listed in the Roadway Design Checklist for Preliminary. For Preliminary Field Review submittal, the complete project package shall be added to FileNet. This is in the form of an Adobe Portfolio PDF with individual files added. The order structure and naming convention is shown in *Table 1-1, Preliminary Field Review Submittal Package List.* See *Figure 1-1, Preliminary Field Review Submittal Package Example*. The naming convention for the submittal package shall be ***nnnnnn-nn-*PreliminaryFieldReview.pdf**.

Portfolio Order #	Item Description	Naming Convention
0	Field Review Notification Memorandum	*nnnnnn-nn*-FieldReviewNotificationMemo.pdf
1	Roadway Plans - All sheets as designated in the Preliminary checklist	*nnnnnn-nn*-PreliminaryFieldReviewPlans.pdf
2	Signed Preliminary checklist PDF	*nnnnnn-nn*-PreliminaryChecklist.pdf

Table 1-1
Preliminary Field Review Submittal Package List

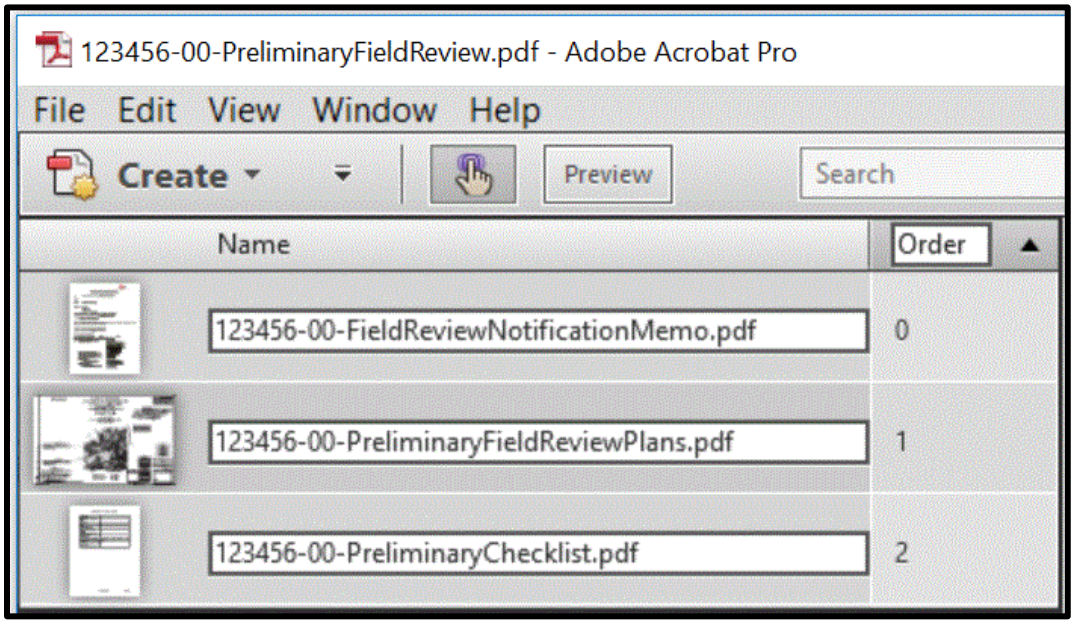


Figure 1-1
Preliminary Submittal Package Example

1-105.02 PUBLIC MEETING FILENET SUBMITTAL PACKAGE

Public Meeting plans shall include all items listed in the Roadway Design Checklist for Preliminary and are to be used for public meetings or public hearings. For a Public Meeting submittal, the complete project package shall be added to FileNet. This is in the form of an Adobe Portfolio PDF with individual files added. The order structure and naming convention is shown in *Table 1-2, Public Meeting Submittal Package List*. See *Figure 1-2, Public Meeting Submittal Package Example*. The naming convention for the submittal package shall be ***nnnnnn-nn*-PublicMeeting.pdf**.

Portfolio Order #	Item Description	Naming Convention
0	Roadway Plans - All sheets as designated in the Preliminary checklist	*nnnnnn-nn*-PublicMeetingPlans.pdf
1	Displays files - if there are multiple files used to create displays shown at the meeting, a folder can be used and include a pdf of each of the necessary files	*nnnnnn-nn*-Displays.pdf
2	Signed Preliminary checklist PDF	*nnnnnn-nn*-PreliminaryChecklist.pdf

Table 1-2
Public Meeting Submittal Package List

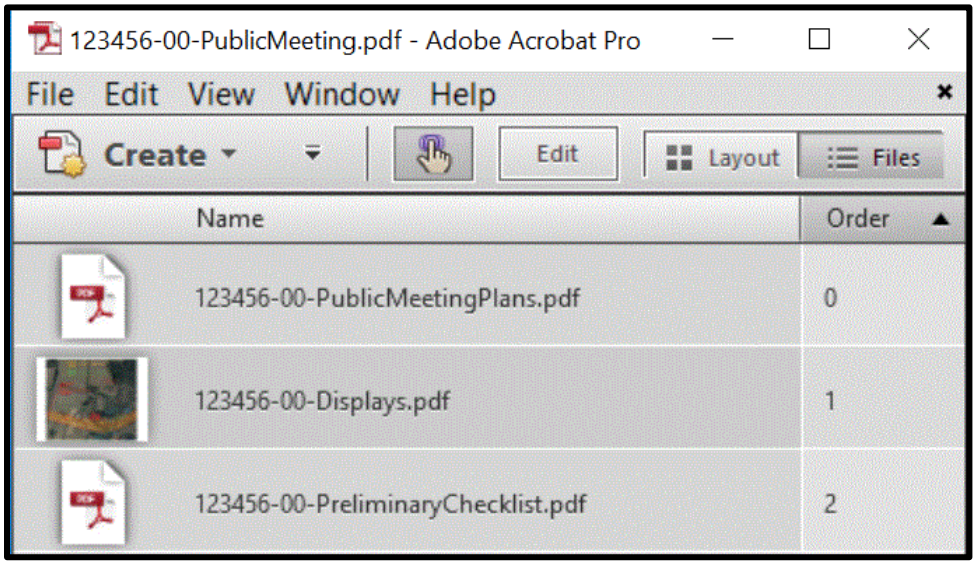


Figure 1-2
Public Meeting Submittal Package Example

1-105.03 SITE REVIEW FILENET SUBMITTAL PACKAGE

Site Review plans shall include all items listed in the Roadway Design Checklist for Preliminary, including, if applicable, the preliminary bridge drawings designed by Structures Division.

For Site Review submittal, the complete project package shall be added to FileNet. This is in the form of an Adobe Portfolio PDF with individual files added. The order structure and naming convention is shown in *Table 1-3, Site Review Submittal Package List.* See *Figure 1-3, Site Review Submittal Package Example*. The naming convention for the submittal package shall be ***nnnnnn-nn*-SiteReview.pdf**.

Portfolio Order #	Item Description	Naming Convention
0	Field Review Notification Memorandum	*nnnnnn-nn*-FieldReviewNotificationMemo.pdf
1	Roadway Plans - All sheets as designated in the Preliminary checklist, including, if applicable, Preliminary Bridge Layouts	*nnnnnn-nn*-SiteReviewPlans.pdf
2	Site Review **Word** Document – This is filled out as much as possible prior to the meeting. Separate sheets should be included for each retaining wall.	nnnnnn-nn-SiteReviewDocument.**docx**
3	Signed Preliminary checklist PDF	*nnnnnn-nn*-PreliminaryChecklist.pdf

Table 1-3
Site Field Review Submittal Package List

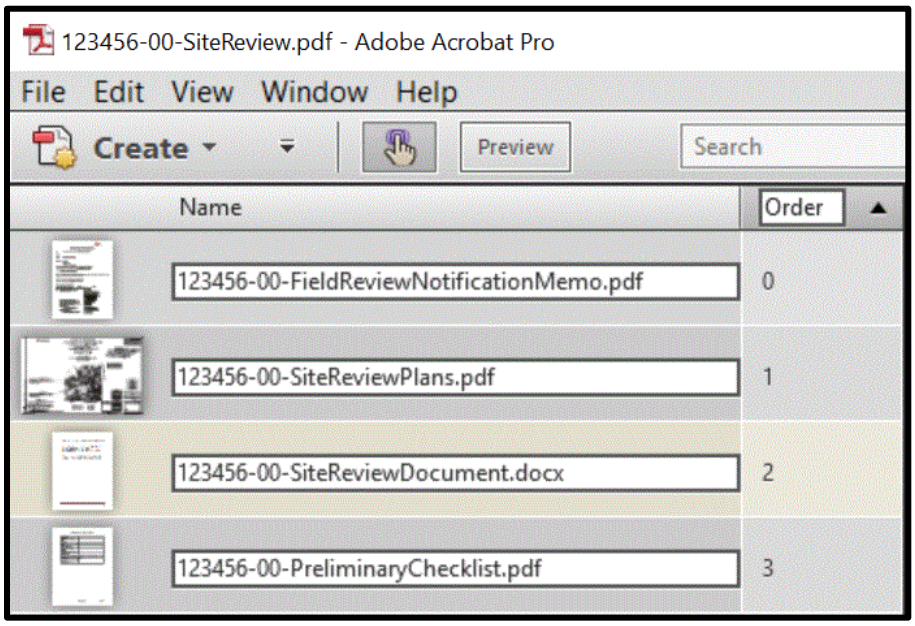


Figure 1-3
Site Review Submittal Package Example

1-105.04 R.O.W. FIELD REVIEW FILENET SUBMITTAL PACKAGE

R.O.W. Field Review plans shall include all items listed in the Roadway Design Checklist for R.O.W. including, if applicable: the preliminary bridge drawings and retaining walls (Structures Division), Natural Stream Design sheets (Environmental Division), ITS sheets and Signal/Lighting sheets (Traffic Operations Division). These plans shall be uploaded to FileNet by the respective Divisions for use by the Designer to include in the submittal packet.

For R.O.W. Field Review submittal, the complete project package shall be added to FileNet. This is in the form of an Adobe Portfolio PDF with individual files added. The order structure and naming convention is shown in *Table 1-4, ROW Field Review Submittal Package List.* See *Figure 1-4, R.O.W. Field Review Submittal Package Example*. The naming convention for the submittal package shall be ***nnnnnn-nn*-ROWFieldReview.pdf**.

Portfolio Order #	Item Description	Naming Convention
0	Field Review Notification Memorandum	*nnnnnn-nn*-FieldReviewNotificationMemo.pdf
1	Roadway Plans - All sheets as designated in the R.O.W. checklist	*nnnnnn-nn*-ROWFieldReview-Roadway.pdf
2	Estimated Roadway Quantities plan sheets – labeled Info Only	*nnnnnn-nn*-RoadwayEstimatedQuantities.pdf
3	Traffic Control plan sheets – labeled Info Only	*nnnnnn-nn*- TrafficControl.pdf
4	Bridge, as applicable	*nnnnnn-nn*-ROWFieldReview-Bridge.pdf
5	ITS, as applicable	*nnnnnn-nn*-ROWFieldReview-ITS.pdf
6	Lighting, as applicable	*nnnnnn-nn*-ROWFieldReview-Lighting.pdf
7	Natural Stream Design, as applicable	*nnnnnn-nn*-ROWFieldReview-NaturalStreamDesign.pdf
8	Retaining Wall Details, as applicable	*nnnnnn-nn*-ROWFieldReview-RetainingWall.pdf
9	Signal, as applicable	*nnnnnn-nn*-ROWFieldReview-Signal.pdf
10	Signed R.O.W. checklist PDF	*nnnnnn-nn*-ROWChecklist.pdf

Table 1-4
R.O.W. Field Review Submittal Package List

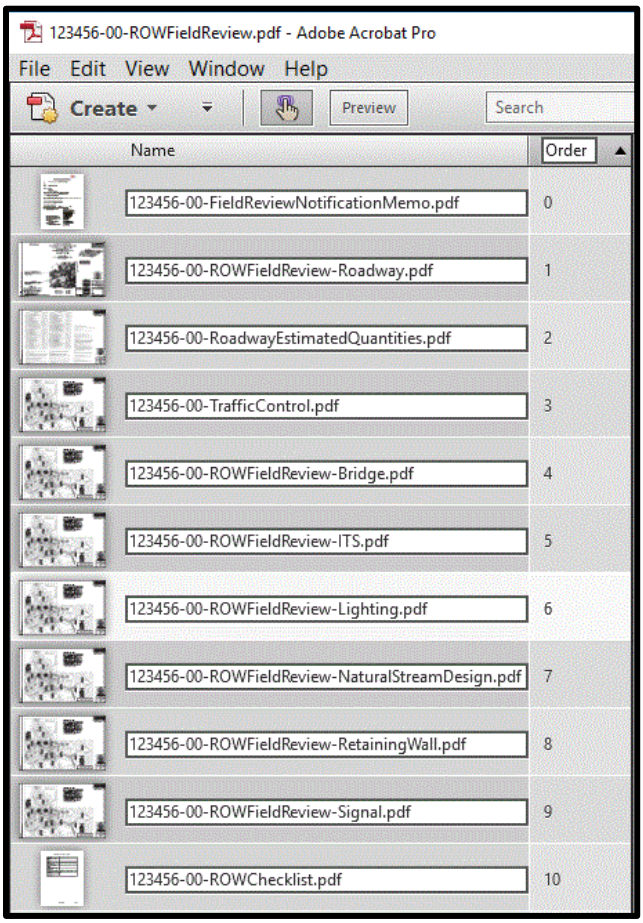


Figure 1-4
R.O.W Field Review Submittal Package Example

1-105.05 R.O.W. FILENET SUBMITTAL PACKAGE

Final R.O.W. plans shall include all items listed in the Roadway Design Checklist for R.O.W. including, if applicable: the preliminary bridge drawings and retaining walls (Structures Division), Natural Stream Design sheets (Environmental Division), ITS sheets and Signal/Lighting sheets (Traffic Operations Division). These plans shall be uploaded to FileNet by the respective Divisions for use by the Designer to include in the submittal packet.

For R.O.W. submittal, the complete project package shall be added to FileNet. This is in the form of an Adobe Portfolio PDF with individual files added. The order structure and naming convention is shown in *Table 1-5, R.O.W. Submittal Package List*. See *Figure 1-5, R.O.W. Submittal Package Example*. The naming convention for the submittal package shall be ***nnnnnn-nn*-ROW.pdf**.

Portfolio Order #	Item Description	Naming Convention
0	Funding Approval letter	*nnnnnn-nn*-FundingApprovalLetter.pdf
1	R.O.W. Submittal letter	*nnnnnn-nn*-ROWSubmittalLetter.pdf
2	Signed Traffic Management Plan	*nnnnnn-nn-ROW-TMP.*pdf
3	Original sealed R.O.W. title sheet	*nnnnnn-nn*-ROWTitleSheet.pdf
4	Roadway Plans - All sheets as designated in the R.O.W. checklist	*nnnnnn-nn*-ROW-Roadway.pdf
5	Bridge, as applicable	*nnnnnn-nn*-ROW-Bridge.pdf
6	ITS, as applicable	*nnnnnn-nn*-ROW-ITS.pdf
7	Lighting, as applicable	*nnnnnn-nn*-ROW-Lighting.pdf
8	Natural Stream Design, as applicable	*nnnnnn-nn*-ROW-NaturalStreamDesign.pdf
9	Retaining Wall Details, as applicable	*nnnnnn-nn*-ROW-RetainingWall.pdf
10	Signal, as applicable	*nnnnnn-nn*-ROW-Signal.pdf
11	Signed R.O.W. checklist PDF	*nnnnnn-nn*-ROWChecklist.pdf

Table 1-5
R.O.W Submittal Package List

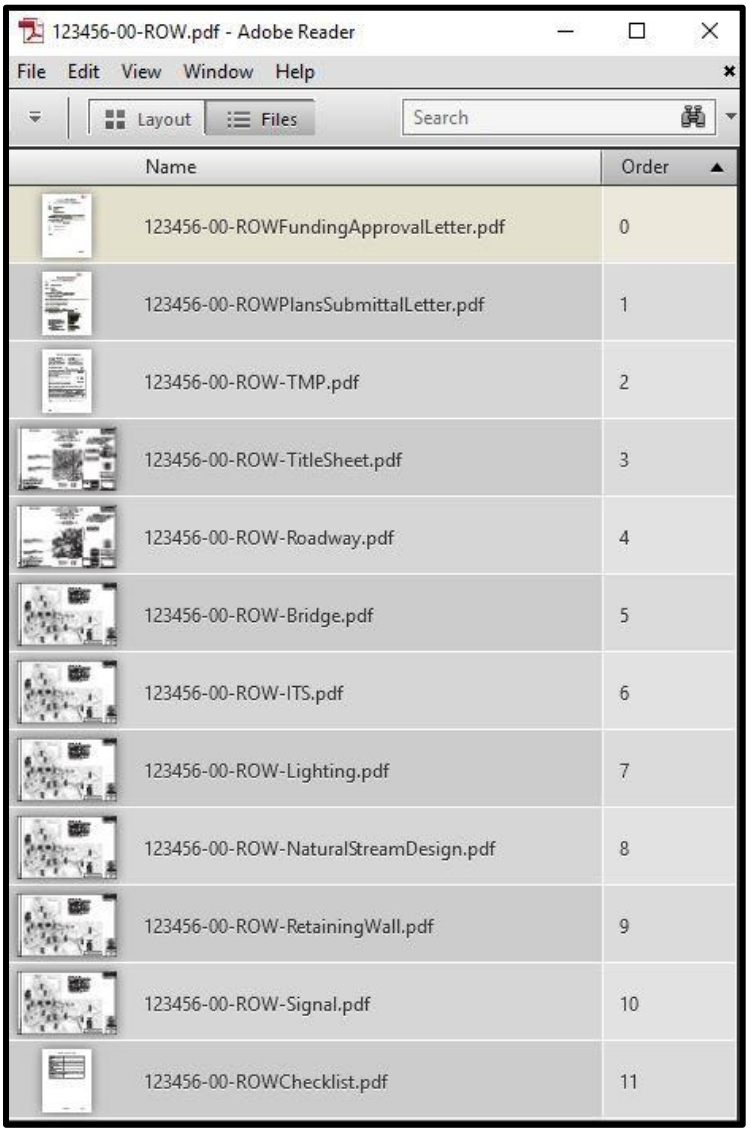


Figure 1-5
R.O.W. Submittal Package Example

1-105.06 R.O.W. REVISION FILENET SUBMITTAL PACKAGE

R.O.W. plans revisions shall include all items listed in the Roadway Design Checklist for R.O.W. including, if applicable: the preliminary bridge drawings and retaining walls (Structures Division), Natural Stream Design sheets (Environmental Division), ITS sheets and Signal/Lighting sheets (Traffic Operations Division).

For all R.O.W. revisions, the complete project package shall be added to FileNet. This is in the form of an Adobe Portfolio PDF with individual files added. The order structure and naming convention is shown in *Table 1-6 R.O.W. Revision Submittal Package List*. See *Figure 1-6, R.O.W. Revision Submittal Package Example*. The naming convention for the submittal package

shall be ***nnnnnn-nn*-ROW-Rev-mm-dd-yy.pdf**. The plan set in its **entirety** shall be included in the submittal package. It is not necessary to re-seal the title sheet unless the revision is on the title sheet. It is recommended that Designers keep a sealed title sheet in their files for submittal at Construction turn-in.

Portfolio Order #	Item Description	Naming Convention
0	Current Revision letter	*nnnnnn-nn*-ROWRevisionLetter-mm-dd-yy.pdf
1	Previous ROW Revision Letters **Folder**, if applicable (This is individual pdfs of the revision letters dropped into this folder.)	Previous_ROW_Revision_Letters
2	R.O.W. Funding Approval letter	*nnnnnn-nn*-ROWFundingApprovalLetter.pdf
3	Original R.O.W. Submittal letter	*nnnnnn-nn*-ROWSubmittalLetter.pdf
4	Signed Traffic Management Plan	*nnnnnn-nn*-ROW-*TMP*.pdf
5	Original sealed R.O.W. title sheet	*nnnnnn-nn*-ROWTitleSheet.pdf
6	All plan sheets as turned in for R.O.W. with revised sheets	*nnnnnn-nn*-ROW-Roadway-Rev-mm-dd-yy.pdf
7	Bridge, as applicable	*nnnnnn-nn*-ROW-Bridge.pdf
8	ITS, as applicable	*nnnnnn-nn*-ROW-ITS.pdf
9	Lighting, as applicable	*nnnnnn-nn*-ROW-Lighting.pdf
10	Natural Stream Design, as applicable	*nnnnnn-nn*-ROW-NaturalStreamDesign.pdf
11	Retaining Wall Details, as applicable	*nnnnnn-nn*-ROW-RetainingWall.pdf
12	Signal, as applicable	*nnnnnn-nn*-ROW-Signal.pdf
13	Technical Studies additional area map, if applicable (*See Chapter 4-201.08, Initial Studies Request Re-Evaluation and Plans Revisions*)	*nnnnnn-nn*-TechStudiesAdditionalAreaMap.pdf

Table 1-6
R.O.W. Revision Submittal Package List

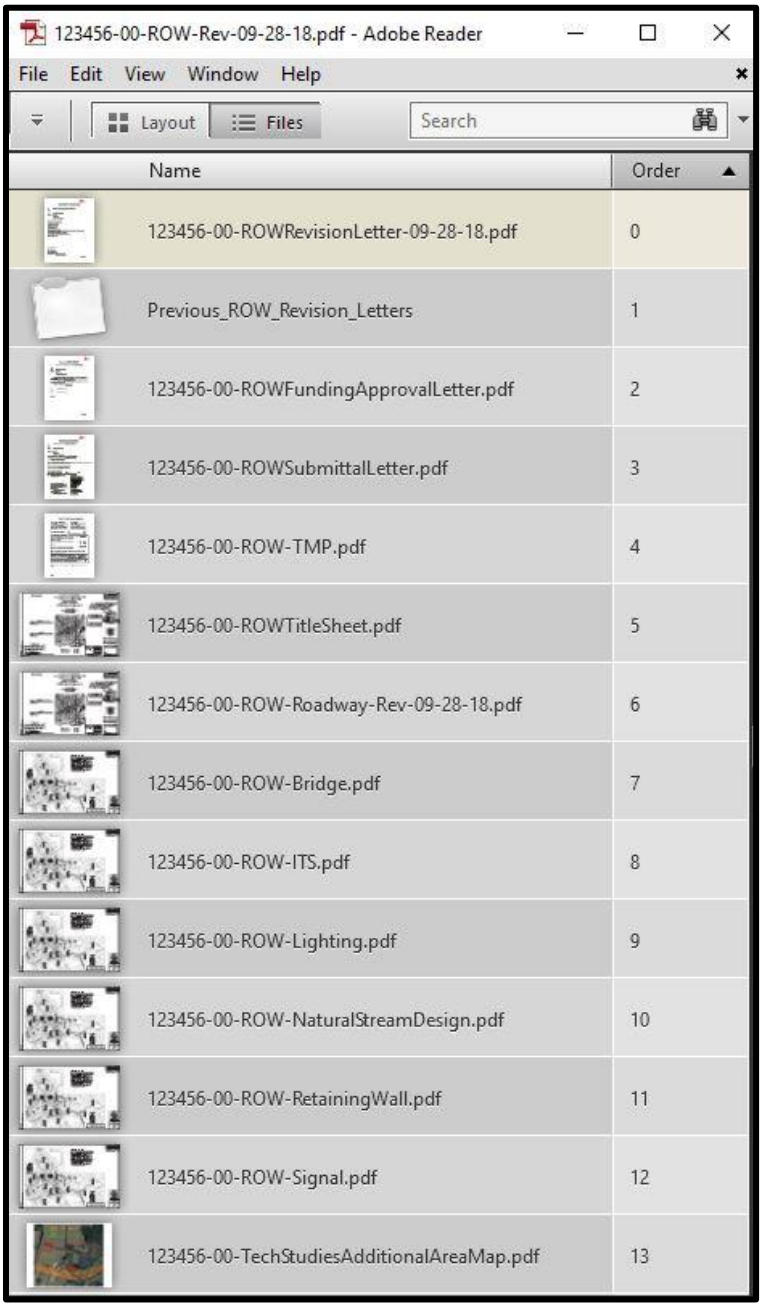


Figure 1-6
R.O.W. Revision Submittal Package Example

1-105.07 CONSTRUCTION FIELD REVIEW FILENET SUBMITTAL PACKAGE

Construction Field Review plans shall include all items listed in the Roadway Design Checklist for Construction including, if applicable, bridge and retaining walls plans designed by Structures Division, ITS, signal and lighting plans designed by the Traffic Operations Division, and natural stream design plans designed by Environmental Division. These plans shall be uploaded to FileNet by the respective Divisions for use by the Designer to include in the submittal packet. If a Constructability Review was held, include the meeting notes.

For Construction Field Review submittal, the complete project package shall be added to FileNet. This is in the form of an Adobe Portfolio PDF with individual files added. The order structure and naming convention is shown in *Table 1-7, Construction Field Review Submittal Package List.* See *Figure 1-7, Construction Field Review Submittal Package Example.* The naming convention for the submittal package shall be ***nnnnnn-nn-*ConstructionFieldReview.pdf**.

Portfolio Order #	Item Description	Naming Convention
0	Field Review Notification Memorandum	*nnnnnn-nn*-FieldReviewNotificationMemo.pdf
1	Roadway Plans - All sheets as designated in the Construction checklist	*nnnnnn-nn*-ConstructionFieldReview-Roadway.pdf
2	Bridge, as applicable	*nnnnnn-nn*-ConstructionFieldReview-Bridge.pdf
3	Geotechnical, as applicable	*nnnnnn-nn*-ConstructionFieldReview-Geotechnical.pdf
4	ITS, as applicable	*nnnnnn-nn*-ConstructionFieldReview-ITS.pdf
5	Lighting, as applicable	*nnnnnn-nn*-ConstructionFieldReview-Lighting.pdf
6	Natural Stream Design, as applicable	*nnnnnn-nn*-ConstructionFieldReview-NaturalStreamDesign.pdf
7	Retaining Wall Details, as applicable	*nnnnnn-nn*-ConstructionFieldReview-RetainingWall.pdf
8	Signal, as applicable	*nnnnnn-nn*-ConstructionFieldReview-Signal.pdf
9	Utility Rainbow Plans, as applicable	*nnnnnn-nn*-UtilityRainbows.pdf
10	Signed Construction checklist PDF	*nnnnnn-nn*-ConstructionChecklist.pdf

Table 1-7
Construction Field Review Submittal Package List

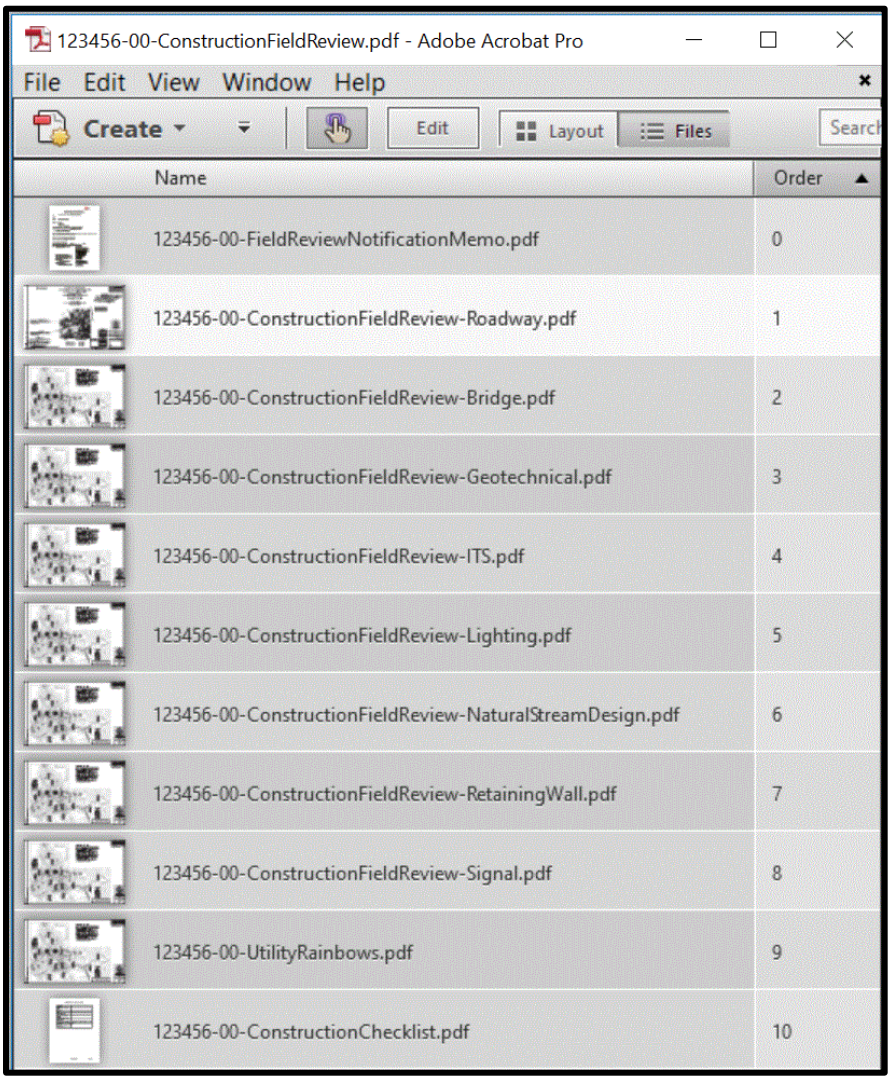


Figure 1-7
Construction Field Review Submittal Package Example

1-105.08 FINAL CONSTRUCTION PLANS REVIEW FILENET SUBMITTAL PACKAGE

The Final Construction plans review shall include all items listed in the Roadway Design Checklist for Construction, including, if applicable, bridge and retaining wall plans designed by Structures Division; geotechnical plans provided by the Geotechnical Engineering Office; ITS, signal and lighting plans designed by the Traffic Operations Division; natural stream design and SWPPP plans designed by the Environmental Division or Regional Environmental Tech groups; and utility plans from the Regional Utility Offices. These plans shall be uploaded to FileNet by the respective Divisions for use by the Designer to include in the submittal packet.

For Final Construction Plans Review submittal, the complete package submittal shall be added to FileNet. This is in the form of an Adobe Portfolio PDF with individual files added. The order structure and naming convention is shown in *Table 1-8, Final Construction Submittal Package List*. See *Figure 1-8, Final Construction Submittal Package Example*. The naming convention for the submittal package shall be ***nnnnnn-nn*-FinalConstructionReview.pdf.**

Portfolio Order #	Item Description	Naming Convention
0	Final Construction Plans Review Letter	*nnnnnn-nn*-FinalConstuctionPlanReviewLetter.pdf
1	Signed Traffic Management Plan	*nnnnnn-nn*-TMP*.pdf*
2	Complete sealed set of Roadway Plans as turned in for final Construction	*nnnnnn-nn*-Construction-Roadway.pdf
3	Bridge, as applicable	*nnnnnn-nn*-Construction-Bridge.pdf
4	Geotechnical, as applicable	*nnnnnn-nn*-Construction-Geotechnical.pdf
5	ITS, as applicable	*nnnnnn-nn*-Construction-ITS.pdf
6	Lighting, as applicable	*nnnnnn-nn*-Construction-Lighting.pdf
7	Natural Stream Design, as applicable	*nnnnnn-nn*-Construction-NaturalStreamDesign.pdf
8	Retaining Wall Details, as applicable	*nnnnnn-nn*-Construction-RetainingWall.pdf
9	Signal, as applicable	*nnnnnn-nn*-Construction-Signal.pdf
10	SWPPP, as applicable	*nnnnnn-nn*-Construction-SWPPP.pdf
11	Utility Plans, as applicable	*nnnnnn-nn*-Construction-Utility.pdf
12	Signed Construction checklist PDF	*nnnnnn-nn*-ConstructionChecklist.pdf

Table 1-8
Final Construction Plans Review Submittal Package List

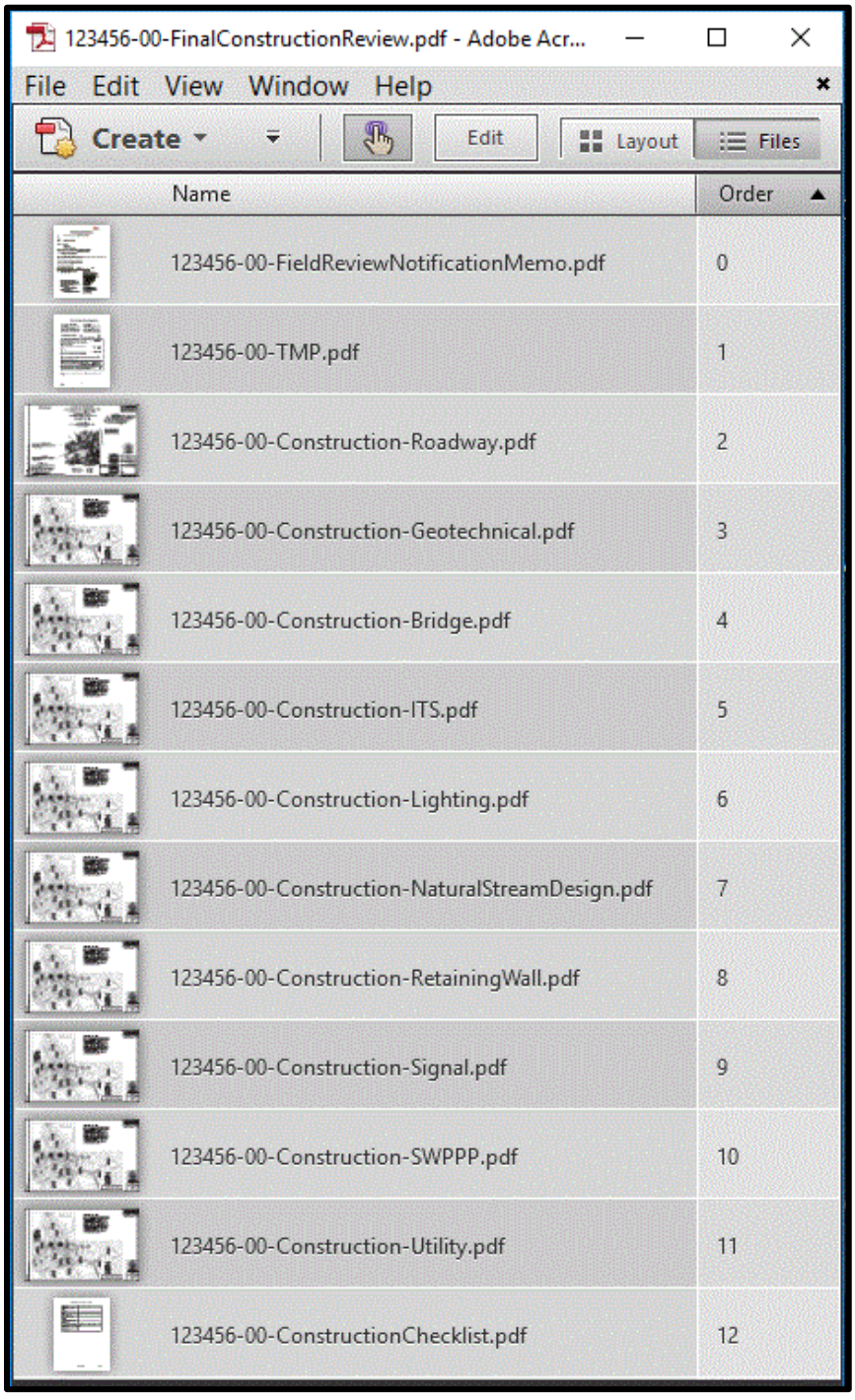


Figure 1-8
Final Construction Plans Review Submittal Package Example

1-105.09 CONSTRUCTION FILENET SUBMITTAL PACKAGE

Final Construction plans shall include all items listed in the Roadway Design Checklist for Construction. Utility plans will be placed on FileNet by the Regional Utility Offices. Sealed Structures plans will be placed on FileNet by the Structures Division personnel, including all bridge sheets and all retaining wall sheets. Natural stream design and SWPPP plans will be placed on FileNet by the Environmental Division personnel or Regional Environmental Tech groups. Signal and Lighting plans shall be placed on FileNet by the TDOT Division managing the signal and lighting portion of the project, including all signal sheets and lighting sheets. Roadway Design, Traffic Operations and Structures Standard Drawings are not required as part of the plans submittal.

Sealed Geotechnical plans will be placed on FileNet by the Geotechnical Engineering Section.

Resurfacing plans are not a traditional roadway project design. Their submittal will not require a R.O.W. title sheet or a checklist, as these do not apply to this project type.

For final Construction submittal, the complete package submittal shall be added to FileNet. This is in the form of an Adobe Portfolio PDF with individual files added. The order structure and naming convention is shown in *Table 1-9, Construction Submittal Package List*. See *Figure 1-9, Construction Submittal Package Example*. The naming convention for the submittal package shall be ***nnnnnn-nn*-RoadwayConstruction.pdf.**

Portfolio Order #	Item Description	Naming Convention
0	Construction Submittal letter	*nnnnnn-nn*-ConstructionSubmittalLetter.pdf
1	Original sealed R.O.W. title sheet	*nnnnnn-nn*-ROWTitleSheet.pdf
2	Signed Traffic Management Plan	*nnnnnn-nn*-TMP.*pdf*
3	Complete sealed set of Roadway Plans as turned in for final Construction	*nnnnnn-nn*-Construction-Roadway.pdf
4	Grading Report	*nnnnnn-nn*-GradingReport.pdf
5	Signed Construction checklist PDF	*nnnnnn-nn*-ConstructionChecklist.pdf

Table 1-9
Construction Submittal Package List

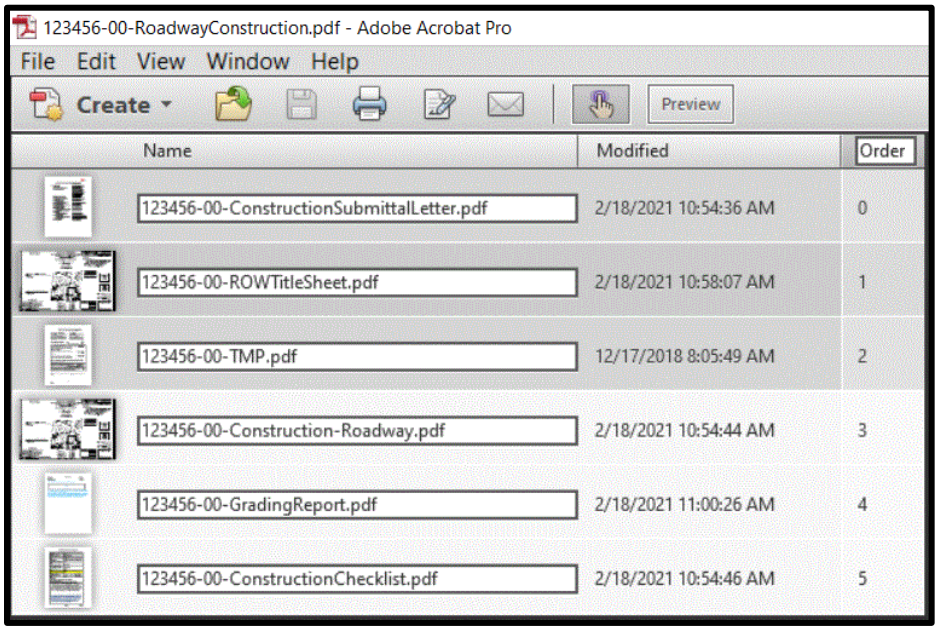


Figure 1-9
Construction Submittal Package Example

Concurrently with the upload of the Construction Submittal Package, the Contractor's Letting Files zip file shall be uploaded to Filenet. This package will contain electronic files of the mainline and side road cross sections (*.dgn and *.sht) and the Geopak digital terrain (*.tin) files. The naming convention for the submittal package shall be **nnnnnn-nn-ConstructionLettingFiles.zip.**

1-105.10 LETTING REVISION FILENET SUBMITTAL PACKAGE

Revisions made to plans between when the plans are initially submitted for construction letting and the day that projects are let to contract are called Letting Revisions. For Letting revision submittals, the complete package submittal shall be added to FileNet. This is in the form of an Adobe Portfolio PDF with individual files added. The order structure and naming convention is shown in *Table 1-10, Letting Revision Submittal Package List*. See *Figure 1-10, Letting Revision Submittal Package Example*. The naming convention for the submittal package shall be ***nnnnnn-nn*-RoadwayConstruction-LettingRev-mm-dd-yy.pdf.**

Portfolio Order #	Item Description	Naming Convention
0	Current Revision letter	*nnnnnn-nn*-LettingRevisionLetter-mm-dd-yy.pdf
1	Previous Letting Revision Letters **Folder**, if applicable (This folder contains individual pdfs of the revision letters dropped into this folder.)	Previous Letting Revision Letters
2	Original Construction Submittal letter	*nnnnnn-nn*-ConstructionSubmittalLetter.pdf
3	Original sealed R.O.W. title sheet	*nnnnnn-nn*-ROWTitleSheet.pdf
4	Signed Traffic Management Plan	*nnnnnn-nn*-TMP.pdf
5	All plan sheets as turned in for Construction with revised sheets	*nnnnnn-nn*-Construction-Roadway-LettingRev-mm-dd-yy.pdf
6	Grading Report	*nnnnnn-nn*-GradingReport.pdf

Table 1-10
Letting Revision Submittal Package List

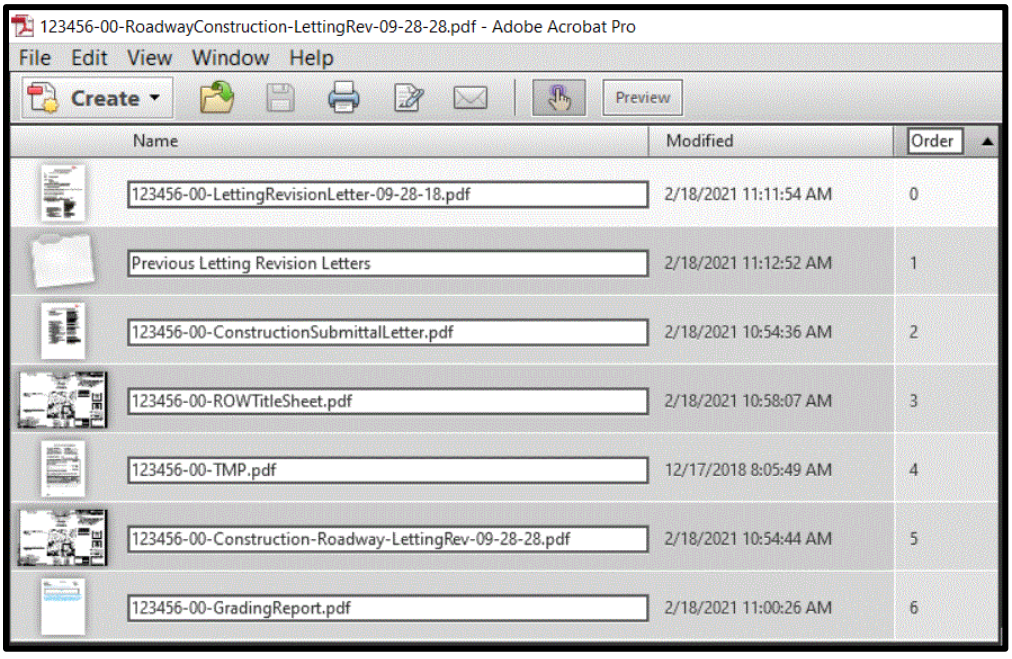


Figure 1-10
Letting Revision Submittal Package Example

If the proposed revision impacts any cross sections and/or the proposed terrain (.tin) file of the Contractor Letting Files, an updated submittal shall be uploaded to Filenet. The naming convention for the submittal package shall be ***nnnnnn-nn*-ConstructionLettingFiles-Rev.XX.XX.XX.zip**.

1-105.11 CONSTRUCTION REVISION FILENET SUBMITTAL PACKAGE

For all Construction revisions submittals, the complete package submittal shall be added to FileNet. This is in the form of an Adobe Portfolio PDF with individual files added. The order structure and naming convention is shown in *Table 1-11, Construction Revision Submittal Package List*. See *Figure 1-11, Construction Revision Submittal Package Example*. The naming convention for the submittal package shall be ***nnnnnn-nn*-RoadwayConstruction-Rev-mm-dd-yy.pdf**.

Portfolio Order #	Item Description	Naming Convention
0	Current Revision letter	*nnnnnn-nn*-ConstructionRevisionLetter-mm-dd-yy.pdf
1	Previous Construction Revision Letters **Folder**, if applicable (This folder contains individual pdfs of the revision letters dropped into this folder.)	Previous Construction Revision Letters
2	Original Construction Submittal letter	*nnnnnn-nn*-ConstructionSubmittalLetter.pdf
3	Original sealed R.O.W. title sheet	*nnnnnn-nn*-ROWTitleSheet.pdf
4	Signed Traffic Management Plan	*nnnnnn-nn*-TMP.pdf
5	All plan sheets as turned in for Construction with revised sheets	*nnnnnn-nn*-Construction-Roadway-Rev-mm-dd-yy.pdf

Table 1-11
Construction Revision Submittal Package List

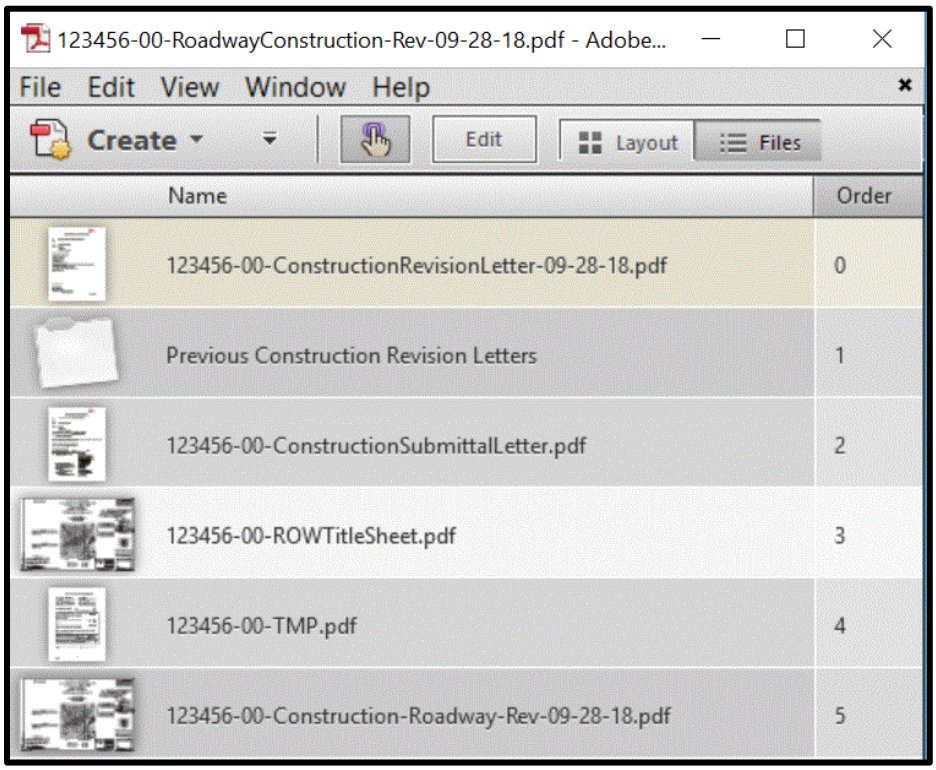


Figure 1-11
Construction Revision Submittal Package Example

1-106.00 FILENET PROPERTIES

When a file is added to FileNet there are several properties associated with the project. It is essential that each project have the properties filled in correctly for each deliverable and that the properties do not vary on the same project. If there is a change on the project, such as the project description, it is essential that the previously added properties for the project description be edited to reflect the change.

1-106.01 LATITUDE AND LONGITUDE

The project latitude and longitude are among the properties required when adding a project to FileNet. See *Figure 1-12, Latitude and Longitude in FileNet Properties.* The latitude and longitude shall be taken at the midpoint of the mainline of the project within the R.O.W. project limits. If a R.O.W. project is split into 2 or more construction projects where each construction project is given a new PIN, the midpoint shall be taken from each of the construction projects. These numbers shall be added in FileNet for all deliverables up through the Construction submittal and shall not change for the life of the project unless the R.O.W. limits change significantly. Personnel may use Google Earth or other similar software to locate latitude and longitude.

Latitude and Longitude coordinates shall be accurate to four decimal places and shown in decimal degrees.

For guidance on converting State Plane coordinates to Latitude and Longitude, see State Plane Coordinates to LatLong.pdf. This file is located under the Documentation section of the Standard Design CADD Files and Documents web page.

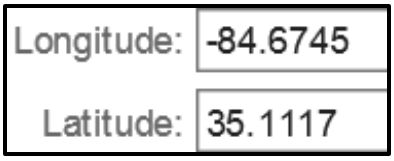


Figure 1-12
Latitude and Longitude in FileNet Properties

Note: The project latitude and longitude coordinates are also properties to be entered in the Estimated Quantities Excel file under the Project Data tab. *See Figure 1-13, Latitude and Longitude in Estimated Quantities Excel File.*

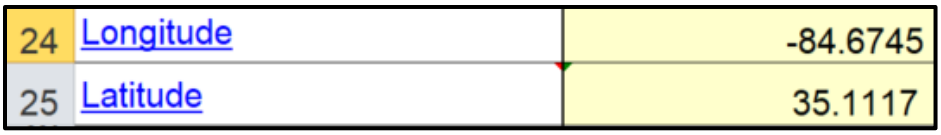


Figure 1-13
Latitude and Longitude in Estimated Quantities Excel File

1-106.02 PROJECT CONTRACT NUMBER

The designer shall assign “00” for the contract number in the file properties when adding a file to FileNet before the contract number is available. The contract number for a project is known one month prior to the Letting date and can be found on the Construction Division Website under Bid Lettings tab. Select the appropriate year Bid Lettings, then select the Letting for the appropriate month within that year. The contract numbers can be found under the “Notice to Contractors” link. Once the contract number is known, the Designer shall update the contract number for all plans and associated files on FileNet for that project. Normally, this project number will not change unless the project is pushed out a Letting.

1-107.00 REMOVAL OF PLANS FROM FILENET

Once a project has been let to contract and awarded, the following files can be removed from FileNet:

- Initial studies request (**PDF** & **Zip**)
- Preliminary estimate (**XLSM**)
- Preliminary Field Review plans (**PDF** & **Zip**)

- Public Meeting Plans (PDF & Zip)
- Incidentals (**PDF**)
- Field review plans (**PDF** and **Zip**)
- Site review plans (**PDF** and **Zip)**
- Permit sketches (**PDF**)
- R.O.W. estimate (**XLSM**)
- Draft Traffic Control Plans (**PDF**)
- R.O.W. TMP (**PDF**)
- NPDES (**PDF**)
- Constructability Review (PDF & Zip)
- Construction Field Review estimate (**XLSM**)
- Construction estimate (**XLSM**)
- Construction Letting Revision estimates (**XLSM**)
- R.O.W. and R.O.W. Revisions - EXCEPT for the most current (**Zip ONLY**)
- Construction and Construction Revisions EXCEPT for the most current (**PDF** and **Zip**)

The most current project folder, **all** R.O.W. PDFs, the most current ROW revision ZIP file, and the most current Construction PDF and ZIP file shall remain on FileNet.

Five years after receipt of Notice of Completion from the Regional Operations Engineer and it is confirmed the project is closed, the project folder and the final R.O.W. and Construction PDF and ZIP files can be removed. To confirm that a project can be removed from FileNet, verify in PPRM that the project status is closed and it has been five years since receiving the Notice of Completion. See *Figure 1-14, PPRM Project Status Field* to determine the project status.

If plans are needed after removal, please contact the Roadway Plans Sales Section of the Roadway Design Division to obtain a PDF of the final construction plans including all revisions.

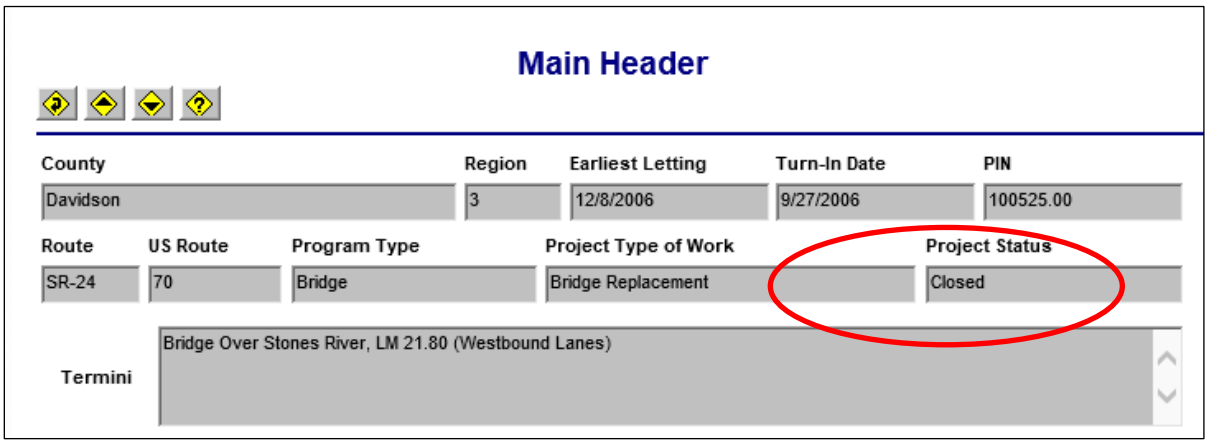


Figure 1-14
PPRM Project Status Field

SECTION 2 – PLANS PRODUCTION

1-200.00 QUALITY ASSURANCE-QUALITY CONTROL

The goal of the TDOT Roadway Design Division Quality Assurance-Quality Control Section is to perform an independent review of the plans by personnel not involved with the development and design of the plans. This check is not intended to design the roadway and drainage components of the project. Quality Assurance measures are created to ensure that roadway Designers produce a quality set of plans that are complete, consistent across the state, and comply with federal and state policies. Designers and Design Managers should check plans to ensure that plans are accurate, constructible, cost effective and safe by conducting in-house checks and holding field reviews with other divisions within TDOT. It is essential that all TDOT Divisions review the plans and provide comments. **If a division is absent, the Design Manager shall contact the division to request comments.** The following sections have been created to provide guidance for plans development.

1-201.00 ROADWAY DESIGN CHECKLISTS

Roadway Design Checklists are provided for each stage of plan preparation to reduce errors and plan revisions and to standardize the preparation, format, and content of plans. Checklists for each submittal have been created to serve as a guide to ensure certain items are included on each sheet of the plans. These checklists shall be used by all Designers, Consultants, and any personnel checking plans. The Initial Studies, Preliminary, Right-of-Way (R.O.W.), Construction and Resurfacing checklists are available on the Roadway Design Guidelines webpage in the Reference Document area.

It is recommended that the Designer download each deliverable checklist for the current phase of the project as opposed to downloading all checklists for each phase at once. This will ensure the current checklist is downloaded. Prior to submitting plans for a field review, the checklist shall be completed for that particular stage of plans development. The Designer shall submit the completed and signed checklist when distributing the Field Review Notification by email for each stage.

The Designer shall also refer to Project Development and Roadway Design activities listed in Program/Project/Resource Management System (PPRM) to ensure that each plan set contains deliverables from other divisions. PPRM is available from the transPORTAL website under Business Applications.

Note: Resurfacing Plans are treated differently than other projects. Refer to Chapter 5-502.00, Resurfacing Projects, for information regarding Resurfacing projects.

1-202.00 PREPARATION OF PLAN SHEETS

The TDOT Survey and Roadway Design Computer–Aided Drafting and Design Standards shall be followed by all divisions of TDOT, by Consultants, and by anyone conducting surveys or producing plans for TDOT projects. This document, CADDV8.pdf, can be found at the Standard Design CADD Files and Documents webpage in the Documentation section. The purpose of the CADD document is to ensure consistency in MicroStation and GEOPAK files, correct file exchanges between outside entities and the Department as well as within the division, and that printed and archived files contain all necessary components and have the same appearance. Some of the most important information found in the CADD document is the following:

- MicroStation
  - File naming convention
  - File extensions
  - Seed files
  - Color table
  - Area patterning
  - Text Size and Fonts
  - Level filters including correct level name, line weight, line style, and color
  - *****Level structure according to sheet
  - Office Templates for letters, 2nd sheets, and tabulated quantities
  - Plan and Profile Sheet Production
  - Cross Section Sheet Production
- GEOPAK
  - GPK filenames
  - Criteria Files
- Survey
  - Project Filenames
  - GPK filenames
  - Data exchange between Survey and Project Development/Design personnel
  - Aerial Survey Files

***** For each type of sheet (Present Layout, R.O.W. Details, Proposed Layout, Drainage Map, etc.), a Sheet Level Structure is set up in MicroStation to turn on and off levels pertaining to the sheet and reference files in the sheet. It is essential that each Surveyor or Designer use the correct levels when placing data in design files that are referenced into the sheets so that the correct attributes are shown when plotting.

Note: Users shall **NOT** turn on levels that are not part of the Sheet Level Structure if requested to do so by another region or division. This negates the consistency of plans throughout the state.

1-202.01 SHEET BORDERS

Sheet borders are available in MicroStation with a level structure that ensures the correct area is printed and converted to PDF correctly for deliverables, printing, and archiving. Only TDOT approved sheet borders shall be used by all divisions within TDOT and all outside Consultants, utilities and others that are providing sheets to TDOT. To place a TDOT approved sheet border, the TDOT menu must be available to the user in MicroStation.

To access the TDOT menu in MicroStation, the TDOT interface must be selected when opening a file in MicroStation. The user shall download and run the TDOT interface file (TDOT interface.exe) to the location that is shown in the download location path located on the Standard Design CADD Files and Documents webpage. When opening a MicroStation file, set the Interface to TDOT in the MicroStation File Open Menu. The TDOT menu can then be accessed in the design file. *See Figure 1-15, TDOT Interface.*

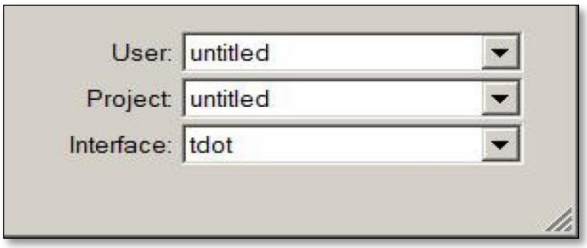


Figure 1-15
TDOT Interface

Use the TDOT menu Sheet Cells tool in MicroStation to insert the correct borders for each type of sheet in the plan set. From the top menu bar, select the TDOT drop-down menu and then select Sheet Cells. There are sheet borders for title sheet, standard drawing, plan, profile, culvert section, and cross section sheet types. Insert them with the X and Y scales set to the appropriate scale. Most sheets are at a 50 scale. See *Figure 1-16, Sheet Cells Tool*. Refer to Chapter 1-202.02 Sheet Scales for additional sheet scales options.

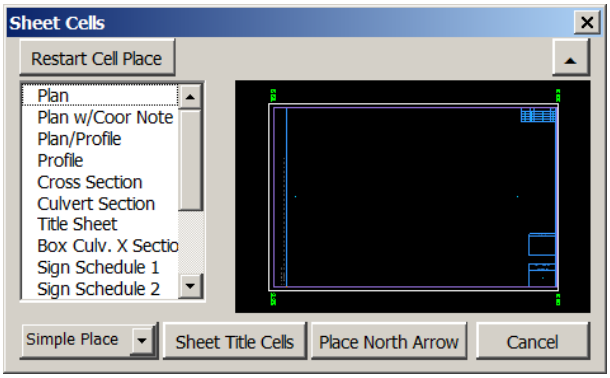


Figure 1-16
Sheet Cells tool

1-202.02 SHEET SCALES

The sheet scale for all sheets is set by the seed file used to create that sheet.

- Seed2d or seed3D yields an active scale of 1” = 50’. This is used for Present, R.O.W. Details, Proposed, Erosion Control, Traffic Control and other similar sheets.
- English General Notes, Special Notes, Estimated Quantities, and other similar sheets, and Index and Standard Drawings cells each yield an active scale of 1” = 1’.
- SeedXS yields an active scale of 1” = 10’.
- For title sheets see Chapter 1-203.00 Development of Title Sheets.
- Drainage Map and Property Map sheets should never use a scale smaller than 1”:200’.

Some 2nd sheets like Ditch Details or Typical Section sheets are not drawn to scale but shall still use an approved sheet border with a 1”-1’ active scale.

1-202.03 SHEET TITLE BLOCK

For each sheet, there is a corresponding approved sheet title that is placed in the sheet title block. The sheet title block is in the lower right hand corner of the sheet for all sheets except the Title sheet and Cross-Section sheets. These sheet titles are found in the TDOT menu. Some sheet titles will have station ranges and a scale that shall be filled in. The ranges shall be the same for all views of the same sheet, i.e. Present, R.O.W. Details, Proposed, Profile, EPSC, and Traffic Control. Sheet titles shall correspond with the index for each phase *See Chapters 1-204.09 Preliminary Index of Sheets, 1-205.01 R.O.W. Index of Sheets,* and *1-206.01 Construction Index of Sheets).*

Cross section sheets do not have sheet title blocks. However, procedures shall be followed as outlined in the GEOPAK Road Manual for making and labeling cross section sheets. The name of the road shall appear in the lower right-hand corner as well as the beginning and ending station ranges for the sheet. The road name shall match the road name as it is defined on

the present layout and typical section sheets. See *Figure 1-17, Cross-Section Sheet Example* for an example of the information shown on a cross-section sheet.

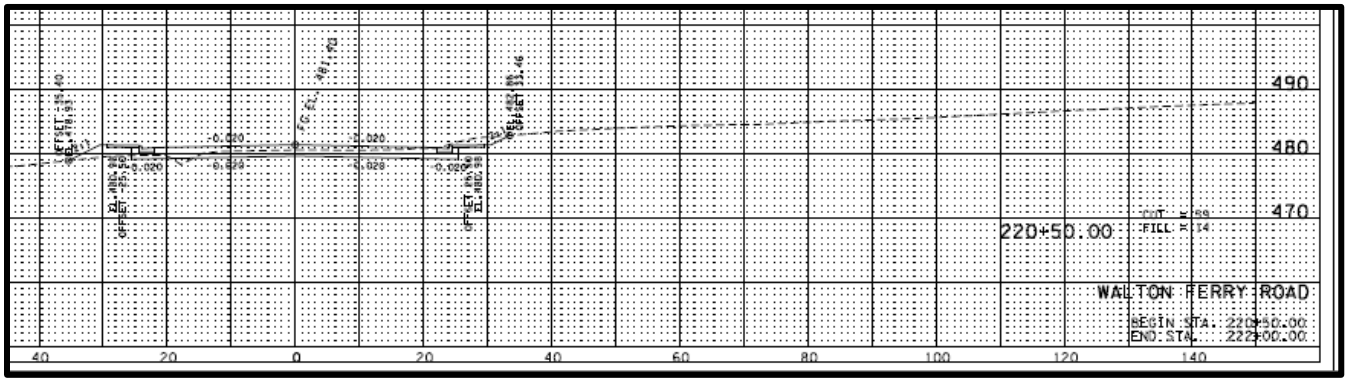


Figure 1-17
Cross-Section Sheet Example

1-202.04 ENGINEER'S SEAL BLOCK ON SHEETS

A square block outline for the engineer's seal is part of the sheet border which ensures each seal is placed at the correct size and location for all sheets. The square block outline is above the sheet border on plan sheets as shown in *Figure 1-18, Sheet Title Block, Engineer's Seal, and Coordinate Value* and above the Chief Engineer's and Commissioner's signatures on title sheets as shown in *Figure 1-22, Title Sheet Cell.* The seal will be left blank with the exception of sealing the R.O.W. title sheet and sealing appropriate sheets for Construction submittal.

1-202.05 COORDINATE NOTATIONS ON SHEETS

Notation for the coordinate adjustment factors shall be on all roadway sheets except the title, index and standard drawings, project commitments, 2nd sheets (Estimated quantities, typical sections, details, notes, etc.), profiles, and cross sections sheets. This notation will be part of the sheet and the factor will need to be filled in. The coordinate adjustment factor is shown between the engineer's seal block and sheet title block. The notation shall read:

"Coordinates are NAD/83 (1995), are datum adjusted by the factor of 1.000XXX" and tied to the TGRN. All elevations are referenced to the NAVD 1988."

The "1995" refers to the year of the adjustment of coordinate values in Tennessee and 1.000XXX refers to the actual datum adjustment factor used for the project. These values are listed in the CADD survey file.

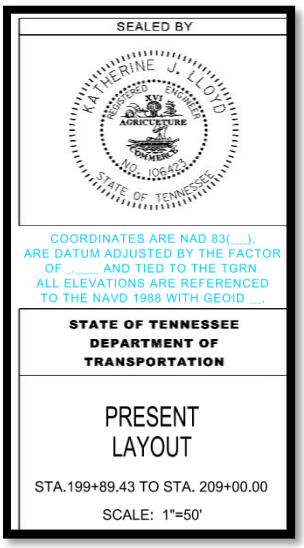


Figure 1-18
Sheet Title Block, Engineer's Seal, and Coordinate Value

1-202.06 PLAN PHASE STAMPS

For information requests (such as Initial Studies request, field reviews, etc.) and deliverables, a plan phase stamp identifying the appropriate stage of development shall be located on the right side above the engineer's seal block on the title sheet only. Plans for public hearings shall have plan phase stamps on every sheet except cross section sheets. A stamp is not required for Final Construction Plans at Turn-In. See *Figure 1-19, Plan Phase Stamps Examples.*

Stamps shall match the name of the FileNet deliverable as shown below.

Phase Stamp Name	Comments
INITIAL STUDIES REQUEST	PPRM Activity # 341
PRELIMINARY FIELD REVIEW	PPRM Activity # 375
PRELIMINARY PLANS	PPRM Activity # 390
CAUTION – PRELIMINARY PLANS SUBJECT TO CHANGE	Use for design hearing or plans other than field review plans sent outside the Department
SITE REVIEW	PPRM Activity # 531
R.O.W. FIELD REVIEW	PPRM Activity # 540
R.O.W. FIELD REVIEW (UTILITIES ONLY)	PPRM Activity # 540 – No R.O.W. acquisition is required
INFO ONLY	PPRM Activity # 540 – To be used on Estimated Quantities and Traffic Control sheets for information purposes only at R.O.W. Field Review

R.O.W. PLANS	PPRM Activity # 600
R.O.W. PLANS (UTILITIES ONLY)	PPRM Activity # 600 – No R.O.W. acquisition is required
R.O.W. PLANS – PERMITS APPLICATION	
CONSTRUCTABILITY REVIEW	PPRM Activity # 690
CONSTRUCTION FIELD REVIEW	PPRM Activity # 695
FINAL CONSTRUCTION PLANS REVIEW	PPRM Activity # 710

Figure 1-19
Plan Phase Stamps Examples

Guidance for placing stamps on PDF files can be found in the document Adding the Plan Phase Stamp Watermark to the PDF Plan Set.pdf located on the Standard Design CADD Files and Documents webpage.

Plan Phase stamps may be added to MicroStation DGN files as cells. These cells are found by selecting the TDOT drop-down menu at the top menu bar, selecting Tools, then selecting the TDOT Design Division Toolbox and clicking the Plan Phase Stamps Cell Dialog in the selection window. See *Figure 1-20, Plan Phase Stamps MicroStation Cells*.

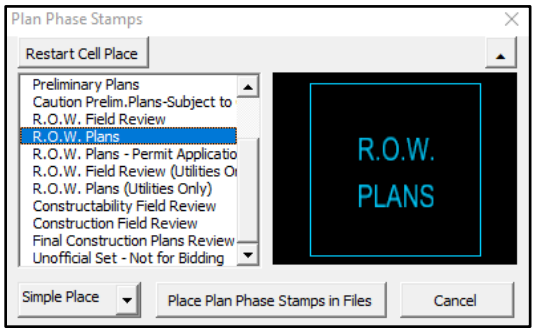


Figure 1-20
Plan Phase Stamps MicroStation Cells

1-203.00 DEVELOPMENT OF TITLE SHEETS

To ensure that all title sheets consistently have the same information, an all-inclusive title sheet has been created with embedded cells that are needed for all phases of the title sheet. For instructions on developing title sheets, users should download Title Sheet Preset Filters Tutorial, which is under the Documentation section located on the Standard Design CADD Files and Documents webpage.

Within MicroStation, a title sheet seed file is available that contains all necessary items for the development of Preliminary, R.O.W., and Construction title sheets. If additional elements are needed for creation of the sheet, cells are available in MicroStation within Sheet Cells in the TDOT Menu. The title sheet is created with fillable texts that can be modified but will maintain the correct text style and weight.

To access the TDOT menu in MicroStation, the TDOT interface must be available when opening a file in MicroStation. See Chapter 1-202.01, Sheet Borders for additional information.

Some of the information needed for the title sheet can be found in the Program/Project/Resource Management System (**PPRM**). PPRM is available from the transPORTAL website and only works with Internet Explorer. Consultant Designers should contact their TDOT Design Manager for PPRM information.

Figure 1-21, Information from PPRM shows an example of the Main page for Project Data Manager that lists the phase of a project, the corresponding federal and state numbers, and the bridge ID number. Each of these will be used in the development of title sheets. Notice that the second portion of the state project number changes with each phase.

Phase	Federal Project#	State Project#	Authorization Date
PE-N	BR-STP-128(23)	68006-0215-94	04/06/2011
PE-D	BR-STP-128(23)	68006-1215-94	08/14/2013
ROW	BR-STP-128(23)	68006-2215-94	08/26/2013
Const	BR-STP-128(23)	68006-3215-94	11/13/2015

Bridge Number	Suff. Rating
68S61740003	47.7

Figure 1-21
Information from PPRM

1-204.00 PRELIMINARY TITLE SHEETS

Preliminary title sheets are developed and used for several initial studies requests such as Hydraulic Grade Approval, Environmental Boundaries and Technical Studies, Geotechnical Studies, Signals and Lighting analysis, Pavement Design Request, and Incidentals (Title Searches). The R.O.W. and Construction title sheets have some changes from the Preliminary sheet; however, most components of the sheet are the same. Any that are different will be defined

within the R.O.W. and Construction Title Sheet Sections. *Figure 1-22, Title Sheet Cell* enumerates various sections of a title sheet cell.

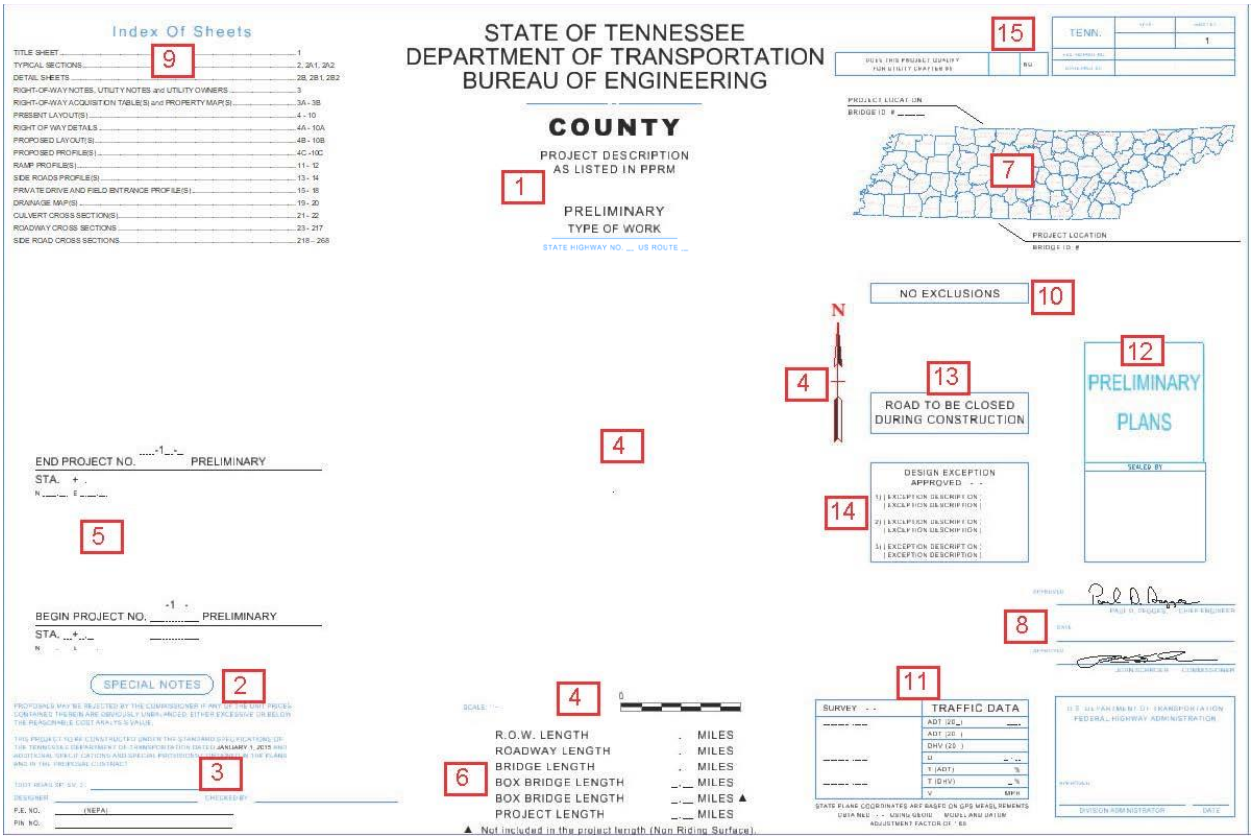


Figure 1-22
Title Sheet Cell

1	Project Description
2	Special Notes
3	Project, Designer, and Manager Identification
4	Map, Map Scale, and North Arrow
5	Project Limits
6	Project Lengths
7	Project Location and Bridge ID Number
8	Chief Engineer Signature, Commissioner Signature and Engineer's Seal Block

9	Preliminary Index of Sheets
10	Exclusions or No Exclusions
11	Traffic Data and Survey Data
12	Plan Phase Stamps
13	Road Closed During Construction
14	Design Exception Approval Dates
15	Chapter 86 Eligibility for Utilities

1-204.01 PROJECT DESCRIPTION

Project descriptions on the title sheet shall match descriptions as they are shown in PPRM:

- County(s)
- State route number (if a State route), U.S. route number (if a U.S. route), or Local road name with Project Limits (from and to)
- Type of project (Preliminary, R.O.W., Construction)
- Type of work
- State Highway number (if applicable)
- US Route number (if applicable)

The type of work being done shall be listed in the project description on the title sheet. The type of work shall correspond with what is shown in PPRM (Example: Bridge replacement, Widening, Resurfacing, etc.) For those that need further explanation on the type of work, additional information can be added (Example: Widening including pave, drain, bridge, lighting, signals).

Typical project descriptions for different roadway types are shown in *Figures 1-23* through *1-25.*

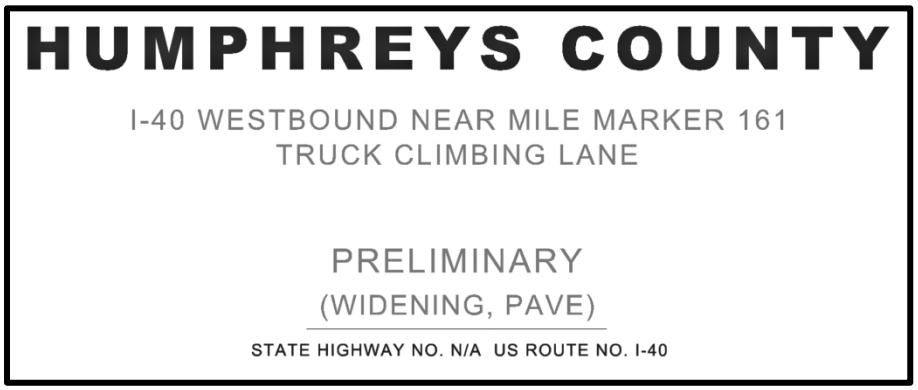


Figure 1-23
Interstate Project Description Example

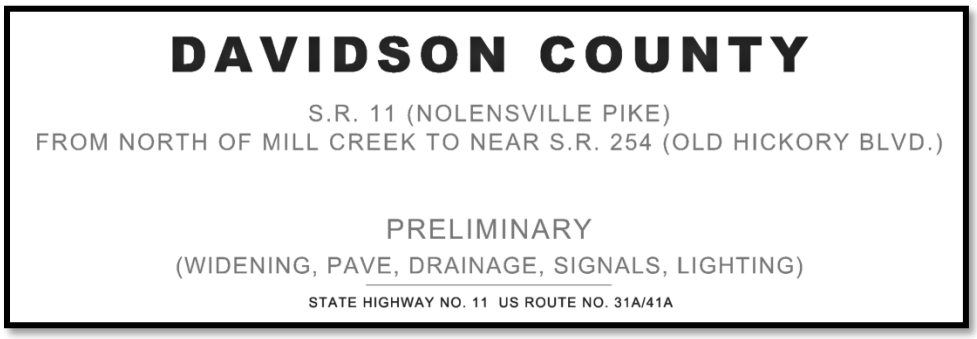


Figure 1-24
State Route Project Description Example

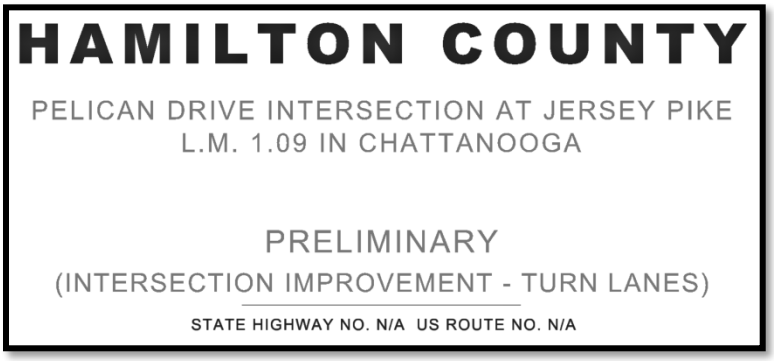
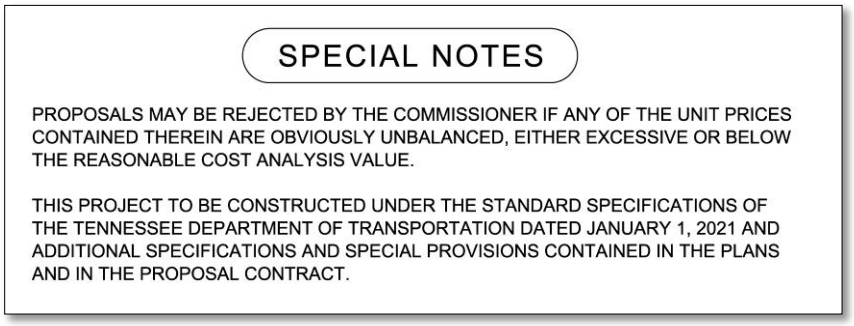


Figure 1-25
Local Road Project Description Example

1-204.02 SPECIAL NOTES

The Special Notes shown on the lower left hand corner of the project title sheet shall always be checked with current Roadway Design Guidelines and Instructional Bulletins to ensure that there is no change. It could be that the note changes between Preliminary, R.O.W., or Construction phases; thus not allowing the Designer to copy and revise an existing title sheet but requiring a new title sheet. The current special note shall read as follows:


SPECIAL NOTES

PROPOSALS MAY BE REJECTED BY THE COMMISSIONER IF ANY OF THE UNIT PRICES CONTAINED THEREIN ARE OBVIOUSLY UNBALANCED, EITHER EXCESSIVE OR BELOW THE REASONABLE COST ANALYSIS VALUE.

THIS PROJECT TO BE CONSTRUCTED UNDER THE STANDARD SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION DATED JANUARY 1, 2021 AND ADDITIONAL SPECIFICATIONS AND SPECIAL PROVISIONS CONTAINED IN THE PLANS AND IN THE PROPOSAL CONTRACT.

Figure 1-26
Title Sheet Special Notes

1-204.03 PROJECT, DESIGNER, AND MANAGER IDENTIFICATION

On the lower left hand corner of the title sheet, there are fillable options for the names of those involved in the project and for project information. For a TDOT-designed project, the Supervisor 2/ Manager, Designer, and Checker shall be entered. For a Consultant-designed project, the appropriate Manager Title shall be added along with the Consultant firm, Designer, and Checker. The Preliminary Engineering NEPA (PE-N) number should be shown in the P.E. NO. field for plan submittals prior to R.O.W. or for Utilities Only. The Project Identification Number (PIN) shall also be entered. See *Figure 1-21, Information from PPRM,* for example PE-N number.

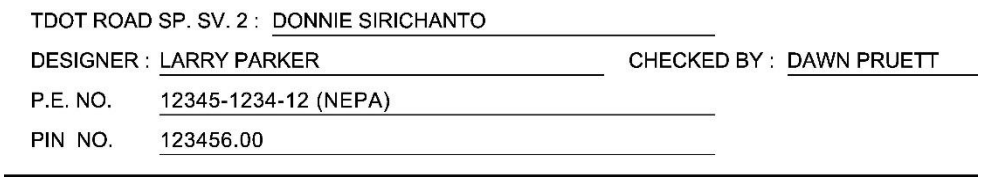

TDOT ROAD SP. SV. 2 : DONNIE SIRICHANTO
DESIGNER : LARRY PARKER CHECKED BY : DAWN PRUETT
P.E. NO. 12345-1234-12 (NEPA)
PIN NO. 123456.00

Figure 1-27
TDOT Designed Project

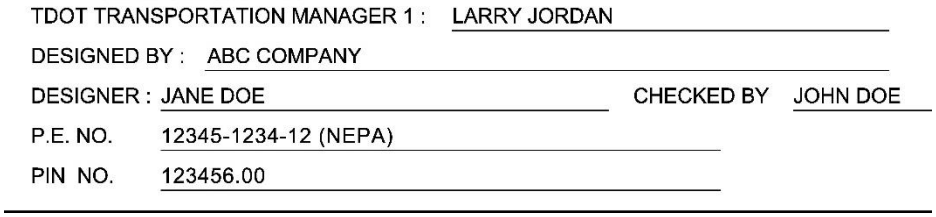

TDOT TRANSPORTATION MANAGER 1 : LARRY JORDAN
DESIGNED BY : ABC COMPANY
DESIGNER : JANE DOE CHECKED BY JOHN DOE
P.E. NO. 12345-1234-12 (NEPA)
PIN NO. 123456.00

Figure 1-28
Consultant Designed Project

1-204.04 MAP, MAP SCALE, AND NORTH ARROW

A location map for the project showing the route to be improved, local roads, streams, railroads and towns shall be placed on the title sheet. Routes to major cities shall be labeled. See Figure 1-22, Title Sheet Cell.

The map scale shall be 1" = 5280' and be placed below the map. The North arrow shall be shown beside the map. See *Figure 1-29, Map, Map Scale, North Arrow, and Project Limits Example.*

1-204.05 PROJECT LIMITS

The begin/end project limits shall be noted with federal and/or state project number, corresponding project phase (R.O.W. or Const.), stations, and northing and easting coordinates labeled to 4 decimal places. If the project has both federal and state project number, then both federal and state projects numbers will be included in the begin/end project limits labels. On Interstate plans, both Interstate log miles (based on Interstate mileposts) and stations will be required when designating the beginning and ending points on all projects. See *Figure 1-29, Map, Map Scale, North Arrow, and Project Limits Example* for an interstate example. Preliminary stations represent the begin/end R.O.W. limits. If no R.O.W. is acquired, then use the Begin/End construction limits.

On state highway plans, such as resurfacing projects, when using log miles to designate the beginning and ending points on projects, county log miles (mile posts) are to be used. The correct log miles as shown in the PPRM description shall be referenced.

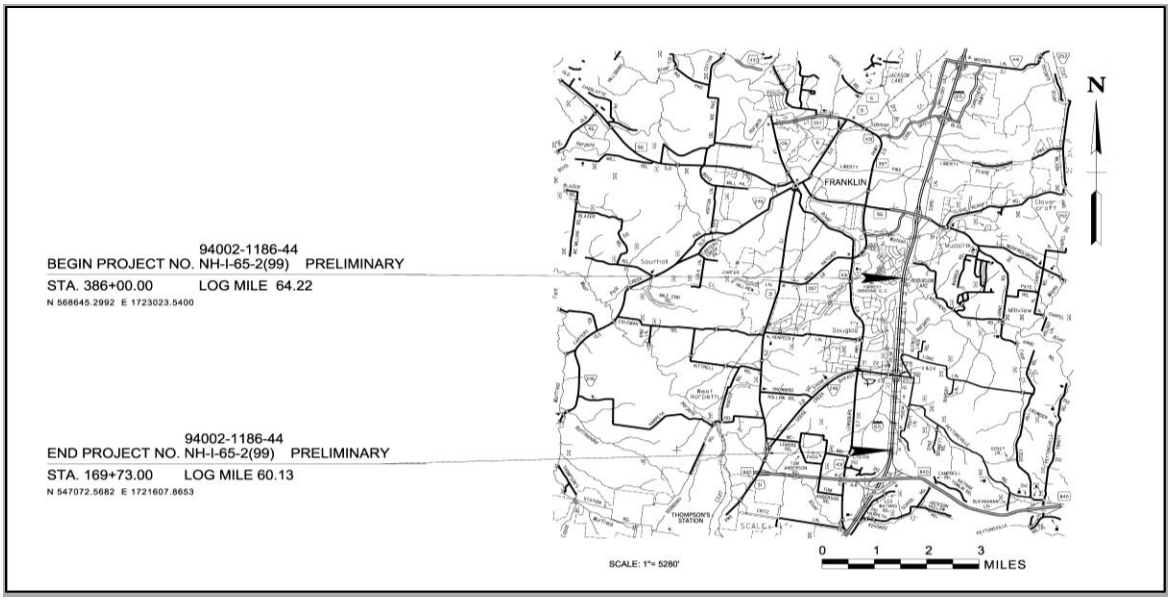


Figure 1-29
Map, Map Scale, North Arrow, and Project Limits Example

A rectangle representing each sheet border in the present layout series and its corresponding sheet number shall be placed along the mainline alignment within the title sheet map as shown in *Figure 1-30, Sheet Borders and Numbering on Map Example*.

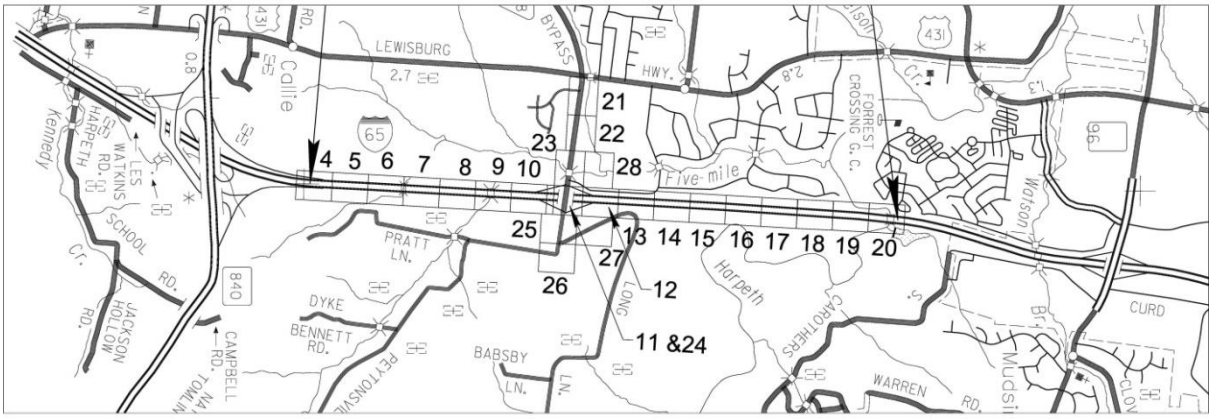


Figure 1-30
Sheet Borders and Numbering on Map Example

1-204.06 PROJECT LENGTHS

For all plan phases, the R.O.W. Length, Roadway Length, Bridge Length, Box Bridge Length, and Project Length shall be shown below the map and shall be noted to the 1000th of a mile and shown as X.XXX. These lengths shall be truncated at the third decimal. The R.O.W. Length is the length along the centerline between the beginning and ending R.O.W. flags. If the project is a Utilities Only project with no R.O.W. acquisition, use 0.000 as the R.O.W. length. The project length is the sum of the lengths for Roadway, Bridge, and Box Bridge and does not include the R.O.W. length. The project length shall be changed to include structure lengths (bridge and/or box bridge) if applicable. If box bridges serve as a riding surface for vehicles, that length shall be added together in the same manner as roadway and regular bridge length for a total project length. If the box bridge does not serve as a riding surface, the box bridge length will not be added in with the others, and a footnote to the Box Bridge Length shall be added below the Project Length to say “Not Included in the Project Length”. *See Figure 1-31, Project Length.* If information is unknown for early submittals, such as Initial Studies Request, leave the lengths blank.

R.O.W. LENGTH	__.__ MILES
ROADWAY LENGTH	__.__ MILES
BRIDGE LENGTH	__.__ MILES
BOX BRIDGE LENGTH	__.__ MILES
BOX BRIDGE LENGTH	__.__ MILES ▲
PROJECT LENGTH	__.__ MILES

▲ Not included in the project length (Non Riding Surface)

Figure 1-31
Project Length

1-204.07 PROJECT LOCATION AND BRIDGE ID NUMBER

The Project Location shall be identified for the county(s) on the state map located in the upper right corner of the title sheet cell.

The Bridge I.D. number(s), if applicable, for all existing bridges within the project limits (either on the mainline, side road or overpassing the project) shall be added under the Project Location as shown in *Figure 1-32 – Project Location and Bridge I.D. Number*. Two options are shown in Figure 1-32 for single or multiple bridges. The Federal Bridge I.D. numbers can be found in the technical report, queried on state routes, interstates and many major local roads in ETRIMS, and found in PPRM. If a project has a bridge and the bridge I.D. number cannot be found in any of these locations, the Designer shall request the information from the Regional Survey Office.

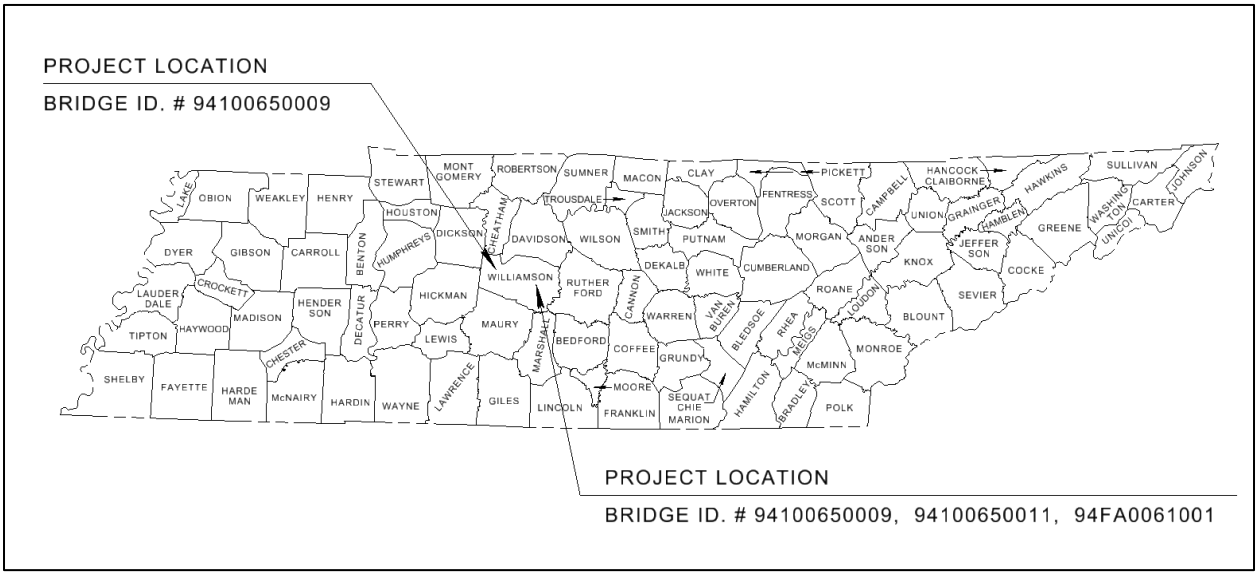


Figure 1-32
Project Location and Bridge I.D. Number

1-204.08 CHIEF ENGINEER AND COMMISSIONER SIGNATURES AND ENGINEER'S SEAL BLOCK

The current Chief Engineer and Commissioner signatures can be added to the title sheet by utilizing the scanned images available as MicroStation cells in the TDOT menu under Title Sheet Cells. See *Figure 1-33, Chief Engineer and Commissioner Signatures.* A square block for the professional engineer's seal is located above the signature block. The engineer's seal is not added at the Preliminary phase of plans development.

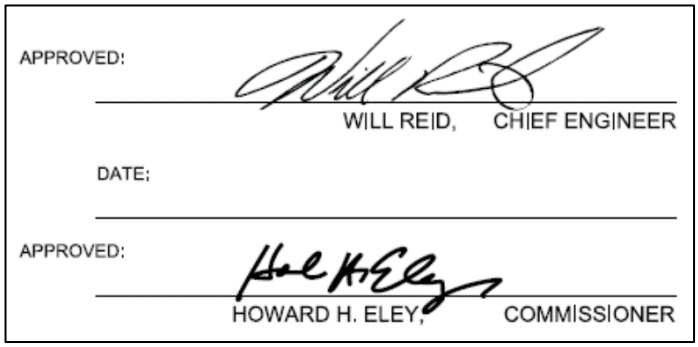


Figure 1-33
Chief Engineer and Commissioner Signatures

1-204.09 PRELIMINARY INDEX OF SHEETS

The Index of Sheets is shown on the Preliminary title sheet in the upper left hand corner. *Figure 1-34, Preliminary Index of Sheets* shows an example Preliminary index containing the names of all sheets that could be part of the preliminary plan set. The order and types of sheets shown shall be used by all Designers. Designers should refer to the Preliminary checklist, Preliminary Index Word document, and blue instructional text in the MicroStation title sheet seed file for additional information regarding sheet numbering. There could be sheets that are not used depending on the scope of the project. The number of sheets in a series may vary depending on the size of the project. Any sheets not used shall be removed from the list but the order of the remaining sheets shall be maintained as shown. With the removal or addition of sheets, some sheets will have to be renumbered; however, there are some sheets that shall always be represented by certain numbers. Sheet 3 shall always be the R.O.W. notes, Utility notes, and Utility Owners. Sheet 3A shall always show the R.O.W. Acquisition Table. Sheet 4 shall always be the first present layout sheet.

There shall not be a combined Present Layout/R.O.W. Detail sheet, and plans shall always have a R.O.W. acquisition table. These sheets shall be separate sheets for legibility reasons and to reduce the amount of time the Designer spends moving text to make it legible. The only

exception shall be if a project is turned in for “Utilities Only.” In this situation, the Designer shall determine if the plans are too cluttered to have a combined Present Layout/R.O.W. Detail sheet.

PRELIMINARY INDEX OF SHEETS

Footnotes:

① Haul Road profiles follow Side Road profiles in the sheet numbering sequence

Figure 1-34
Preliminary Index of Sheets Example

1-204.10 EXCLUSIONS OR NO EXCLUSIONS

If there are no portions of the roadway that are excluded from the proposed project, this shall be noted on the title sheet as “NO EXCLUSIONS” as shown in *Figure 1-35, No Exclusions*.

NO EXCLUSIONS

Figure 1-35
No Exclusions

If there is a portion of the roadway within the limits of the project that will not be improved or resurfaced, the following cell shall be placed on the title sheet and appropriate station ranges and lengths between the ranges shall be filled in as shown in *Figure 1-36, Exclusion Block.*

EXCLUSIONS	
STATION TO STATION	LENGTH (FT.)
-	.
-	.
-	.
TOTAL=	.

Figure 1-36
Exclusion Block

1-204.11 TRAFFIC DATA AND SURVEY DATA BLOCK

The cell for the Traffic Data Block is shown in *Figure 1-37, Traffic Data and Survey Data Block*. The first line shows Average Daily Traffic (ADT) data for the current year. The second and third lines show ADT data and Design Hourly Volume (DHV) data for the design year, which is 20 years from the current year. The other entries are Directional Volume (D), Truck ADT's, Truck DHV, and Design Speed (V). Information for this block can be found in the original technical report.

The traffic data block shall be updated at specific times throughout the project. See *Chapter 4-200.00, Traffic Report Request,* for information on obtaining updated traffic data.

The date of the original survey and the date of each survey update shall be listed beside the traffic data block on the current title sheet. Format shall be MM-DD-YY as shown in *Figure 1-37, Traffic Data and Survey Data Block*. For information on updating the survey, see *Chapter 1-305.00, Updating Surveys.*

The geoid model shall be listed on each title sheet as shown in *Figure 1-37, Traffic Data and Survey Data Block*. The geoid model and datum adjustment factor is found in the CADD survey file. The following note shall be added to all title sheets: "COORDINATES ARE NAD 83(INSERT YEAR), ARE DATUM ADJUSTED BY THE FACTOR OF X.XXXXXX AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988 WITH GEOID (INSERT MODEL)".

SURVEY 02-26-12	TRAFFIC DATA	
04-29-13 UPDATED	ADT (2018)	68160
06-09-14 UPDATED	ADT (2038)	104750
02-28-16 UPDATED	DHV (2038)	9666
09-27-17 UPDATED	D	65 - 35
	T (ADT)	17 %
	T (DHV)	11 %
	V	70 MPH

COORDINATES ARE NAD 83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000084 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988 WITH GEOID 12B.

Figure 1-37
Traffic Data and Survey Data Block

1-204.12 PLAN PHASE STAMPS

See *Chapter 1-202.06, Plan Phase Stamps*, for more details on the appropriate plan phase stamp to use. For preliminary plans, use the phase stamp shown in *Figure 1-22, Title Sheet Cell*.

1-204.13 ROAD CLOSED DURING CONSTRUCTION

For some projects, the road may be closed during construction. Usually, this is noted in the technical report by a letter from the local governments agreeing that the road shall be closed during construction. The technical report should also indicate whether the local government or TDOT is responsible for signing the detour route. If the road is going to be closed during construction, this should be noted on the Preliminary, R.O.W. and Construction title sheet as shown in *Figure 1-38, Road Closed During Construction*.

ROAD TO BE CLOSED
DURING CONSTRUCTION

Figure 1-38
Road Closed During Construction

1-204.14 DESIGN EXCEPTION APPROVAL DATES

Approved design exceptions shall be noted with approval date above the Traffic Data Block on the title sheet as shown in *Figure 1-39, Design Exception Block Examples*. For additional guidance regarding design exception request, please see *Chapter 2-105.00, Design Exception Requests*.

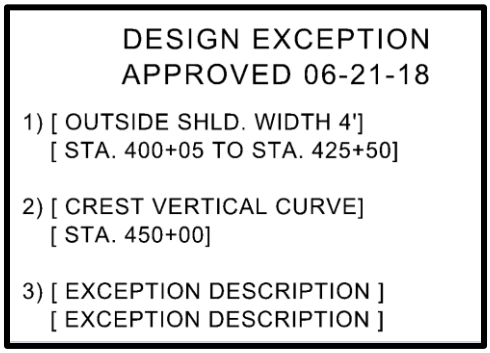


Figure 1-39
Design Exception Block Examples

1-204.15 CHAPTER 86 ELIGIBILITY FOR UTILITIES

Departmental Policy for Utility Relocations from Public Highway Rights-of-Way Under TCA §54-5-804, Number 340-07 applies to highway construction projects administered by TDOT that require the relocation of utility facilities located on public highway rights-of-way. A project will qualify for utility relocation reimbursement or for inclusion in the Department's highway construction contract if the utility meets the following conditions:

- Grade and Drainage projects with R.O.W. acquisition; and
- Bridge Replacement projects on the State highway system.

Non-qualifying projects are not considered as qualified for inclusion in Chapter 86, even if the utility is an Eligible Utility, in the following types of projects:

- Local Interstate Connectors (LIC)
- Resurfacing projects (State or Federal-aid funded)
- State Industrial Access (SIA) highways
- Minor intersection improvement projects with no R.O.W. acquired
- Bridge repair projects
- Safety funded projects
- Maintenance projects
- Signal installation projects
- Minor projects that have limited project funding available
- BRZE off-system bridges

- Any project that does not allow at least nine (9) months to process the project for Chapter 86 between the scheduled letting date for the construction contract and the date on which the project plans are sent to the utility as provided in TCA § 54-5-854.

The Designer shall discuss the project with appropriate Regional Utility Manager to verify if the project is eligible for Chapter 86 funds and shall mark the appropriate check box on the title sheet as shown in *Figure 1-40 Chapter 86 Eligibility for Utilities*.

DOES THIS PROJECT QUALIFY FOR UTILITY CHAPTER 86	YES _	NO _

Figure 1-40
Chapter 86 Eligibility for Utilities

1-205.00 RIGHT-OF-WAY TITLE SHEET

To modify the Preliminary Title sheet to a R.O.W. title sheet, the preliminary levels can be turned off and R.O.W. levels turned on as described in the Title Sheet Preset Filters Tutorial document located on the Standard Design CADD Files and Documents webpage in the Documentation section. See *Chapter 1-203.00, Development of Title Sheets*. The Project Identification number shall change from PE-N to PE-D. The Preliminary Engineering Design (PE-D) number shall be shown in the lower left hand corner of the title sheet for R.O.W. plan submittal, Utilities Only submittal, and for any subsequent plan submittals. The type of preliminary engineering number shall be specified on the title sheet adjacent to the P.E. project number and shown in parentheses as “Design”. See *Figure 1-41, TDOT Designed Project* and *Figure 1-42, Consultant Designed Project*.

NOTE: The type of work shall be verified to reflect any changes in scope of project.

TDOT ROAD SP. SV. 2 DONNIE SIRICHANTO
DESIGNER LARRY PARKER CHECKED BY DAWN PRUETT
P.E. NO. 12345-1234-12 (DESIGN)
PIN NO. 123456.00

Figure 1-41
TDOT Designed Project

TDOT DESIGN MANAGER 1 LARRY JORDAN
DESIGNED BY ABC COMPANY
DESIGNER JANE DOE CHECKED BY JOHN DOE
P.E. NO. 12345-1234-12 (DESIGN)
PIN NO. 123456.00

Figure 1-42
Consultant Designed Project

The type of project will change from Preliminary to R.O.W. in both the project description and in project limits when the correct R.O.W. levels are active. *See Figure 1-43, Project Description-Type of Project Change* and *Figure 1-44, Project Limits – Type of Project and State Federal Aid Number Change.* The state federal aid number shall be changed in the begin/end project limits labels to correspond with the R.O.W. funding phase. *See Figure 1-21, Information from PPRM or Chapter 1-204.05, Project Limits*. Additional sheets shall be added to the index. *See Chapter 1-205.01, R.O.W. Index of Sheets.*

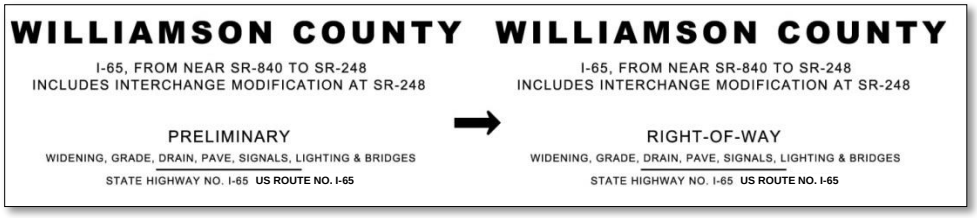


Figure 1-43
Project Description-Type of Project Change

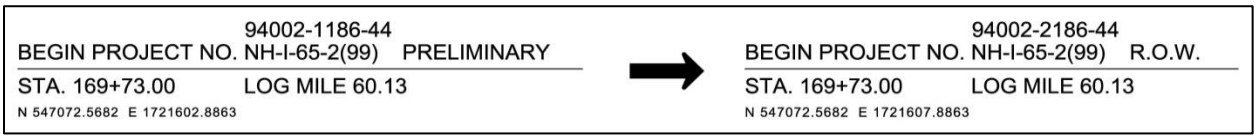


Figure 1-44
Project Limits - Type of Project and State Federal Aid Number Change

If a project is submitted for “Utilities Only”, it shall be marked on the title sheet with a project phase stamp. See *Figure 1-45, R.O.W. (Utilities Only) Phase Stamp.*

Figure 1-45
R.O.W. (Utilities Only) Phase Stamp

1-205.01 R.O.W. INDEX OF SHEETS

The Index of Sheets is shown on the R.O.W. title sheet in the upper left-hand corner. *Figure 1-46, R.O.W. Index of Sheets Example* is an example R.O.W. index containing the names of all sheets that could be part of the R.O.W. plan set. The order and types of sheets shown shall

be used by all Designers. Designers should refer to the R.O.W. checklist, R.O.W. Index Word document, and blue instructional text in the MicroStation title sheet seed file for additional information regarding sheet numbering. There could be sheets that are not used depending on the scope of the project. The number of sheets in a series may vary depending on the size of the project. Any sheets not used shall be removed from the list, but the order of the remaining sheets shall be maintained as shown. With the removal or addition of sheets, some sheets will have to be renumbered; however, there are sheets that shall always be represented by certain numbers. Sheet 3 shall always be the R.O.W. notes, Utility notes, and Utility Owners. Sheet 3A shall always show the R.O.W. Acquisition Table. Sheet 4 shall always be the first present layout sheet.

There shall not be a combined Present Layout/R.O.W. Detail sheet, and plans shall always have a R.O.W. acquisition table. These sheets shall be separate sheets for legibility reasons and to reduce the amount of time the Designer spends moving text to make it legible. The only exception shall be if a project is turned in for “Utilities Only.” In this situation, the Designer shall determine if the plans are too cluttered to have a combined Present Layout/R.O.W. Detail sheet.

As plans progress, there will be additional sheets added for the Construction phase that were not in the R.O.W. submittal. **When plans are turned in for Construction, the original R.O.W. sheet numbers shall remain as they were when turned in for R.O.W. and shall not be altered to match construction sheet numbers.**

Other Divisions that are developing their own sheets to add to the plan set should follow the naming convention shown in Figure 1-46, R.O.W. Index of Sheets Example. The first sheet of their series, *-1, should contain an index for the rest of the sheets in that series.

R.O.W. INDEX OF SHEETS

Footnotes:

① Haul Road profiles follow Side Road profiles in the sheet numbering sequence.

Figure 1-46
R.O.W. Index of Sheets Example

1-205.02 WORK ZONE SIGNIFICANCE DETERMINATION

It is Departmental policy to plan, design, construct, maintain, and operate safe and efficient work zones. Consideration and management of work zone impacts begin at project inception, continue through all phases of design and construction, and are reflected through the Work Zone Safety and Mobility Process that address all aspects of work zone safety and mobility. A Significant Project is one that, alone or in combination with other concurrent projects nearby, is anticipated to cause sustained work zone impacts that are greater than what is considered tolerable. See the Work Zone Safety & Mobility Manual for guidance on significance determination and additional information. For information regarding the functional classification for your project, see the Functional Classification maps.

The Designer shall mark the appropriate check box to indicate the project's significance determination. This should also be included on Resurfacing title sheets. *See Figure 1-47, Work Zone Determination.*

WORK ZONE SIGNIFICANCE DETERMINATION		
SIGNIFICANT	YES _	NO _

Figure 1-47
Work Zone Determination

1-205.03 SEALING THE R.O.W. TITLE SHEET

When a plan set is submitted for R.O.W. Appraisals or for Utilities Only, only the R.O.W. title sheet shall be sealed by the appropriate TDOT staff or the Consultant. The remainder of the sheets in the R.O.W. plans shall not be sealed. TDOT approved sealing mechanisms shall be used to seal the title sheet. The seal block outline on the title sheet is located above the Chief Engineer's and Commissioner's signatures as shown in *Figure 1-48, Engineer's Seal on R.O.W. Title Sheet.*

When turning in a plan set for Construction, the original R.O.W. title sheet shall be included in the submittal. It is recommended that when sealing the plans for R.O.W. or Utilities Only, an individual title sheet be sealed for future inclusion in Construction plans submittal. The individual R.O.W. title sheet shall be named ***nnnnnn-nn*-ROWTitleSheet.pdf**.

The Department is utilizing Adobe Certified Document Services (CDS) for PDF documents. Vendors supplying the CDS certificates can be found on Adobe's website at www.adobe.com/security/partners_cds.html. Any of the companies listed can be used to purchase a token. A certification is to be specific to a single professional engineer utilizing the desktop-based document certification process and may not be done on a companywide basis. The professional engineer shall not allow anyone else to use the certification on his/her behalf.

Refer to the document Digital Signature Certification Workflow located on the Standard Design CADD Files and Documents webpage for information in applying a digital signature to a plan set.

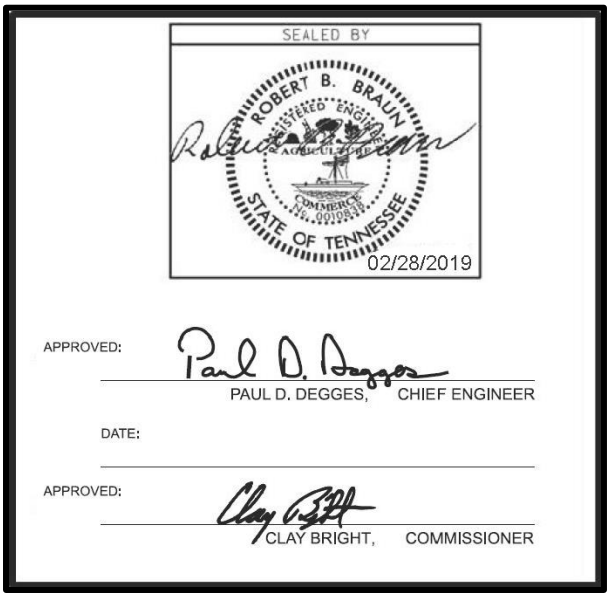


Figure 1-48
Engineer's Seal on R.O.W. Title Sheet

1-206.00 CONSTRUCTION TITLE SHEET

To modify the R.O.W. title sheet to a Construction title sheet, the R.O.W. levels can be turned off and Construction levels turned on as described in the Title Sheet Preset Filters Tutorial document located on the Standard Design CADD Files and Documents webpage in the Documentation section. See *Chapter 1-203.00, Development of Title Sheets*. Also, the type of project will change from R.O.W. to Construction in the project description and in project limits when the correct Construction levels are active. *See Figure 1-49, Project Description-Type of Project Change and Figure 1-50, Project Limits - Type of Project and State Federal Aid Number Change.* The state federal aid number shall be changed in the begin/end project limits labels to correspond with the Construction funding phase. *See Figure 1-21, Information from PPRM or Chapter 1-204.05, Project Limits.* Additional sheets shall be added to the index. *See Chapter 1-205.01, R.O.W. Index of Sheets.*

NOTE: The type of work shall be verified to reflect any changes in scope of project.

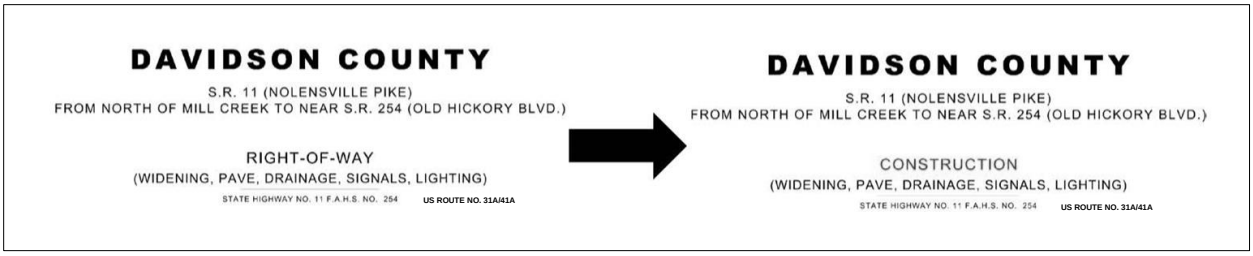


Figure 1-49
Project Description-Type of Project Change

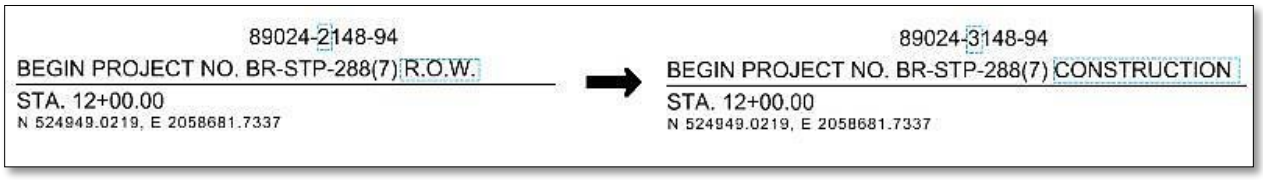


Figure 1-50
Project Limits - Type of Project and State Federal Aid Number Change

1-206.01 CONSTRUCTION INDEX OF SHEETS

The Index of Sheets for Construction plans is not shown on the title sheet as it is in the Preliminary and R.O.W. plans. Designers shall place a note in the upper left corner of the title sheet which says “See Sht. 1A for Index”. The index is combined with the Roadway Standard Drawings and immediately follows the Construction title sheet in the plans. *Figure 1-51, Construction Index of Sheets Example* shows an example Construction Index containing the names of all sheets that could be part of the Construction plan set. The Construction index lists all the sheets submitted in the R.O.W. plans plus additional sheets in the 2nd sheets series as well as other sheets such as traffic control. Designers should refer to the Construction checklist, Construction Index Word document, and blue instructional text in the MicroStation title sheet seed file for additional information regarding sheet numbering. As with the Preliminary and R.O.W. index, the order and types of sheets shown shall be followed by all Designers. There could be sheets that are not used depending on the scope of the project. The number of sheets in a series could vary depending on the size of the project. Any sheets not used shall be removed from the list but the order of the remaining sheets shall be maintained as shown. With the removal or addition of sheets, some sheets may have different numbers than were shown in the R.O.W. plans; however, there are sheets that shall always be represented by certain numbers. Sheet 3 shall always be the R.O.W. notes, Utility notes, and Utility Owners. Sheet 3A shall always show the R.O.W. Acquisition Table. Sheet 4 shall always be the first present layout sheet.

Other Divisions that are developing their own sheets to add to the plan set should follow the naming convention shown in Figure 1-51, Construction Index of Sheets Example. The first sheet of their series, *-1, should contain an index for the rest of the sheets in that series.

CONSTRUCTION INDEX OF SHEETS

Figure 1-51
Construction Index of Sheets Example

The sheet numbers for R.O.W. shall not be changed to match the Construction sheet numbers but will remain on line 1 of the sheet identification block. The Construction phase, project year, project number, and sheet number shall be entered in line 2 of the identification block. If the project goes through a Preliminary phase where “Prelim” is shown in the “Type” column, then “Prelim” is changed to “R.O.W.” when the project enters the R.O.W. phase of development. The PROJECT NO. field should contain the federal project number. If no federal number is available, then the state project number shall be used. See *Figure 1-52, Construction Project Sheet Number Change*.

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	BR-STP-12(3)	12
CONST.	2016	BR-STP-12(3)	15

Figure 1-52
Construction Project Sheet Number Change

1-206.02 SEALING CONSTRUCTION PLANS

TDOT Divisions are responsible to complete, seal, and submit their respective sheets for the plan sets. Each submittal will contain its own index and estimated quantities.

Digital Signature Certification is the standard practice for signing and sealing TDOT plan sets. All Construction sheets shall be signed and sealed using the digital process and manual signed and sealed sheets will not be accepted. A Signature sheet will be created for each set of Construction Plans with an index of sheets listed below each responsible Engineer's information. This Signature sheet will be the only sheet to be digitally signed and sealed by the professional Engineer. The Signature sheet allows multiple Engineers to sign and seal one plan sheet. All remaining plan sheets will be watermarked with the Engineer's signature and date located in the box outlined for the placement of the engineer seal, but will not be digitally signed. See *Figure 1-53, Signature Sheet Example.* The final combined set will follow the standard file naming convention *nnnnnn-nn-RoadwayConstruction.pdf* where "*nnnnnn-nn*" represents the project identification number.

Sealing of Construction revisions will be completed using the same Signature process as the original Construction submittal. A new Signature sheet will be created for the revised sheets and inserted directly following the original Signature sheet.

The Department is utilizing Adobe Certified Document Services (CDS) for PDF documents. Vendors supplying the CDS certificates can be found on Adobe's website at www.adobe.com/security/partners_cds.html. Any of the companies listed can be used to purchase a token. A certification is to be specific to a single professional engineer utilizing the desktop-based document certification process and may not be done on a companywide basis. The professional engineer shall not allow anyone else to use the certification on his behalf.

Refer to the document Digital Signature Certification Workflow located on the Standard Design CADD Files and Documents webpage for information in applying a digital signature to

a plan set. For projects designed by TDOT Designers, most signature sheets will only have a signature of the engineer sealing the roadway plans in the first column. Figure *1-53, Signature Sheet Example*, shows an example of a signature sheet that would be common for consultant designed plans with multiple engineer signatures.

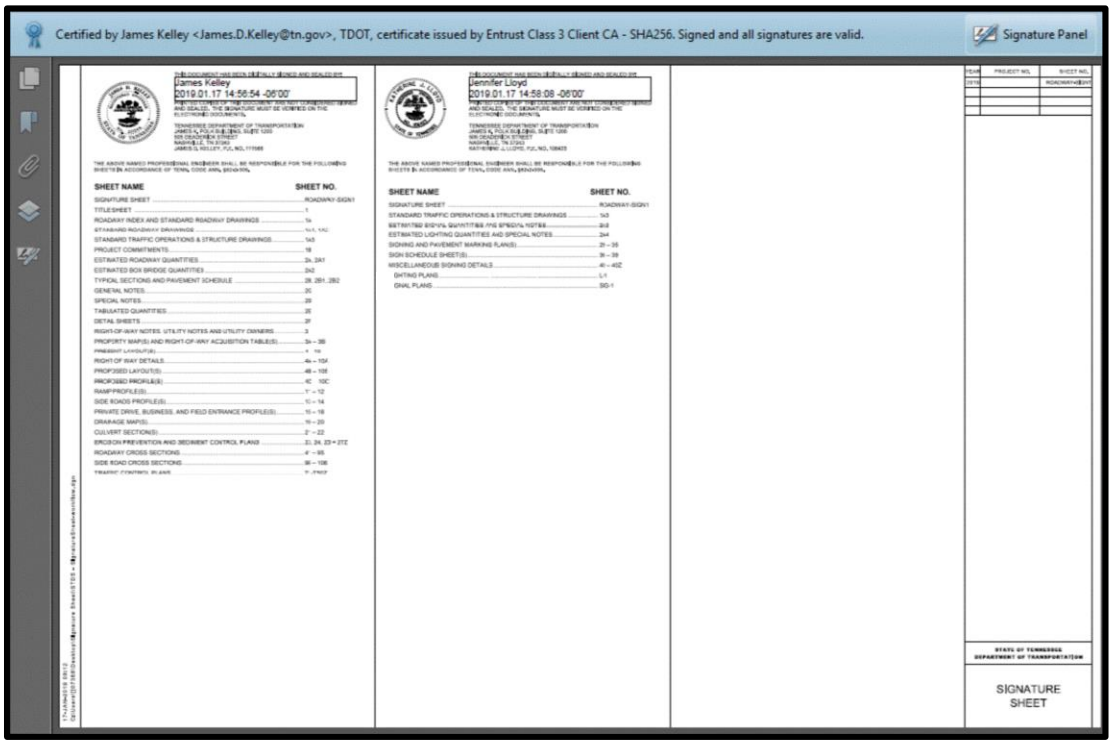


Figure 1-53
Signature Sheet Example

1-207.00 RESURFACING TITLE SHEET

The Project Length shown on the title sheet is different for a resurfacing project title sheet. The length should be shown to a hundredth of a mile. See *Figure 1-54, Resurfacing Project Length on Title Sheet.* Also, see TDOT Roadway Design Guidelines Chapter 5-*502 Resurfacing Projects,* for more information on resurfacing projects.

PROJECT LENGTH	XX.XX MILES
TOTAL LANE MILES RESURFACED	XX.XX MILES

Figure 1-54
Resurfacing Project Length on Title Sheet

The Project Limits for a resurfacing project and a resurfacing and safety project are shown in *Figure 1-55, Begin and End Project Flags on Title Sheet Resurfacing Project* and *Figure 1-56, Begin and End Project Flags on Title Sheet Resurfacing and Safety Project*. When the cost of

the safety upgrades are greater than $10,000, the items for the safety improvements shall be funded separately from the other resurfacing plan items. The project type will then be labeled as Resurface and Safety. If safety funding is already set up for the project and it is determined that the $10,000 minimum for safety funds cannot be met, the Designer should contact the Program Development and Administrative Division so that the safety funding source can be removed from the project.

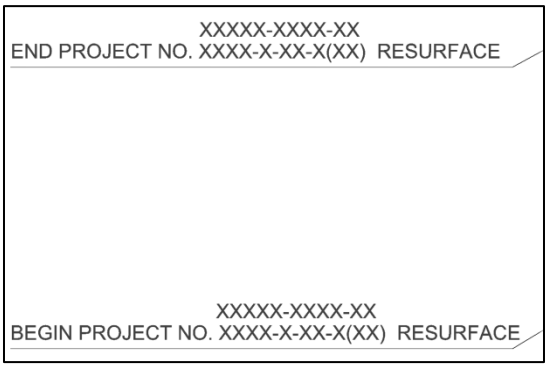


Figure 1-55
Begin and End Project Flags on Title Sheet Resurfacing Project

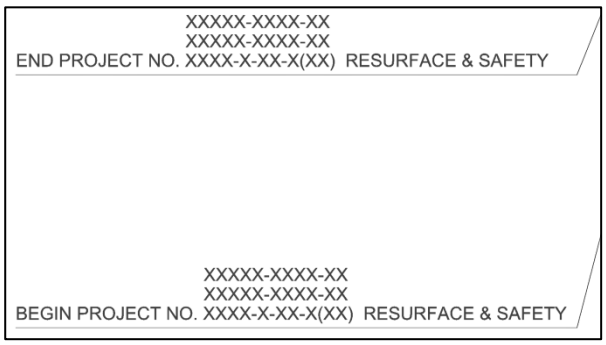


Figure 1-56
Begin and End Project Flags on Title Sheet Re surfacing and Safety Project

1-207.01 RESURFACING PROJECTS WITH BRIDGE REPAIR PLANS

On resurfacing projects that include bridge repairs, the Designer shall add the resurfacing project number and the bridge repair project number to the project number block on the top right corner of on the title sheet and all bridge repair sheets. The bridge repair type shall be listed as “BRIDGE”.

SECTION 3 – SURVEY INFORMATION

1-300.00 SURVEY REQUIREMENTS

Surveyors shall comply with the TDOT Roadway Design Survey Manual and the TDOT Survey & Roadway Design CADD Standards Manual when submitting the original files to Design Managers. These manuals are located on the Roadway Design Survey Standards webpage.

1-301.00 COORDINATE VALUES

Survey procedures require that all surveys shall be tied to the State Plane Coordinate System using the Tennessee Geodetic Reference Network (TGRN). All surveyed coordinate values will be based on the North American Datum 1983 (NAD/83) (1995 adjustment) coordinates and appropriate notes indicating such shall appear on the topography plot.

All design computations shall be based on these adjusted coordinate values. This will ensure that all computed points on the project have coordinate values tied to the State Plane System. Assumed coordinates will not be used.

Coordinate values for all P.I.s of horizontal curves shall be computed to four decimal places and shall be shown in the curve data on present layout sheets. Coordinate values for all begin/end project limits labels shall be computed to four decimal places. Coordinate values for all other points, such as the intersection of the mainline centerline and a side road centerline, shall be shown to two decimal places.

A notation near the title block in lower right hand corner for each sheet shall read, “Coordinates are NAD/83 (enter year), are datum adjusted by the factor of X.XXXXX and tied to the TGRN. All elevations are referenced to the NAVD 1988 with GEOID (enter model). The note will appear on all sheets except 2nd sheets, profile sheets and cross sections sheets regardless of whether coordinate points are shown. The “year” value refers to the year of the adjustment of coordinate values in Tennessee; X.XXXXX refers to the actual datum adjustment factor used for the project; and “model” refers to the GEOID model used. These values are listed in the CADD survey file. See *Chapter 1-204.11, Traffic Data and Survey Data Block* for guidance on placement of the coordinates note on the title sheet.

1-302.00 TVA TRANSMISSION LINES

Tennessee Valley Authority (TVA) requests that TDOT-provided Global Positioning System (GPS) coordinates for intersection points be labeled on present and proposed plan sheets where TVA transmission lines and roadway centerlines intersect. This will assist them in determining the precise location of TVA facilities in relationship to our proposed alignment.

1-303.00 DISTANCES, BEARINGS, AND CONTROL POINTS

In order to provide consistency and maintain accuracy, the following criteria are to be adopted for all roadway plans:

- Distances shown on the plans shall be no more accurate than the nearest 0.01 foot (35 ft., 35.0 ft., and 35.00 ft., are acceptable: 35.001 ft. is not acceptable), with the exception of the begin/end project limits labels where 0.001 is acceptable.
- Bearings shown on the plans shall be no more accurate than 1 (one) second (for example N 35 00' 01" E is acceptable; N 35 00' 01.1" E is not acceptable).
- GPS control points shall be shown to an accuracy of 0.0001 foot.

1-304.00 TRACT NUMBERS ON PLANS

On all design projects, tract, and/or parcel numbers assigned during the survey process **shall not** be deleted or altered unless directed by the HQ or Regional R.O.W. Office. Tract numbers are assigned during the survey process and have the same parcel number in the GEOPAK "GPK" file. The parcel information contained in the GPK file is used in survey and plan preparation and R.O.W. processes. There shall not be any duplicate tract numbers on any one project.

No tract shall be deleted after the plans have been printed for a design public hearing. For tracts where no acquisition is required, the Designer shall place a single line through all the information for all such tracts in the R.O.W. Acquisition Table in the plans. The Designer shall also place a line through all the no-acquisition tract numbers and owner names on the Property Maps sheets, Present Layout sheets, R.O.W. Details sheets, and on any other plan sheets where these tract numbers and owner names may appear. This will ensure that all tract information is retained in the GPK file and not deleted nor altered. The tract information is then recoverable and can be used by other sections as the information is passed to the R.O.W. and Operations Divisions or returned to the Survey Office for updating.

1-305.00 UPDATING SURVEYS

It is the Designer's responsibility to thoroughly review the survey information. Requests for updates normally take place following the **Preliminary Field Review** and the **Right-of-Way Field Review**, if necessary. Every effort shall be made to make sure all additional information required is requested at these times which will reduce the number of times survey crews are sent out on the same project.

After a request is made for Environmental Boundaries and wetlands are identified by the Environmental Division or Environmental Tech Offices, the Designer or Design Manager shall

request additional survey information if the Environmental Boundary document does not provide updated survey information obtained during the identification process.

Additional survey requests shall be made by email sent to the appropriate Regional Survey office and shall be created using the template file *Additional Survey Request Form*.xltx located in the DDOCS.zip file on the Standard Design and Survey CADD Files and Documents webpage.

When requesting additional information, requested information will be shown either in electronic format or on a marked set of prints. Also, it may be necessary to include GEOPAK information. This is covered in the CADD Standards document (CADDV8.pdf) located on the Standard Design and Survey CADD Files and Documents webpage.

If a survey is updated, the updated survey date(s) shall be added to the title sheet of the current phase of the project beside the traffic block as shown in *Figure 1-37, Traffic Data and Survey Data Block.* .

SECTION 4 – ESTIMATES

1-400.00 ESTIMATED ROADWAY QUANTITIES

For each project, Designers shall create and maintain an estimate file of all roadway quantities for project cost estimation. The project estimates may contain any combination of the following types of quantities: roadway, bridge, box bridge, utility, R.O.W. relocation, signal, and/or lighting. The estimated roadway quantity sheet included in the project plans may contain quantities provided by other TDOT Divisions. An item number should only be used once per project. All Divisions shall coordinate to determine if an item number is listed in multiple estimated quantity files.

Estimates can be used to help predict costs of future projects of similar scope. The estimated roadway quantities Excel file is part of various project deliverables, including finalized Preliminary Plans, R.O.W. funding requests, Construction Field Reviews, and final Construction plans distribution.

The Bid Analysis and Estimating Office provides a dollar figure to each listed item based on historical data to determine a total cost that TDOT estimates it will need to complete the project. The projected cost estimate is used by the Project Development and Administration Division for budget updates throughout the life cycle of the project. The Program Development and Administration Division authorizes funding for each stage of the project and compiles the list of projects that are budgeted in the State Transportation Improvement Program (STIP). It is essential that Designers create a complete, accurate and updated estimate when changes occur to ensure that projected costs are within the funding allocated in the STIP.

Contractors also use the estimated roadway items to calculate a total dollar amount that it would cost them to build the job and use this amount to bid on the project. TDOT's and the contractors' estimates are compared during the Letting phase to ensure that the bids are not obviously unbalanced, too high, or too low compared to TDOT's cost estimate. Bid proposals may be rejected by the Commissioner if they are excessive or below the reasonable cost analysis value.

Lump Sum (LS) quantities shall be 1 (one) unless the estimated roadway quantities file includes multiple projects, and the same item number is in each project. Fractional Lump Sum (LS) quantities for the same item number must add up to equal one or the program that the Estimating Office uses will force it to one. Lump Sums for the same item number when multiple projects are in the proposal shall not be rounded to 1 (one) each. Instead, the total quantity for a Lump Sum item for all the projects in a single proposal shall total 1 (one). Lump Sums shall not add up to more than 1 (one) when the same item number is listed for multiple projects in the same

estimated quantities file. An example would be Traffic Control for two projects let together with each quantity equal to 0.5.

For item numbers with units of measure of EACH, the quantity shall not be a fraction. Some quantities can be decimals such as pavement markings when unit of measure is L.M. (linear mile) if the quantity is low, or between 1 and 5.5, since rounding up or down creates a percent change greater than 10%. Square yards and tons shall always be whole numbers.

The quantity for all item numbers shall not be rounded if rounding (either up or down) results in a change of 10% or more in the total quantity. For example, if 1.5 is rounded to 2.0, then the change is 0.5/1.5 = 0.333 or 33.3%. If 1.75 is rounded to 2.0, then the percent change is 0.25/1.75 = 0.1428 or 14.3%. These examples shall not be rounded but shall remain 1.5 and 1.75, respectively. However, if the quantity is calculated to be 1.85, then the percent change if rounding up to 2.0 would be 0.15/1.85 = 0.081 or 8.1%. In this case, it is acceptable to round up to 2.0 (two) for this item.

1-401.00 CREATING THE PRELIMINARY ROADWAY QUANTITIES ESTIMATE

The first estimate prepared by the Designer for a project is the preliminary estimate. This estimate is a living document and shall be updated as the project develops.

Each estimate file contains quantities associated with each item of work that is needed to build the project. Each item has an official item number, description, unit of cost, and associated quantity. These items are listed in the **items.dat** file and only these approved items shall be used in plans. The uses for many items in the **items.dat** file are described in detail in TDOT's Standard Specifications For Road and Bridge Construction, *(See Part 1, Section 109, Measurement and Payment, and all Sections in Part 2).*

To download the complete list of approved roadway items in the items.dat file and/or to run a quick search for an item either by item number or description keyword, go to the Roadway Item Lists webpage.

If a new Roadway Design item number is needed, the Design Manager should contact the HQ Roadway Design Division at TDOT.Design@tn.gov. If a new ITS item number is needed, the Design Manager should contact the Traffic Operations Division at TDOT.TrafficOps.ITS-Reviews@tn.gov. If a new traffic signal of lighting item number is needed, the Design Manager should contact the Traffic Operations Division at TDOT.TrafficOps.SNL-Reviews@tn.gov. These divisions will determine if an item number will be assigned or included in another item. If a new item number is needed specific to a project, they will contact the HQ Construction Office to get the new number.

The estimated roadway quantities sheet in project plans is created from an Excel file that works in conjunction with the items.dat file. The template for the estimated roadway quantities

Excel file can be downloaded from the Roadway Design Documents webpage. *See Figure 1-57, Estimated Quantities Project Data* and *Figure 1-58, Estimated Roadway Quantities Block 1 Sheet* for examples of some of the tabs in the estimated roadway quantities Excel file.

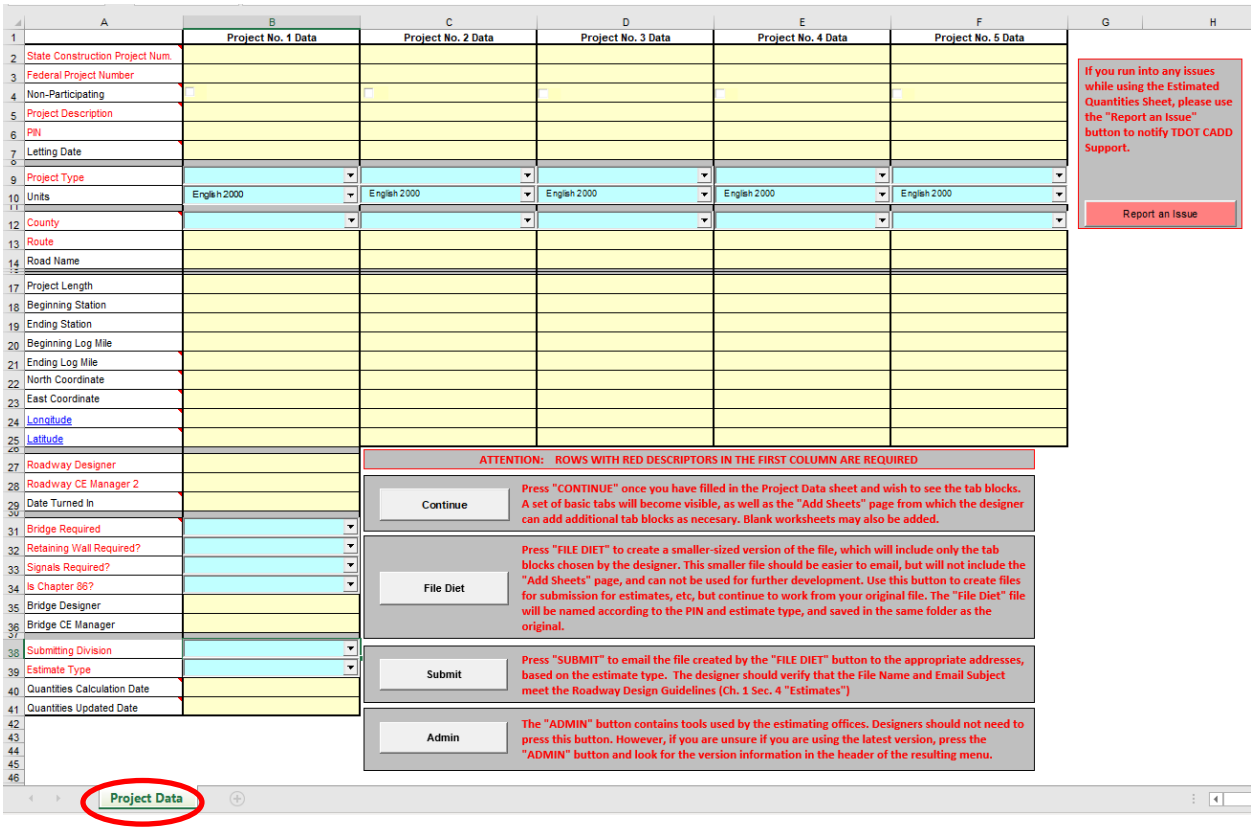


Figure 1-57
Estimated Roadway Quantities Project Data

Project Data Sheet Tab

- **ALL** Information shall be filled in. The Excel template requires Designers to complete the Project Data fields for at least one project before proceeding to the estimated quantities tab sheets. Once all data is entered, Designers should select the Continue button.
- The Excel template will accommodate projects with up to five State Project Numbers.
- Non-participating items are listed by column as designated on the Project Data tab.
- The North and East Coordinates shall coincide with the location of the Latitude and Longitude as defined in *Chapter 1-106.01, Latitude and Longitude*.
- Dates should be updated as needed for the entries in Letting Date, Date Turned In, and Quantities Updated Date with each submittal.
- If bridges, retaining walls, or other structures designed by the Structures Division are proposed, the Designer shall include the Bridge Designer and CE Manager on the project data portion of the estimate file.

- The File Diet button may be used to create an email-friendly copy of the spreadsheet which contains only the tables used by the Designer. The resulting file is much smaller but should not be used for further development since all unused tables are deleted, and therefore it is not possible to add additional tables.
- The Submit button may be used to send the email-friendly copy created by the File Diet button to the appropriate mailing list, as determined by the Estimate Type.
- The Admin button is for use by the HQ Construction Estimates section and the Bid Analysis & Estimating Office. This button starts a workflow that allows for the data to be exported meeting their software's entry requirements.

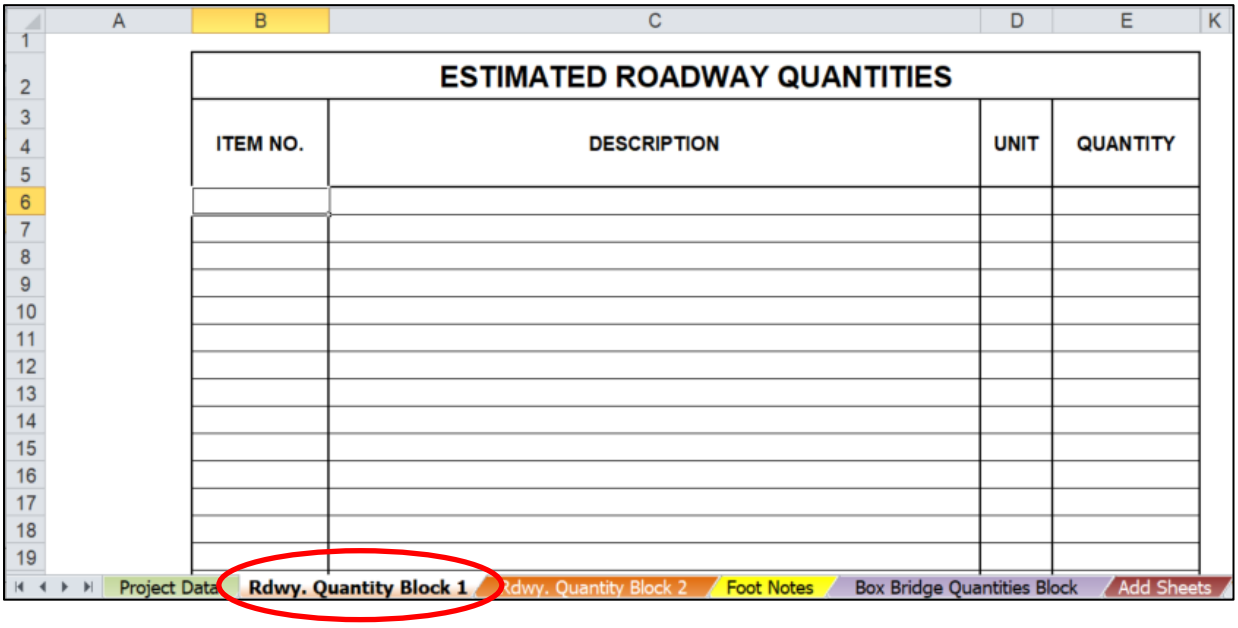


Figure 1-58
Estimated Roadway Quantities Block 1 Sheet

Rdwy. Quantity Block 1 Sheet

- Instructions on selecting items, filling in descriptions, format, etc. are found within the estimated roadway quantities Excel file and the 2ndSheetsV8 document, located on the Standard Design and Survey CADD Files and Documents webpage.
- The Roadway Estimated Quantity blocks now allow for the use of equations.
- All tab blocks are built into the Excel template. To add tab blocks sheets, select the "Add Sheets" tab. Sheets are organized by group. Select group first, then select the specific sheet, then click "Select" this will add the selected sheet. To delete, select "Delete Sheets", and select the desired sheet from the list.

- If additional copies of a sheet are needed, simply select the sheet again. Blank worksheets may be added by selecting “Blank Worksheet” from the “Add Sheets” menu. Additional footnotes sheets may be added by selecting “Footnotes”. A notes section is provided in the upper right corner of additional footnotes sheets, so the designer may keep track of which sheets the footnotes refer to.
- Quantities from the added tab blocks can be linked into the main roadway quantity sheets. (Example: Catch Basins and Manholes, Guardrail, Pavement, Removal of Buildings and Obstructions, Traffic Control, etc.).
- Sheets shall not be renamed.
- If more than one PIN is associated with the project, the Designer should use the buttons to the right to select the appropriate number of quantity columns (one per PIN). All items shall be listed in numerical order. There is a ‘sort’ button to help with this task.
- Quantities cannot contain commas.
- Quantities shall be rounded up to the nearest whole number with the exceptions of those as shown in Chapter 7 Item Numbers of the guidelines.
- Contractors are paid by the quantities that are ordered and used on the project. If there is an item number in question that may not be used on the project, it shall be added to the estimate. It is better to have it shown on the estimate and not used by the contractor than needed after Letting as a change order. These items shall be discussed at the Construction Field Review and footnoted “Requested by _____Division.”
- Projected quantities for erosion control and traffic control shall be included in the preliminary estimate even though traffic control sheets are not included in the preliminary or R.O.W. plans. Quantities from similar projects can be used to help estimate these quantities.
- If open-ended and/or lump sum item numbers are used, the Designer shall fill in the descriptions in the estimate data file. Without completing these item descriptions, there is no way the estimator in the Bid Analysis & Estimating Office can complete the preliminary construction cost estimate.
- Box-Bridge items shall be listed on a sheet separate from the roadway items. Use the sheet labeled Box Bridge Quantities sheet.
- Alternate roadway items shall be listed after all other roadway items. The alternates will be designated in column C as Alternate AA1, Alternate AA2, Alternate AA3, Alternate AB1, Alternate AB2, and so on. AA1 would alternate with AA2 and AA3. AB1 would alternate with AB2, etc.
- No prices shall be entered in the estimate.

1-402.00 SUBMITTAL OF ESTIMATES

As previously noted in *Chapter 1-400.00, Estimated Roadway Quantities*, the Program Development and Administration Division authorizes funding for each stage of the project and compiles the list of projects that are budgeted in the STIP. It is essential that Designers create a complete and accurate estimate and update and re-submit the estimate when changes occur to ensure that projected costs are within the funding allocated within the STIP. The following sections will explain how often an estimate should be updated and submitted for use in budgeting.

1-402.01 SUBMITTAL OF THE PRELIMINARY ESTIMATE

For PPRM Activity #390 Finalize Preliminary Plans, the Design Manager responsible for the project shall place the Excel quantity file ***nnnnnn-nn-PreliminaryEstimate.xlsm*** on FileNet and send an email notification to the appropriate Strategic Transportation Investments Division (STID) regional email TDOT.STID.R1@tn.gov, TDOT.STID.R2@tn.gov, TDOT.STID.R3@tn.gov, or TDOT.STID.R4@tn.gov, and carbon copy (Cc) the Program Development and Scheduling Office at TDOT.PDSO@tn.gov. The estimate shall be submitted after the Preliminary Field Review is held and the estimate is updated accordingly.

The subject line shall read:

Region X, County Name, Route Name, PIN nnnnnn-nn, Preliminary Estimate Submittal

Each Designer shall ensure the following is addressed in the preliminary estimate:

- If bridges, retaining walls, or other structures designed by the Structures Division are proposed, the Designer shall indicate structures are required within the body of the email. This information is necessary to ensure that the structures are included in the preliminary estimate.
- The Designer shall send the preliminary construction Excel quantities estimate data via email to the Design Manager responsible for the project. Design Managers and Designers shall keep a copy of the estimate file in the project folder and keep the email message that shows the date the estimate was emailed.

If an estimate is submitted during the preliminary stage, for plans associated with a public hearing, or from a request by the Program Development and Administrative Division, an updated estimate shall be submitted if a time lapse of one year has occurred since the previous estimate was submitted. If there is a time lapse of over one year between the preliminary project submittal and the projected request date for R.O.W. funding, an updated preliminary estimate shall be completed and placed on FileNet with the name ***nnnnnn-nn-PreliminaryEstimate.xlsm***. The name shall not include a revision date for the file placed on FileNet. The original estimate placed

on FileNet shall be removed. The Design Manager shall email the appropriate Strategic Transportation Investments Division (STID) regional email TDOT.STID.R1@tn.gov, TDOT.STID.R2@tn.gov, TDOT.STID.R3@tn.gov, or TDOT.STID.R4@tn.gov, and carbon copy (Cc) TDOT.PDSO@tn.gov. If there are items that will be used on the project, but the quantities are unknown, this shall be mentioned in the body of the email. The email shall also state that the estimate is being submitted because it has been a year since the last submittal. **If there are NO CHANGES in the estimate from the previous submittal, it shall be stated in the body of the email that there are NO CHANGES from the previous estimate that was submitted on DD/MM/YYYY** but shall still be placed on FileNet and the other removed**.** All updated estimates shall be kept in the project folder. For the project folder, a date shall be part of the naming convention so that the development of the estimate can be easily compared.

1-402.02 SUBMITTAL OF R.O.W. ESTIMATE FOR R.O.W. OR UTILITIES ONLY FUNDING

As plans develop into the R.O.W. phase, additional items shall be added to the preliminary estimate and renamed the Roadway R.O.W. estimate ***nnnnnn-nn-RoadwayROWEstimate.xlsm***. This is a replacement for what was originally called the preliminary estimate. This is **not** a substitution for the Form 44 ROW estimate which will continue to be submitted by the R.O.W. personnel. **PPRM** Activity #585 Finalize R.O.W. Plans shall include updating the estimate from comments received at the Site Review and R.O.W. Field Review. The R.O.W. estimate shall be part of the request for R.O.W. or Utilities Only funding. If there are retaining walls on the project, please refer to *Chapter 2-900.07 Retaining Walls Quantities* for guidance on including retaining wall quantities in the R.O.W. estimate for R.O.W. plans. If there are landscaping quantities on the project, refer to *Chapter 5-504.00, Landscaping Plans*.

After R.O.W. submittal, if there is a time lapse of over one year between R.O.W. submittal and the distribution of the Construction Field Review notice, an updated R.O.W. estimate shall be completed and placed on FileNet with the name ***nnnnnn-nn-RoadwayROWEstimate.xlsm****.* The name shall not include a revision date for the file placed on FileNet. The previous estimate placed on FileNet shall be removed. The Design Manager shall email TDOT.Preliminary.Estimates@tn.gov with a carbon copy (Cc) to TDOT.PDSO@tn.gov that ***nnnnnn-nn-RoadwayROWEstimate.xlsm*** was placed on FileNet. The email shall state that the estimate is being submitted because it has been a year since the last submittal. **If there are NO CHANGES in the estimate from the previous submittal, it shall be stated in the email that there are NO CHANGES from the previous estimate that was submitted on DD/MM/YYYY,** but shall still be placed on FileNet and the other removed**.** All updated estimates shall be kept in the project folder. For the project folder, a date shall be part of the naming convention so that the development of the estimate can be easily compared.

If there are significant changes, additions, or revisions to the R.O.W. plans that affect the estimate, a revised estimate shall be completed and placed on FileNet with the name ***nnnnnn-***

nn-RoadwayROWEstimate.xlsm. The name shall not include a revision date for the file placed on FileNet. The previous estimate placed on FileNet shall be removed. The Design Manager shall email TDOT.Preliminary.Estimates@tn.gov with a carbon copy (Cc) to TDOT.PDSO@tn.gov. The email shall state that the estimate is being submitted because of significant changes, additions, or revisions to the R.O.W. plans. All updated estimates shall be kept in the project folder. For the project folder, a date shall be part of the naming convention so that the development of the estimate can be easily compared.

1-402.03 RESUBMITTALS OF ESTIMATES DUE TO AN INSTRUCTIONAL BULLETIN OR ROADWAY DESIGN GUIDELINES CHANGE

As stated in previous sections, the Designer shall update the estimate and submit yearly and/or when significant changes have occurred. For projects that are not funded for construction but have been submitted for R.O.W., the Designer shall take time to update the estimate according to changes in Instructional Bulletins/ Design Guidelines. For the same situation, the Consultant is allowed one week per calendar year to review the Instructional Bulletins/ Design Guidelines and update any estimates that correspond to those changes.

1-402.04 SUBMITTAL OF CONSTRUCTION ESTIMATE FOR CONSTRUCTION FIELD REVIEW

When plans are developed and ready for Construction Field Review distribution, the estimate shall be complete with any previous missing items and descriptions filled in. If a Constructability Review was held, all changes to the quantities as a result of the review shall be reflected in the Roadway Construction Field Review quantity estimate. **The Design Manager shall request necessary information needed to complete the estimate sheet at least two weeks prior to the date set to print for outside distribution.** Requests for large projects should be made even earlier to ensure that the estimate is complete and that sheets from the estimates are correct in the Construction Field Review plan set. Plans sheets and items shall be requested from Geotechnical, Traffic Operations, Structures, and Utilities personnel as needed. All Divisions submitting estimates shall coordinate with other Divisions to verify no duplicate item numbers are submitted.

The Design Manager shall email the Construction Field Review quantity estimate ***nnnnnn-nn-RoadwayConstructionFieldReviewEstimate.xlsm*** to TDOT.Preliminary.Estimates@tn.gov with a carbon copy (Cc) to TDOT.PDSO@tn.gov on the same day the Construction Field Review Notice is sent out which occurs approximately 7 months prior to submittal of final construction plans for Letting. If the project has sheet submittals from other functional groups, the Excel file for those quantities shall be obtained and emailed simultaneously with the estimated roadway quantities Excel estimate as attachments. *(See below for further instruction)*

The email subject line shall read:

Region X, County Name, Route Name, PIN nnnnnn-nn, Construction Field Review Estimate Submittal

The following must be completed **BEFORE** the estimate is emailed with the Construction Field Review Notice:

- The Designer shall ensure that the totals on the estimate reflect all tabulation blocks shown in the plans.
- If there are Traffic Operations quantities (ITS, Signals, and/or Lighting), the Design Manager over the project shall request the appropriate Excel files containing these quantities:
  - ***nnnnn-nn-TrafficOpsITSConstructionFieldReviewEstimate.xlsm***
  - ***nnnnnn-nnTrafficOpsSignalsConstructionFieldReviewEstimate.xlsm***
  - ***nnnnnn-nn-TrafficOpsLightingConstructionFieldReviewEstimate.xlsm***

  These items will NOT be added to the estimated roadway quantities Excel file but will be included as a separate file within the same email as an attachment.
- If there are structures (bridges) in the plans, the Design Manager over the project shall contact TDOT Structures Division personnel to request the Excel file ***nnnnnn-nn-StructuresConstructionFieldReviewEstimate.xlsm*** containing these quantities. These items will NOT be added to the estimated roadway quantities Excel file but will be included as a separate file within the same email as an attachment.
- If there are retaining walls in the plans, the Design Manager over the project shall contact Structures (TDOT.StructuresRW@tn.gov) to request the Excel file: ***nnnnnn-nn-StructuresConstructionFieldReviewEstimate.xlsm***. If there are both structures and retaining walls, coordination shall occur between Structures personnel to combine these quantities into one file and to submit the file to the Design Manager that requested the information. These items will NOT be added to the estimated roadway quantities Excel file, but will be included as a separate file within the same email as an attachment.
- If there are utilities in the plans, the Design Manager over the project shall contact TDOT Regional Project Development Utility Office to request the Excel file ***nnnnnn-nn-UtilityConstructionFieldReviewEstimate.xlsm*** containing these quantities. These items will NOT be added to the estimated roadway quantities Excel file but will be included as a separate file within the same email as an attachment.
- The Design Manager shall contact the R.O.W. office to check to see if there will be R.O.W. Removal Items for buildings and obstructions. The item numbers shall be furnished by the regional R.O.W. office and should be a lump sum item and footnoted. See *Chapter 9-205.00, Demolition* for additional information.

The estimate shall be thoroughly checked at the Construction Field Review to ensure that there are no missing quantities or adjustments that must be made to existing quantities. Close attention should be paid to the grade differences and the construction of structures to ensure if items are needed for temporary shoring. If there are significant changes and additions to quantity items due to comments at the Construction Field Review, a revised estimate for the applicable division shall be completed using the following naming conventions and emailed by the Design Manager to TDOT.Preliminary.Estimates@tn.gov with a carbon copy (Cc) to TDOT.PDSO@tn.gov.

- ***nnnnnn-nn*-RoadwayConstructionFieldReviewEstimate.xlsm**
- ***nnnnnn-nn*-TrafficOpsITSConstructionFieldReviewEstimate.xlsm**
- ***nnnnnn-nn*-TrafficOpsSignalsConstructionFieldReviewEstimate.xlsm**
- ***nnnnnn-nn*-TrafficOpsLightingConstructionFieldReviewEstimate.xlsm**
- ***nnnnnn-nn*-StructuresConstructionFieldReviewEstimate.xlsm**
- ***nnnnnn-nn*-UtilityConstructionFieldReviewEstimate.xlsm**

The email shall state that **the estimate(s) is being re-submitted because of significant changes and/or additions resulting from the Construction Field Review**. All updated estimates shall be kept in the project folder. For the project folder, a date shall be part of the naming convention so that the development of the estimate can be easily compared. It is not necessary to place the estimate on FileNet.

1-402.05 SUBMITTAL OF CONSTRUCTION ESTIMATE FOR LETTING PROCESS

When the final construction plans are turned in for the Letting process for PPRM Activity # 715 Finalize Roadway Construction Plans, the submittal will include a final construction estimate. **All Divisions submitting estimates shall coordinate with other Divisions to verify no duplicate item numbers are submitted.** The Designer or Design Manager shall attach the construction Excel estimate ***nnnnnn-nn-RoadwayConstructionEstimate.xlsm*** to the email containing the Construction Submittal for Letting. The Designer or Design Manager will upload the Excel estimate file to FileNet. The previous estimate placed on FileNet shall be removed. The Designer or Design Manager shall email the Construction Submittal Letter, Grading Report, and Construction Estimate to the addresses shown in Table 1-12 for the internal email distribution list. The body of the email shall include that the construction plan set and estimated roadway quantities Excel file have been uploaded to FileNet.

The subject line shall read:

Region X, County Name, Route Name, PIN nnnnnn-nn, Roadway Construction Plans and Estimate Submittal for DD/MM/YYYY Letting

A copy of the email shall be placed in the project folder to document the submittal of the construction estimate.

If there are Geotechnical plans and quantities, the Geotechnical Office shall upload the Excel the Excel quantity file using the following naming conventions to FileNet. The exception to this is if there are quantities used by the Geotechnical Office that are already being used by the Roadway Designer. If this occurs, the Geotechnical Office shall submit all quantities to the Roadway Designer for inclusion into their estimated quantities file. The Roadway Designer shall footnote the item numbers with the quantities used by the Geotechnical Office. The Geotechnical Office shall include a note on their estimated quantity sheet that the items shown are included with the Roadway estimated quantities.

- ***nnnnnn-nn*-GeotechConstructionEstimate.xlsm**,
- ***nnnnnn-nn*-GeotechEstimate.xlsm,**
- ***nnnnnn-nn*-GeotechConstructionEstimate.xlsm**

The Geotechnical Office shall email the Construction Submittal Letter and Construction Estimate to the addresses shown in Table 1-12 for the internal distribution list. The body of the email shall include that the Geotechnical construction plan set and estimated Geotechnical quantities Excel file have been uploaded to FileNet.

The subject line shall read:

Region X, County Name, Route Name, PIN nnnnnn-nn, Geotechnical Construction Plans and Estimate Submittal for DD/MM/YYYY Letting

If there are Traffic Operations sheets and quantities (ITS, signals, and/or lighting) in the plans, the Traffic Operations Division shall upload the Excel the Excel quantity file using the following naming conventions to FileNet.

- ***nnnnnn-nn*-TrafficOpsITSConstructionEstimate.xlsm**,
- ***nnnnnn-nn*-TrafficOpsSignalsConstructionEstimate.xlsm,**
- ***nnnnnn-nn*-TrafficOpsLightingConstructionEstimate.xlsm**

The Traffic Operations Division emails the Construction Submittal Letter and Construction Estimate to the addresses shown in Table 1-12 for the internal distribution list. The body of the email shall include that the Traffic Operations construction plan set and estimated Traffic Operations quantities Excel file have been uploaded to FileNet.

Note: These items will NOT be added to the estimated Roadway quantity Excel file but will be emailed as a separate file. Traffic Operations shall coordinate with all Divisions to verify no duplicate item numbers are submitted.

The subject line shall read:

Region X, County Name, Route Name, PIN nnnnnn-nn, Traffic Operations Construction Plans and Estimate Submittal for DD/MM/YYYY Letting

If there are structure sheets and quantities (bridges or retaining walls) in the plans, the Structures Division shall upload the Excel quantity file, ***nnnnnn-nn-StructuresConstruction Estimate.xlsm*** and structures construction plans to FileNet. The Structures Division emails the Construction Submittal Letter and Construction Estimate to the addresses shown in Table 1-12 for the internal email distribution list. The body of the email shall include that the structures construction plan set and estimated structure quantities Excel file have been uploaded to FileNet. Note: Structures shall coordinate with all Divisions to verify no duplicate item numbers are submitted.

The subject line shall read:

Region X, County Name, Route Name, PIN nnnnnn-nn, Structures Construction Plans and Estimate Submittal for DD/MM/YYYY Letting

If there are utility sheets and quantities in the plans, the Regional Project Development Utility Office shall upload the Excel quantity file, ***nnnnnn-nn-UtilityConstructionEstimate.xlsm*** and utility construction plans to FileNet. The Regional Project Development Utility Office emails the Construction Submittal Letter and Construction Estimate to the addresses shown in Table 1-12 for the internal email distribution list. The body of the email shall include that the utility construction plan set and estimated utility quantities Excel file have been uploaded to FileNet.

The subject line shall read:

Region X, County Name, Route Name, PIN nnnnnn-nn, Utility Construction Plans and Estimate Submittal for DD/MM/YYYY Letting

If there are Natural Stream Design plans and quantities, the Environmental Mitigation Office shall upload the Excel the Excel quantity file using the following naming conventions to FileNet. The exception to this is if there are quantities used by the Environmental Mitigation Office that are already being used by the Roadway Designer. If this occurs, the Environmental Mitigation Office shall submit all quantities to the Roadway Designer for inclusion into their estimated quantities file. The Roadway Designer shall footnote the item numbers with the quantities used by the Environmental Mitigation Office. The Environmental Mitigation Office shall include a note on their estimated quantity sheet that the items shown are included with the Roadway estimated quantities.

- ***nnnnnn-nn*-NaturalStreamConstructionEstimate.xlsm**,
- ***nnnnnn-nn*-NaturalStreamEstimate.xlsm,**
- ***nnnnnn-nn*-NaturalStreamConstructionEstimate.xlsm**

The Environmental Mitigation Office shall email the Construction Submittal Letter and Construction Estimate to the addresses shown in Table 1-12 for the internal distribution list. The body of the email shall include that the Natural Stream construction plan set and estimated Natural Stream quantities Excel file have been uploaded to FileNet.

The subject line shall read:

Region X, County Name, Route Name, PIN nnnnnn-nn, Natural Stream Construction Plans and Estimate Submittal for DD/MM/YYYY Letting

1-402.06 REVISION OF CONSTRUCTION ESTIMATE FOR LETTING PROCESS

If there is a need to change, add, and/or delete quantities after Final Turn-in for the Letting process but prior to the Letting of the project, a revision shall be made to the construction Excel estimate by the appropriate Division. It shall become part of the project record and placed in the project folder but does not have to be distributed or uploaded to FileNet. The revised file name shall be:

- ***nnnnnn-nn-RoadwayConstructionEstimate-Rev-mm-dd-yy.xlsm,***
- ***nnnnnn-nn-StructuresConstructionEstimate-Rev-mm-dd-yy.xlsm,***
- ***nnnnnn-nn-TrafficOpsITSConstructionEstimate-Rev-mm-dd-yy.xlsm,***
- ***nnnnnn-nn-TrafficOpsSignalsConstructionEstimate-Rev-mm-dd-yy.xlsm***
- ***nnnnnn-nn-TrafficOpsLightingConstructionEstimate-Rev-mm-dd-yy.xlsm***
- ***nnnnnn-nn-UtilityConstructionEstimate-Rev-mm-dd-yy.xlsm***

The Designer shall also create an estimate revision request using the Excel template file *Estimate Revision Request*. In the construction plan set, each revised quantity shall be shown on the estimated roadway quantities sheet tabulation block, included in the revision note on affected sheets, and reflected in any associated tabulation blocks and/or footnotes. For additional information on the Estimate revision process see *Chapter 6-402.00, Letting Revisions*. The Design Manager shall email the **"Estimate Revision Request"** form and revised plan sheets as an attachment to the addresses shown in *Table 1-12, Internal Email Distribution List*.

The subject line shall read:

Region X, County Name, Route Name, PIN nnnnnn-nn, *Roadway* Construction Estimate Revision and Revised Plan Sheets for DD/MM/YYYY Letting

*This could be a Structures, Traffic Operations and/or Utility revision as distributed by those divisions.

Note: Once a project has been Let to contract and an estimate change is requested, an Estimate Revision Request form is not required as part of the Construction Revision. Neither HQ Construction Division nor the Bid Analysis & Estimating Office will alter the estimate in the system after the job has been awarded and has a contract number.

1-403.00 FOOTNOTES FOR ROADWAY ESTIMATED QUANTITY SHEET

For the Constructability Review (if applicable), Construction Field Review, and final Construction plans, footnotes shall be added in the estimated roadway quantities Excel file and shown on the estimated roadway quantities sheet in the plans. Footnotes are sometimes needed for items to provide clarity, to define when substitutions can be made, and to define maintenance schedules or cycles. Footnotes for quantities should be in numerical order and placed in column A. Footnotes listed in tabulated quantities shall also be shown in the Estimated Quantities Sheet. Additional information for required footnotes can be found in the Roadway Design Guidelines Chapters 5, 6 and 7.

1. When an item is used in multiple locations for various reasons, footnotes shall be used to define what the use and quantity is for each item within the total. For example, Item Number 303-10.01, Mineral Aggregate (Size 57) with a total of 181 TONS may have the following footnote:

   INCLUDES 5 TONS FOR USE WITH SEDIMENT FILTER BAG, 9 TONS FOR CULVERT PROTECTION TYPE 1, AND 167 TONS FOR HAUL ROADS.

2. Where lump sum (LS) quantities are used, the description shall be filled in and a breakdown of the items included in the lump sum shall be footnoted. For example, Item Number 730-40.02, Temporary Traffic Signal System, LS, with a quantity of 1 may have a footnote similar to the following:

   INCLUDES ALL ITEMS NECESSARY TO KEEP EXISTING SIGNAL AT SR 248 AND I-65 SB OFF RAMP OPERATIONAL DURING ALL PHASES OF CONSTRUCTION. CONTRACTOR TO COORDINATE WITH CITY ENGINEER PRIOR TO ANY ADJUSTMENTS. CONTRACTOR SHALL OBTAIN THE APPROVAL FROM CITY ON MANNER OF MAINTAINING EQUIPMENT THROUGH CONSTRUCTION PHASING. VEHICLE DETECTION MUST BE MAINTAINED THROUGHOUT CONSTRUCTION (VIDEO OR OTHER MEANS ACCEPTABLE). MAY USE CONTRACTOR OWNED EQUIPMENT TO SUPPLEMENT EXISTING EQUIPMENT IF NEEDED. CONTRACTOR SHALL MAINTAIN ALL EQUIPMENT DURING CONSTRUCTION, THROUGH A MINIMUM OF 2 PHASES OF CONSTRUCTION. ITEM INCLUDES MAINTENANCE OF EXISTING POLES OR PROVIDING ALTERNATE TEMPORARY SIGNAL SUPPORT POLES. SEE TDOT STANDARD DRAWING T-SG-11 FOR ADDITIONAL DETAILS.

3. For items such as erosion control that might have to be replaced during the life cycle of the project, the following footnote below shall be used:

   SEE SUBSECTION 209.07 OF THE STANDARD SPECIFICATIONS FOR MAINTENANCE REPLACEMENT.

1-404.00 ESTIMATE CONFIDENTIALITY

The Designer is hereby instructed to follow the TDOT guidelines regarding the handling of the construction cost estimates and unit bid prices as listed below.

1. Construction Cost Estimates: All Designers are hereby instructed to keep the construction cost estimate confidential. These cost estimates shall never be made public and may only be revealed to the proper officials of TDOT. Should an inquiry be made by a person other than a TDOT official, refer the inquirer to a Design Manager. Secure the cost estimates at all times so that no unauthorized person may have access to them.

2. Unit Bid Prices: After a project is let for construction, but prior to awarding it, all Designers are hereby instructed not to divulge any unit prices bid on a project to anyone. When a project bid is rejected and not awarded, the unit prices are never to be made public. Any inquiry made in regard to bid prices shall be referred to your Design Manager for proper handling.

1-405.00 FINANCIAL PLANS

Federal law requires a financial plan to be completed for projects estimated to cost over $100 million. If a project exceeds $500 million, then the financial plan shall be submitted to Federal Highway Administration for review. Once the Environmental Document is completed and the $100 million cost threshold is met, the TDOT Federal Affairs Liaison will develop the initial document template. The financial plan must be updated annually by the Project Development Director. If it is determined later in the design development process that the cost estimate will exceed $100 million, the Project Development Director should contact the TDOT Federal Affairs Liaison and the Community Relations Office. The TDOT Federal Affairs Liaison will provide the Project Development Director with the project specific financial plan template. An example of a completed document can be found on the Design Guidelines webpage.

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SECTION 5 – FIELD REVIEWS

1-500.00 TYPES OF FIELD REVIEWS

The Designer and Design Manager shall consult the Roadway Design Checklists for each stage of deliverables to ensure all necessary items from the checklists are complete and ensure all preceding **PPRM** activities are completed prior to scheduling the review. See *Chapter 1-201.00, Roadway Design Checklists*. There is no standard for conducting field reviews. However, it is suggested that the manager conducting the review, discuss utility and other external parties concerns first. Emphasis shall always be placed on the construction staging of the project to ensure sufficient ROW is acquired, detours and/or haul roads are in place if needed, and estimated quantities identified. It is essential that early environmental concerns be discussed that could delay the project or change the time of the year that the project can be constructed. It is not necessary to go page by page for formatting and repetitive issues that can be marked up and given to the Design Manager.

Preliminary Field Review (PPRM Activity #375): The project shall be approximately **30%** complete. The horizontal and vertical alignment shall be set and all items complete as listed in the Preliminary Checklist. A preliminary estimate shall be submitted. See *Chapter 1-402.01, Submittal of the Preliminary Estimate*, for additional information. A site visit by the Design Team is required prior to this field review.

For small scope projects (bridge and approach, SIA, etc.), an official Preliminary Field Review does not have to be held. Plans shall be placed on FileNet. Email notification with Field Review Letter shall be sent to appropriate personnel listed on the internal distribution list with reference to plans placed on FileNet. The Field Review Letter and plans shall be sent to appropriate persons listed on external distribution list. Designers should coordinate with the Regional Utility Office for correct utility contact prior to sending to external customers. A request for comments with deadline shall be part of the letter since an official field review does not have to be held.

For large scope projects, an official Preliminary Field Review shall be held. Plans shall be placed on FileNet. Email notification with Field Review Letter shall be sent to appropriate personnel listed on the internal distribution list with reference to plans placed on FileNet. The Field Review Letter and plans shall be sent to appropriate persons listed on external distribution list. Designers should coordinate with the Regional Utility Office for correct utility contact prior to sending to external customers. The Field Review letter shall list time and location of review and request for comments with deadline for those unable to attend in person.

Site Review (PPRM Activity #531): The project shall be approximately **40%** complete and include all changes identified at the Preliminary Field Review and any changes necessary due to feedback from the Initial Studies Request. All proposed retaining walls shall be identified and shown on the plans. The plans shall include preliminary bridge layouts containing the plans

and profile of the proposed structures, typical sections with construction phasing, and other pertinent data. The Site Review document shall be filled out by the Designer with as much information as possible and ensure each retaining wall has its own sheets associated with it. The Design Manager overseeing the project should check the document prior to distribution. The document should be distributed to personnel as defined in the site review document in concurrence with the Site Review notice. This is an internal review and is not intended for local governments or utility companies. Invitees should review the information that is already filled out and see if there is additional information that can be sent back to the Designer. This review **must be held** on the project location. Although Google Earth or other similar tools can allow the user to view the project site, vital information such as eroded areas, traffic issues, site distance issues both longitudinally and at intersections, evidence of geometric identifiers at intersections that suggest the turning radii needs improvement, evidence of debris, and velocity or bank erosion at culverts, etc. can only be seen at the project site. The project site will be analyzed by all of the attendees to determine if the best design is proposed. All proposed retaining walls will be addressed during the review to determine which walls will be designed by the Structures Division and submitted in the R.O.W. plans. It will also be determined at this Site Review if a Constructability Review shall be held by the Headquarters Construction Division.

Right-of-Way Field Review (PPRM Activity #540): The project shall be approximately **80%** complete. All aspects of the roadway design needed for R.O.W. identification and purchase and utility relocation shall be complete. All comments from the Preliminary Field Review and Site Review should be incorporated into the plans and the estimate. The plans shall include all items listed in the checklist including preliminary bridge layouts containing the plans and profile of the proposed structures, typical sections with construction phasing, and other pertinent data. The Estimated Roadway Quantity Sheet and Traffic Control Sheets shall be a draft version and printed for informational purposes only for the R.O.W. Field Review. The sheets will be independent pdf files uploaded in the R.O.W. submittal package. The sheets will not be shown in the R.O.W Index and shall not be part of the final R.O.W. submittal. The sheet(s) shall have the *Info Only* stamp. The quantities shown on the estimated roadway quantity sheet shall be discussed to ensure that all aspects of the plans are discussed during the R.O.W. phase, specifically traffic control and construction phasing. After the field review, changes shall be made to the traffic control sheets prior to R.O.W. submittal. When R.O.W. plans are submitted, the draft traffic control plans will be an independent pdf named ***nnnnnn-nn-DraftTrafficControlROW*.pdf** and placed on FileNet. After submittal, these plans will not be updated. The estimate will not be added to FileNet, but the estimate file should be updated based on comments received at the field review. An additional site visit is only required if deemed necessary by the Design Team.

Constructability Review (PPRM Activity #690): The project shall be approximately **100%** complete and follow the deliverable as shown in the Construction Field Review. This review should occur at least two months prior to the Construction Field Review. This review is initiated by the Design Team or HQ Construction Division. This review will provide a forum for the construction industry to share their knowledge and experience on construction and sequencing, traffic control, utility conflicts, utility schedule, and alternate construction methods by utilizing their expertise to ensure that difficult projects are buildable, cost-effective, and biddable. This review

is not mandatory, and the need for this review shall be determined at the Site Review. This review will be held by the Headquarters Construction Division, Regional Operations, and Design Team.

Please refer to the Constructability Review Procedures Manual for information on managerial and team roles, participant selection, schedule, and record keeping. The manual can be found on the Constructability Reviews website.

Construction Field Review (PPRM Activity #695): The project shall be approximately 100**%** complete and shall occur approximately six (6) months prior to Letting if possible. For accelerated and/or small projects, the schedule may not allow time for 6 months pre turn-in window. If a Constructability Review (**PPRM** Activity #690) was held, all changes shall be incorporated into the plans and the field review notice shall include the Constructability Review meeting notes. All sections of the roadway plans, structures plans (including bridges and retaining wall plans designed by the Structures Division), and utility rainbow plans (utility relocations plans) as well as estimated utility quantity sheets for utilities that are part of the state contract shall be included in the field review plans. Estimates shall be sent out with the field review notice as defined in *Chapter 1-402.04 Submittal of Construction Estimate for Construction Field Review*. **The Design Manager shall request necessary sheets from other divisions (Materials and Tests, Traffic Operations, Structures, and R.O.W./Utilities) at least one month prior to the projected date set for printing the plans for external distribution.** Earlier requests for large projects should be made to ensure that all sheets are included in the plans.

The following must be completed **BEFORE** the Construction Field Review Notice is emailed, mailed, or sent as an appointment:

- PPRM activities that precede activity #695 should be complete
- The Design Manager should contact the Environmental staff to obtain the contact information of the SWPPP Consultant assigned to the project to ensure that they are invited to the field review.
- The plans shall be checked according to the Roadway Design Checklist and updated as required.
- TDOT Personnel shall ensure that the names and addresses listed for outside municipalities are correct prior to mailing out plans.

All of the following applicable items must be part of the Construction Field Review plans:

- All Roadway sheets as defined in the Roadway Design Construction Checklist
- Geotechnical sheets
- Utility Rainbow sheets
- Final Bridge sheets (layout, substructure, and foundations)
- All Retaining Wall sheets including notes
- Signals, Lighting, and ITS sheets
- Signing and Pavement Marking sheets

- Estimated Utility Quantity sheet and Utility Special Notes for Relocation, if utility relocations are part of the contract

All outstanding issues shall be discussed and resolved at this meeting including R.O.W./Utilities/RR, Structures, Constructability (Project Phasing, Traffic Control, etc.), NEPA, Environmental Permit Application Requirements, and draft SWPPP comments. At the completion of the field review, all parties shall clearly understand the remaining items that are necessary to produce final plans that are accurate, constructible, and biddable.

The use of uniformed police officers may be utilized when a Tennessee Highway Patrol (THP) Trooper is not available, Item Number 712-08.01 Uniformed Police Officer per DOLL, for the Traffic Management Plan and estimated quantities shall be determined at the Construction Field Review. The use of Uniformed Police Officers instead of THP shall be approved by the Engineer and the Regional Safety Coordinator or Regional Operations Office as stated in *Tennessee Department of Transportation Standard Specifications for Road and Bridge Construction* **subsection 712.04**.

A site visit is required if the plans were turned in for R.O.W. prior to the implementation of the Site Review or if deemed necessary by the Design Manager.

All SWPPP comments shall be addressed as soon as possible after this review and the updated set of plans distributed to the Environmental staff to allow the SWPPP Consultant to complete their process PRIOR to Letting so that no revisions are needed for the SWPPP application.

Final Construction Plans Review (PPRM Activity #710): The project shall be **100%** complete and the review shall occur approximately two (2) months prior to Construction turn-in. Plans shall include all updates from the Construction Field Review. The Final Construction Plans Review notice shall include the Construction Field Review meeting notes. This review will be a final check of the plans to ensure all issues have been resolved, including final SWPPP comments. An additional field review can be held at the discretion of the Project Development or Design Manager based on the changes needed from the Construction Field Review. Each Division will email the person that sent out the final plans confirmation that their division has reviewed the plans and agree with the project being ready to submit for letting. This correspondence shall be part of the project folder.

If the Letting for the project is moved out six (6) months or more from the original turn-in date associated with the distribution of the Final Construction Plans Review, the plans shall be reviewed for changes in standard drawings revision dates/titles and sent out again to the QA/QC section and SWPPP Consultant. It is strongly recommended that another review be held when a project has been delayed for turn-in for **one year** or more.

1-501.00 FIELD REVIEW PROCEDURES

All personnel shall follow these steps when arranging, conducting, and documenting field reviews:

1. Place project files on FileNet. *See Chapter 1-105.00, FileNet Project Deliverables.*
2. Develop the Field Review Invitation Memorandum. *See Figure 1-59, Example Field Review Invitation Memorandum.*
3. Distribute Field Review Invitation Memorandum internally by email and appointment. See *Figure 1-60, Sample Email Notification and Figure 1-61, Sample Appointment, and Table 1-12, Internal Email Distribution List.*
4. Distribute Field Review Invitation Memorandum and plans by mail to outside agencies. S*ee Table 1-13, External Distribution List.*
5. Conduct the field review.
6. Develop and distribute the field review report. *See Chapter 1-502.02, External Distribution to Agencies or Municipalities.*
7. Place field review documentation in project file.

1-502.00 SCHEDULING

When scheduling the field review, the Design Manager shall take the initiative to contact participants in other divisions to ensure that the proposed date of the field review does not conflict with training days, symposiums, regularly scheduled meetings, or obligations to other field reviews or meetings. Field review procedures 1 through 4 (see *Chapter 1-501.00, Field Review Procedures*) shall be completed **a minimum of three (3) weeks (15 business days)** prior to the scheduled date of the field review. The beginning of the three (3) weeks will start on the date the Field Review Notification Memorandum is emailed, the appointment is sent, and plans are mailed.

1-502.01 INTERNAL DISTRIBUTION

Field review notifications and documentation will be distributed to all Departmental personnel by email notification or appointment. The field review notification and email shall be included in the project folder. Field review plans will not be printed for Departmental personnel but will be available on FileNet. The email distribution will contain the Field Review Invitation Memorandum in PDF format included as an attachment (*See Figure 1-59, Example Field Review Invitation Memorandum)* and consist of an email notification (*See Figure 1-60, Sample Email Notification*) and appointment (*See Figure 1-61, Sample Appointment*).

Notifications for field reviews shall have the subject line as follows:

Region X, County Name, Route Name, PIN nnnnnn-nn, Purpose (Type of Review)

The body of the email shall also show the information shown in the subject line, the name of the plan set stored in FileNet, and the date the plans were added to FileNet. The email notification shall be sent to the recipients using email addresses shown in Table 1-12, *Internal Email Distribution List* and Table 1-13, *External Distribution List*. Emails/Appointments shall be sent for each distribution listed in numbers 1 to 4 unless otherwise noted within Table 1-12.

1. Preliminary, Site, R.O.W., and Construction Field Reviews
2. R.O.W. Plans Submittals and R.O.W. Revisions
3. Construction Plans Submittal for Lettings and Letting Revisions
4. Construction Revisions

TN TDOT Department of Transportation

R.O.W. FIELD REVIEW NOTIFICATION

TO: Address TDOT as directed in Table 1-12
Address External Agencies and Municipalities as directed in Table 1-13

FROM: Robert Braun
505 Deaderick Street
1200 James K. Polk Bldg.
Nashville, TN 37243

DATE: 8/2/2018

SUBJECT: R.O.W. FIELD REVIEW
REGION 3
COUNTY: Davidson
PIN: 112521.00
PROJECT NO.: IM/NH-40-4(81): 19005-2159-44
PROJECT DESCRIPTION: I-40 from I-40 East to I-440 South

This will confirm arrangements made regarding a R.O.W Field Review for the subject project. Persons desiring to attend this review will meet at the TDOT Region 3 Office Building, 2nd floor Design Conference Room, 6601 Centennial Blvd., Nashville, TN, at 10:00 am CST on August 30, 2018.

Please review the enclosed plans and have comments ready before the meeting is held. For those who cannot attend the meeting, please send comments to me via email at Robert.Braun@tn.gov, by phone at (615) 741-6719, or by mail at the address indicated above.

The plans have been uploaded to FileNet under the file name 112521-00-ROWFieldReview.pdf and 112521-00-ROWFieldReview.zip.

For those addresses without FileNet access, prints of the plans are enclosed.

Enclosure

cc: File

Figure 1-59
Example Field Review Invitation Memorandum

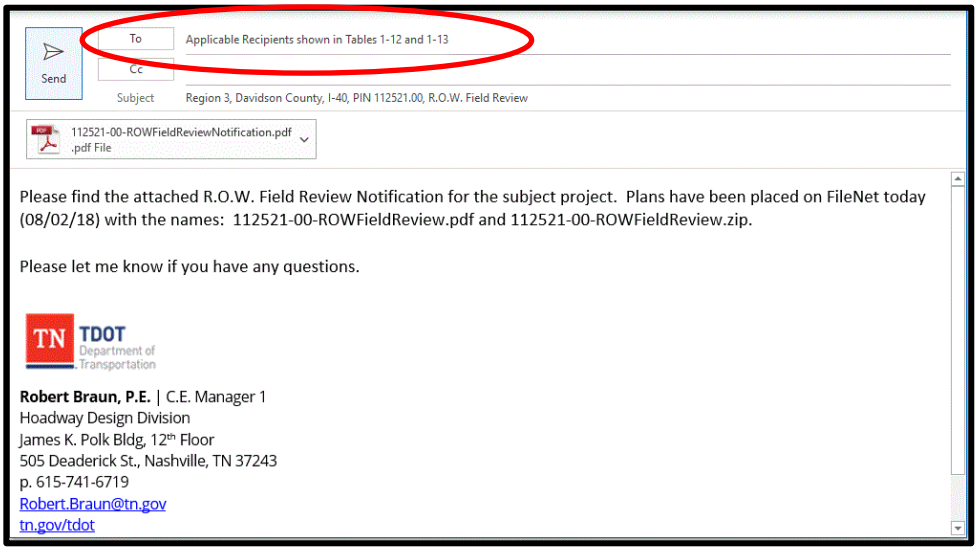

Figure 1-60
Sample Email Notification

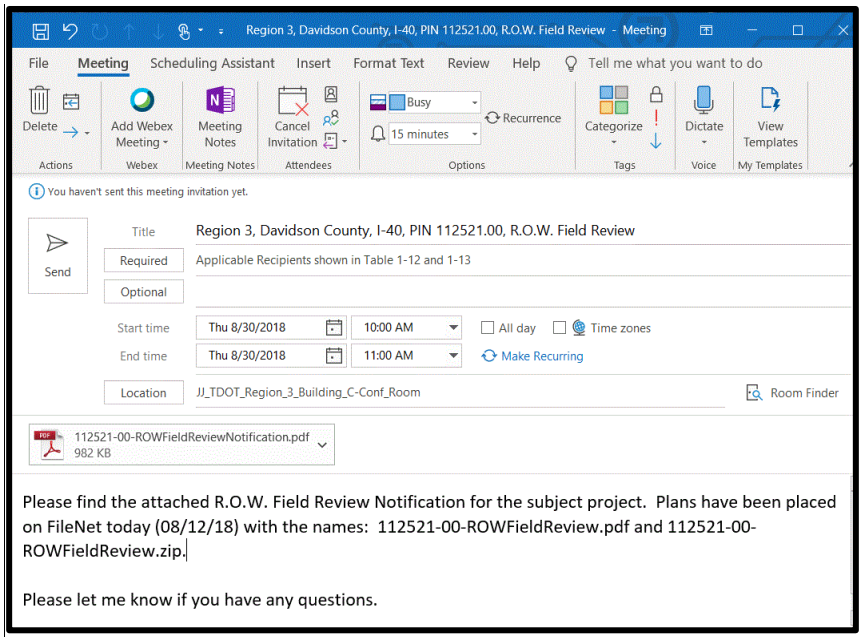

Figure 1-61
Sample Appointment

Emails/Appointments shall be sent for each distribution listed in numbers 1 to 4 **unless** otherwise noted within Table 1-12.

1. Preliminary, Site, R.O.W., Construction Field, and Final Plan Reviews
2. R.O.W. Plans Submittals and R.O.W. Revisions
3. Construction Plans Submittal for Lettings and Letting Revisions
4. Construction Revisions

Groups	Email Address This is not the email name that will show in Outlook. After the email addresses have been entered, Outlook should switch the address to the email name. If it does not update, select "Check Names" in Outlook. If there are any addresses that do not switch to an email name, then the email address was typed in wrong.
ADA Office #1, #2 and #3	TDOT.ADA@tn.gov
Bid Analysis and Estimating Office #3 and #4, Revisions Only. For R.O.W. revisions, submit updated estimate when significant changes occur in R.O.W. estimate.	TDOT.EstimatingOffice@tn.gov
Business Development PlanGrid Team #3 Revisions Only and #4	TDOT.R1BusinessDev@tn.gov TDOT.R2BusinessDev@tn.gov TDOT.R3BusinessDev@tn.gov TDOT.R4BusinessDev@tn.gov
Consultant Projects (TDOT Managed) **HQ Roadway Design Manager (if consultant project with HQ Oversight)**	Use individual email address Use individual email address
Construction (HQ) #1 Only	TDOT.HQ.Construction@tn.gov

Table 1-12, Continued
Internal Email Distribution List

Construction (HQ) Estimates #3 Only	TDOT.Construction.Estimates@tn.gov
District Operations Refer to Regional District Maps to locate appropriate district by county location. If a project is in two counties thus in two districts, contact regional Operations Directors to verify which district office will oversee the project. All Except #2	TDOT.R1.D17@tn.gov TDOT.R1.D18@tn.gov TDOT.R1.D19@tn.gov TDOT.R2.D27@tn.gov TDOT.R2.D28@tn.gov TDOT.R2.D29@tn.gov TDOT.R3.D37@tn.gov TDOT.R3.D38@tn.gov TDOT.R3.D39@tn.gov TDOT.R4.D47@tn.gov TDOT.R4.D48@tn.gov TDOT.R4.D49@tn.gov
Environmental Coordinator (Regional)	R1.EnvTechOffice@tn.gov R2.EnvTechOffice@tn.gov R3.EnvTechOffice@tn.gov R4.EnvTechOffice@tn.gov
Environmental Division (HQ)	TDOT.Env.AirNoise@tn.gov TDOT.Env.CulturalResources@tn.gov TDOT.Env.Ecology@tn.gov TDOT.Env.HazmatOffice@tn.gov TDOT.Env.Mitigation@tn.gov TDOT.Env.NEPA@tn.gov TDOT.Env.Permits@tn.gov
Geotechnical Engineering Section	TDOT.Geotech@tn.gov
Maintenance #1 Construction Field Review Only	TDOT.HQ.Maintenance@tn.gov TDOT.RG1.Maintenance@tn.gov TDOT.RG2.Maintenance@tn.gov TDOT.RG3.Maintenance@tn.gov TDOT.RG4.Maintenance@tn.gov

Table 1-12, Continued
Internal Email Distribution List

Multimodal Division #1 Distribute Preliminary & Site Field Review Only unless there are multimodal components in the plan and include all Field Review Invites	TDOT.MultimodalPlanning@tn.gov
Operations Director *Regional Directors are included in this email account All Except #2	TDOT.R1.OD@tn.gov TDOT.R2.OD@tn.gov TDOT.R3.OD@tn.gov TDOT.R4.OD@tn.gov
Pavement Design #1 Only, Exclude Site Review	TDOT.PavementDesign@tn.gov
Plans Assembly #3 Only	Eplans.Turnins@tn.gov
Printing Services Superintendent #3 Only	TDOT.PrintShopLettingInfo@tn.gov
Program Development and Scheduling Office #2 and # 3, Submittal Only on #2	TDOT.PDSO@tn.gov
Project Development Director	TDOT.R1.PDD@tn.gov TDOT.R2.PDD@tn.gov TDOT.R3.PDD@tn.gov TDOT.R4.PDD@tn.gov
Quality Assurance/Quality Control #1 Only	TDOT.QualityAssurance@tn.gov

Table 1-12, Continued
Internal Email Distribution List

Right-of-Way/Utilities (HQ)	TDOT.HQ.ROW@tn.gov
Right-of-Way/Utilities (Regional)	TDOT.RG1.ROW@tn.gov TDOT.RG2.ROW@tn.gov TDOT.RG3.ROW@tn.gov TDOT.RG4.ROW@tn.gov TDOT.R1.UTIL@tn.gov TDOT.R2.UTIL@tn.gov TDOT.R3.UTIL@tn.gov TDOT.R4.UTIL@tn.gov
Roadway Design Division File Room #4 Only	TDOT.DesignFileRoom@tn.gov
Roadway Design Division Revisions #2, #3 and #4 Revisions Only	TDOT.DesignRevisions@tn.gov
Safety Coordinators (Regional) #1 Only	Use individual email address
State Railroad Coordinator (HQ) Distribute if railroad involvement	HQRailroadCoordinator@tn.gov
State Work Zone Engineer (Roadway Design Division) Distribute #1 (**ROW & Construction**) and #2 - #4 ONLY if the TMP is Significant or if the project contains a Work Zone Deviation	TDOT.WZ-Review@tn.gov

Table 1-12, Continued
Internal Email Distribution List

Strategic Transportation Investment Division (STID) All Except #4	TDOT.STID.R1@tn.gov TDOT.STID.R2@tn.gov TDOT.STID.R3@tn.gov TDOT.STID.R4@tn.gov
Structures (hydraulics and structures) (retaining walls) Distribute for #'s 1-4 if structure and/or retaining wall is in plans	TDOT.Structures@tn.gov TDOT.StructuresRW@tn.gov
Traffic Engineer (Regional) #1 Only	Use individual email address
Traffic Operations (HQ) (ITS Infrastructure) **Traffic Operations (HQ) (Signals, Lighting)** **Traffic Operations (HQ) (Signing)** Distribute for #1 (**Prelim**.) to the ITS and Signals and Lighting email accounts. Distribute for #1 (**Site, ROW**) to all three email accounts. Distribute #1 (**Construction**) and #2 - #4 **only if** ITS, signals, lighting, and/or signing is in plans.	ITS TDOT.TrafficOps.ITS-Reviews@tn.gov Signs TDOT.TrafficOps.Sign-Reviews@tn.gov Signals and Lighting TDOT.TrafficOps.SNL-Reviews@tn.gov

Table 1-12, Continued
Internal Email Distribution List

1-502.02 EXTERNAL DISTRIBUTION TO AGENCIES OR MUNICIPALITIES

It is necessary to provide plans to field review invitees outside the Department including FHWA, county and local officials, and utility owners. The distribution shall consist of the Field Review Invitation Memorandum (See *Figure 1-59, Example Field Review Invitation Memorandum*) and a half-size set of plans. The distribution shall be sent to the recipients in accordance to *Table 1-13, External Distribution List*. Field review distribution by mail shall occur on the same day as the field review distribution by email and appointment.

Plans shall be provided to the Federal Highway Administration (FHWA) for new and reconstruction projects on the Interstate System or for Projects of Divisional Interest (PODI) or Appalachian Development Projects only. All projects of these types shall have field reviews scheduled in coordination with the FHWA. FHWA does not require a field review notification for any other Federal-Aid projects. Plans shall be uploaded to TNCloud and the link and password included in the field review notice.

Design Managers shall also have the option to email field review notifications and provide electronic plans as an attachment or to send them on other electronic media, provided the individual has the capability to print the plans and has agreed to the electronic distribution.

Plans (one ½ size set if mailing a printed set) and the Field Review Memorandum shall be sent for the Preliminary, Site, R.O.W., and Construction Field Reviews.

Federal Highway Administration (FHWA) Field Operations & Finance Team Leader and Area Engineer and for projects as noted below: Plans should be distributed on new and reconstruction projects on the Interstate System, Projects of Divisional Interest (PODI), or Appalachian Development Projects.	Use following link to obtain Field Operations & Finance Team Leader and Area Engineer Contact: https://www.fhwa.dot.gov/tndiv/staff.cfm
City and/or County Mayor, **Director of Public Works**, AND **Highway Chief Administrator Officer**	City and/or County shall be contacted for each distribution to ensure information is correct and personnel have not changed.
UTILITIES Cable, Electric, Fiber, Gas, Phone, Water/Sewer, (Other)	Project Development Personnel shall contact Regional Utilities offices to ensure utility contacts shown in the Survey.dgn file are correct prior to distribution of plans.

Table 1-13
External Distribution List

1-503.00 FIELD REVIEW REPORT

All comments from the field review shall be typed by the appropriate Designer. The comments should be reviewed by the Design Manager prior to distributing the report to ensure that nothing was missed in the notes. All comments received during the field review shall be evaluated and changes shall be included in the plans prior to submission for R.O.W. or Construction for authorization. If comments or questions were made at the field review that require further exploration or are deemed to be incorrect or not feasible, this shall be noted in the field review report. If there is an action item that must be completed by another TDOT Division (Geotechnical, Environmental, Structures, etc.), this item should be highlighted within the document and also be in the body of the email. This will ensure that other divisions are aware that they have a task to complete. The sign-in sheet shall also be scanned in and become part of the field review report.

A complete field review report shall be distributed **within two weeks** after the review to all attendees, individuals providing comments, and personnel who received the original Field Review Invitation Memorandum. The Site Review report shall clearly state which retaining walls were determined to be designed by the Structures Division (TDOT.StructuresRW@tn.gov) and if the determination was made to hold a Constructability Review (**PPRM** Activity #690).

Field review reports shall be distributed by email except to those outside the Department whose e-mail addresses are not available. Field review reports shall be in PDF format. FHWA has requested the field review reports not be sent for projects which were not attended by a representative of FHWA.

SECTION 6 –PUBLIC HEARINGS/MEETINGS

1-600.00 PUBLIC HEARING AND PUBLIC MEETING REQUIREMENTS

Generally, if a project has R.O.W. acquisition affecting 10 or more tracts, there should be a public hearing/meeting.

In order to meet all legal requirements for advertising public hearings or public meetings, the Community Relations Division (CRD) requests that all information pertaining to public hearings be received within the time frames described in the TDOT Public Involvement Plan. The TDOT Public Involvement Plan has vital information on the purpose and procedures of the hearings/meetings, who shall attend the hearings, types of facilities needed, etc. The Public Involvement Plan which includes document samples such as comment cards, templates, and checklist for the public hearings/meetings can be found on the Public Involvement & Communication Office webpage. Fillable forms are also available from the DDocs.zip download from the Standard Design CADD Files and Documents webpage.

The Manager requesting the public hearing/meeting must complete a Pre-Meeting Questionnaire a minimum of 60 days prior to the proposed hearing/meeting date. See *Figure 1-62, Example Pre-Meeting Questionnaire*. When the date has been approved by the Community Relations Division (CRD), a Public Meeting/Hearing Notice Request and a Public Meeting/Hearing Checklist must be sent to the CRD. See *Figure 1-63, Example Meeting Notice* and *Figure 1-64, Example Meeting Checklist*. For Public Meetings, the request and checklist must be submitted four (4) weeks in advance of the meeting date. For Public Hearings, the request and checklist must be submitted six (6) weeks in advance of the hearing date. An electronic copy shall be sent via email and a hard copy shall be mailed. These items should be directed to the personnel listed in the Public Meeting/Hearing Checklist.

A general location map is needed for newspapers from the Consultant or Design Manager for design hearings. See *Figure 1-65, Example General Location Map*. The CRD has requested that the general location map be submitted as a Microsoft Word document. For guidance in creating a Word document from a MicroStation drawing refer to the LocationMaps.pdf document located on the Standard Design CADD Files and Documents webpage.

If there is a proposed alignment change due to comments at the Public Hearing or Public Meeting, the Design Manager shall notify Geotechnical Engineering Section and Environmental immediately by email for notification of changes.

TN TDOT Department of Transportation

Pre-Public Hearing and Meeting Questionnaire

Project Information	
Project Route & Termini:	What is the public involvement level for this project? (Use the TDOT Public Involvement Plan) Choose a Level
Brief Description of Work:	Have Public Officials been briefed? If yes, when?
	Type of Hearing/Meeting: Choose Type

Displacements		
Residential: Choose yes or no	Business: Choose yes or no	Multi-family: Choose yes or no
Describe Major Impacts to Project Area: Short Term:	Long Term:	

Estimated Project Costs		
PE:	ROW:	Construction:

Yes	No	Project Information
☐	☐	During the project development process, has there been any public resistance, organized or other? If yes, describe.
☐	☐	Does the project have MPO/RPO support? If yes, briefly explain.
☐	☐	Does the project have local officials support or opposition? Provide name and title.
☐	☐	Does the project have state officials support or opposition? Provide name and title.
☐	☐	Does the project have federal officials/agency support/opposition/concerns? Provide name and title.
☐	☐	Have there been meetings held between TDOT, public officials, MPOs and RPOs? If yes, please explain.
☐	☐	Are there any individuals or other groups that may support or oppose the project? If yes, describe.
☐	☐	Have there been previous public meetings held for the project?
☐	☐	Has there been any media coverage? Choose positive or negative
☐	☐	Is there any other information that might be important?

Project Number: XXXXX-XX-XX	TX Number:

Proposed Methods of Public Outreach (check all that apply)			
☐	Notice in legal section of the newspaper	☐	Social Media
☐	Editorial/press release	☐	State/Local Officials Meeting
☐	Direct Mail	☐	Flashing Signs
☐	Door Hangers/Notice on Door	☐	Flyers in Businesses
☐	Radio	☐	Website
☐	Translation Services Needed?	☐	Other

Completed/Submitted by: _____ Date: Select Date

Completed/Submitted by: _____ Date: Select Date

Completed/Submitted by: _____ Date: Select Date

Figure 1-62
Example Pre-Meeting Questionnaire

NOTICE OF PUBLIC HEARING

The Tennessee Department of Transportation (TDOT) will host a public meeting on *(enter date)* to gather public input on the (*insert project information including county and description as shown in PPRM*). The meeting will be held from *X:00* p.m. until *X:00* p.m. at the following location:

[location]

The meeting is being held to provide the public an opportunity to provide comments regarding this project. Representatives of TDOT will be available to provide information on various aspects of this proposed project. Anyone with questions regarding the meeting should contact:

YOUR NAME
YOUR ADDRESS
(XXX) *YOUR PHONE*
YOUR EMAIL

Persons with a disability, who require aids or services to participate at the meeting, may contact Ms. Shanna Waelty no less than ten (10) days prior to the date of the meeting:

Ms. Shanna Waelty
Suite 1200, James K Polk Building
Nashville, TN 37243
Shanna.Waelty@tn.gov
Phone: (615) 741-0465
TTY Relay (877) 831-0298

A court reporter will be available to receive oral statements to be included in the project transcript. In addition, comment sheets will be available for those who prefer to make written statements. Written statements and other exhibits to be included in the project transcript may be submitted within twenty-one (21) days after the meeting date to the following address:

Project Comments
Tennessee Department of Transportation
Suite 700, James K. Polk Building
505 Deaderick Street
Nashville, TN 37243-0332

TDOT is an Equal Opportunity Employer and does not discriminate on the basis of race, age, sex, religion, color, disability or national origin.

Figure 1-63
Example Meeting Notice

TN TDOT Department of Transportation

Public Meeting/Hearing Checklist

Please submit to the Community Relations Division when ready to proceed with setting the meeting date.

Submit this for **electronically** to: Chelsea.Bell@tn.gov
Meeting materials submitted **electronically** to: Amanda.K.Tidwell@tn.gov

Project Name/County:

Check box for Yes and/or write response:

TARGET Meeting Date: Click here to enter a date.

- ☐ Have you discussed a proposed meeting date with your regional community relations officer?
  Region 1- Mark Nagi
  Region 2- Jennifer Flynn
  Region 3- Kathryn Schulte
  Region 4- Nichole Lawrence
- ☐ Have you discussed a proposed meeting date with other pertinent staff?
- ☐ Will you need more than one court reporter? If yes, how many?
- ☐ Have you secured a meeting location?
- ☐ Is the meeting location equipped with a microphone for public input? (Please check with facility where meeting is being held.)
- ☐ Is a sound system needed?

Who will make the presentation at the meeting?

Who is preparing meeting materials? (All materials must be submitted to CRD two weeks prior to meeting for approval.)

If you want the notice published in another paper besides the main paper for that county please list the paper(s):

Time Requirements

Public Meeting requests must be submitted with this checklist to CRD eight (8) weeks prior to meeting date.
Public Hearing requests must be submitted to CRD with this checklist ten (10) weeks in advance of hearing date.

Submitted By:
Date: Click here to enter a date.

Figure 1-64
Example Meeting Checklist

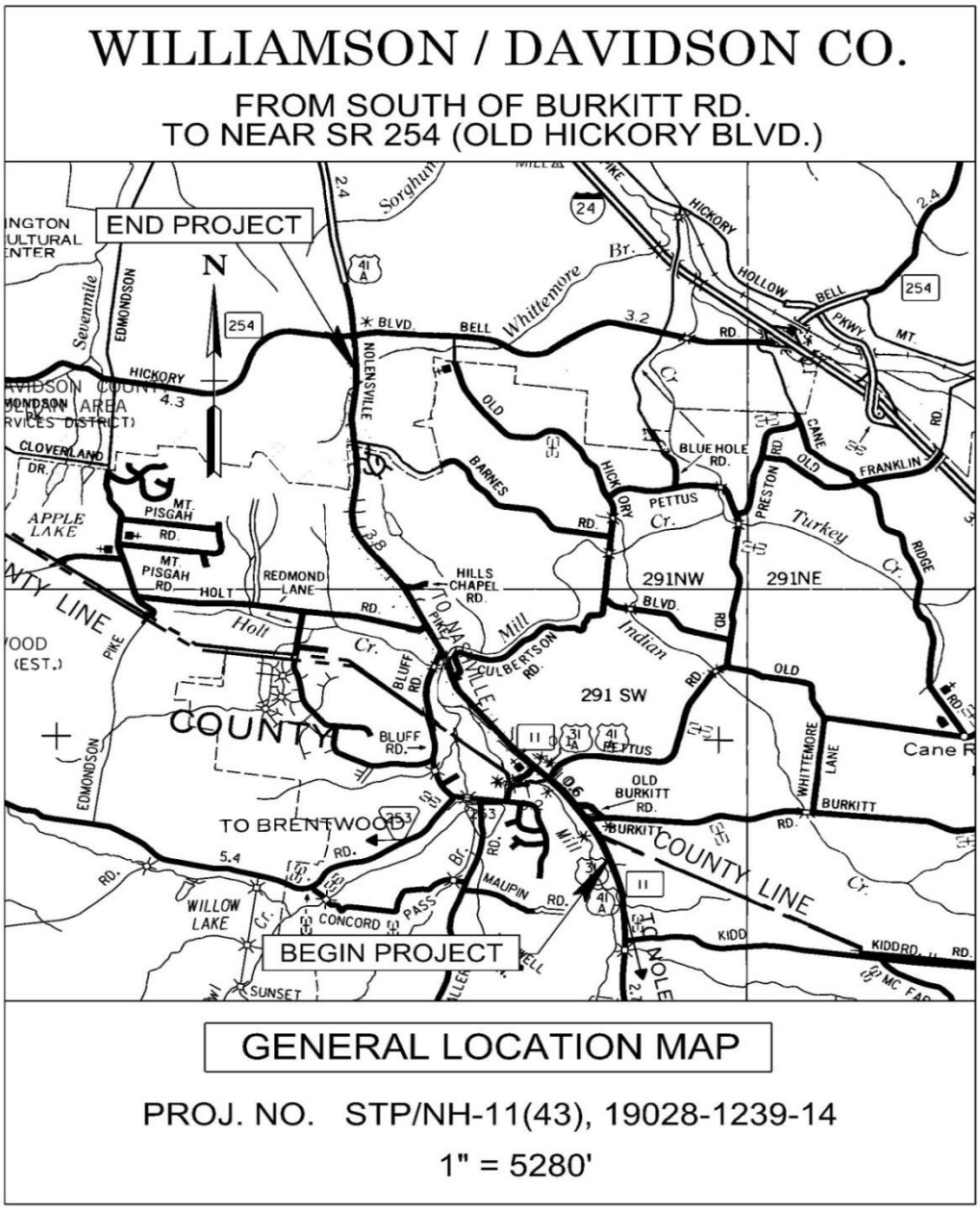

Figure 1-65
Example General Location Map

SECTION 7 – VALUE ENGINEERING

1-700.00 VALUE ENGINEERING

Value Engineering is a systematic independent multidisciplinary team review process which utilizes project functional analysis to develop recommendations that:

- Optimize the value and quality of the project.
- Provide the needed functions, considering community and environmental commitments, safety, reliability, efficiency, and overall life-cycle cost.
- Reduce the time to develop and deliver the project.

1-701.00 VALUE ENGINEERING OFFICE RESPONSIBILITIES

TDOT has established a VE Program in accordance with 23 CFR Part 627. TDOT shall designate a VE Program Coordinator, hereinafter referred to as the "Coordinator", to promote and advance VE program activities. The program is administered by the Roadway Design Division's VE Office. The responsibilities of the VE Office include the following:

- Monitor PPRM and coordinate with TDOT Program Development and Administration to identify projects that meet the project selection criteria.
- Ensure that VE analyses are conducted on all applicable projects.
- Coordinate all VE training requirements.
- Provide a list of current and potential VE projects on a quarterly basis to the FHWA.
- Provide an annual report to FHWA summarizing the results of the VE analyses.
- Coordinate with HQ Construction Office to fulfill any Program Performance Data requested by FHWA.

1-702.00 VALUE ENGINEERING PROJECT SELECTION POLICY

A VE analysis shall be conducted as early as practicable on all applicable projects developed by TDOT and Local Agencies that utilize federal-aid highway funding.

Applicable projects requiring VE analysis include the following:

a) Projects that are located on the National Highway System (NHS), utilize federal-aid highway funding, and have an estimated total project cost greater than or equal to $50 million.
b) Bridge projects that are located on the NHS, utilize federal-aid highway funding, and have an estimated total project cost greater than or equal to $40 million.
c) Any major project (as defined in 23 U.S.C. 106(h)) that is located on or off of the NHS and utilizes Federal-aid highway funding in any contract or phase comprising the major project.

d) Any project for which a VE analysis has not been conducted and a change is made to the project's scope or design between the final design and the construction Letting that results in an increase in the project's total cost such that it meets the thresholds identified in bullets a), b), or c) above.

e) Any other project which utilizes federal-aid highway program funding that FHWA determines to be appropriate. Design Build Projects do not require a VE analysis, but Construction Manager/General Contractor (CM/GC) projects do require a VE analysis if it meets the thresholds identified in bullets a), b), or c) above.

The total project cost is defined as the estimated costs of all work to be conducted on a project including the environmental, design, r.o.w., utilities, and construction phases. A bridge project is defined as any project whose primary purpose is to construct, reconstruct, rehabilitate, resurface, or restore a bridge. For projects split into smaller sections for development, the termini used in the environmental document shall control and be used for determining threshold requirements.

TDOT and Local Agencies may elect, on a case by case basis, to conduct a VE analysis on other complex projects if there is a potential to realize benefits from the analysis. Design Managers and Division Heads are encouraged to notify the Coordinator of any projects that they think have the potential to benefit from a VE analysis.

1-703.00 VALUE ENGINEERING ANALYSIS PROCEDURES

1-703.01 IDENTIFYING AND SCHEDULING VALUE ENGINEERING ANALYSIS

The Coordinator shall determine when the VE analysis will take place. The VE analysis shall be conducted as early as practicable during the project development. In most cases, the VE analysis shall be scheduled prior to Right-of-Way field review.

When a project has been identified as a candidate for VE analysis, the Coordinator shall notify the Roadway Design Manager. The Roadway Design Manager shall then notify the Coordinator of any changes made to the project scope during the project development.

1-703.02 ASSEMBLING THE VALUE ENGINEERING ANALYSIS TEAM

The Coordinator shall select a multidisciplinary team composed of individuals who are not directly involved in the project's planning or design. The team shall include members from key project disciplines such as Roadway, Structures, Environmental, Geotechnical, Construction, Hydraulics, Materials and Test, Traffic Operations, Strategic Transportation Investments, and Quality Assurance/Quality Control (QA/QC).

The Coordinator will select the team leader and they will work together during the planning and scheduling of the VE analysis. The team leader will guide the team during the project analysis and the Coordinator shall oversee the team's progress to ensure that the VE analysis process, as defined in 23 CFR Part 627.3, is followed.

1-703.03 VALUE ENGINEERING JOB PLAN

The VE team analysis shall follow the VE Job Plan, which consists of seven phases as defined in 23 CFR Part 627.3(f). Prior to the beginning of the VE team analysis, the Coordinator will scale the level of analysis conducted and effort expended for each phase to meet the needs of each individual project and convey this plan of analysis to the team leader.

Analyze Project Functions:

1. Information Phase: Review project information, including commitments and constraints, and identify and define the current project conditions and overall analysis goals.

2. Function Analysis Phase: Analyze the project information to understand the required functions of the project and define each required function using a two-word active verb/ measurable noun technique.

Generate Alternatives:

3. Creative Phase: Generate ideas to identify other ways to accomplish the required functions which improve the project's performance, enhance its quality, and/or lower its costs.
4. Evaluation Phase: Evaluate advantages and disadvantages for each design alternative, including life-cycle costs, and the need for additional environmental studies. Select feasible ideas for development.

Act on Recommendations:

5. Development Phase: Develop each selected alternative, including environmental, technical and cost supporting data, into fully supported recommendations
6. Presentation Phase: Present the VE recommendations to TDOT management and/or the Roadway Design Manager.

7. Resolution Phase: The Coordinator will evaluate, document, and ensure implementation of all approved VE recommendations.

1-703.04 PRESENTATION OF RECOMMENDATIONS

The Coordinator and team leader will work together to create a VE Recommendations Report which includes analysis and cost information for each recommendation. The total estimated VE cost saving for all recommendations will determine how the recommendations are presented.

- For savings totaling $1 million or less, the VE Recommendations Report will be presented to the Roadway Design Manager and/or Regional Project Development Director (PDD) for their evaluation and response.

- For savings totaling more than $1 million, a team member presentation of all recommendations will be made to TDOT management. The VE Recommendation Report will be available for all presentation attendees. A copy of the VE Recommendations Report shall be given to the Roadway Design Manager for their evaluation and response prior to the presentation.

The Coordinator will request a written response to each recommendation from the Roadway Design Manager. This written response shall explain whether or not the recommendation is found feasible to implement. The team presentation to TDOT Management shall also include any discussions and/or decisions made during the presentation.

1-704.00 VALUE ENGINEERING WORKBOOKS

After the response to all VE recommendations has been received from TDOT Management, the Coordinator shall assemble the VE Workbook. This Workbook shall include all Job Plan forms and all correspondence with TDOT Management. The Coordinator shall distribute the completed VE Workbook to the Roadway Design Manager and forward the VE workbook to the FHWA office. A copy shall be retained by the VE Office for at least 3 (three) years after the final acceptance of construction.

1-705.00 IMPLEMENTATIONS OF APPROVED RECOMMENDATIONS

The Coordinator shall oversee the implementation of all accepted VE recommendations. The Roadway Design Manager shall be responsible for incorporating all accepted VE recommendations into the project prior to finalizing the construction plans. If the Roadway Design Manager determines that any accepted VE recommendation is no longer acceptable, he/she shall notify the Coordinator and provide, in writing, the reason(s) for the changes. These changes shall be evaluated to determine if any additional action can be taken to modify the recommendation.

The Coordinator shall review the final construction plans to ensure all accepted VE recommendations have been implemented.