SECTION III - RIGHT-OF-WAY PLANS

CHAPTER 1 - GENERAL GUIDELINES

CHAPTER 2 – DRAINAGE

CHAPTER 4 - PLANS SUBMITTALS

SECTION III - RIGHT-OF-WAY PLANS

CHAPTER 1 - GENERAL GUIDELINES

3-100.00 ROADWAY DESIGN CHECKLIST - R.O.W. PLANS (See 1-105.00)

3-102.00 SIZE OF FULL-SIZE PLAN AND CROSS-SECTION SHEETS (See 2-112.00 and 4-112.00)

3-105.00 IDENTIFICATION OF SUPERVISORS, DESIGNERS, AND CHECKERS ON TITLE SHEET (See 2-115.00)

The signature block in the lower left corner of the project title sheets shall conform to the samples shown in these guidelines.

3-105.05 SIGNATURES OF THE COMMISSIONER AND THE CHIEF ENGINEER ON TITLE SHEET (See 4-115.05)

Please refer to the appropriate Instructional Bulletin for signatures on the title sheets for lettings, right-of-way submittals, and utility submittals.

3-105.10 CONSULTANT'S SEAL, SIGNATURE, and date ON TITLE SHEET

When a consultant submits plans for R.O.W. Appraisals and Acquisition, the consultant's seal, signature, and date shall be placed on the right side of the title sheet above the Chief Engineer's signature.

3-110.02 DESIGN EXCEPTION REQUESTS

Despite the range of flexibility that exists with respect to the controlling elements of design, there are situations in which the accepted criteria are not applicable to the project circumstances or could not reasonably be met. For such instances, when it is appropriate, the design exception process allows for the use of criteria other than the accepted values.

The design exception process requires formal approval for exceptions relating to the following 13 controlling criteria of design: (1) design speed, (2) lane width, (3) shoulder width, (4) bridge width, (5) structural capacity, (6) horizontal alignment, (7) vertical alignment, (8) grades, (9) stopping sight distance, (10) cross slopes, (11) superelevation, (12) vertical clearance, and (13) horizontal clearance (other than the clear zone).

Design exception requests for projects shall be submitted to the Director of the Roadway Design Division using **Design Exception and Justification Form**, shown in Figure 3-1. After review the Director of the Roadway Design Division will be forwarding the design exception request to approval authority for final approval.

The approval authority for design exceptions on the Appalachian Development Highway System is with the **FHWA Division Administrator**. The approval authority for design exceptions on the Interstate System and NHS is the **Assistant Chief Engineer** and any other system is the **TDOT Director of the Roadway Design Division**.

All applicable material from the following list shall be addressed in narrative form on the **Design Exception and Justification Form**, shown in Figure 3-1., by the roadway designer. For locally developed projects, the highest local official responsible for the project is responsible for this task.

1. Accident experience or data.

2. The effect of the variance from the design standard on safety and operation of the facility.

3. Any safety mitigation measures considered and provided to minimize the effect of the reduced design.

4. The compatibility of the design and operation with adjacent sections.

5. The comparative cost of the full standard versus the lower design being proposed.

6. The long term effect of the reduced design as compared to the full standard.

7. The difficulty in obtaining the full standard such as right-of-way restriction, delays, environmental impacts, etc.

8. Any capacity reductions or operational problems caused by the proposed exception.

9. Level of service for full standards versus the reduced design.

10. The cumulative effect of more than one standard that is being reduced.

11. The possibility of improving or correcting the reduced design feature in the future.

The completed Design Exception and Justification Form including any attachments shall be reviewed by Regional Project Development Director (PDD) and submitted to the Director of Roadway Design Division for final approval or forwarding to approval authority. Approved design exceptions **shall** be noted, with approval date, in the lower right corner of the title sheet.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
SUITE 1300 JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-3848
(615) 741-2221

JOHN C. SCHROER
COMMISSIONER

BILL HASLAM
GOVERNOR

DESIGN EXCEPTION AND JUSTIFICATION FORM

TO: _____, Director, Roadway Design Division, TDOT

FROM: _____, Director, Regional Project Development, TDOT
or
_____, Highest Local Official Responsible for the Project, Title
(Locally Developed Projects)

DATE: _____

SUBJECT: **Design Exception Request**

Project No. _____ Pin _____
Project Description: _____

CONTROLLING CRITERIA FOR WHICH EXCEPTION IS REQUESTED:

Design Speed	☐	Lane Width	☐	Shoulder Width	☐	Grades	☐
Horizontal Alignment	☐	Vertical Alignment	☐	Cross Slopes	☐		
Stopping Sight Distance	☐	Superelevation	☐	Bridge Width	☐		
Horizontal Clearance (other than clear zone)	☐	Vertical Clearance	☐	Structural Capacity	☐		

DESIGN EXCEPTION REQUESTED:

(Note: List location and controlling element of the feature when an exception is requested. Example: 1) Station 4+50, 30 mph horizontal curve 2) Station 10+00 to 13+00, 11ft. lane width instead of 12ft. 3) 20 mph vertical alignment (Sag K=24) instead of 40 mph)

Figure 3-1
Design Exception and Justification Form

DESIGN DATA:

Highway Functional Classification: _____
Standard for the Above Classification: _____
Existing Posted Speed: _____
Proposed Posted Speed: _____
Type of Terrain: _____
Rural or Urban Area: _____
Traffic Data: ADT (20_____): _____ D: _____
ADT (20_____): _____ T: _____
DHV: _____ V: _____

DESIGN FEATURES:

	Standard	Existing	Proposed	N/A
Cross Slope:				
Superelevation:				
Minimum Radius of Curve:				
Minimum Stopping Sight Distance:				
Minimum "K" Value for Crest Vertical Curve:				
Minimum "K" Value for Sag Vertical Curve:				
Maximum Grade:				

ROADWAY TYPICAL SECTION:

	Standard	Existing	Proposed	N/A
Horizontal Clearance (Other than the clear zone)				
Shoulder Widths:				
Outside Shoulders:				
Inside Shoulders:				
Lane Width:				

BRIDGE FEATURES:

	Standard	Existing	Proposed	N/A
Traffic Lane Widths:				
Outside Shoulder Widths:				
Inside Shoulder Widths:				
Load Capacity or Sufficiency Rating:				
Vertical Clearance:				
To Waterway:				
To Other Highway:				
To Railroad:				

Figure 3-1 (Continued)
Design Exception and Justification Form

FACTORS CONSIDERED:

(Note: Each of the following factors shall be addressed in narrative form. If a factor is not applicable, or data is not available, only the appropriate box needs to be checked. For factors that are not a consideration, justification should be included.)

1) Accident experience or data

Data Available ☐ No Data Available ☐ Not Applicable ☐

2) Effect of the variance from the design standards on safety and operation of the facility

Effect considered ☐ No effect on the facility ☐ Not Applicable ☐

3) Safety mitigation measures considered and provided

Measures provided ☐ Measures not justified ☐ Not Applicable ☐

4) Compatibility of the design and operation with adjacent sections

Considered ☐ Not a Consideration ☐ Not Applicable ☐

5) Comparative cost of the full standard versus the lower design proposed

Considered ☐ Not a Consideration ☐ Not Applicable ☐

6) Long term effect of the reduced design as compared to the full standard

Considered ☐ Not a Consideration ☐ Not Applicable ☐

7) Difficulty obtaining the full standard such as right-of-way restriction, environmental impacts, etc.

Considered ☐ Not a Consideration ☐ Not Applicable ☐

8) Capacity reductions or operational reductions caused by the design

Considered ☐ Not a Consideration ☐ Not Applicable ☐

9) Level of service for the full standard versus the proposed design

Considered ☐ Not a Consideration ☐ Not Applicable ☐

10) Cumulative effect of more than one standard that is being reduced

Considered ☐ Not a Consideration ☐ Not Applicable ☐

11) Possibility of improving or achieving the full standard feature in the future

Applicable ☐ Not on the state highway system ☐ Not Applicable ☐

Figure 3-1 (Continued)
Design Exception and Justification Form

DESIGN EXCEPTION AND JUSTIFICATION:

(Note: This section shall include a narrative description of the design exception request and includes a recommendation for approval)

ATTACHMENTS:

(Note: Include appropriate items such as plan prints, accident data, estimates, sketches, photos, etc.)

DESIGN EXCEPTION IS RECOMMENDED FOR APPROVAL BY:

Regional Project Development Director
and / or
Director of Roadway Design Division

☐ Comments Attached

APPROVED: _____ _____

Division Administrator, FHWA **Date**
or
Assistant Chief Engineer, TDOT
or
Director, Roadway Design Division, TDOT

Figure 3-1 (continued)
Design Exception and Justification Form

3-110.05 SOILS AND GEOLOGY REPORTS (See 3-140.00)

On all projects which have grade and drain, the Soils and Geology Report shall be requested approximately one month prior to scheduling the Preliminary Field Review. A set of plans **with existing contours** on the present layout sheets and cross-sections should be placed on FileNet. An email notice should be sent to the Geotechnical Engineering Section of the Materials and Tests Division for a Soils and Geology Report requesting a Soils and Geology Report. The email should include the Request for Soils and Geology Report Form in MS Word (*.doc) or *.pdf format included as an attachment. A copy of the email shall be placed in the project folder to document the submittal. The designer is to submit a request for C.B.R. tests, which will be needed for pavement design. If a grade or alignment change is made on the project subsequent to the submission of the plans, then replacement plan sheets and cross-section sheets are to be resubmitted.

All soils data shall be incorporated into the plans prior to submission of final Right-of-Way Plans.

Once soils data is added on the cross-sections, a set of plans and cross-sections should be placed on File Net. An email notification should be sent to the Geotechnical Engineering Section requesting review and approval, once the plans have been placed on FileNet. A copy of the email shall be placed in the project folder to document the submittal. On projects with major geotechnical considerations, the Geotechnical Engineering Section may request the plans and/or cross-sections for review at other stages of plans development.

A copy of the Request for Soils and Geology Report Form is shown in Figure 3-2.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
NASHVILLE, TENNESSEE 37243-1402

REQUEST FOR SOILS AND GEOLOGY REPORT

TO: Mr. Len Oliver
Civil Engineering Manager 2
Geotechnical Engineering Section
Materials and Tests Division
6601 Centennial Boulevard
Nashville, TN 37243-1016

FROM: Design Manager
Roadway Design Division

DATE OF REQUEST: DATE REQUESTED BACK:

WE REQUEST SOILS SURVEY DATA, C.B.R. and WATER SAMPLE RESULTS, IF NEEDED ON:

PROJECT NO. : COUNTY:

ROUTE NO. : PROJECT LENGTH:

DESCRIPTION OF PROJECT:

PLANS HAVE BEEN ADDED TO FILENET ON 06/15/2011 UNDER THE FILE NAME 040028-01-GeologicalReportRequest.pdf FOR YOUR USE.

REMARKS:

Figure 3-2
Request for Soils and Geology Report Form

3-115.00 UPDATING SURVEYS

All additional survey information requests will be sent to the Regional Survey Supervisor responsible for the survey. An email copy of the request will be forwarded to the Survey Coordinator's Office in Headquarters.

Requests will normally take place following the **Preliminary Field Review** and the **Right-of-Way Field Review**, if necessary. Every effort will be made to make sure all additional information required is requested at these times, this will cut down on the number of times survey crews are sent out repetitively on the same project.

It is the designer's responsibility to thoroughly review their survey information and additional needs prior to requesting additional information from the Regional Survey Office. This will aid in minimizing multiple trips to the project by survey crews.

All requests will consist of a transmittal letter, or the use of *AdditionalSurveyRequestForm.xlt* located under the TDOT Letters tab in Microsoft Excel (New), either option will include:

PIN (from PPRM)
P.E. NUMBER
COUNTY
ROUTE
PROJECT DESCRIPTION

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 Guidelines.

If wetlands were not identified on the original survey, the location and extent of missing wetlands will be requested in one of the additional information requests. Prior to requesting additional information, that includes wetland locations; the Roadway Design Division will contact the Environmental Division and make sure wetlands have been marked.

Add the date(s) of the original survey and each survey update in the lower right side of the Right-of-Way Title Sheet.

3-120.00 REVISIONS ON UNECONOMIC REMNANTS

The Regional Office adding the uneconomic remnant acquisition to the plans will submit a plan change request. The parent (original) tract will be left as it appears in the acquisition table. Place the uneconomic remnant in the table separately as an 8000 series number using the parent tract number as the last digits. For example, Tract 25 would be Tract 8025. The "Total Area Acquired" column for Tract 8025 will be the area required from Tract 25 as an uneconomic remnant. In order to identify the remnant properly, it shall be specially shown on the property map and the present layout sheets with broken single cross hatching and labeled as an uneconomic remnant. If an uneconomic remnant is sold, the word "Sold" shall be added to the table of acquisition by footnote. The word "Sold", name of grantee, and date of transfer shall be placed on the property map and present layout sheets adjacent to the remnant.

3-125.00 PAVEMENT DESIGN REQUESTS (See 3-125.05)

The design of a pavement structure takes into consideration many forms of input. Several of these are traffic loadings, soil characteristics (C.B.R. tests), materials availability, construction requirements, past performance, quality control and departmental policy. Paving sections are analyzed for structural capacity and for life-cycle cost. Because of these factors, pavement designs will be set by the Pavement Design Section only. On field reviews, any comments relating to pavement sections shall be noted in the field review report and then brought to the attention of the Pavement Design Section. After reviewing the requested change with the designer, the Pavement Design Section will make the final decision on changes to be incorporated into the project plans relative to paving.

The Pavement Design Section will furnish pavement designs on projects where concrete pavement or plant mix asphalt pavement is required, except for state industrial access projects, metro-urban resurfacing projects, and 100% state resurfacing projects. For BRZE and BR-STP projects with an ADL (Average Daily Loading) of 150 or less, or an ADT (Average Daily Traffic) less than 1,000 and percent trucks less than seven, pavement sections shall be designed as in Section 3-125.05.

For all pavement design request submittals, a pavement design request packet should be emailed to TDOT.PavementDesign@tn.gov. A copy of the email shall be placed in the project folder to document the submittal. The request will be submitted at the same time plans are submitted for preliminary field review. For projects not requiring a preliminary field review, the request shall be submitted upon completion of setting the line and grade. Each person listed in the CC section of the request for pavement design form should be copied on the email along with the design manager. The pavement design request packet shall consist of a single .pdf file that contains the request for pavement design form shown in Figure 3-3, plan sheets (title, typical sections and proposed layout sheets, a traffic report which includes an ADL for the mainline and any other major roads or streets within the limits of the project and soils report once it is received should be forwarded. This information is needed to analyze the needs of side roads, overlays, pavement alternates and other pavement design features.

The naming convention for the pavement design request packet will include the PIN # and the Region #, XXXXXX-XX-PavementDesignRequest-RegX.pdf. If there are modifications, including submitting additional information, then the naming convention will be *XXXXXX-XX-PavementDesign-RegX-Rev-00-00-00.pdf*. Revised pavement design requests will contain the packet in its entirety - i.e. letter, plans, traffic report and soils report.

Example: 123456-00-PavementDesignRequest-Reg1.pdf

When assembling the .pdf file, select small file size or default file size in Adobe Acrobat Standard in order to keep the pavement design request packet under the 15 MB email limit. If the file exceeds 15 MB, the designer should split the packet into multiple emails and add the Part 1, Part 2, etc. to the naming convention.

Example: 123456-00-PavementDesignRequest-Reg1-Part 1.pdf

For the Roadway Plans prepared by consultants, **THE PAVEMENT DESIGN REQUEST PACKAGE** should be prepared as described above and emailed to the Roadway Design Manager for review. Upon acceptance, the design manager will forward the package to

TDOT.PavementDesign@tn.gov. A copy of the email shall be placed in the project folder to document the submittal.

The pavement design request package should be resubmitted whenever major design revisions are made that could affect the pavement design as determined by the Design Manager.

3-125.01 REVIEW OF PAVEMENT DESIGN

If the pavement design will be more than 2 years old at the time of the constructability field review, the designer shall submit a request for pavement design review (figure 3-3A) three weeks prior to the constructability field review. The designer shall attach the pavement request review form, the original pavement design and updated traffic report in a single pdf file and email it to: TDOT.PavementDesign@tn.gov. The subject line of the email shall be:

"PAVEMENT DESIGN REVIEW – PIN NO"

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
PAVEMENT DESIGN SECTION
SUITE 1300, JAMES K. POLK BUILDING
Nashville, Tennessee 37243-3848

REQUEST FOR PAVEMENT DESIGN

DATE: _____ DESIGNER: _____
COUNTY: _____ ROUTE: _____
PROJECT NO. _____ PIN: _____
DESCRIPTION: _____
_____

PROPOSED LETTING DATE:_____

PLEASE CHECK THE BOX FOR ALL DESIGN ITEMS THAT APPLY TO YOUR PROJECT.

NEW ALIGNMENT ☐
WIDENING ☐
INTERSECTING ROADS ☐
RESURFACING ☐
DETOUR ROAD ☐
TRAFFIC TO BE MAINTAINED
DURING CONSTRUCTION ☐

OTHER COMMENTS:_____

ATTACHMENTS		**DATE REQUESTED**
TRAFFIC REPORT W/ADL'S	☐	_____
SOILS REPORT	☐	_____
PDF OF PLANS	☐	(TITLE, TYPICAL SECTIONS, PROPOSED LAYOUT)

PLEASE EXPLAIN ANY MISSING ATTACHMENTS (include date requested for soils and traffic):

_____

_____

cc: Design Manager

Figure 3-3
Request for Pavement Design Form

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
PAVEMENT DESIGN SECTION
SUITE 1300, JAMES K. POLK BUILDING
Nashville, Tennessee 37243-3848

JOHN C. SCHROER
COMMISSIONER

BILL HASLAM
GOVERNOR

REQUEST FOR REVIEW OF PAVEMENT DESIGN

DATE: _____ DESIGNER: _____
COUNTY: _____ ROUTE: _____
PROJECT NO. _____ PIN: _____
DESCRIPTION: _____
_____

PROPOSED TURN-IN DATE:_____
ORIGINAL PAVEMENT DESIGN RECEIVED _____

Please review the attached pavement design for this project and provide email confirmation that it is adequate for present conditions.

ATTACHMENTS	**DATE REQUESTED**
UPDATED TRAFFIC REPORT W/ADL'S (if available) ☐	_____
ORIGINAL PAVEMENT DESIGN ☐	_____

CONSTRUCTABILITY FIELD REVIEW PLANS PDF ON FILENET UNDER THE NAME _____

PLEASE EXPLAIN ANY MISSING ATTACHMENTS (include date requested traffic):
_____
_____

cc: Design Manager

Figure 3-3A
Request for Pavement Design Review

3-125.05 PAVEMENT DESIGN - SELECTED BRZE AND BR-STP (See 3-125.00)

For BRZE and BR-STP projects with an ADL of less than 150, the pavement design can be obtained by using the County Soils Groupings, shown in Table 3-1, and Tables 3-2 and 3-3.

ADL's will not be provided when ADT's (Average Daily Traffic) are 1,000 or less and percentage of trucks is 7% or less. In this case, use Pavement Design No. IV for ADT less than or equal to 200 and Pavement Design No. I for ADT greater than 200 but less than or equal to 1,000.

Two examples are given as follows:

1.) The designer has a BRZE project in Hamblen County. The ADL is 53. First, go to the County Soils Groupings, Table 3-1, to obtain the Group No. which is 2. Then refer to Table 3-2, go to the column for Group 2 and down to the row containing 53 ADL. This determines that Pavement Design I shall be used. Refer to Table 3-3 to obtain the pavement design (1.25 in. "D" mix, 2.00 in. "B-M2", 3.00 in. "A" mix, and 8.00 in. "303-01").

2.) The designer has a BRZE project in Hamblen County. The ADT is 874 and the percentage of trucks is 5. No ADL is given, because the ADT and truck percentage is low. As stated above, Pavement Design I shall be used. Refer to Table 3-3 to obtain the pavement design (1.25 in. "D" mix, 2.00 in. "B-M2", 3.00 in. "A" mix, and 8.00 in. "303-01").

When the existing road is crushed stone base only or base and double bituminous surface treatment, the roadway surface shall be replaced in kind.

When the shoulders are 4 feet or less, the designer will distinguish on the field review whether the shoulder shall be stone and double bituminous surface treatment or paved with 1.25 inches of 411 D-mix.

The proposed roadway pavement shall be a higher type or equal surface than that of the shoulders.

When using ADT's for pavement design, use design year traffic.

COUNTY	GROUP	COUNTY	GROUP	COUNTY	GROUP
Anderson	2	Hamilton	3	Morgan	4
Bedford	3	Hancock	6	Obion	5
Benton	2	Hardeman	3	Overton	6
Bledsoe	6	Hardin	2	Perry	3
Blount	4	Hawkins	6	Pickett	5
Bradley	1	Haywood	4	Polk	5
Campbell	4	Henderson	3	Putnam	6
Cannon	4	Henry	3	Rhea	1
Carroll	4	Hickman	4	Roane	4
Carter	6	Houston	6	Robertson	4
Cheatham	3	Humphreys	5	Rutherford	6
Chester	4	Jackson	6	Scott	2
Claiborne	2	Jefferson	4	Sequatchie	3
Clay	6	Johnson	6	Sevier	1
Cocke	5	Knox	4	Shelby	5
Coffee	4	Lake	3	Smith	3
Crockett	4	Lauderdale	4	Stewart	5
Cumberland	5	Lawrence	5	Sullivan	4
Davidson	3	Lewis	4	Sumner	3
Decatur	3	Lincoln	3	Tipton	5
Dekalb	3	Loudon	6	Trousdale	4
Dickson	6	McMinn	3	Unicoi	6
Dyer	5	McNairy	4	Union	5
Fayette	5	Macon	4	Van Buren	5
Fentress	2	Madison	4	Warren	5
Franklin	4	Marion	3	Washington	4
Gibson	5	Marshall	4	Wayne	5
Giles	5	Maury	5	Weakley	4
Grainger	6	Meigs	3	White	4
Greene	5	Monroe	3	Williamson	3
Grundy	2	Montgomery	4	Wilson	2
Hamblen	2	Moore	3		

Table 3-1
County Soil Groupings

FLEX ADLs	COUNTY SOIL GROUP NUMBER					
	GROUP 1	GROUP 2	GROUP 3	GROUP 4	GROUP 5	GROUP 6
1-19	I	I	III	III	III	IV
20 - 29	I	I	I	I	III	III
30 - 39	I	I	I	I	I	III
40 - 59	II	I	I	I	I	I
60 - 89	II	II	I	I	I	I
90 - 119	II	II	II	I	I	I
120 - 150	II	II	II	II	I	I

Table 3-2
Pavement Design Number

MIX TYPE	PAVEMENT DESIGN NUMBER			
	I	II	III	IV
“D”	1.25”	1.25”	1.25”	1.25”
“B-M2”	2.00”	2.00”	2.00”	2.00”
“A”	3.00”	3.00”	----	----
303-01 or 02	8.00”	10.00”	12.00”	8.00”

Table 3-3
Pavement Design

3-130.00 ABANDONMENT OF WATER WELLS

If during the location and design phase it is determined that a water well requires abandonment, the Design Office shall request information at the time shown on the Project Activity Status Sheet (see 1-110.00) by notifying the Geologist Water Well Program, Division of Water Supply, 401 Church Street, Sixth Floor L & C Tower, Nashville, Tennessee 37243-1549, telephone 1-800-523-4873 or (615) 532-0176. The Design Office shall also request an inspection of the well and recommendations concerning sealing. Quantities and bid items shall then be set up in the project plans for the contractor to perform the actual sealing of the well.

When requesting a well inspection and recommendations for sealing from the Water Management Division, the designer shall provide the following:

1. A print of the title sheet and of the plan sheet showing the location of the well.

2. The name, address and telephone number of the driller, the date the well was drilled and the name and telephone number of the property owner at the time the well was drilled, if the information is available.

The designer shall take the initiative to ensure that this information is returned in time to incorporate it into the project plans. The well shall be located on the proposed layout sheet and a note added as to whether the well is to be sealed by the contractor.

Every effort is to be made to ensure that this information is on the project plans before turning them in for the letting. All water wells shall be sealed in accordance with the standards set forth by the Tennessee Department of Environment and Conservation (TDEC).

3-140.00 FIELD REVIEW PROCEDURES (See 1-120.00, 2-315.00. 2-315.05, 3-110.05 and 3-330.00)

3-145.00 NOTICE OF INTENT (NOI) FORM

The Notice of Intent (NOI) is an application for the General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges of Stormwater Associated with Construction Activities. This permit is required for any project which will result in the disturbance of one (1) acre or more of total land area. The NOI form should be completed by the Storm Water Pollution Prevention Plan (SWPPP) consultant.

CHAPTER 2 – DRAINAGE

3-200.00 Drainage Manual

To assist the designer performing drainage and hydrologic design, the Roadway Design Division has developed a Drainage Manual to provide a collection of applicable drainage criteria, policies and examples. The Manual discusses Tennessee Department of Transportation policies, practices and procedures for performing drainage design and hydraulic analyses on projects that are the responsibility of TDOT.

Designers shall use Chapters 1 through 11 of the Roadway Design Division's Drainage Manual for all projects designed or constructed by TDOT. These chapters include:

Chapter 1	Introduction
Chapter 2	General Drainage Policies and Practices
Chapter 3	Drainage Plan Requirements
Chapter 4	Hydrology
Chapter 5	Roadside Ditches and Streams
Chapter 6	Culverts
Chapter 7	Storm Drainage Systems
Chapter 8	Stormwater Storage Facilities
Chapter 9	Energy Dissipators
Chapter 10	Erosion Prevention and Sediment Control
Chapter 11	Natural Stream Design

Limited copies of the Manual will be distributed for internal use only. Consultants and other interested persons may download the Manual from the TDOT Internet site. The Manual can be found at:

http://www.tn.gov/tdot/topic/chief-engineer-design-drainage-manual

3-200.01 SELECTION OF PIPE MATERIALS

See Drainage Manual, Chapter 6, Section 6.04.2 Culvert Size and Type Selection.

3-200.05 COMPARISON OF LARGE PIPES WITH BOX CULVERTS

See Drainage Manual, Chapter 6, Section 6.04.2.2.2 Selection of Large Pipes vs. Box Culverts.

3-200.10 BRIDGE END DRAINS

See Drainage Manual, Chapter 7, Section 7.03.6 Bridge End Drains.

3-200.30 USE OF TRENCH OR SLOTTED DRAIN PIPE

See Drainage Manual, Chapter 7, Section 7.03.3.4 Use of Longitudinal Drains.

3-205.00 END TREATMENT FOR CROSS DRAINS (UNDER MAINLINE)

See Drainage Manual, Chapter 6, Section 6.04.3.1.1 End Treatments for Culverts Under Mainline.

3-205.05 END TREATMENTS FOR CROSS DRAINS (UNDER PUBLIC SIDE ROADS)

See Drainage Manual, Chapter 6, Section 6.04.3.1.2 End Treatments For Culverts Under Public Side Roads.

3-205.10 END TREATMENTS FOR SIDE DRAINS

See Drainage Manual, Chapter 6, Section 6.04.3.1.3 End Treatments For Culverts Under Private Drives.

3-205.15 END TREATMENTS FOR MEDIAN DRAINS

See Drainage Manual, Chapter 6, Section 6.04.3.1.4 End Treatments For Median Crossovers.

3-205.20 PLACEMENT OF HEADWALLS ON CULVERTS

See Drainage Manual, Chapter 6, Section 6.04.3 Selection of Appurtenances.

3-215.00 PLANS FORMAT FOR CROSS DRAINS

See Drainage Manual, Chapter 6, Section 6.04.1 Site Layout.

3-216.00 SUBMISSION OF ALL CULVERT SECTIONS

See Drainage Manual, Chapter 6, Section 6.02 Documentation Procedures.

3-220.00 USE OF PIPE CULVERTS OTHER THAN "ROUND" PIPE

See Drainage Manual, Chapter 6, Section 6.04.2.2.1 Use of Pipe Culverts Other Than Round Pipe.

3-225.00 HYDRAULIC COMPUTATION RECORDS

See Drainage Manual, Chapter 6, Section 6.02 Documentation Procedures.

3-230.00 IMPROVED INLET GUIDELINES

See Drainage Manual, Chapter 6, Section 6.04.3.2 Improved Inlets.

3-235.00 MANHOLES IN PAVEMENT AREA

See Drainage Manual, Chapter 7, Section 7.03.5.7 Manholes in the Pavement Area.

3-236.00 COMPUTATION OF SIZE FOR CIRCULAR MANHOLES AND CATCH BASINS

See Drainage Manual, Chapter 7, Section 7.03.5.5 Pipe Connections to Structures.

3-240.00 STOCK PASSES

See Drainage Manual, Chapter 6, Section 6.04.3.5 Stock Passes.

3-250.00 CATCH BASIN GRATE ELEVATIONS SHOWN ON THE PLANS

See Drainage Manual, Chapter 7, Section 7.03.3.6 Catch Basin Grate Stations and Elevation Shown on the Plans.

3-251.00 USE OF CATCH BASINS WITH STRUCTURAL STEEL GRATE UNITS

See Drainage Manual, Chapter 7, Section 7.03.3.3.1 Use of Inlets with Structural Steel Grates.

3-253.00 PERFORMANCE OF NUMBER 38, 39, 40, 42, 43 AND 44 AREA DRAINS IN SUMP CONDITIONS

See Drainage Manual, Chapter 7, Section 7.04.4.3 Inlet Performance at Sag Points.

3-255.00 SPACING BETWEEN CATCH BASINS FOR MAINTENANCE CLEAN OUTS

See Drainage Manual, Chapter 7, Section 7.03.5.6 Spacing Between Catch Basins and Manholes.

3-256.00 USE OF JUNCTION BOXES

See Drainage Manual, Chapter 7, Section 7.03.5.4 Junction Boxes.

3-260.00 ALTERNATING CATCH BASINS

See Drainage Manual, Chapter 7, Section 7.03.5.1.1 Alternate Catch Basins.

3-261.00 USE OF NO. 6-72 CATCH BASINS

See Drainage Manual, Chapter 7, Section 7.03.5.1.2 Use of No. 6-72 Catch Basins.

CHAPTER 3 - PLANS DEVELOPMENT AND CALCULATIONS

3-300.00 AREAS SHOWN IN RIGHT-OF-WAY ACQUISITION TABLE

Acquisition Areas and Easement Areas of 0.100 acres or more shall be shown in acres to 3 decimal places. Areas less than 0.100 acres shall be shown to the nearest square foot.

Right-of-way areas left and right shall be based on the centerline used for construction. If the proposed centerline is changed during design, it shall be necessary to re-compute the areas left and right supplied with the survey and appearing in the TOTAL AREA columns of Figure 2-21 of the guidelines.

The sum of all areas to be acquired and/or as easements shall be totaled and shown at the bottom of the acquisition table.

See Figure 2-25 for example Right-of-Way Acquisition Table.

3-300.01 DISTURBED AREA

Designers shall show the total disturbed project area below the Right-of-Way Acquisition Table. The total disturbed area shall be updated and the plans revised for any change in the amount of disturbance. Disturbed Area is defined in chapter 10 of the TDOT Drainage Manual as the total area of the site to be cleared, graded or excavated with the life of the project, and shall be calculated as the area within the slopes lines plus a 15 feet wide strip adjacent to the slope lines. For urban areas, the disturbed area may be calculated as the area within the slope lines plus the width of the construction easement when no construction activities will occur outside the construction easement.

See Figure 2-25 for example of how to show disturbed area below the Right-of-Way Acquisition Table.

3-300.05 EASEMENT AREAS (See 2-320.00)

3-305.00 R.O.W. NOTES FOR ALL R.O.W. PROJECTS (See 2-300.00)

3-305.05 R.O.W. NOTES ON PLANS REGARDING DRIVEWAYS (See 2-300.05)

3-305.06 NPDES PERMITTED PROJECTS

All projects which require a NPDES permit shall add the Erosion Prevention and Sediment Control (EPSC) Notes found in Section 6-290.03, Erosion Prevention and Sediment Control Special Notes, NPDES and shall follow the guidance indicated in Section 6-290.03 to determine if “Special Notes” are required.

3-305.07 UTILITY RELOCATION NOTES ON EPSC PLANS

All projects which require utility relocations as part of the contract shall add the notes found in Section 6-290.04, Erosion Prevention and Sediment Control Special Notes, Utility Relocation.

3-305.08 Special EPSC Notes

Special Erosion Prevention and Sediment Control (EPSC) Notes found in Section 6-290.00 shall be added to the first sheet of the EPSC Plans. Placement of these notes shall follow the guidance indicated in Section 6-290.00 to determine if a particular note is required.

The designer should add any additional Special EPSC Notes which provide project specific information on requirements for the proposed EPSC measures, as well as specific steps the contractor is to take in the execution of the EPSC Plan. These notes should also be added to the first sheet of the EPSC Plans.

Any additional Special EPSC Notes provided by the Environmental Division shall be shown on the first sheet of the EPSC Plans.

3-305.10 PRIVATE DRIVEWAYS SHOWN ON R.O.W. PLANS (See 2-300.05)

3-305.15 GUIDELINES ON CONSTRUCTION AND RESURFACING OF PUBLIC ROAD INTERSECTIONS AND DRIVEWAYS ON HIGHWAY PROJECTS (See 2-300.10)

3-310.05 HANDICAP RAMPS

Right-of-Way plans for new construction or reconstruction projects shall accommodate the appropriate curb ramp and truncated dome surface details shown on the current standard drawings. The handicap ramp Standard Drawings detail four (4) types or layouts of handicap ramps that can be used at intersections depending upon the site layout, topography, and right-of-way constraints. Types 1 and 2 are the preferred types to be used. Types 3 and 4 are appropriate for areas with right-of-way constraints. Designers should indicate the type ramp to be used at each intersection on the plans. Designers should use the estimated quantities for a 90 degree intersection on a 0.0% grade when calculating quantities for intersections other than 90 degrees or with grades other than 0.0%. Limits of payments for handicap ramps are shown on the standard drawings.

Ramps shall be indicated on the Right-of-Way Plans for field review. Ramps adjacent to lowered curb for driveways may be eliminated.

Truncated Domes shall be used with all handicap ramps.

Refer to the RP-H-Series Standard Drawings for details.

3-310.10 DRIVEWAY APRONS

Right-of-Way plans for new construction or reconstruction projects shall accommodate the appropriate driveway aprons. The driveway standard drawings have been modified to provide ADA compliant cross-slope for sidewalks through driveway aprons. The aprons have also been modified to provide for a better turning radius into the drive.

3-315.00 CAPPING ROCK FILLS

In areas where a solid rock fill is expected and grassed slopes are designed, provide road and drainage excavation (unclassified) or borrow excavation (unclassified) in sufficient quantity to cap these fills with a minimum of ± 9 inches of common material before placing topsoil and seeding.

3-315.05 TOPSOIL REQUIREMENTS FOR EARTHWORK BALANCES (See 2-145.05 and 4-203.30)

In areas to be seeded, compute the quantity of topsoil required based on a 3-inch ± thickness with 100% shrinkage.

Topsoil will not be required on projects where all slopes are to be sodded. A note shall be added to the plans detailing any other special areas where topsoil will not be required (such as rock fills not to be seeded).

Do not make deductions in topsoil and seeding quantities for sodded or paved ditch areas on normal projects requiring topsoil and seeded slopes.

Topsoil shall be secured from within the proposed roadway balances where possible. If necessary, embankment areas shall be stripped in addition to excavation areas.

When final earthwork balances are calculated, the topsoil shall be taken into account in the following manner:

1. Calculate the topsoil needed and the topsoil available to see if all the topsoil can possibly be obtained from the proposed roadway areas.

2. Adjust the cross-section end areas as necessary to reflect the topsoil that is to be stripped. These adjusted areas are to be used to balance the job.

3. Balance the project using the proper shrinkage and swell factors.

4. On the profile, when showing the earthwork balance, include the topsoil figures in the balance. See example calculations in 3-315.15.

If enough topsoil cannot be obtained from the proposed earthwork areas, add a "Furnishing and Spreading Topsoil" item to the Roadway Quantity Table for the remainder.

3-315.10 SHRINKAGE AND SWELL FACTORS (See 2-145.10)

3-315.15 EARTHWORK BALANCES IN PLANS (See 2-145.05)

Examples of how to calculate earthwork balances and how to show these balances on the plans profile sheet are as follows:

1. Earthwork balanced.

   A. Show on profile sheet.

EXC. (UNCL.) 295,000 C.Y.

COMMON	250,000 C.Y.	(INCL. 13,000 C.Y. FROM EXCAVATION AREAS AND 5,000 C.Y. FROM EMBANKMENT AREAS; 12,500 C.Y. FROM COUNTY ROADS AND PRIVATE DRIVES)
ROCK	45,000 C.Y.	

EXC.
EMB.

EMB.	253,489 C.Y.	(INCL. 5,490 C.Y. FOR COUNTY ROADS AND PRIVATE DRIVES; 5,000 C.Y. TO REPLACE STRIPPED TOPSOIL)
	SHR. 15% SW. 15%	

   B. Calculation procedure for balanced section

250,000 C.Y.	Exc. (Common)
-13,000 C.Y.	Topsoil from exc. areas
- 5,000 C.Y.	Topsoil from emb. areas
232,000 C.Y.	Exc. (Common) available for balance

$$\frac{\text{Exc. (Com)}}{1.15} + [\text{Exc. (Rock)} \times 1.15] \quad \text{vs.} \quad \text{Emb.}$$

$$\frac{232{,}000}{1.15} + (45{,}000 \times 1.15) \quad \text{vs.} \quad 253{,}489 \text{ C.Y.}$$

$$201{,}739 + 51{,}750 \quad \text{vs.} \quad 253{,}489 \text{ C.Y.}$$

$$253{,}489 \text{ C.Y.} = 253{,}489 \text{ C.Y.}$$

Balanced

2. Earthwork unbalanced.

A. Show on profile sheet.

EXC. (UNCL.)	COMMON	350,000 C.Y.	(INCL. 13,000 C.Y. TOPSOIL EXCAVATION AREAS AND 5,000 C.Y. FROM EMBANKMENT AREAS; 12,500 C.Y.FROM COUNTY ROADS AND PRIVATE DRIVES; 100,000 C.Y. EXCESS MATERIAL.)
	ROCK	45,000 C.Y.	
EXC.			
EMB.	EMB.	253,489 C.Y.	(INCL. 5,490 C.Y. FOR COUNTY ROADS AND PRIVATE DRIVES; 5,000 C.Y. TO REPLACE STRIPPED TOPSOIL)

SHR. 15%
SW. 15%

B. Calculation procedure for unbalanced section

350,000 C.Y. Exc. (Common)

-13,000 C.Y. Topsoil from exc. areas

- 5,000 C.Y. Topsoil for emb. area

332,000 C.Y. Exc. (Common) available for balance

$$\frac{\text{Exc. (Com)}}{1.15} + [\text{Exc. (Rock)} \times 1.15] \quad \text{vs.} \quad \text{Emb.}$$

$$\frac{332{,}000}{1.15} + (45{,}000 \times 1.15) \quad \text{vs.} \quad 253{,}489 \text{ C.Y.}$$

340,446 C.Y. vs. 253,489 C.Y.

The 86,957 C.Y. of excess material has had the shrinkage factor applied to it (this assumes all excess material will be common). When this quantity is multiplied by the shrinkage factor (to "un-shrink" it), the excess then becomes 100,000 C.Y.

3-315.20 SUBMISSION OF GRADING QUANTITIES SHEETS (See 2-145.07 and 4-203.50)

3-325.00 RAILROADS (See 1-210.00, 1-210.05 and 1-210.10)

CHAPTER 4 - PLANS SUBMITTALS

3-400.00 SUBMITTAL FOR INCIDENTALS

Submitting plans for "ALL INCIDENTALS EXCEPT APPRAISALS" if the project has more than 10 tracts. (See distribution list below) It shall only be necessary to submit the title sheet, typical sections, property maps (with Right-of-Way Acquisition Table with property owner's name and county records portions completed) and the present layouts. Proposed layouts are not to be printed for incidental right-of-way work. Do not submit for "Incidentals" if there are 10 tracts or less in the plans. There will not be duplicate tract numbers on any one project. During Right-of-Way Plans preparation, tracts may need to be added or deleted, but all tract numbers appearing on the preliminary plans must continue to appear on subsequent Right-of-Way Plans for the project, including the acquisition stage Right-of-Way Plans.

If for any reason the tract number becomes unneeded, it must continue to be shown in the table of acquisition and on the property map and present layout sheets with the number crossed out in all places using a single line. Stamp or mark prints of title sheets for "Incidentals Only". The title sheet must have a right-of-way project number in the upper right-hand corner (not the P.E. number). This applies to all right-of-way projects to be acquired by the State. **For projects whose right-of-way is to be acquired by Local Government,** the preliminary engineering number is to be used in the upper right-hand corner of the title sheet. Using 0.2" lettering, place the text "Right-of-way to be acquired by Local Government" on the right side of title sheet above the signatures. Incidental plans submission will not be submitted for projects whose right-of-way is being acquired by local governments.

It will be the responsibility of the Right-of-Way office to print and distribute copies of the plans as needed.

Submitting for "Incidentals"

Place a pdf of the required plan sheets onto FileNet under the name: nnnnnn-nn-Incidentals.pdf, then notify by email of the electronic distribution the appropriate email address listed below.

Region 1 TDOT.RG1.ROW@tn.gov
Region 2 TDOT.RG2.ROW@tn.gov
Region 3 TDOT.RG3.ROW@tn.gov
Region 4 TDOT.RG4.ROW@tn.gov

3-400.05 SUBMITTAL FOR "UTILITIES ONLY" (See 2-315.00 and 2-315.05)

On any project, other than a paving or resurfacing project, that does not have right-of-way acquisition involved; the designer shall submit Right-of-Way plans and stamp them ROW Plans (Utilities Only) (See 1-115.20). Submission of these plans will be treated as Right-of-Way plans and follow the procedures listed in Section 3-400.15 and 3-400.25.

It will be the responsibility of the Right-of-Way office to print and distribute copies of the plans as needed.

3-400.10 ADVANCE ACQUISITION PROJECTS

Once "Advance Acquisition" has begun, tract numbers may not be changed.

3-400.15 PRELIMINARY CONSTRUCTION QUANTITY ESTIMATES (See 4-140.00 and 4-140.05)

A preliminary construction quantity estimate shall be prepared on all projects when the funding is requested for the Final R.O.W. Plans. The Design Manager responsible for the project will place quantity data on FileNet and send an email notification to TDOT.Preliminary.Estimates@tn.gov and CC to TDOT.PDSO@tn.gov. This submission should be done concurrently with the right-of-way funding approval request. **Projects shall not be submitted for "appraisals and acquisition" or "utilities only" until the preliminary construction quantity estimate is submitted.**

Each designer shall follow the procedure below to obtain the preliminary construction cost estimates:

1. Calculate preliminary quantities to a reasonable detail. Any known quantities which cannot be estimated (example: signal and signing quantities) should be identified and included in the email transmitted to the Estimating and Bid Analysis Office.

2. The TDOT designer or consultant shall provide the Design Manager responsible for the project a .pdf set of the plans and the preliminary construction quantities estimate data via email or CD. The estimate will contain project description information, pay item numbers, and quantities in the proper format. See Section 4-140.05 for additional information. Design managers and designers shall keep a copy of the estimate data in the project folder and a copy of the estimate file.

3. If bridges, retaining walls, or other structures designed by the Structures Division are proposed, the designer shall indicate structures are required and include the structure designer and manager on the project data portion of the estimate file. This information is necessary to insure that the structures are included in the preliminary estimate.

4. Where open-ended item numbers are used, the designer shall fill in the descriptions in the estimate data file. Where lump sum item numbers are used, description and break down of the quantities must be submitted with the estimate data file. Without completing these item descriptions, there is no way the estimator in the Estimating and Bid Analysis Office can complete the preliminary construction cost estimate.

5. Preliminary construction quantities estimates shall be updated whenever a revision to the plans is made that will significantly alter the project cost or every twelve (12) months until construction plans turn-in. In the event that no plan changes are made during the previous twelve month period, the Design Manager will resubmit the original data file with a request that the estimate be updated since the previous estimate is a year old.

6. For federal over-site projects, a preliminary estimate using the construction plans quantities shall be submitted to the Estimating and Bid Analysis Office when the plans are distributed for the constructability field review. A construction estimate will still be submitted with construction plans submittal in accordance with Section 4-140.00 and 4-140.05.

3-400.17 SUBMITTAL OF PRELIMINARY CONSTRUCTION QUANTITIES ESTIMATES

For in-house and consultant design projects, the Design Manager, or designer shall place the final right-of-way plans and the completed construction estimate Excel on FileNet. An email notification should be sent to the following email address: TDOT.Preliminary.Estimates@tn.gov and CC to TDOT.PDSO@tn.gov once the required materials are placed on FileNet. A copy of the email shall be placed in the project folder to document the submittal of the preliminary construction quantities. In the subject line of the email state the following information: "County: Pin No"

3-400.20 RIGHT-OF-WAY FUNDING APPROVAL REQUESTS (See 4-140.00)

Funding approval shall be requested and received on all right-of-way projects prior to their submission for "appraisals and acquisition." The funding approval shall be requested approximately two (2) weeks prior to the anticipated right-of-way turn-in date. See Section 3-400.15 for further details.

When requesting funding approval for right-of-way "appraisals and acquisition", email TDOT.PDSO@tn.gov a pdf copy of the title sheet and the right-of-way funding approval request transmittal letter, example shown in Figure 3-4, to the Program Operations Office, Federal Aid Section.

An approved signed and dated copy of the right-of-way funding request approval transmittal letter shall be attached to the first page of the Right-of-Way Plans uploaded to FileNet.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
NASHVILLE, TENNESSEE 37243-1402

MEMORANDUM

TO: Programs Operations Office
Attn: Federal Aid Section
Suite 600, James K. Polk Bldg.
Nashville, TN 37243-1402

FROM: Larry Jordan, Transportation Manager 1
Design Office, Headquarters

DATE: December 30, 1999

SUBJECT: Right-of-Way Funding Approval Request
Project No.: STP-13(15), 43005-2234-14, 43005-1226-04
Description: S.R. 13 from S.R. 230 to Main Street in Waverly
Humphreys County

In accordance with the Roadway Design Guidelines, I am requesting funding approval for R.O.W. appraisals and acquisition. For your use, I have attached one (1) half-size title sheet of this project.

At your earliest convenience following funding approval, please initial and date below and return a copy of this form to my office.

Funding Approval for Right-of-Way Appraisals and Acquisition:

By: _____

Date: _____

Figure 3-4
Right-of-Way Funding Approval Request Transmittal Letter Example

3-400.25 SUBMITTALS OF ROW APPRAISALS AND ACQUISITION (SEE 2-315.00, 2-315.05, AND 3-400.00)

When submitting a project for right-of-way "appraisals and acquisition," the Design Manager in charge of the project is to upload all required files to FileNet (see Section 1-115.00) send email notification of right-of-way plans turn-in to the following:

HQ ROW	TDOT.HQ.ROW@tn.gov
Environmental Division	TDOT.EnvironmentalDoc@tn.gov Permits.Filenet.TDOT@tn.gov Ecology.Plans@tn.gov TDOT.Historians@tn.gov
Structures Division	TDOT.Structures@tn.gov
Program Development and Scheduling Office Program Operations Office	TDOT.PDSO@tn.gov
Project Manager (if appropriate)	Individual TDOT email account
Railroad Coordinator (if appropriate)	Individual TDOT email account*
Appropriate Regional ROW Office ROW Region 1 ROW Region 2 ROW Region 3 ROW Region 4	 TDOT.RG1.ROW@tn.gov TDOT.RG2.ROW@tn.gov TDOT.RG3.ROW@tn.gov TDOT.RG4.ROW@tn.gov

* See Contact List at:
http://www.tn.gov/tdot/topic/chief-engineer-design-staff

The email subject line shall include the Region, County, State Route Number or Route Name, PIN, "ROW Turn-in"

It will be the responsibility of the Right-of-Way office to print and distribute copies of the plans as needed.

Refer to Section 3-400.15 for preliminary construction quantity estimate. This estimate shall be completed and submitted to the Estimating and Bid Analysis Office prior to submitting plans for "appraisals and acquisition". The date the information was submitted to the Estimating and Bid Analysis Section shall be included in the right–of-way submittal transmittal letter.

It is important that the incidentals report data be incorporated into the plans before finalizing the Right-of-Way Plans to reduce right-of-way revisions. However, **if it is imperative** that final Right-of-Way Plans be submitted before receiving the incidentals report data, the TDOT C.E. Manager 2 will give the approval to proceed to the Design Manager in charge of the project. This approval shall be noted on the Right-of-Way Funding Request approval transmittal letter to the Program Operations Office, Federal Aid Section. See Section 3-400.00 for additional information not shown on this page.

When a consultant submits plans for right-of-way "appraisals and acquisition," the consultant's seal, signature, and date shall be placed on the right side of the title sheet above the Chief Engineer's signature.

All cross-sections will have the project number shown and be numbered in the upper right-hand project identification block. The sheet numbering will follow the numbering used on the plan sheets in the same manner used in the construction plans.

Before plans are submitted for “appraisals and acquisition” of right-of-way, all information which might affect the existing or relocated utilities shall be shown on the plans. This includes, but is not limited to, the following:

1. Storm sewers, catch basins, manholes, cross drains, side drains, box culverts, channel changes, special ditches and other drainage facilities
2. Preliminary bridge layouts and hydraulic data
3. Retaining walls
4. Guardrails
5. Detour roads
6. Traffic signal pole locations including attachment heights and footing details
7. Street light pole locations
8. Erosion prevention and sediment control devices (EPSC Plan)
9. Other details which might affect utilities

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
NASHVILLE, TENNESSEE 37243-1402

MEMORANDUM

TO: Director, Right-of-Way Division

FROM: CE Manager over project

DATE:

SUBJECT: Project No. (Federal and State ROW)
PIN
Project Description
County

The subject project is being submitted for (Right-of-Way or Utilities Only) plans submittal. The following information is being forwarded for plans distribution:

Right-of-Way Funding Approved	date received
Plans have been placed on FileNet:	PDF file name EXE file name date added
Preliminary Estimate Emailed	date sent

Comments:

For further information, please contact Project Point of Contact and phone number/email.

The Regional Utility Office is responsible for printing and mailing plans to affected utilities.

cc: Program Development and Scheduling Office
Program Operations Office
Environmental Division
Structures Division
Region _ Right-of-Way Office
Project Manager (If Applicable)

Figure 3-5
Right-of-Way “Appraisals and Acquisition” Transmittal Letter Template

3-400.35 ADDITION OF EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) PLANS INTO FIELD REVIEW AND FINAL ROW PLANS

Erosion Prevention and Sediment Control (EPSC) Plans sheets shall be included in the plans submitted for Right-of-Way Appraisals and Acquisition. EPSC Plan sheets shall also be included in right-of-way field review and constructability field review plans. EPSC Plan sheets shall immediately follow the Culvert Cross Sections. The EPSC Plan should be complete to the extent possible; however, quantity tabulations will not be required until printed for constructability field review.

Once plans are formally submitted, any changes to the EPSC Plan sheets due to design revision, right-of-way revision, permit requirements, mitigation requirements, ecological evaluation requirements, EPSC notes revisions, addition or deletion of sheets, etc. will require a formal plan revision.

The Design Manager should contact the Technical Studies Section of the Environmental Division when EPSC Plans are revised to determine if revised plan sheets or other information is needed.

3-400.40 ADDITION OF CONTOURS TO PLANS

Contours shall be included in plans for all projects submitted for Right-of-Way Appraisal and Acquisition and Construction except for resurfacing projects, projects where a survey is not required, and small projects or projects of limited scope where a surface is not developed. Contours shall also be included in right-of-way field review and constructability field review plans. Contours should include existing (pre-construction) and proposed contours. Contours for intermediate construction phases are not required. For small projects or projects of limited scope where a surface is not developed, cross sections shall be included in all plans submittals in lieu of contour sheets.

Contour sheets should be developed at the same scale as the EPSC Plan sheets. Designers should refer to Design CADD standards for contour sheet development. Existing contours should be included on Phase 1 of the EPSC Plan or may be developed as a separate sheet. Existing contour sheets will include the project centerline, contours at an interval sufficient to show the direction of flow, contour elevations, north arrow, scale, existing edges of pavement, and streams and rivers. Proposed contours should be included on the final phase of the EPSC Plan or as separate sheets. Proposed contour sheets will include the project centerline, contours at an interval sufficient to show the direction of flow, contour elevations, north arrow, streams and rivers, proposed edges of pavement, and proposed slope lines. Proposed contours will only be required to the top of cut or toe of slope. It will not be required to connect to existing contours outside the slope lines. Surface development should include the mainline and side roads. When developed as a separate set of sheets, contours should immediately follow the EPSC sheets.

Since site conditions and topography are unique to each project, designers should seek input from the Natural Resources Office, Permits Section, of the Environmental Division to determine contour intervals.

3-405.00 RIGHT-OF-WAY REVISIONS

When a project has been submitted for right-of-way appraisals and acquisition, and a change becomes necessary anywhere on the project, a Right-of-Way Plans revision is required. All right-of-way revisions will be submitted through the Design Manager responsible for the project in an accurate and timely manner.

The Design Manager responsible for the project will upload the revised plan set to Design FileNet (See Section 1-115.00) and submit an email notification to the appropriate personnel. The email will contain the revision letter and a pdf of the revised sheets only. In the event that the pdf is larger than the 15 MB email limit, then the pdf should be broken down into smaller files and additional emails sent.

Distribution of Right-of-Way Plans Revisions

The following plans revision distribution shall be sent by email for all of right-of-way revisions regardless of whether they have been let to contract or not.

TO	EMAIL ADDRESS
Director, State Right-of-Way Division	TDOT.HQ.ROW@tn.gov
Appropriate Regional Right-of-Way Manager	TDOT.RG1.ROW@tn.gov TDOT.RG2.ROW@tn.gov TDOT.RG3.ROW@tn.gov TDOT.RG4.ROW@tn.gov
Regional Director of Project Development	Use individual email address*
Environmental Division	TDOT.EnvironmentalDoc@tn.gov Permits.Filenet.TDOT@tn.gov Ecology.Plans@tn.gov TDOT.Historians@tn.gov
Roadway Design Division, Quality Assurance Office	TDOT.QualityAssurance@tn.gov
Railroad Coordinator (if railroad involvement)	Use individual email address*
Project Manager (if applicable)	Use individual email address

* See Contact List at:
http://www.tn.gov/tdot/topic/chief-engineer-design-staff

The email subject line shall include the Region, County, State Route Number or Route Name, PIN, “ROW-Revision”

It will be the responsibility of the Right-of-Way office to print and distribute copies of the plans as needed.

3-410.00 ENVIRONMENTAL PERMIT REQUIREMENTS

After the Environmental Division receives both the email notification for Right-of-Way Field Review Plans submittal and the Ecology Report, they will complete the permit evaluation. The permit evaluation shall determine the necessary permits required for the project. The findings of the permit evaluation will be documented in a report called the Permit Assessment.

If the project does not require items submitted for permit evaluation, the Designer shall send a letter to the Environmental Division, copied to the Program Scheduling Office, stating that no environmental impacts will occur as a result of the project.

Figure 3-6 contains a flow chart depicting the steps which should be followed to complete permit application approval.

Figure 3-7 is an example of a permit assessment, which has been completed by the Environmental Division and returned to the appropriate Design Manager. Along with the appropriate project and reference information, the Permit Assessment provides an itemized list of revisions and instructions for the designer to complete, which should insure prompt permit approval.

Once the project has been evaluated for required permits, and the Designer receives the permit assessment, the Designer will be responsible for preparing any and all requested information and sketches required for the Environmental Division to apply for permits. The permit sketches and applicable information shall be submitted as indicated in the Permit Assessment. If there is a lag in the schedule due to unforeseen delays the permit sketches and applicable information shall be submitted 12 months prior to the projected letting date. The permits sketches and applicable information shall be submitted to the Natural Resource Office Permit Section for permit application.

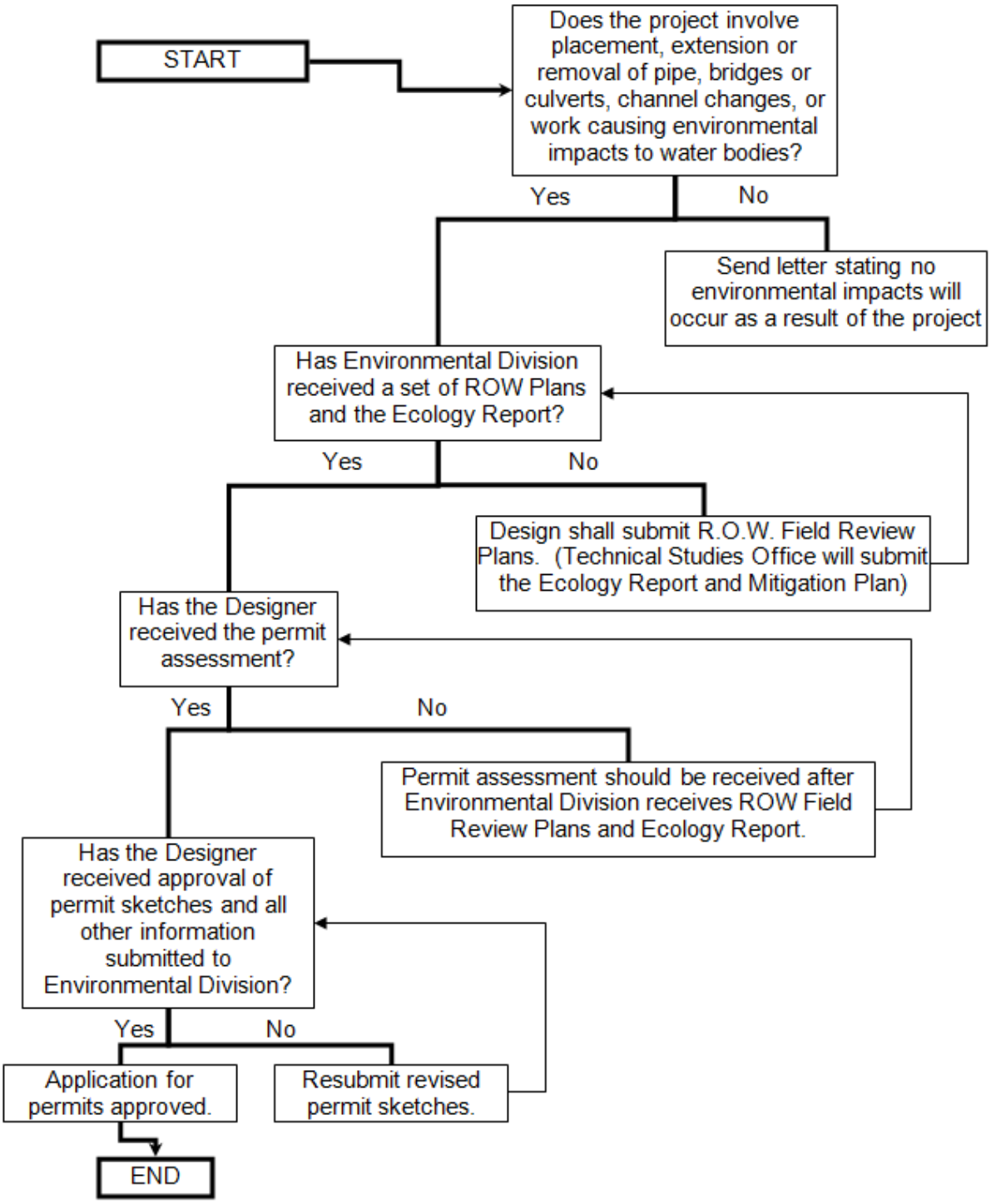


Figure 3-6
Permitting Process Flow Chart

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL DIVISION
SUITE 900, J. K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TN 37243-0334
TELEPHONE: (615) 253-2477 FAX: (615) 741-1098

MEMORANDUM

TO: Mr. Jim Bivens, Roadway Specialist Supervisor 2
Region 1 Design Office

FROM: John L. Hewitt, C.E. Manager 1
Environmental Permits Office

DATE: January 24, 2005

SUBJECT: PERMIT ASSESSMENT / DISTRIBUTE PERMIT REQUIREMENTS
P.E. # 40115-1406-94
FED # BRZE-4000(34)
PIN 100618.00
Lampkin Road
Bridge over Walnut Fork Creek
Henry County

Thank you for sending the plans for review on the above referenced project. Please refer to the Environmental Boundaries and Mitigation Design Memorandum dated November 19, 2004 from Ms. Lilah Miller when making the following adjustments:

1) Please make the following revisions to the erosion control sheet 6:
   - Please list standard drawings EC-STR-31 "Temporary Diversion Channels" and EC-STR-25 "Temporary Road Crossing", on the standard drawing index sheet and in the appropriate Erosion Control Legends.
   - Please relocate or remove the temporary silt fence from within Walnut Fork Creek (west bank around abutment).
   - Please show all existing wetlands.
   - Please show erosion control notes.
   - If haul roads are needed please show on the erosion control sheet.

2) Please make the following revisions for the impact between station 102+50 ± (Rt. & Lt.) and 108+50 ± (Rt. & Lt.):
   - Permit sketches will be required for this impact. Please refer to comment number three and the enclosed example set of permit sketches for information and requirements.
   - Revise the present layout (sheet 4) to show the existing wetland along Walnut Fork Creek. Please refer to Ms. Miller's Memorandum for information concerning wetland location.
   - Revise sheet 4A (proposed layout sheet) to show only wetlands remaining after construction.
   - Please label cut and fill lines on the present layout sheet (sheet 4).

Figure 3-7
Example Permit Assessment

Mr. Jim Bivens
January 24, 2005
Page 2

- If haul roads are needed, please show on the present and proposed layout sheets (4 and 4A).
- For all temporary wetland impacts please indicate all trees that are to be planted on the proposed layout sheets, erosion control sheets, and permit sketches that involve the replacement of trees from Ms. Miller's Memorandum. Also please add the tree planting scheme for temporary wetland impact areas and the following notes to the proposed layout sheet and permit sketches:
  - The area of temporary wetland impact shall be restored to pre-construction elevation and reseeded / or replanted according to the mitigation design and permit sketches as soon as possible following the completion of construction activities.
  - "No substitutions for any of the tree species will be accepted without written permission from the TDOT Environmental Division. No Clones or Cultivars will be accepted. Any trees found to be either incorrect species, improperly planted, or which do not survive, at anytime prior to termination of the contract, shall be removed and replaced at the contractor's expense. Stakes and wires will be removes immediately prior to contract termination."

3) For each wetland impact requiring permit sketches, please provide the information listed in the current roadway guidelines, as well as, a wetland impact table with the temporary and permanent impact areas and volumes listed, separately. The permit sketches are required to indicate the temporary and permanent wetland impacts, cross-hatched separately. Where trees are to be planted on-site (i.e. temporary replacement of wetlands), please show the mitigation (tree species, spacing, location, note for no substitutions, etc.) on the permit sketches and proposed layout plan sheet in the plans.

4) Please show and label the wet weather conveyance (WWC-1) on the present layout sheet (sheet 4). Please refer to Ms. Miller's Memorandum for location and information concerning wet weather conveyances.

5) To avoid additional delays, please verify that all comments and corrections mentioned in this Memorandum and the Memorandum from Ms. Miller have been completed and are accurate before submittal to this office.

6) Please provide our office with four sets of revised half-size plans, including erosion control plan sheets, and one set of permit sketches.

If you have any questions, please contact Anthony Myers at (615) 532-9945.

JLH:ARM:kek

Enclosures

cc: Mr. Freddy Miller, Roadway Design Office
Mr. Sam Cardwell, Program Scheduling Section
Dr. Deedee Kathman , Technical Studies Office
Permit File, Reading File, Chronological File

Figure 3-7 (continued)
Example Permit Assessment

Permit Issuing Agencies

Several State and Federal Agencies issue permits for impacts to Waters of the United States and Waters of the State of Tennessee. These agencies have regulatory authority over the Tennessee Department of Transportation. These agencies, and the permits the agencies issue, are described in the following paragraphs. Included are links to the agencies' website. The following agencies issue the permits for various environmental impacts.

Tennessee Department of Environment and Conservation (TDEC)

The following is a link to TDEC's permit website:

http://www.tn.gov/tdot/article/environmental-ecology-and-permits-environmental-permits

Aquatic Resource Alteration Permit (ARAP)

Many impacts to wetlands and streams considered Waters of the State of Tennessee are covered by one of the previously issued **"General"** permits (road crossings, wet weather conveyances, bank stabilization, utility line crossings, etc.).

Impacts to Waters of the State of Tennessee not covered by one of the General ARAP's require an **"Individual"** permit. The "Individual" permit is also referred to as a **"Section 401 Water Quality"** permit. Typically, Individual permits are required for channel changes and wetland impacts greater than 0.25 acres of isolated wetlands or 0.1 acres of non-isolated wetlands. Individual permits require a 30 day public notice before they can be issued.

Individual Federal permits, (Corps of Engineers and Coast Guard) require a **"401 Water Quality Certification"** from TDEC. Typically, a 401 certification is similar to an Individual ARAP. It is usually issued under one of the federal permits that utilize the federal public notice process. This is typically required for impacts to Waters and Wetlands of the United States.

National Pollutant Discharge Elimination System Permit (NPDES)

This permit controls water pollution by regulating point sources discharges (i.e. ditches, pipes, etc.) of stormwater from construction activities that discharge pollutants into Waters of the State of Tennessee. The Storm Water Pollution Prevention Plan (SWPPP) Consultant shall be responsible for completing the SWPPP document and the "Notice of Intent" (NOI), which is required when the disturbed area for a project is one acre or more.

Class V Injection Well Permit (Sinkholes)

This permit is required for any project that fills or affects stormwater runoff flowing into an open sinkhole or cave within the Right-of-Way or in the vicinity of the project. This permit is also required for any project that may affect the ground water via a sinkhole.

A treatment plan may be required from the Geotechnical Engineering Section of the Division of Materials and Tests, and will need to be placed in the plans for submittal with the application for this permit. A geotechnical report may also be needed with the application for this permit.

Since a sketch is not required for this permit, the entire sinkhole must be shown on the present layout sheet of the plans. The proposed layout sheet should show the remaining portion of the sinkhole (if any) and applicable treatment.

Tennessee Wildlife Resources Agency (TWRA)

The following is a link to the TWRA's website:

https://www.tn.gov/twra/

Reelfoot Watershed Management Permit

The Reelfoot Watershed Management permit is required for all projects that effects water flowing within the drainage basin of Reelfoot Lake. This permit requires a joint application to the TWRA and TDEC.

United States Army Corps of Engineers (USACE)

The following is a link to the USACE's permit website:

http://www.usace.army.mil/CECW/Pages/cecwo_reg.aspx

Section 404 Permit

Permits for Section 404 include environmental impact to Waters of the United States (including Waters of the State of Tennessee). The permit will either be "Nationwide" or "Individual" Permit, as describe below.

Nationwide Permits

This permit is required for environmental impacts to Waters of the United States (including Waters of the State of Tennessee). Many impacts are covered under previously issued general or **"Nationwide"** Permits (minor road crossings, categorical exclusions, bank stabilization, isolated waters and headwaters, etc.). TDEC ARAP permits **are required** to accompany most Nationwide Permits.

Individual Permits

Impacts to streams and wetlands considered Waters of the United States (including Waters of the State of Tennessee), not covered by one of the Nationwide permits require an **"Individual"** permit. These are generally impacts to streams or wetlands larger than 0.5 acres. TDEC 401 Water Quality Certification is required along with the Individual Section 404 Permits.

Section 404 – Federal Emergency Management Agency (FEMA) Requirements

All projects with either the Nationwide or Individual Section 404 Permits must conform to FEMA standards. If the roadway project is located within a flood study area where either base flood elevations or a designated floodway has been determined, contact the Hydraulic Design Section of the Structures Division for further guidance and design procedures on FEMA Study information.

The appropriate coordination information for Flood Study streams (i.e. "no-rise" certification and letter to corresponding officials, Conditional Letter of Map Revision (CLOMR), FEMA map name and number, FEMA Flood Insurance Study Name, etc.),

should be supplied to the Environmental Division by the Hydraulic Design Section of the Structures Division for the permit submission.

Additional information is needed from the Designer when projects impact Corps of Engineers reservoirs. This is typically when TDOT is acquiring right-of-way from the Corps of Engineers. Contact the Environmental Permits Office for affected reservoir elevations. The quantities of cut and fill, in cubic yards, are required within the affected reservoir elevations. If the project causes a loss of flood storage for the reservoir, an offset plan may be required. Once the Environmental Permits Office receives this information, the Designer will be informed of the appropriate Corps of Engineers official to contact for determining if an offset plan is necessary. This may require the purchase of additional right-of-way or additional design work on the subject reservoir or route.

Section 10 Permit

A Section 10 permit is required for streams considered navigable by the Corps of Engineers, but not covered by a Coast Guard Bridge Permit. With a Section 10 Permit, TDEC will require a 401 Water Quality Certification.

Coast Guard Bridge Permit

The following is a link to the Coast Guard's Bridge permit website:

http://www.uscg.mil/hq/cg5/cg5411/default.asp

This permit is required for projects which impact streams or rivers deemed navigable by the Coast Guard. TDEC will require a 401 Water Quality Certification with this permit.

Tennessee Valley Authority

The following is a link to TVA's permit website:

http://www.tva.gov/river/26apermits/

Section 26a Permit

A TVA Section 26a permit is required for all projects within the Tennessee River Watershed that may affect Waters of the United States, Waters of the State of Tennessee, and/or TVA administered public land. All impacts (except minor impacts) require a Section 26a permit which is an individual permit. Minor impacts will typically require a letter of "No-Objection" from TVA.

If a TVA Section 26a permit is required, the Hydraulic Design Section of the Structures Division shall provide an offset plan. Power storage and flood storage elevations may be obtained from the Hydraulic Design Section of the Structures Division.

Information Required for Submittal to Environmental Division for Permit Processing

The Designer shall prepare the permit sketches and applicable information including half-size plans, vicinity map, a table listing the environmental impacts, and project specific permit sketches. The project specific permit sketches identified in the Project Assessment shall also include a location map. The following is a detailed list of information required for submittal to the Environmental Division for permit processing:

1) The permit assessment will indicate the number of copies of half-size plans required for permit processing. The roadway plans shall be provided and should include:

   - Cover sheet with location map
   - Typical sections
   - Present and proposed layouts, including information contained in the ecology report, with:
     - Cut and fill slope lines
     - Streams and springs
     - Wetland boundaries
     - Proposed structures on streams
     - Open sinkholes and caves that will be filled in, undercut, and/or receive runoff from the project
     - Mitigation features (meanders in proposed relocated streams, and tree plantings for both relocated streams and wetlands, if indicated in the ecology report)
     - Information on how in-stream work will be separated from flowing water and specific engineering details required for the contractor to build the project
   - Roadway profiles
   - Culvert sections of all culverts on streams
   - Erosion prevention and sediment control plans
   - Detour and construction access or haul roads (if they require temporary stream or wetland crossings) with streams

2) A vicinity map based on a color 7 ½-minute Quadrangle map, showing the stream crossings. The vicinity map shall be on an 8 ½ × 11-inch sheet. If the Quadrangle portion showing the project is larger than that which will fit on the 8½ x 11-inch sheet, it shall be divided into 8½ x 11-inch segments and labeled with match lines. The vicinity map shall provide the following information:

   - Proposed alignment
   - Scale shall be indicated graphically
   - Circle the stream crossings, and other impacts such as wetland fills, sinkholes, caves, and structure locations
   - Label the station of each crossing
   - Label the location and stations of the project termini and the construction limits of the roadway project
   - Date prepared (and date of latest revision)
   - Contour interval
   - North arrow
   - An information block containing the following information:
     - The Tennessee Department of Transportation shall be identified as the applicant
     - The Quadrangle sheet name and number
     - Preliminary Engineering number

- Project Identification Number (PIN)
- Route number and name
- Official project description
- County
- Nearest town or city

Figure 3-8 is an example Vicinity Map required for submittal with the permit sketches.

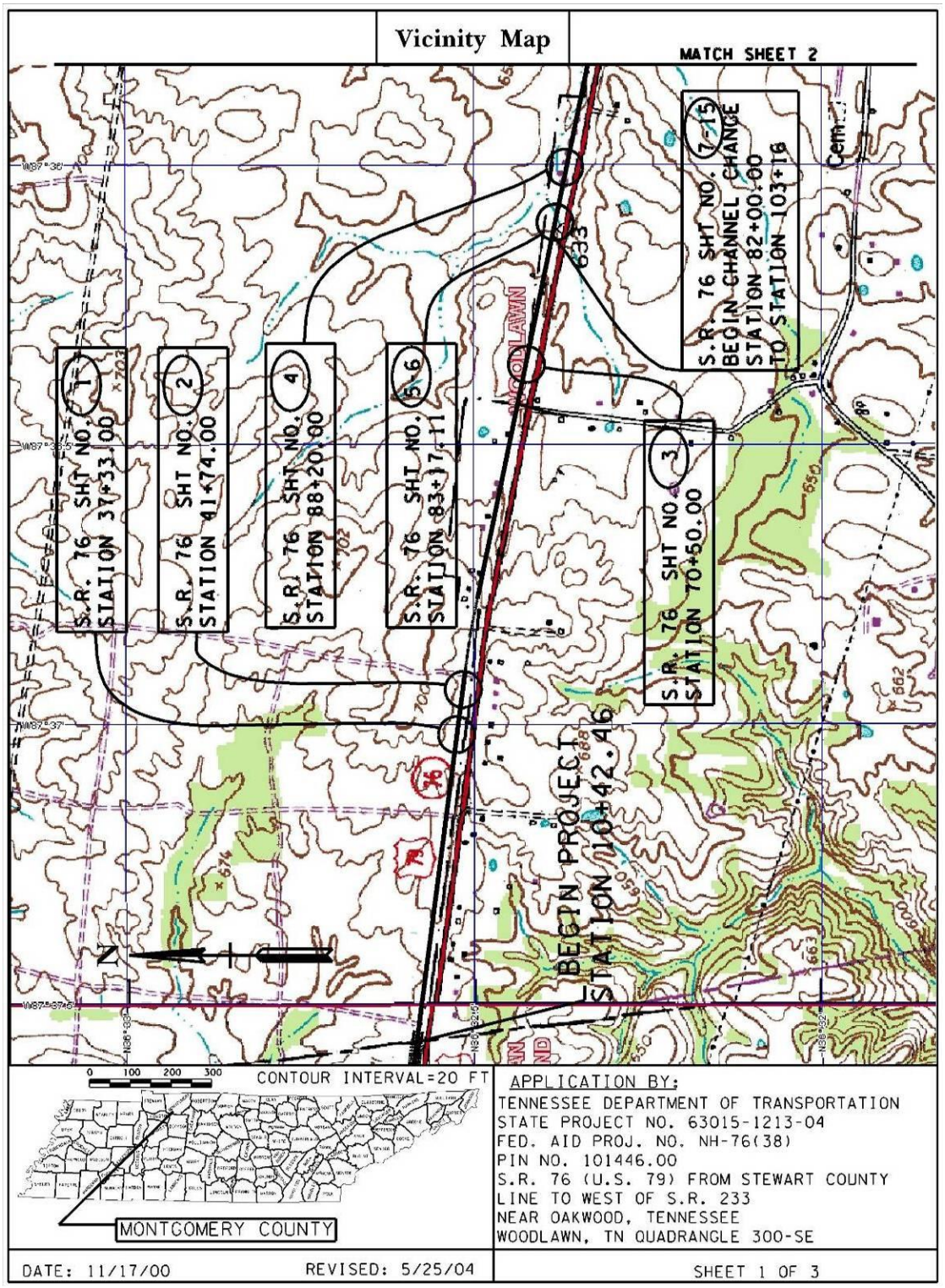


Figure 3-8
Example Vicinity Map

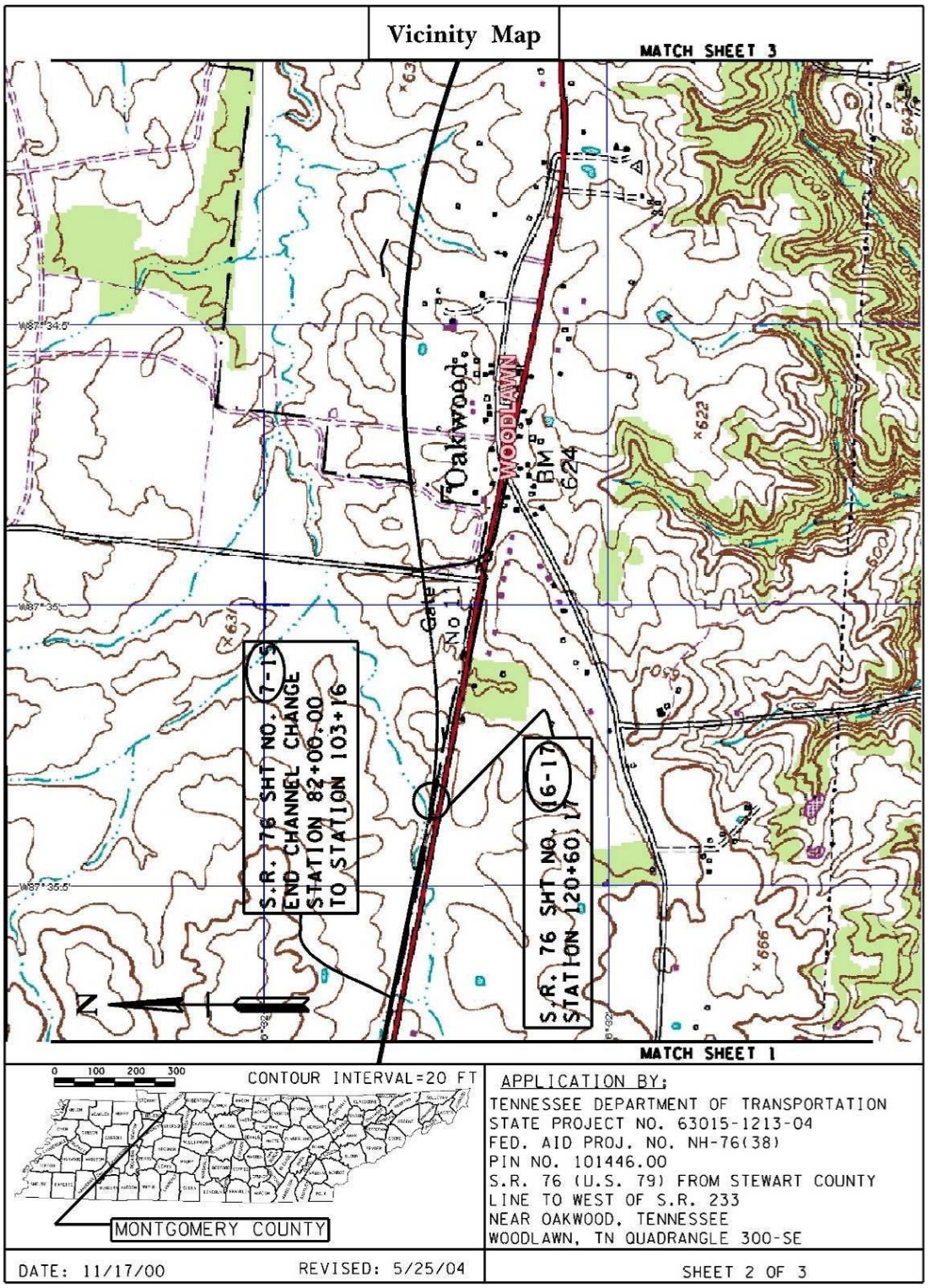


Figure 3-8 (continued)
Example Vicinity Map

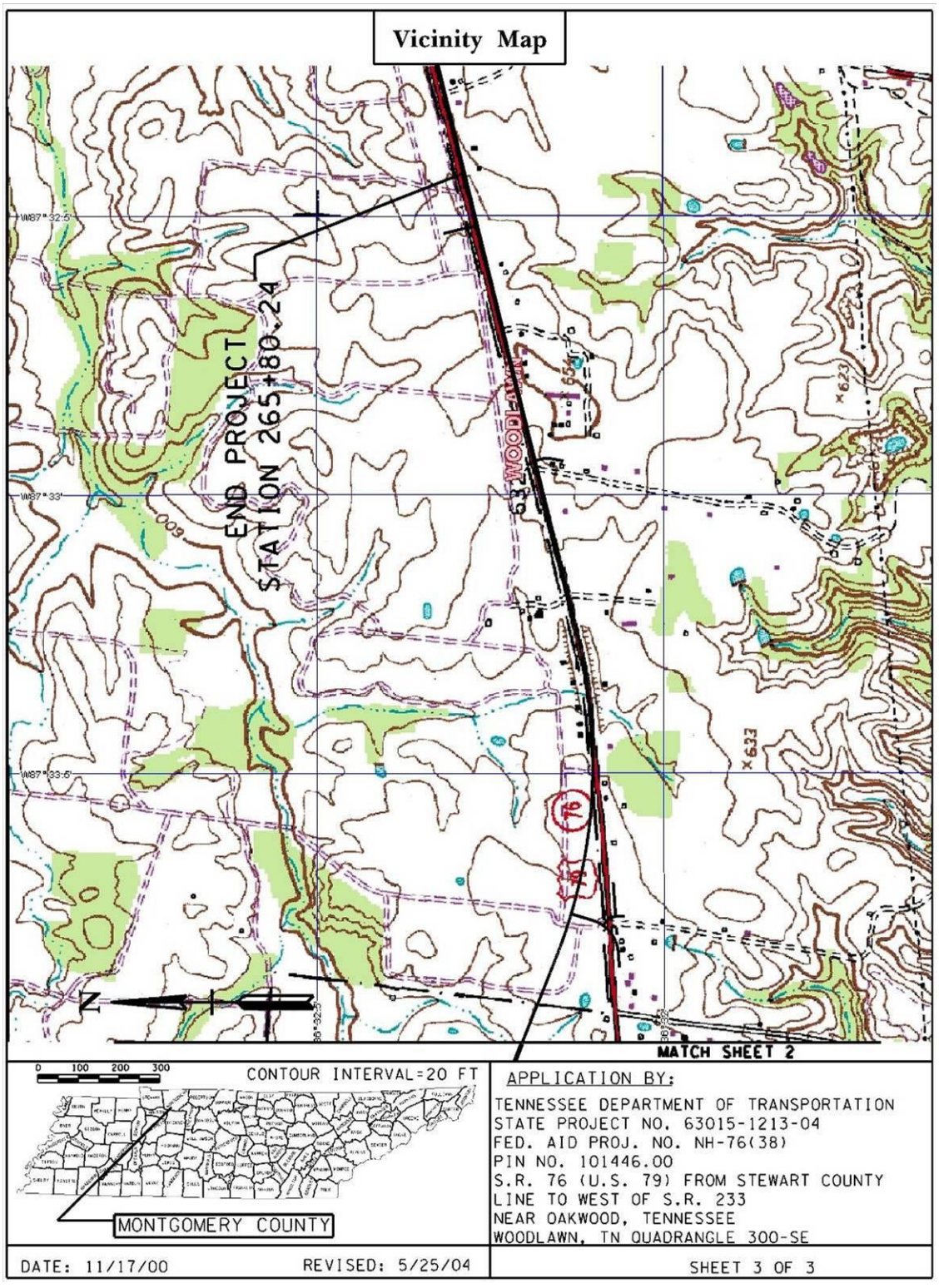


Figure 3-8 (continued)
Example Vicinity Map

3) Provide a table of environmental impacts listing the following:

- Station or range of stations of impact (i.e. STA. 65+20.00 or STA. 82+00 to 103+16)
- Feature impacted (wetland, channel, stream, etc.)
- Specific impact on the feature (wetland fill, channel change, stream relocation, etc.)

Figure 3-9 is an example of a table listing the environmental impacts for project.

S.R. 76 List of Enviromental Impacts

Table One

Station No.	Impact	Area in Acres	Feature Impacted
37+33	Wetland Fill	0.044	Isolated Wetland
41+74	Wetland Fill	0.065	Isolated Wetland
70+50	Wetland Fill	0.531	Isolated Wetland
88+20	Wetland Fill	0.008	Isolated Wetland

Station No.	Impact	Length in ft.	Feature Impacted
83+17.11	Culvert	297	Fletchers Fork Creek
82+00 to 103+16	Channel Changes	2116	Fletchers Fork Creek
120+60.17	Culvert	219	Fletchers Fork Creek

	Property Owner	Address
37+33	Jane Smith	556 Quali Hollow Road, Clarksville, Tn 55555
41+74	Jane Smith	556 Quali Hollow Road, Clarksville, Tn 55555
70+50	Jane Smith	556 Quali Hollow Road, Clarksville, Tn 55555
88+20	John Doe	555 Quali Hollow Road, Clarksville, Tn 55555
83+17.11	John Doe	555 Quali Hollow Road, Clarksville, Tn 55555
82+00 to 103+16	John Doe	555 Quali Hollow Road, Clarksville, Tn 55555
120+60.17	Jane Smith	556 Quali Hollow Road, Clarksville, Tn 55555

Figure 3-9
Example Table of Impacts

4) Provide permit drawings as required

Site specific permit drawings will be required for certain impacts. The purpose of the drawings is to provide the regulatory agencies with details of the impacts which can then be brought to the attention of the general public via the public notice process. The drawings shall be of a nature so as not to overwhelm the non-engineering public with technical information, yet specific enough to provide details of the environmental impacts and any on-site mitigation. Specific engineering details required for the contractor to build the project shall be detailed in the plans and included with the submission of material to the Environmental Division. Templates to be used in preparing permit sketches and location map can be found at:

https://www.tdot.tn.gov/PublicDocuments/\DesignDivision\assistant_engineer_design\design\v8maps\locationmaps.pdf

Location Map

A Location Map will be required for all permit drawing submittals. Where multiple impacts occur within a single project, a single location map shall be utilized that indicates each specific impact requiring permit sketches. In addition to the information required on the vicinity map, the following additional information will be required on the Location Map:

- Project site indicated on portion of county map
- County indicated on inset state map
- Location of all site-specific environmental impacts shall be indicated with station number
- Show proposed project alignment
- Scale shall be indicated graphically
- Label the beginning and ending stations of the proposed project
- Date prepared and date of latest revision
- North arrow
- An information block in the bottom right containing the following information:
  - The Tennessee Department of Transportation shall be identified as the applicant
  - The Preliminary Engineering (PE) number
  - Project Identification Number (PIN)
  - Route number and/or name
  - Project start location (“From”)
  - Project end location (“To”)
  - County
  - Sheet __ of __

Figure 3-10 is an example of a Location Map showing the necessary information.

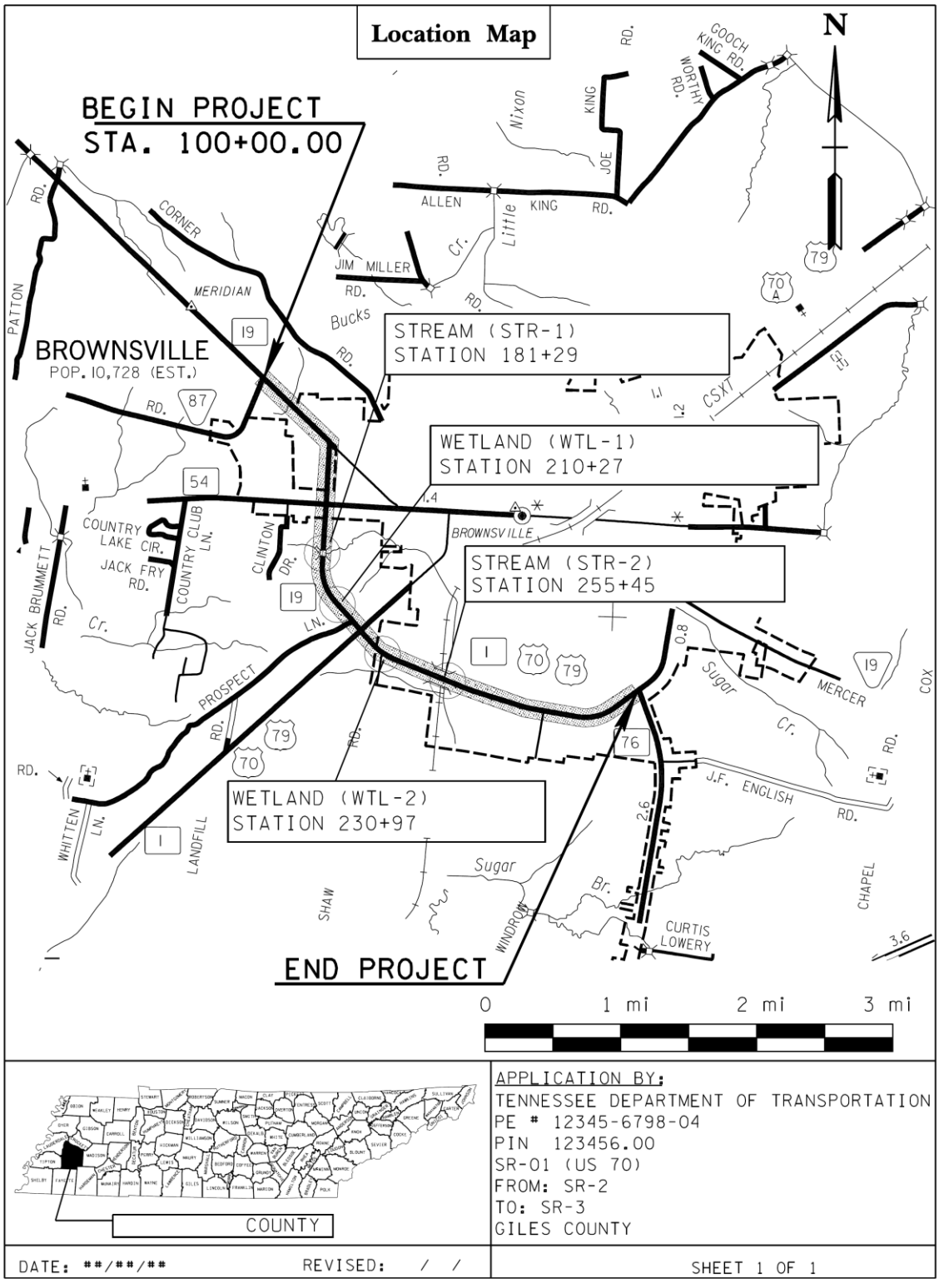


Figure 3-10
Example Location Map

English **Revised: 10/27/15**

General Permit Drawings

All permit drawings shall have the following general information (See "Permit Border Cell"):

- All maps and drawings shall be on 8½ x 11-inch reproducible paper
- Submit the fewest number of drawings necessary to adequately show the proposed activity. The orientation may be either portrait or landscape (portrait preferred).
- Since drawings must be reproduced by photocopying, color shading shall not be used. Drawings may show work as dot shading, or other similar graphic symbols. Only use hatching and cross-hatching for wetland impacts.
- A 1-inch margin shall be left at the top edge and left side for binding purposes
- A ½-inch bottom edge and right side border shall also be utilized
- The adjacent property owner's names and tract numbers labeled (A separate permit drawing listing the property owner's names, tract numbers and addresses of each impact may be required.)
- North arrow
- All drawings shall be to scale, and the scale shall be indicated graphically
- Roadway alignments, stationing, and tick marks adjacent to proposed impact
- Proposed right-of-way boundaries and all easements shown and labeled
- Buffer Zones where applicable
- Proposed cut and fill slope lines shown and labeled
- Turn off unnecessary levels so to minimize non-applicable information and avoid clutter
- An information block containing the following information:
  - The Tennessee Department of Transportation shall be identified as the applicant
  - The Preliminary Engineering (PE) number
  - Project Identification Number (PIN)
  - Route number and/or name
  - Project start location ("From:____")
  - Project end location ("To:_____")
  - Name of County
  - Sheet __ of __

In addition to the above general information, the following additional information will be required on the site specific permit drawings:

Channel Changes or Stream Relocation

The following information is required on permits for channel changes or stream relocations, alterations, or longitudinal encroachments (transitions of up to 50 feet on either end of a culvert are not included in this category):

- Beginning and ending stations of the stream impact along with the stream name or number (i.e. STR-3)
- Plan view of the stream relocation showing:
  - Location of and labeling the existing stream, relocated stream, channel changes, alterations or longitudinal encroachments
  - Proposed trees, meanders, deflectors, species, spacing, etc. for replacement of channel
- Typical cross-section of existing and proposed channel (to scale). The proposed channel dimensions shall match the existing channel dimensions as closely as possible. If channel widening is needed for high flow, contact the Technical Studies Office for an appropriate channel design. This shall also be shown on the proposed layout sheet in the plans.
- Any additional channel cross-sections necessary to show proposed channel geometry and proposed bank stabilization measures
- A Stream Impact Table providing existing and proposed length of stream
- Length of riprap and/or relevant features with the channel change. Riprap shall only be used in streams where absolutely necessary and when used the evidence to support its use shall be given (to prevent erosion, velocity, etc...)
- Notes specific to the mitigation or vegetative plantings (trees, etc.) and to the sequence of construction when necessary
- Estimated quantities table for specific plantings
- Any necessary planting details specific to the proposed mitigation
- Any other relevant features (to scale)

The Hydraulic Design Section of the Structures Division will perform the design of a channel change if the 50-year discharge exceeds 500 cubic feet per second at the downstream section of the proposed change.

Figure 3-11 is an example of a Permit Sketch required for a stream relocation.

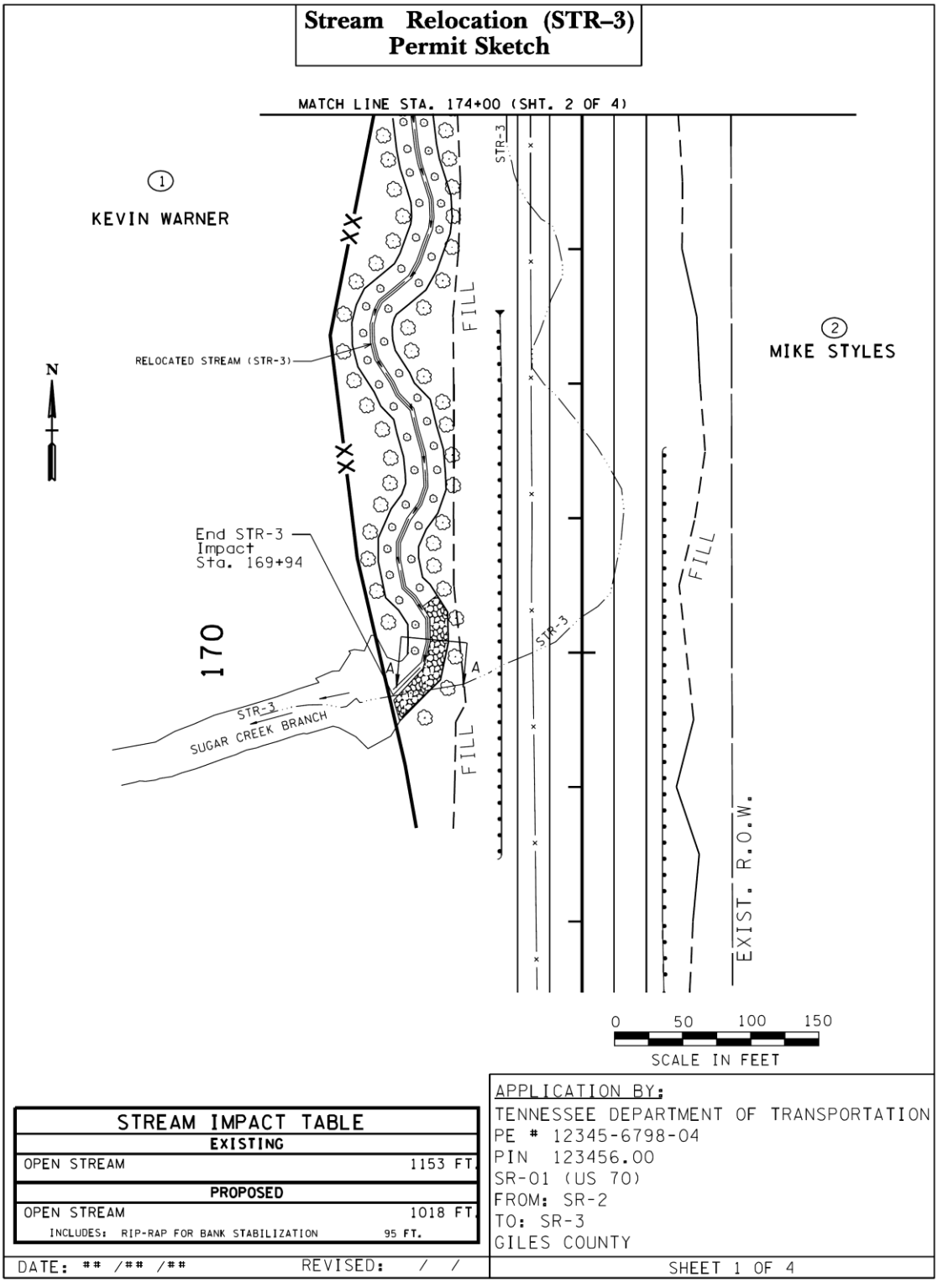


Figure 3-11
Example Channel Change Permit Sketches

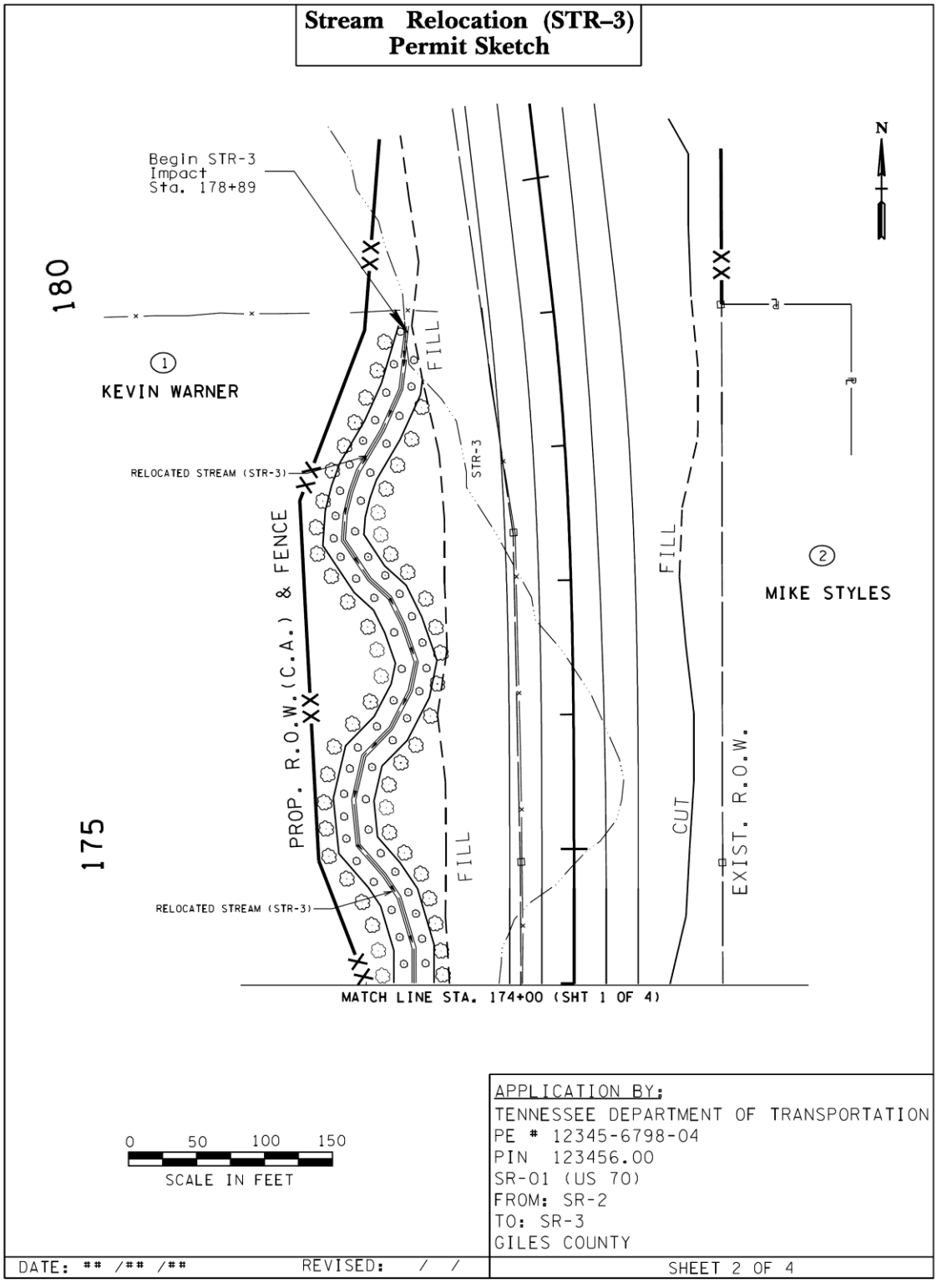
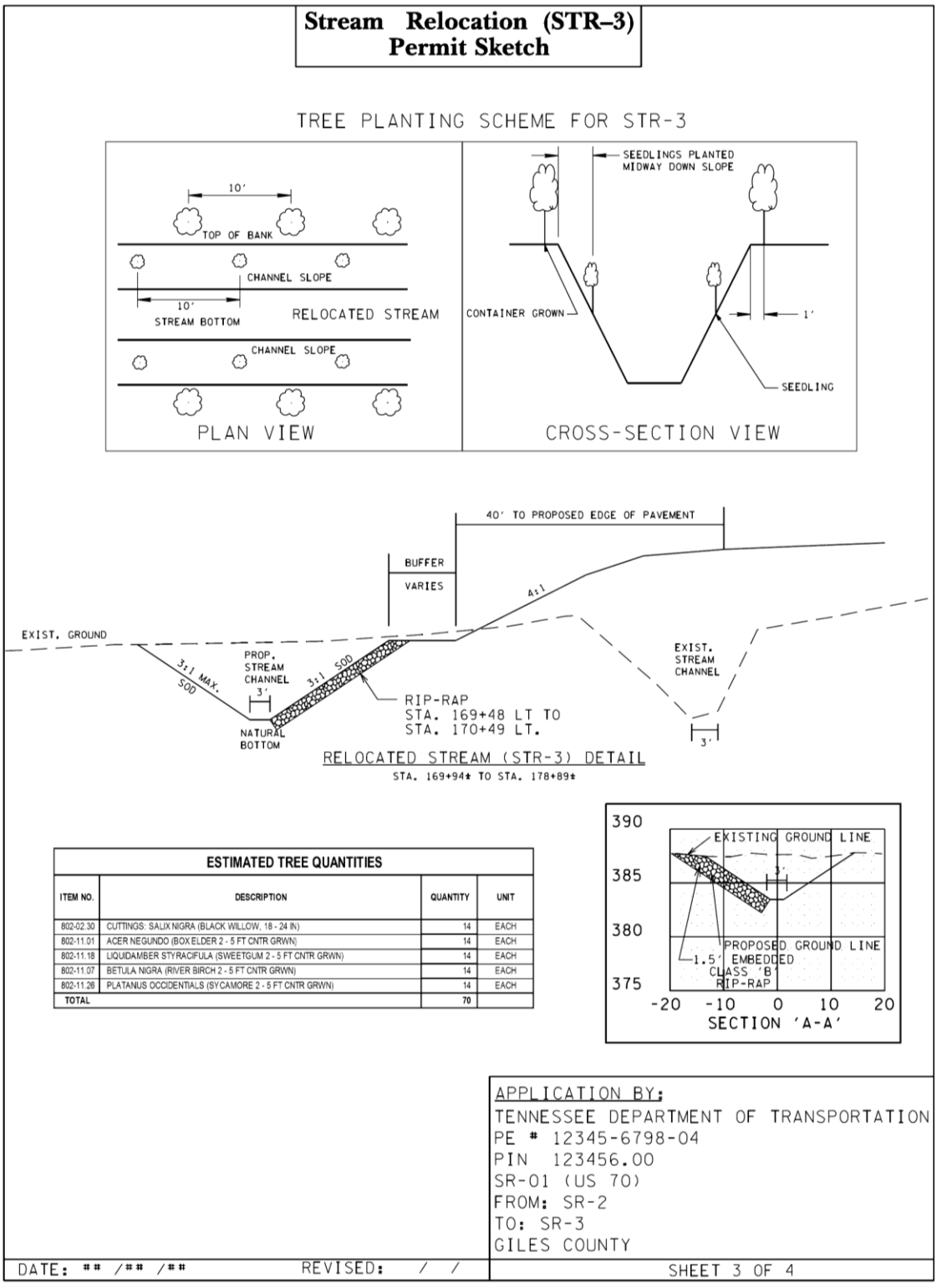


Figure 3-11 (continued)
Example Channel Change Permit Sketches



ESTIMATED TREE QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
802-02.30	CUTTINGS: SALIX NIGRA (BLACK WILLOW, 18 - 24 IN)	14	EACH
802-11.01	ACER NEGUNDO (BOX ELDER 2 - 5 FT CNTR GRWN)	14	EACH
802-11.18	LIQUIDAMBER STYRACIFULA (SWEETGUM 2 - 5 FT CNTR GRWN)	14	EACH
802-11.07	BETULA NIGRA (RIVER BIRCH 2 - 5 FT CNTR GRWN)	14	EACH
802-11.26	PLATANUS OCCIDENTIALS (SYCAMORE 2 - 5 FT CNTR GRWN)	14	EACH
TOTAL		70	

Figure 3-11 (continued)
Example Channel Change Permit Sketches

Stream Relocation (STR–3)
Permit Sketch

STANDARD STREAM MITIGATION :

1) IF THE RELOCATED CHANNEL FLOWS INTO A PROPOSED CULVERT, THE NEW CHANNEL SHALL BE RELOCATED PRIOR TO INSTALLATION OF THE CULVERT TO ENSURE CORRECT ELEVATION LEVELS ARE SET FOR THE INLET. THE NEW CHANNEL SHALL BE EXCAVATED AND STABILIZED DURING A LOW-WATER PERIOD. RIP-RAP (ONLY AS SHOWN ON PLANS), SEEDING OR SOD SHALL BE INSTALLED IMMEDIATELY FOLLOWING CHANNEL COMPLETION. TREES SHALL BE INSTALLED IN THE FIRST PLANTING SEASON FOLLOWING CHANNEL EXCAVATION. WATER SHALL BE DIVERTED INTO THE NEW CHANNEL ONLY AFTER IT IS COMPLETELY STABILIZED, AND ONLY DURING A LOW WATER PERIOD. STABILIZED MEANS THAT ALL SPECIFIED ROCK AND EROSION CONTROL BLANKET IS IN PLACE , AND SEEDING AND SOD ARE IN PLACE AND ESTABLISHED.

2) CHANNEL RELOCATION SEQUENCE
   A) FLAG EDGE OF THE NEW CHANNEL TOP OF BANK PRIOR TO CLEARING. DO NOT CLEAR LARGE TREES IN POSITION TO SHADE THE NEW CHANNEL. LEAVE AS MANY TREES AND SHRUBS AS POSSIBLE BETWEEN TOE OF THE NEW HIGHWAY SLOPE AND THE STREAM.
   B) EXCAVATE THE NEW CHANNEL 'IN THE DRY' BY LEAVING AREAS OF UNDISTURBED EARTH (DIVERSION BERMS) IN PLACE AT BOTH ENDS.
   C) SHAPE CHANNEL TO SPECIFICATIONS SHOWN. REMOVE LOOSE SOILS AND DEBRIS.
   D) PLACE TOPSOIL, EROSION CONTROL BLANKET, SEED AND SOD AS SPECIFIED.
   E) REMOVE DIVERSION BERMS, BEGINNING WITH THE MOST DOWN STREAM. BANKS AND BOTTOM ELEVATION OF THE OLD CHANNEL SHOULD TRANSITION SMOOTHLY INTO THE NEW CHANNEL. THE ELEVATIONS OF THE NEW CHANNEL BOTTOM AT EACH END OF THE RELOCATION SEQUENCE SHOULD MATCH THE ELEVATIONS OF THE EXISTING CHANNEL, AND A STEADY PERCENT SLOPE SHOULD BE MAINTAINED THROUGHOUT THE RELOCATED CHANNEL CENTERLINE OR AS SPECIFIED.
   F) INSTALL TREES ACCORDING TO STANDARD SPECIFICATIONS SECTION 802.

3) ONLY RIP-RAP SHOWN ON PLANS SHOULD BE USED IN THE RELOCATED CHANNEL REACH. ANY OTHER PROPOSED RIP-RAP SHOULD BE COORDINATED WITH THE ENVIRONMENTAL DIVISION.

4) REQUESTS BY ANY AGENCY THAT WOULD REQUIRE THE MODIFICATION OF CHANNELS, DITCHES, ELEVATIONS, RIP-RAP OR ANY OTHER STREAM MITIGATION ITEMS ASSOCIATED WITH THE CHANNEL RELOCATIONS SHALL BE REFERRED TO THE TDOT ENVIRONMENTAL DIVISION VIA THE HEADQUARTERS CONSTRUCTION OFFICE FOR THE COORDINATION WITH ALL AGENCIES AND TDOT DIVISIONS. THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION MAY MAKE RECOMMENDATIONS CONCERNING EROSION CONTROL VIA THE ENGINEER WITHOUT SUCH REFERRAL.

TREES:

1. NO SUBSTITIONS OF TREE SPECIES OR SIZES SHALL BE ALLOWED WITHOUT THE WRITTEN APPROVAL OF TDOT ENVIRONMENTAL DIVISION. TREES SHALL BE THE VARIETY REQUESTED AND FIRST QUALITY. NO CLONES OR CULTIVARS WILL BE ACCEPTED. ANY FOUND TO BE INCORRECT SPECIES, OR IMPROPERLY PLANTED, AT ANY TIME PRIOR TO TERMINATION OF THE CONTRACT SHALL BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE. STAKES AND WIRES SHALL BE REMOVED IMMEDIATELY PRIOR TO CONTRACT TERMINATION.UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
2. THE CONTRACTOR SHOULD ARRANGE SEVERAL MONTHS AHEAD OF TIME TO OBTAIN THE CORRECT TREE SPECIES, AS SOME MAY REQUIRE SOME TIME TO LOCATE.
3. TREES SHALL BE WATERED AS REQUIRED THROUGH THE PERIOD OF ESTABLISHMENT TO ENSURE SURVIVAL.

APPLICATION BY:
TENNESSEE DEPARTMENT OF TRANSPORTATION
PE # 12345-6798-04
PIN 123456.00
SR-01 (US 70)
FROM: SR-2
TO: SR-3
GILES COUNTY

DATE: ** /** /** REVISED: / / SHEET 4 OF 4

Figure 3-11 (continued)
Example Channel Change Permit Sketches

Stream Relocation with Structure

The following information is required on permit sketches for stream relocations that include a drainage structure as part of the relocation plan:

- Beginning and ending stations of the stream impact along with the stream name or number (i.e. STR-3)
- Plan view of the stream relocation showing:

- Location of and labeling the existing stream, relocated stream, channel changes, alterations or longitudinal encroachments, and relevant roadway features so as to locate stream work in relation to the roadway project.
- Proposed trees, meanders, species, spacing, etc…
- Length and size of structure(s) located along the stream relocation
- Length of riprap and/or relevant features with the channel change. Riprap shall only be used in streams where absolutely necessary and when used the evidence to support its use shall be given (to prevent erosion, velocity, etc...)
- Right-of-Way and easements, cut and fill slopes, and property owner names and tract numbers
  - Stream Impact Table indicating:
    - Length of existing open stream
    - Length of proposed open stream
    - Length of proposed riprap at outlet (where applicable)
    - Length and size of proposed structure
    - Total proposed post-project length
  - Typical cross-section of existing and proposed channel (to scale). The proposed channel dimensions should match the existing channel dimensions as closely as possible. If channel widening is needed for high flow, contact the Technical Studies Office for an appropriate channel design. This shall also be shown on the proposed layout sheet in the plans.
  - Any other additional channel cross-sections necessary to show proposed channel geometry and proposed bank stabilization measures
  - Typical cross-section of the structure (to scale) showing size, length, inverts, channel stabilization measures, and direction of flow
  - Notes specific to the mitigation or vegetative plantings (trees, etc.) and to the sequence of construction when necessary
  - Estimated quantities table for specific plantings
  - Any necessary planting details specific to the proposed mitigation
  - Any other relevant features (to scale)

Figure 3-12 is an example of the typical sketches required for a culvert longer than 200 feet.

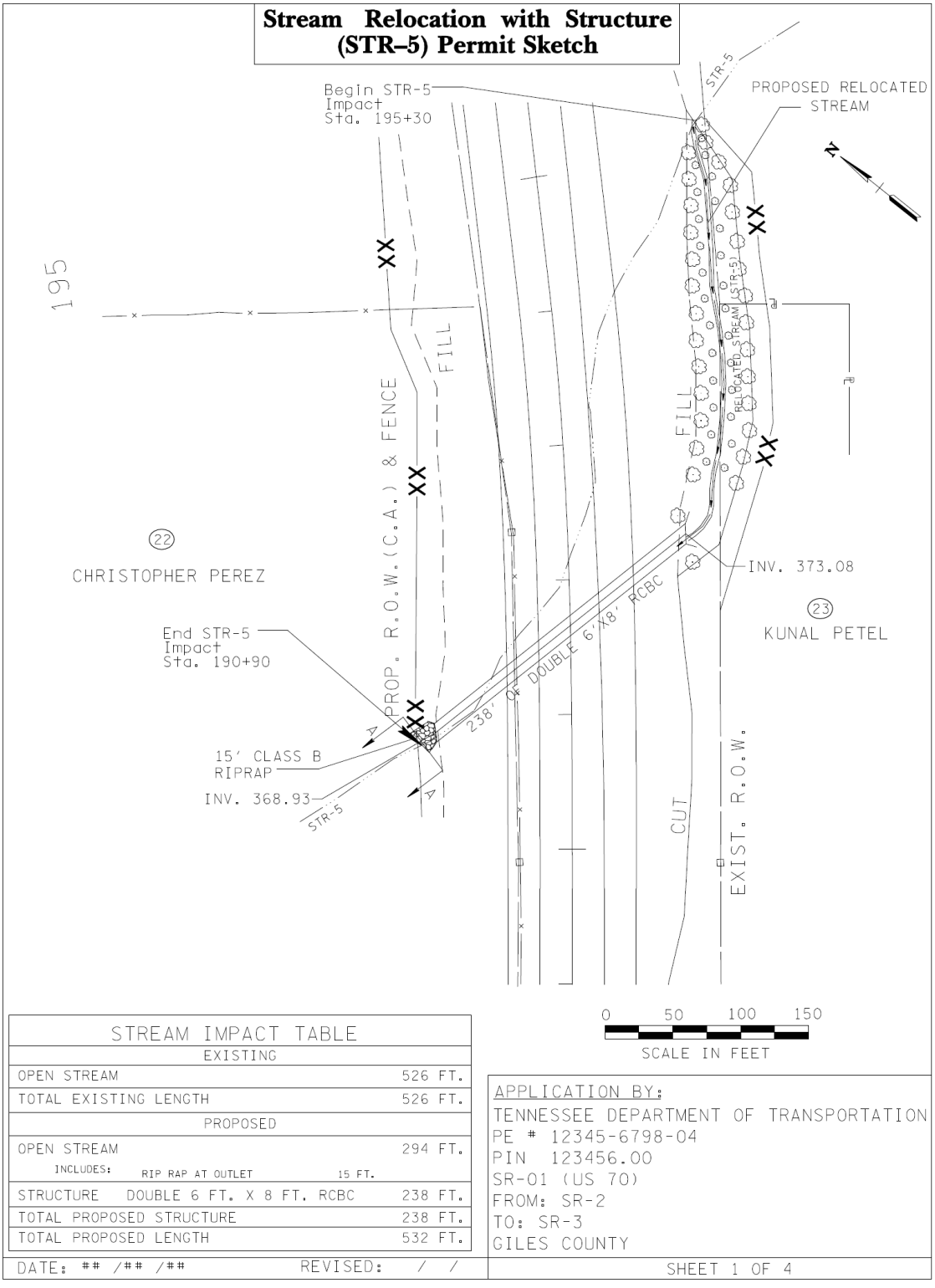


Figure 3-12
Example Permit Sketches for Stream Relocation with Structure

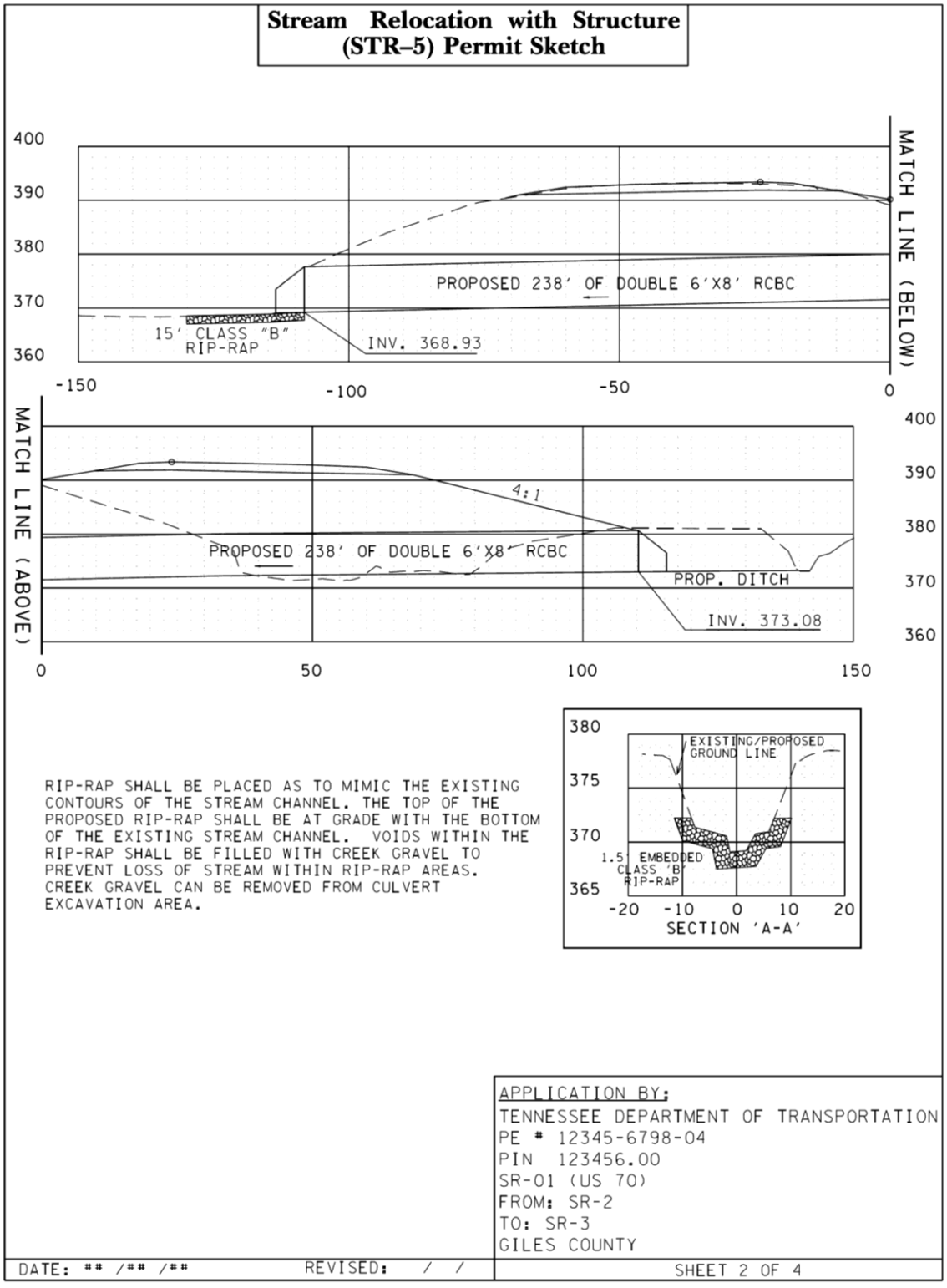


Figure 3-12 (continued)
Example Permit Sketches for Stream Relocation with Structure

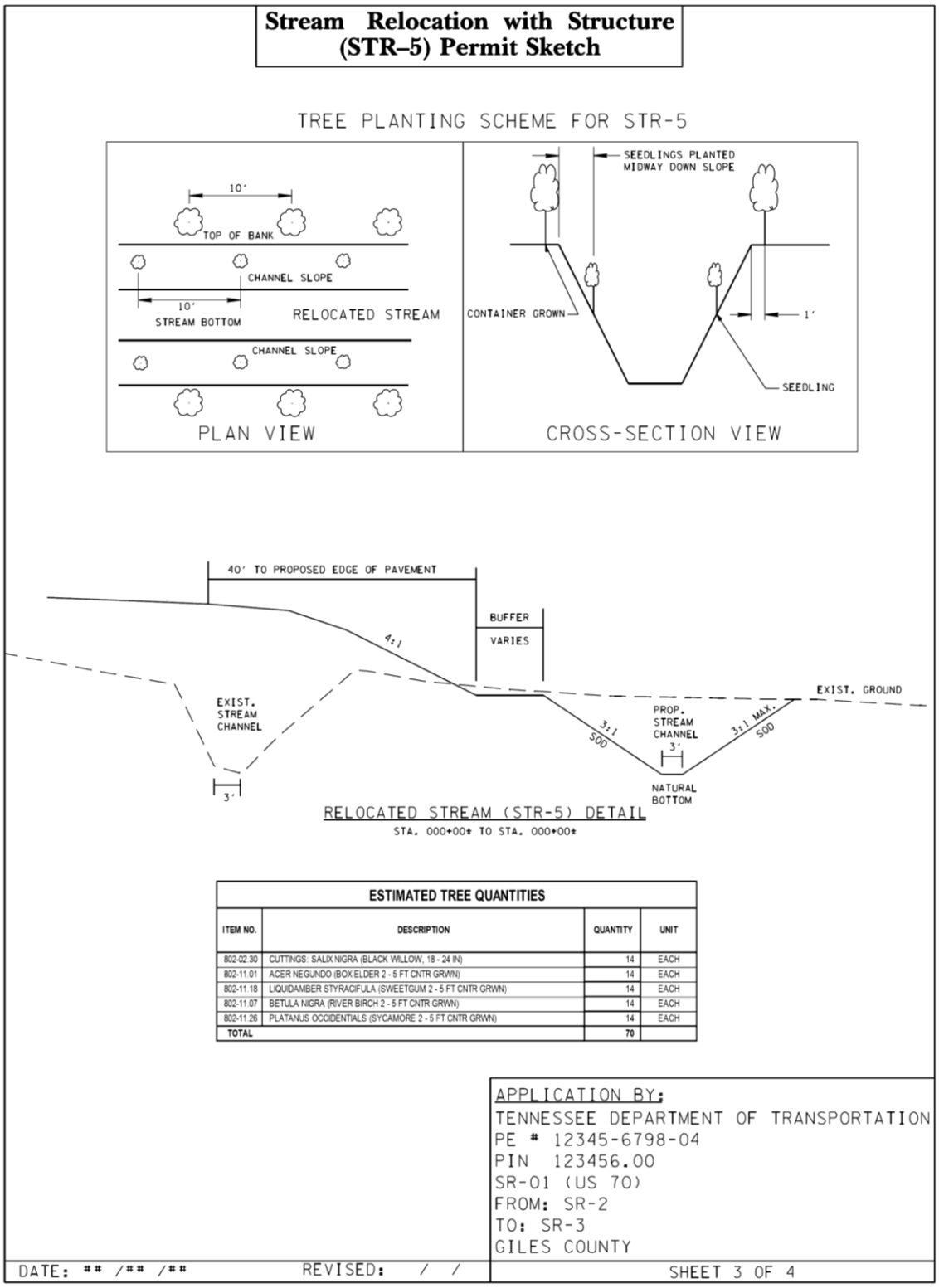


Figure 3-12 (continued)
Example Permit Sketches for Stream Relocation with Structure

Stream Relocation with Structure (STR–5) Permit Sketch

STANDARD STREAM MITIGATION :

1) IF THE RELOCATED CHANNEL FLOWS INTO A PROPOSED CULVERT, THE NEW CHANNEL SHALL BE RELOCATED PRIOR TO INSTALLATION OF THE CULVERT TO ENSURE CORRECT ELEVATION LEVELS ARE SET FOR THE INLET. THE NEW CHANNEL SHALL BE EXCAVATED AND STABILIZED DURING A LOW-WATER PERIOD. RIP-RAP (ONLY AS SHOWN ON PLANS), SEEDING OR SOD SHALL BE INSTALLED IMMEDIATELY FOLLOWING CHANNEL COMPLETION. TREES SHALL BE INSTALLED IN THE FIRST PLANTING SEASON FOLLOWING CHANNEL EXCAVATION. WATER SHALL BE DIVERTED INTO THE NEW CHANNEL ONLY AFTER IT IS COMPLETELY STABILIZED, AND ONLY DURING A LOW WATER PERIOD. STABILIZED MEANS THAT ALL SPECIFIED ROCK AND EROSION CONTROL BLANKET IS IN PLACE , AND SEEDING AND SOD ARE IN PLACE AND ESTABLISHED.

2) CHANNEL RELOCATION SEQUENCE
   A) FLAG EDGE OF THE NEW CHANNEL TOP OF BANK PRIOR TO CLEARING. DO NOT CLEAR LARGE TREES IN POSITION TO SHADE THE NEW CHANNEL. LEAVE AS MANY TREES AND SHRUBS AS POSSIBLE BETWEEN TOE OF THE NEW HIGHWAY SLOPE AND THE STREAM.
   B) EXCAVATE THE NEW CHANNEL 'IN THE DRY' BY LEAVING AREAS OF UNDISTURBED EARTH (DIVERSION BERMS) IN PLACE AT BOTH ENDS.
   C) SHAPE CHANNEL TO SPECIFICATIONS SHOWN. REMOVE LOOSE SOILS AND DEBRIS.
   D) PLACE TOPSOIL, EROSION CONTROL BLANKET, SEED AND SOD AS SPECIFIED.
   E) REMOVE DIVERSION BERMS, BEGINNING WITH THE MOST DOWN STREAM. BANKS AND BOTTOM ELEVATION OF THE OLD CHANNEL SHOULD TRANSITION SMOOTHLY INTO THE NEW CHANNEL. THE ELEVATIONS OF THE NEW CHANNEL BOTTOM AT EACH END OF THE RELOCATION SEQUENCE SHOULD MATCH THE ELEVATIONS OF THE EXISTING CHANNEL, AND A STEADY PERCENT SLOPE SHOULD BE MAINTAINED THROUGHOUT THE RELOCATED CHANNEL CENTERLINE OR AS SPECIFIED.
   F) INSTALL TREES ACCORDING TO STANDARD SPECIFICATIONS SECTION 802.

3) ONLY RIP-RAP SHOWN ON PLANS SHOULD BE USED IN THE RELOCATED CHANNEL REACH. ANY OTHER PROPOSED RIP-RAP SHOULD BE COORDINATED WITH THE ENVIRONMENTAL DIVISION.

4) REQUESTS BY ANY AGENCY THAT WOULD REQUIRE THE MODIFICATION OF CHANNELS, DITCHES, ELEVATIONS, RIP-RAP OR ANY OTHER STREAM MITIGATION ITEMS ASSOCIATED WITH THE CHANNEL RELOCATIONS SHALL BE REFERRED TO THE TDOT ENVIRONMENTAL DIVISION VIA THE HEADQUARTERS CONSTRUCTION OFFICE FOR THE COORDINATION WITH ALL AGENCIES AND TDOT DIVISIONS. THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION MAY MAKE RECOMMENDATIONS CONCERNING EROSION CONTROL VIA THE ENGINEER WITHOUT SUCH REFERRAL.

TREES:

1. NO SUBSTITIONS OF TREE SPECIES OR SIZES SHALL BE ALLOWED WITHOUT THE WRITTEN APPROVAL OF TDOT ENVIRONMENTAL DIVISION. TREES SHALL BE THE VARIETY REQUESTED AND FIRST QUALITY. NO CLONES OR CULTIVARS WILL BE ACCEPTED. ANY FOUND TO BE INCORRECT SPECIES, OR IMPROPERLY PLANTED, AT ANY TIME PRIOR TO TERMINATION OF THE CONTRACT SHALL BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE. STAKES AND WIRES SHALL BE REMOVED IMMEDIATELY PRIOR TO CONTRACT TERMINATION.UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
2. THE CONTRACTOR SHOULD ARRANGE SEVERAL MONTHS AHEAD OF TIME TO OBTAIN THE CORRECT TREE SPECIES, AS SOME MAY REQUIRE SOME TIME TO LOCATE.
3. TREES SHALL BE WATERED AS REQUIRED THROUGH THE PERIOD OF ESTABLISHMENT TO ENSURE SURVIVAL.

APPLICATION BY:
TENNESSEE DEPARTMENT OF TRANSPORTATION
PE # 12345-6798-04
PIN 123456.00
SR-01 (US 70)
FROM: SR-2
TO: SR-3
GILES COUNTY

DATE: ** /** /** REVISED: / / SHEET 4 OF 4

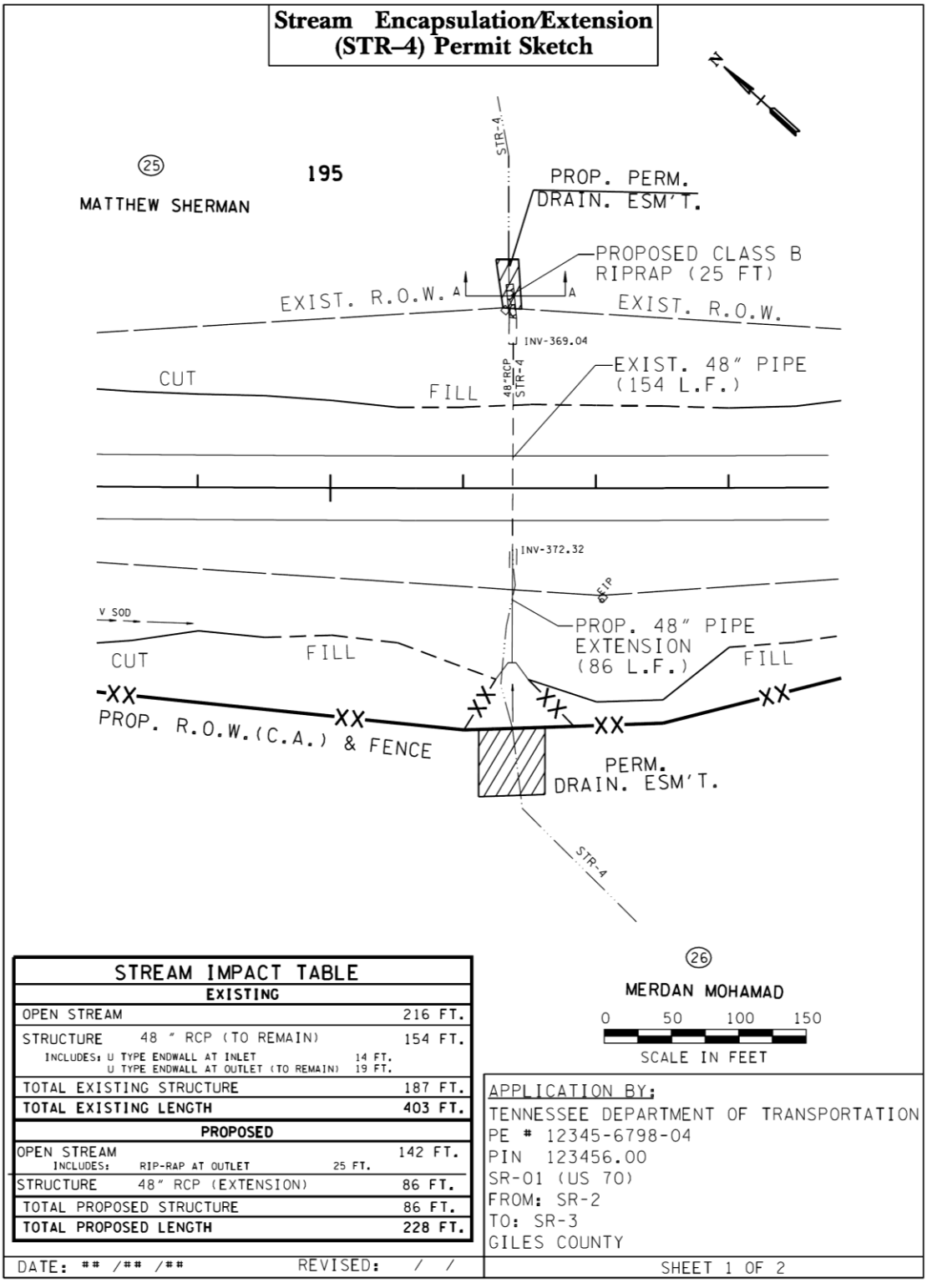
Figure 3-12 (continued)
Example Permit Sketches for Stream Relocation with Structure

Stream Encapsulation/Extension

The following information is required on permit sketches for a stream encapsulation with a new structure or a structure extension:

- Station or range of stations of the impact
- Plan view of impact area showing existing and proposed conditions (to scale) showing:
  - Existing and proposed structure size and length
  - Direction of flow
  - Drainage easements
  - Stream number or name
  - Riprap location shown graphically along with the riprap class and linear feet of riprap placement in the channel identified
  - A stream impact table providing existing and proposed stream and structure lengths, structure sizes, and end treatments
- Profile view of encapsulation or extension (i.e. culvert cross-section) showing existing and proposed conditions (to scale):
  - Existing and proposed structure size and length
  - Direction of flow
  - End treatments (i.e. endwalls, etc…) and inverts
  - Riprap location shown graphically along with the riprap class and linear feet of riprap placement in the channel
  - Hydraulic data table from roadway drawings
  - Notes specific to placement of any material into channel
  - Typical channel cross-section

Figure 3-13 is an example of the typical sketch required for a stream encapsulation with a structure extension.



STREAM IMPACT TABLE	
EXISTING	
OPEN STREAM	216 FT.
STRUCTURE 48 " RCP (TO REMAIN)	154 FT.
INCLUDES: U TYPE ENDWALL AT INLET 14 FT. U TYPE ENDWALL AT OUTLET (TO REMAIN) 19 FT.	
TOTAL EXISTING STRUCTURE	187 FT.
TOTAL EXISTING LENGTH	**403 FT.**
PROPOSED	
OPEN STREAM INCLUDES: RIP-RAP AT OUTLET 25 FT.	142 FT.
STRUCTURE 48" RCP (EXTENSION)	86 FT.
TOTAL PROPOSED STRUCTURE	86 FT.
TOTAL PROPOSED LENGTH	**228 FT.**

Figure 3-13
Example Permit Sketch for Stream Encapsulation/Structure Extension

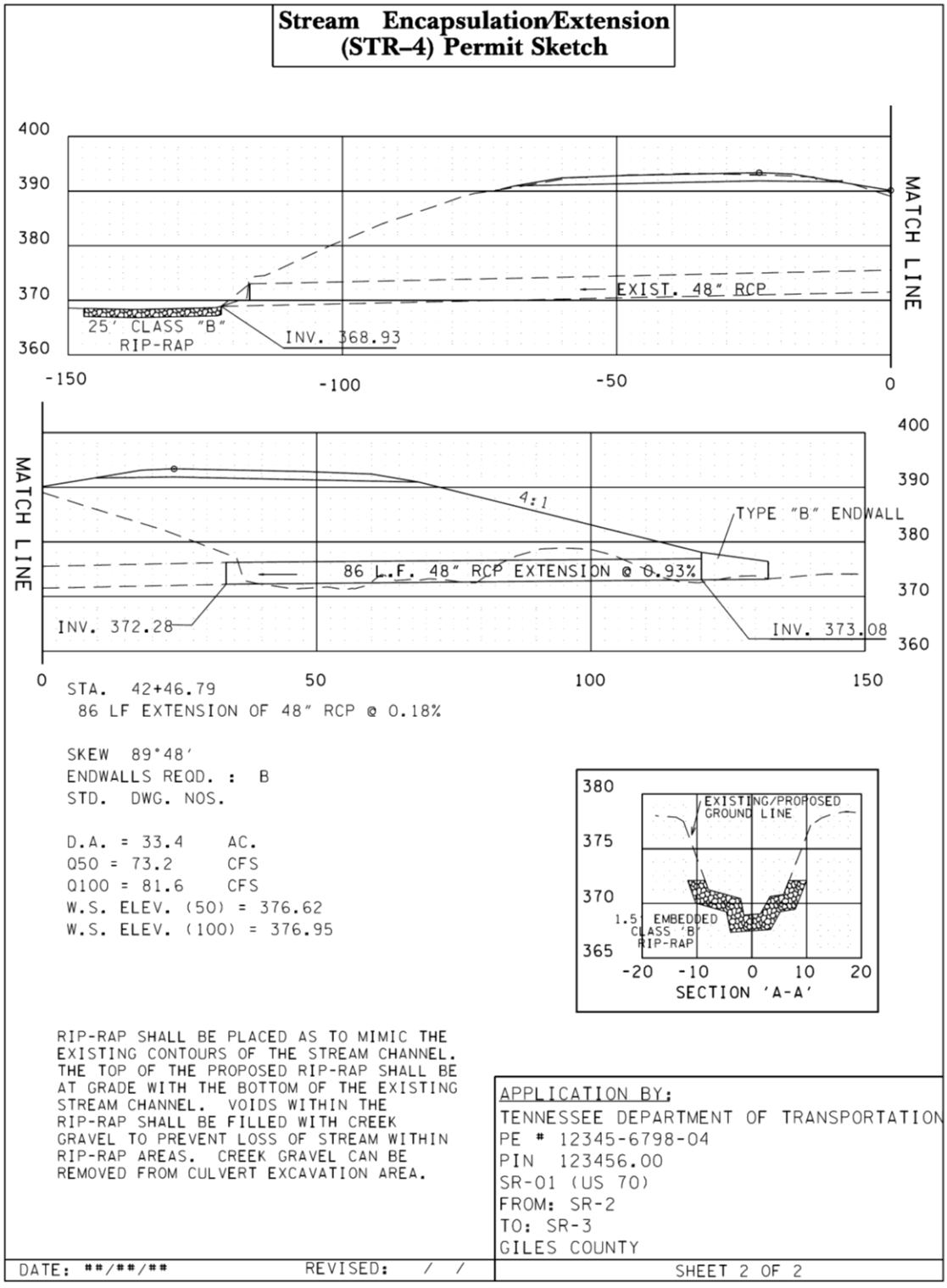


Figure 3-13 (Continued)
Example Permit Sketch for Stream Encapsulation/Structure Extension

Wetland Impacts

The following information is required on permit sketches for wetland impacts:

- Station or range of stations of the impact.
- Plan view of impact area showing:
  - Existing and proposed conditions (to scale)
  - Wetland Number identified (i.e. WTL-2, etc.)
  - Cross-hatch the permanent wetland impacts and hatch the temporary wetland impacts
  - Construction haul/access roads where applicable
  - Note indicating if a portion of the wetland is outside of TDOT Right-of-Way, easements, and/or not to be disturbed during construction
- Boundaries of the existing wetland shall be indicated even if the wetland extends past the Right-of-Way or easement lines.
- List all property owners that are directly impacted or adjacent to all wetland impacts.
- Notes regarding mitigation (tree, species, etc...) of wetland impact as indicated in the ecology report.
- Wetland Impact Table indicating:
  - Legend of hatching for the permanent and temporary wetland impacts
  - Area of the permanent and temporary wetland impacts in acres
  - Volume of the permanent and temporary wetland impacts in cubic yards (assume 1 foot depth)
- Notes specific to mitigation or vegetative plantings (trees, etc.).
- Estimated quantities table for specific plantings.
- Any necessary planting details specific to mitigation.

Figure 3-14 is an example of the typical sketches required for a wetland impact.

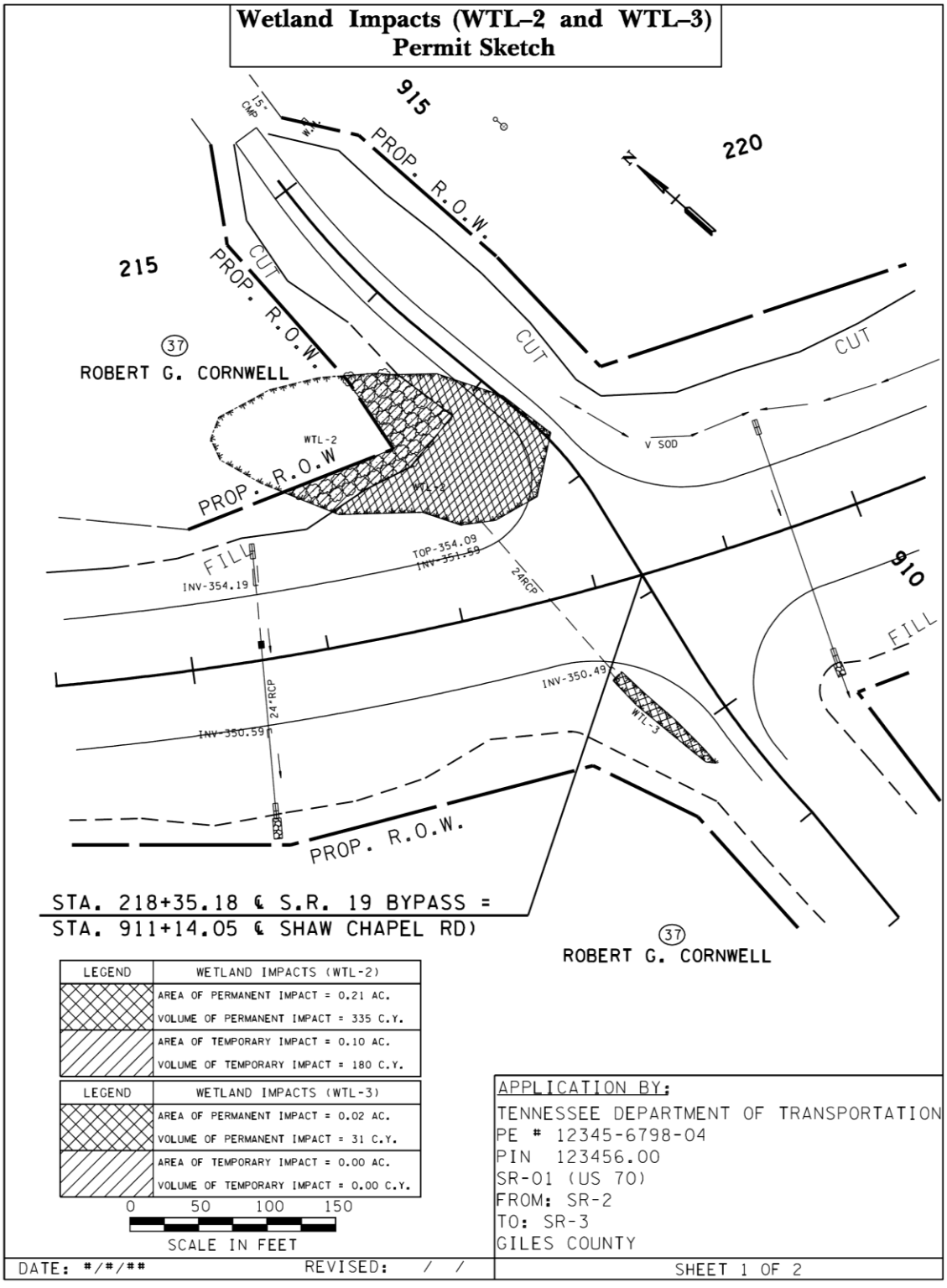


Figure 3-14
Example Permit Sketches for Wetland Impacts

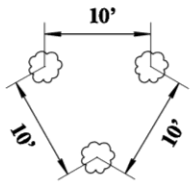
Wetland Impacts (WTL–2 and WTL–3) Permit Sketch

MITIGATION NOTES:
1. REMOVE THE TOP 12 INCHES OF TOPSOIL AND STOCKPILE IT UNTIL CONSTRUCTION IS COMPLETE.
2. ONCE CONSTRUCTION ACTIVITIES ARE COMPLETED, RESTORE ALL TEMPORARY WETLAND IMPACT AREAS TO PRE-CONSTRUCTION CONDITIONS. THIS INCLUDES REMOVING HAUL ROADS (IF APPLICABLE), RESTORING THE SITE TO THE ORIGINAL (PRE-CONSTRUCTION) ELEVATION AND SPREADING STOCKPILED TOPSOIL BACK OVER THE WETLAND SITE.
3. THE AREA OF TEMPORARY IMPACTS WILL BE STABILIZED ACCORDING TO STANDARD PRACTICES. PLANTING WILL BE BASED ON NOTES PROVIDED BY ECOLOGY
4. WETLAND AREAS LOCATED OUTSIDE OF PROPOSED RIGHT-OF-WAY AND CONSTRUCTION EASEMENTS ARE TO BE CLEARLY MARKED AND NOT TO BE DISTURBED.

TREES:
1. NO SUBSTITIONS OF TREE SPECIES OR SIZES SHALL BE ALLOWED WITHOUT THE WRITTEN APPROVAL OF TDOT ENVIRONMENTAL DIVISION. TREES SHALL BE THE VARIETY REQUESTED AND FIRST QUALITY. NO CLONES OR CULTIVARS WILL BE ACCEPTED. ANY FOUND TO BE INCORRECT SPECIES, OR IMPROPERLY PLANTED, AT ANY TIME PRIOR TO TERMINATION OF THE CONTRACT SHALL BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE. STAKES AND WIRES SHALL BE REMOVED IMMEDIATELY PRIOR TO CONTRACT TERMINATION.UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
2. THE CONTRACTOR SHOULD ARRANGE SEVERAL MONTHS AHEAD OF TIME TO OBTAIN THE CORRECT TREE SPECIES, AS SOME MAY REQUIRE SOME TIME TO LOCATE.
3. TREES SHALL BE WATERED AS REQUIRED THROUGH THE PERIOD OF ESTABLISHMENT TO ENSURE SURVIVAL.

ESTIMATED TREE QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
	Seedling (Red maple (Acer rubrum) 18" - 24" Ht, BR)		EACH
	Seedling (Sycamore (Platanus occidentalis) 18" - 24" Ht, BR)		EACH
	Seedling (White oak (Quercus alba) 18" - 24" Ht, BR)		EACH
	Seedling (Green ash (Fraxinus pennsycanica) 18" - 24" Ht, BR)		EACH
	Seedling (Black willow (Salix nigra) 18" - 24" Ht, BR)		EACH
TOTAL		0	



PLANTING DETAIL

APPLICATION BY:
TENNESSEE DEPARTMENT OF TRANSPORTATION
PE # 12345-6798-04
PIN 123456.00
SR-01 (US 70)
FROM: SR-2
TO: SR-3
GILES COUNTY

DATE: */*/** REVISED: / / SHEET 2 OF 2

Figure 3-14 (continued)
Example Permit Sketches for Wetland Impacts

Scenic River/Endangered Species

The following information is required on permit sketches for projects involving areas of concern such as the National Wild and Scenic River System, a State Scenic River, or waters designated as Outstanding National Resource Waters or projects where Endangered Species are affected or jeopardized.

- Station or range of stations of the impact
- Plan view of site indicating the area of concern
- Notes regarding mitigation of impact (when applicable)
- Name of the stream or surface waters
- Other relevant features (to scale)

Figure 3-15 is an example of the typical sketch required for a Scenic River Impact.

Bank Stabilization

The following information is required on permit sketches for bank stabilization:

- Station or range of stations of the impact
- Plan view of bank stabilization location
- Type of material to be used
- Typical cross-section of the bank stabilization (to scale)
- Longitudinal impact of the bank stabilization
- Any other relevant features (to scale)

Streams Containing Contaminated Sediments

The following information is required on permit sketches for streams containing contaminated sediments:

- Station or range of stations of the impact
- Plan view of site indicating the area containing contaminated sediments
- Type of material to be used to decontaminate the location
- Notes regarding mitigation of impact
- Other relevant features (to scale)

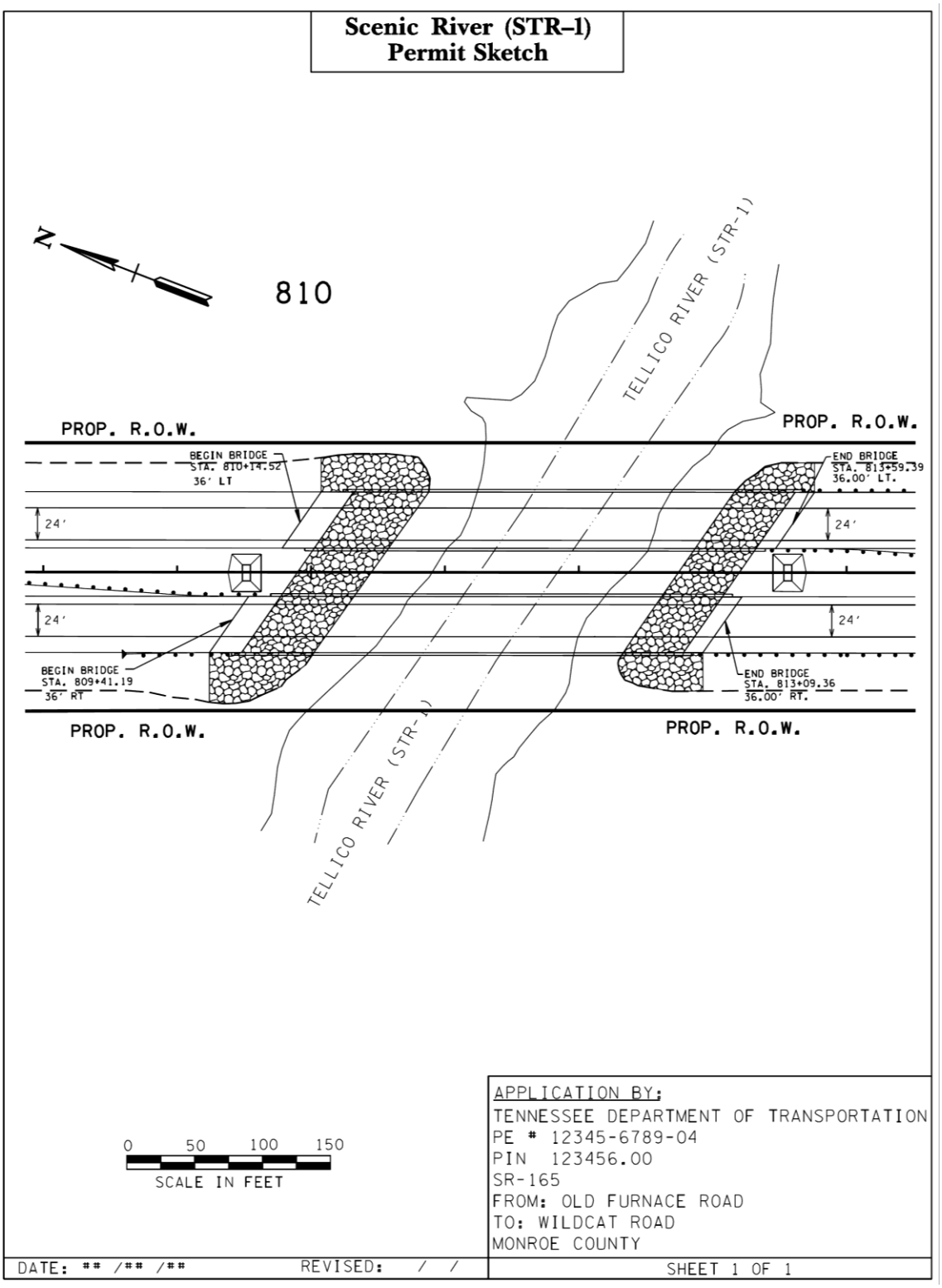


Figure 3-15
Example Permit Sketch for Scenic River Impacts

Application for Permit Approval

Once the Application for Permits is approved and submitted to the regulatory agency (TDEC, TVA, etc…) by the Environmental Division, an email will be sent to the Design Manager. Please note, if the regulatory agency disagrees with the Environmental Divisions assessment, the regulatory agency will request more information.

Figure 3-16 is an example email that will be sent to the Design Manager.

PE # 39945-1679-04
PIN 104395.00
SIA - Mt. Ararat Road
Serving Beech River Airport
Henderson County

Our office reviewed the above referenced project for a permit assessment (Activity 670-PPRM) and application (Activity 675-PPRM). We applied for Water Quality Permits on November 28, 2005 and no further information is needed at this time. If the regulatory agencies have specific requests, we will notify your office, as soon as possible, for any additional information that may be needed. If the plans change from the date of application, in areas shown as a stream on the quad map or listed as a stream in the ecology report dated July 22, 2005, please notify our office, as soon as possible, for further review.

Figure 3-16
Example Approved Application for Permits Notification Email

Table 3-4 identifies typical project activities for the permitting process required for a typical three mile grade and drain project with some environmental concerns. Table 3-5 identifies project activities for the permitting process required for a typical bridge and approach project. Some of the activities have designated Activity Numbers as designated in the Program Project and Resource Management Activities Manual. Please note the number of weeks may very per project due to unforeseeable delays. Activities which are identified in the Program, Project, and Resource Management Activities Manual are designated in Tables 3-4 and 3-5.

Grade & Drain Project Week No.	Roadway Design Division Description of Activity	Other Divisions Description of Activity
0	Design Begins. (Begin Activity No. 340)	
6	Designer sends plans to Structures Division for Grade Approval and to Environmental Division for locating Environmental Boundaries and to distribute plans to SWPPP Consultant. (End of Activity No. 340)	
7		Environmental Division to send Plans to SWPPP Consultant.
11		Structures Division sends Grade Approval to Roadway Design Division. (Activity No.345)
15		SWPPP Consultant to send Roadway Design Division information concerning highly impaired waters (if such are on project).
17	Design Manager Distributes Preliminary Field Review Plans and for Technical Studies. (Activity No. 365)	
18		Environmental Division starts reviewing plans for natural resources impacts etc. (Beginning of Activity No. 370) and sends Preliminary Plans to SWPPP Consultant.
21*	Design Manager Conducts Preliminary Field Review. (Activity No. 375)	SWPPP Consultant to provide comments at Preliminary Field Review.

Table 3-4
Typical Grade and Drain Project Timeline Including Permit Activities
Note: Number of weeks may vary. * Denotes project milestones

Grade & Drain Project Week No.	Roadway Design Division Description of Activity	Other Divisions Description of Activity
23	Design Manager Distributes Preliminary Field Review Report. (Activity No. 390)	
24		Environmental Division ends reviewing plans for natural resource impacts and provides: "Environmental Boundaries and Avoidance memoranda" to Design, Geotechnical and Structures Divisions. (End of Activity No. 370)
33*	Design Office Conducts Design Meeting. (Activity No. 400)	
44	Design Manager reviews Hearing Transcript & prepares Response Letter. Design Director reviews and approves Response Letter. Design Manager distributes Response Letter. Design Manager **notifies** Environmental Division of any alignment changes. (Activity No. 410)	
45		Environmental Division revises Environmental Document for any alignment changes and does any required field work necessary due to alignment shift.
53	Designer Completes ROW Plans Preparation (End of Activity No. 535) and Design Manager Distributes ROW Field Review Plans to Environmental Division for Environmental Permit Evaluation.	
54		Environmental Division Receives ROW Plans to develop Mitigation Plans (Activity No. 565) and sends ROW Plans to SWPPP Consultant.

Table 3-4 (continued)
Typical Grade and Drain Project Timeline Including Permit Activities
Note: Number of weeks may vary. * Denotes project milestones

Grade & Drain Project Week No.	Roadway Design Division Description of Activity	Other Divisions Description of Activity
56*	Design Manager Conducts ROW Field Review. (Activity No. 540)	SWPPP Consultant attends ROW Field Review.
60		SWPPP Consultant to send comments concerning EPSC Plan Sheets to the Roadway Design Division.
64	Designer to respond to all of comments from SWPPP Consultant.	
67	Designer begins Finalizing ROW Plans. (Beginning of Activity No. 585)	Environmental Division prepares Final Mitigation Plan. (Activity No. 570)
72	Designer Finalizes ROW Plans. (End of Activity No. 585)	
77	Designer Begins Refining ROW Plans. (Beginning of Activity No. 588)	Environmental Division Distributes Permit Assessment, with permit locations, and final mitigation design to Roadway Design Division. (Activity No. 670)
80*	Design Manager Distributes Final ROW and/or Utility Plans and Preliminary Estimate. (Activity No. 600)	
146	Design Manager Submits Permit Sketches and Plan Sheets to Environmental Division. (End of Activity No 575) *(** If there is a lag in the schedule due to other issues this should take place 12 months or 52 weeks prior to Letting Date*)	
147		Environmental Division to begin reviews of Permit Sketches and Plan Sheets and makes any request for adjustment to the appropriate Design Manager of Project. (Beginning of Activity No. 675)

Table 3-4 (continued)
Typical Grade and Drain Project Timeline Including Permit Activities
Note: Number of weeks may vary. * Denotes project milestones

Grade & Drain Project Week No.	Roadway Design Division Description of Activity	Other Divisions Description of Activity
159		Environmental Division to apply for Permits (End of Activity No. 675) notifies Roadway Design Division via email. *(**If there is a lag in the schedule to other issues this should take place 9 months or 39 weeks prior to Letting Date)*
180	Design Manager Distributes Constructability field Review Plans. (End of Activity No. 705)	Environmental Division sends Construction Plans to SWPPP Consultant.
183	Design Manager Conducts Constructability field Review. (Activity No. 710)	SWPPP Consultant comments concerning EPSC Plans to be included in report.
183	Design Manager informs Environmental Division (Permits) of any changes resulting from Construction Field Review that would require a permit application revision.	
185	Design Manager to Distribute Constructability field Review Report.	Environmental Division Obtains Permits. (End of Activity No. 680)
189	Design Manager Submits Final Roadway Plans w/estimate to Program Operation Office, Estimate Section. (End of Activity No. 715)	Environmental Division sends Final Roadway Plans to the SWPPP Consultant for the completion of the SWPPP.
198*		**CONTRACT LETTING**

Table 3-4 (continued)
Typical Grade and Drain Project Timeline Including Permit Activities
Note: Number of weeks may vary. * Denotes project milestones

Bridge & Approach Project Week No.	Roadway Design Division Description of Activity	Other Divisions Description of Activity
0	Design Begins. (Begin Activity No. 340)	
6	Design Manager sends Preliminary Plans to Structures Division for Grade Approval and to Environmental Division to distribute plans to SWPPP Consultant. (End of Activity No. 340)	
7		Environmental Division to send Plans to SWPPP Consultant.
11		Structures Division sends Grade Approval to Roadway Design Division. (Activity No. 345)
15	Roadway Design Division sends Preliminary Plans (that have received Grade Approval from Structures Division) to Environmental Division for Technical Studies. (Activity No. 365)	
20		Environmental Division conducts technical studies to verify environmental boundaries, wetlands, hazardous material, biological concerns, mitigation measures and/or commitments in plans are consistent with environmental document. Environmental Division provides Environmental Boundaries & Avoidance Memo. (Activity No. 370)
23		Structures Division provides Preliminary Bridge Layout to the Roadway Design Division. (Activity No. 490)
25	Roadway Design Division distributes ROW Plans for Preliminary/ROW Field Review and to the Environmental Division for the permit assessment process and for the SWPPP Consultant.	

Table 3-5
Typical Bridge and Approach Project Timeline Including Permit Activities
Note: Number of weeks may vary. * Denotes project milestones

Bridge & Approach Project Week No.	Roadway Design Division Description of Activity	Other Divisions Description of Activity
28*	Roadway Design Division conducts PREL/ROW Field Review. (Activity No. 540)	SWPPP Consultant to provide comments on the EPSC Plans Sheets to be included in Field Review Report.
30	Design Manager Distributes Preliminary/ROW Field Review Report.	
31		Environmental Division sends "Permit Assessment Report" to the Roadway Design Division. (Activity No. 670)
35*	Roadway Design Division distributes Final ROW and/or Utility Plans and Preliminary Estimate. (**this milestone is contingent on getting authorization for Right-of-Way Funding) (Activity No. 600)	
39	Roadway Design Division submits Permit Sketches and Plan Sheets to the Environmental Division. (Activity No. 575)	
40	Roadway Design Division prepares Construction Plans. (Activity No. 705)	Environmental Division to begins Review of Permit Sketches and Plan Sheets and makes any request for adjustment to the appropriate Design Manager of Project.
46		Environmental Division to apply for Permits and notifies Roadway Design Division via email. (Activity No. 675)
50	Roadway Design Division distributes Construction Prints.	Environmental Division sends Construction Plans to SWPPP Consultant.
53	Design Manager Conducts Construction Field Review. (Activity No. 710)	SWPPP Consultant comments concerning EPSC Plans to be included in Field Review Report.

Table 3-5 (continued)
Typical Bridge and Approach Project Timeline Including Permit Activities
Note: Number of weeks may vary. * Denotes project milestones

Bridge & Approach Project Week No.	Roadway Design Division Description of Activity	Other Divisions Description of Activity
53	Design Manager informs Environmental Division (Permits) of any changes from Construction Field Review that would require a permit application revision.	
55	Design Manager to Distribute Construction Field Review Report.	Environmental Division Obtains Permits. (Activity No. 680)
61	Design Manager submits Final Roadway Plans w/estimate to Program Operation Office, Estimate Section.	Environmental Division sends Final Roadway Plans to the SWPPP Consultant for the completion of the SWPPP.
70*		**CONTRACT LETTING**

Table 3-5 (continued)
Typical Bridge and Approach Project Timeline Including Permit Activities
Note: Number of weeks may vary. * Denotes project milestones

Permit Drawing Cells

The following cells shall be used for permit drawings and can be found in the TDOT Roadway Design Division's standard cell libraries (**STDS.CEL**):

- **PMLOCP** Permit drawing location map form (portrait)
- **PMLOCL** Permit drawing location map form (landscape)
- **PMSK** Permit drawing sketch form (portrait)
- **PMSKGR** Permit drawing sketch form (landscape with profile grid)

These cells can be accessed through the TDOT Roadway Design Division Microstation© interface on the "Permits and Forms" dialog. This dialog can be brought up through the TDOT drop down menu on the Microstation© title bar.

The latest versions of the standard cell libraries and programs to access them can be obtained on TDOT Roadway Design Division's CADD web page at:

https://www.tdot.tn.gov/PublicDocuments/\DesignDivision\assistant_engineer_design\design\v8\CADDV8.pdf

English **Revised: 10/27/15**

Plans Distribution Notification to the Environmental Division

For all projects requiring permits Table 3-6 shows the Environmental Division units that need notification that plans have been placed on FileNet.

1. Email notification at major milestones will include an email to the Director of the Environmental Division, Suite 900, James K. Polk Building. Refer to Table 3-6 for additional units in the Environmental Division that should be notified. This will eliminate printings and distributions for permit assessments and technical studies including archaeological, ecological, historical, and hazardous waste purposes.

2. The right-of-way field review plans shall include the proposed EPSC plan sheets. Quantity tabulations are not needed for the field review plans.

3. The plans submitted for permit application purposes shall include mitigation plans and EPSC sheets.

4. The Environmental Division will be responsible for requesting final construction plans from the print shop after plans are submitted.

Activity	Email Notification FileNet Distribution
Structural Grade Approval/Tech Studies Request	TDOT.EnvironmentalDoc@tn.gov Ecology.Plans@tn.gov
Preliminary Field Review	TDOT.EnvironmentalDoc@tn.gov Ecology.Plans@tn.gov Permits.FileNet.TDOT@tn.gov TDOT.Historians@tn.gov
Design Public Hearing/Meeting	TDOT.EnvironmentalDoc@tn.gov No prints required; however, notify Director of Environmental Division (by email) of any alignment changes.
Right of Way Field Review or combined Preliminary & ROW Field Review **Note:** Include all erosion prevention and sediment control plan sheets	TDOT.EnvironmentalDoc@tn.gov Ecology.Plans@tn.gov Permits.FileNet.TDOT@tn.gov
Permit Sketches **Note:** Includes any additional requirements as indicated by the Permit Assessment Report	Permits.FileNet.TDOT@tn.gov
Constructability field Review	TDOT.EnvironmentalDoc@tn.gov Ecology.Plans@tn.gov Permits.FileNet.TDOT@tn.gov
Final Construction Plans	TDOT.EnvironmentalDoc@tn.gov Ecology.Plans@tn.gov Permits.FileNet.TDOT@tn.gov

Table 3-6
Typical Plan Distribution

3-410.02 PLACEMENT OF TREES IN MITIGATION AREAS

Areas designated for tree planting for water quality impacts typically include restored or existing wetlands, channel changes, and when specified, areas around streams and the inlet and outlet areas at culverts. The Technical Studies Office in the Environmental Division shall be consulted to determine which areas require tree planting. All required tree planting must be located within the permanent right-of-way rather than in a drainage easement. Sufficient room shall be designated for the placement of trees and seedlings near culverts, channel relocations and along stream banks, or other mitigation features, within the right-of-way boundaries. These trees should be protected from disturbance during construction and from maintenance activities after construction. Within the approved permit, the regulatory agencies will specify how long and what percentage of survival is needed to satisfy the conditions of the specific permit.

All notes required by the Technical Studies Office, Environmental Division, or specified in the Ecology report must be placed in the final ROW plans for the permit applications.

3-410.03 TECHNICAL STUDIES COVER LETTER

The designer shall attach the NEPA Project Description Form (C:\Users\Public\Office Standards\TDOT Letters) to the plans when submitting plans to Environmental Division NEPA Section for technical studies (PPRM Activity 365).

3-411.00 GREEN SHEET CERTIFICATION LETTER

On projects that included environmental commitments the Green Sheet Certification Process shall be completed as listed below.

1. Environmental Division will distribute the Environmental Document, Right-of-Way Re-evaluation or Construction Re-evaluation including any Green Sheets to the Design Manager throughout the plans development phase.
2. The Designer shall take the environmental commitments shown on the Green Sheets into account when preparing the plans.
3. The Design Manager and a representative of Environmental Division, NEPA Section shall review the Green Sheet Commitments at the Constructability Field Review.
4. The Design Manager and Environmental Division Representative shall complete the Green Sheet Certification Letter (GSCL see Figure 3-16) at the PS&E Review once all environmental commitments have been addressed or an explanation as to why it will not be addressed has been determined and written on the GSCL.
5. The Design Manager shall email the signed GSCL to TDOT.EnvironmentalDoc@tn.gov.
6. Environmental Division will submit the GSCL with the final Environmental Document.

Green Sheet Certification Letter

Federal Construction Project Number _____
PIN #_____
County _____ Route_____
Project Description: _____
_____

I certify that the roadway plans include all items from the attached environmental "green sheet" other than those noted below.
Explanation:

_____ _____ _____
Name Title (Roadway Design Division)
Date

I certify that the roadway design plans for this project have been reviewed by Environmental Division staff and that all items shown on the attached green sheet, other than any items specifically explained above, are included in the plans.

_____ _____ _____
Name Title (Environmental Division) Date

Attachment
cc: _____, Project Manager

Figure 3-17
Green Sheet Certification Letter

3-412.00 DEMOLITION OF BUILDINGS

On any project in which the removal of a building is not accomplished during the Right-of-Acquisition phase of the project and is instead included in scope of the project the designer shall add the following special notes to the plans:

IF THE ASBESTOS SURVEY AND ABATEMENT IS NOT PART OF THE CONTRACT, THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE TDOT HAZARDOUS MATERIALS OFFICE TO VERIFY THAT AN ASBESTOS SURVEY HAS BEEN COMPLETED FOR ANY BUILDING TO BE REMOVED. IN THE CASE THAT NO SURVEY HAS BEEN COMPLETED THE CONTRACTOR SHALL COORDINATE WITH THE HAZARDOUS MATERIAL OFFICE IN SCHEDULING A SURVEY.

ASBESTOS-CONTAINING MATERIALS (ACM) ABATEMENT SHALL BE COMPLETED PRIOR TO ANY DEMOLITION ACTIVITIES FOR BUILDINGS INCLUDED IN THE PROJECT. ABATEMENT SHOULD BE ACCOMPLISHED PER SP202ACM SPECIAL PROVISION REGARDING REMOVAL OF ASBESTOS-CONTAINING MATERIALS. STATE OF TENNESSEE ASBESTOS ACCREDITATION REQUIREMENTS (TCA 1200-01-20) MANDATE THAT ACM ABATEMENT WORK BE PERFORMED BY AN ACCREDITED FIRM (CONTRACTOR) USING ACCREDITED ABATEMENT WORKERS AND SUPERVISORS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A NOTICE TO THE TDEC, DIVISION OF AIR POLLUTION CONTROL TEN (10) DAYS IN ADVANCE OF ANY ACM ABATEMENT OR DEMOLITION.

3-413.00 REMOVAL, REPAIR, OR REHABILITATION OF BRIDGES

On any project including the removal, repair or rehabilitation of an existing bridge (not including asphalt milling or paving) the designers shall add the following special notes to the plans:

THE CONTRACTOR SHALL VERIFY THAT AN ASBESTOS SURVEY HAS BEEN COMPLETED PRIOR TO ANY REMOVAL, REPAIR OR REHABILITATIONS ACTIVITIES (NOT INCLUDING ASPHALT MILLING OR OVERLAY).

ASBESTOS-CONTAINING MATERIALS (ACM) ABATEMENT SHALL BE COMPLETED PRIOR TO ANY REMOVAL, REPAIR OR REHABILITATION OF BRIDGE(S). ABATEMENT SHOULD BE ACCOMPLISHED PER SP202ACM SPECIAL PROVISION REGARDING REMOVAL OF ASBESTOS-CONTAINING MATERIALS. STATE OF TENNESSEE ASBESTOS ACCREDITATION REQUIREMENTS (TCA 1200-01-20) MANDATE THAT ACM ABATEMENT WORK BE PERFORMED BY AN ACCREDITED FIRM (CONTRACTOR) USING ACCREDITED ABATEMENT WORKERS AND SUPERVISORS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A NOTICE TO THE TDEC, DIVISION OF AIR POLLUTION CONTROL TEN (10) DAYS IN ADVANCE OF ANY ACM ABATEMENT, DEMOLITION, OR MAJOR REPAIR INVOLVING THE REMOVAL/REPLACEMENT OF A STRUCTURAL COMPONENT.