

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION



PROPOSAL CONTRACT

FOR THE CONSTRUCTION OF

Contract No. CNQ922

CUMBERLAND COUNTY

Project No. STP-101(21), 18038-3241-14 (PIN 100268.03)

The utility relocation on S.R. 101 from Firetower Road to east of Westchester Drive/Catoosa Boulevard.

Project Length - 5.300 miles

Completion Time - On or before 6/1/2017 (See Special Provision 108B)

The DBE goal for this contract is 3%.

AT AN ESTIMATED COST OF \$_____

By _____

City, St. _____

Surety _____

(June 18, 2012)
(December 12, 2012)
(June 14, 2013)

STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

INSTRUCTIONS TO BIDDERS

BIDS TO BE RECEIVED

April 1, 2016

Bids for the construction or maintenance of the following projects will be received via the Internet until 10:00 A.M. April 1, 2016, opened publicly in the Construction Division, Suite 700, James K. Polk Office Building, Nashville, Tennessee, 37243-0326 and posted to the Tennessee Department of Transportation Construction Division website <http://www.tn.gov/tdot/section/bid-letting> at that hour.

The proposed construction shall be performed in accordance with the Standard Specifications for Road and Bridge Construction of the Tennessee Department of Transportation, dated January 1, 2015, which are incorporated herein by reference and made a part hereof. In addition, only the Special Provisions contained within the applicable Contract Proposal will be considered binding. Any reference to the Standard Specifications dated prior to January 1, 2015 shall be disregarded. In addition, any reference to any Special Provision not contained within the applicable Contract Proposal shall be disregarded. All questions related to the Contract Proposal, Plans, Specifications or Special Provisions shall be directed to the Headquarters Construction Office (615-741-2414). Information received from other offices of the Tennessee Department of Transportation is strictly advisory.

IMPORTANT NOTICE TO BIDDERS:

Prospective bidders should read the following instructions carefully before submitting their bids. Special attention is called to the regulations of the Tennessee Department of Transportation (Department) that total bids, rather than unit prices, will be posted. Proposals shall be rejected as being irregular if they fail to contain a unit price for each item listed.

After a bidder has submitted a bid via Internet Bidding, he can withdraw it using the electronic bidding program up until the time set for the opening of bids.

On all projects which are financed in whole or in part by funds received through Federal agencies and other third parties, the awarding of contracts by the Department will be subject to approval by the party or parties through which funds are received. The Department reserves the right to reject any bid proposal which is not acceptable to any such third party set out above, although such bid proposal would otherwise qualify as the lowest and best bid under the Standard Specifications of the Department. It shall be the responsibility of the bidder to determine which projects are so financed in part by third parties, such information being available upon request from the Department.

The awarding of the contract or rejection of all proposals will be made within thirty (30) days after the bid opening. Upon award, a detailed letter of instructions will be forwarded along with appropriate documents to the low bidder.

The Tennessee Department of Transportation hereby notifies all bidders, that it will affirmatively insure that in any contract entered into pursuant to this advertisement, disadvantaged business

enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the basis of age, race, color, religion, national origin, sex or disability in consideration for an award.

The Tennessee Department of Transportation is an equal opportunity affirmative action employer, drug-free, with policies of nondiscrimination on the basis of race, sex, religion, color, national or ethnic origin, age, disability, or military service. For more information call: (615) 741-5996.

PREQUALIFICATION OF BIDDERS:

Each prospective bidder and subcontractor will be required to file a document entitled "Prequalification Questionnaire." The foregoing shall be filed on a form provided by the Department. The form must be filled out completely, and the truth and accuracy of the information provided must be certified by a sworn affidavit signed by an officer, partner, owner or other authorized representative of the applicant who has authority to sign contracts or other legal documents on behalf of the applicant. A prospective bidder must be prequalified by and in good standing with the Department prior to being given authorization to bid. A prospective subcontractor must be prequalified by and in good standing with the Department prior to being approved as a subcontractor. Each prospective bidder or subcontractor shall notify the Department if there is any subsequent change in the name, organization or contact information provided.

Prospective bidders' "Prequalification Questionnaire" shall be filed with the Department at least fourteen (14) days prior to the date of opening bids on any letting in which the applicant intends to submit a bid to the Department, or at least fourteen (14) days prior to the date on which the applicant requests approval as a subcontractor under a contract awarded by the Department. Bidders intending to submit proposals consistently shall complete and submit the prequalification application annually; however, this document may be changed during such period upon submission of additional favorable reports or upon receipt by the Department of substantiated evidence of unsatisfactory performance. The Department reserves the right to request additional information and documentation to clarify and/or verify any information submitted in an applicant's prequalification application.

The prequalification form can be found at the web address
<http://www.tn.gov/assets/entities/tdot/attachments/prequal.pdf>

PRIME CONTRACTOR LICENSING REQUIRMENTS

The Department shall require that all prime contractors, except mowing and litter removal contractors, are to be licensed with the State of Tennessee, Department of Commerce and Insurance (TDCI), Board for Licensing Contractors (BLC). The prime contractor must be licensed in the general classification (e.g. Heavy Construction (HC), Highway, Railroad, Airport Construction (HRA), Specialty (S), Municipal and Utility Construction (MU), or Electrical Contracting (CE)) for the type of work in the project which they will perform. Bidders may submit a proposal without having a license and will be considered for award for twenty-one (21) days after proposals are opened. If the Bidder does not have a license with the TDCI, on or before twenty-one (21) days after proposals are opened, the Bidder will be considered non-responsive and their proposal will be rejected.

SECRETARY OF STATE REQUIREMENTS

Title 48 of Tenn. Code Ann. requires all contractors and subcontractors that are domestic or foreign Corporations, Limited Liability Companies, Limited Partnerships, or Limited Liability Partnerships to be in good standing with the Secretary of State. This includes being duly incorporated, authorized to transact business, and/or in compliance with other requirements as

detailed by the Secretary of State. Please contact the Secretary of State should you have any questions at (615) 741-2286 or visit http://www.tn.gov/sos/bus_svc/index.htm.

The Department will not execute any contracts or approve subcontracts with contractors that are domestic or foreign Corporations, Limited Liability Companies, Limited Partnerships, or Limited Liability Partnerships, who are not in good standing with the Secretary of State (i.e. have a valid Certificate of Existence/Authorization). If a Bidder is not in good standing with the Secretary of State (i.e. have a valid Certificate of Existence/Authorization) on or before twenty-one (21) days after proposals are opened then the Bidder will be considered non-responsive and their bid will be rejected.

ISSUANCE OF BIDDING DOCUMENTS

All sales of bid documents, such as Plans, Bid Authorization, and Standard Specifications, must be paid at the time of purchase.

TDOT no longer issues hard copy Proposal Contracts and will only accept Internet bids and bid bonds. The Internet bid and electronic bid bond executed by the Contractor and their Surety will be considered as a complete bid and will be printed at the time of the letting. All requests for authorization to bid via the Internet using Bid Express must be submitted on the Bidding Authorization Form. This form is available at the web address http://www.tn.gov/assets/entities/tdot/attachments/Bid_Authorization_Form.pdf. Adobe Reader 8.0 or newer is needed to use this form. This form must be complete before authorization to bid is given. Bidding authorization will be obtainable until 4:00 P.M. the day before the letting. A charge of \$25.00 will be made for each authorized Proposal. Any bid submitted via the Internet that is not authorized will not be considered.

Addenda to the Proposal and amendments to the electronic bidding file will be posted on the Bid Express website. Addenda will be acknowledged by all bidders through the electronic bidding program. It is the bidder's responsibility to monitor the Bid Express website for Addenda until 4:00 P.M. the day before the letting. The bidder will not be notified by the Department unless Addenda are issued after 4:00 P.M. the day before the letting. Failure to acknowledge receipt of Addendum Letters or to apply any applicable amendments to the electronic bidding file is grounds for rejection.

Standard Specifications for Road and Bridge Construction, dated January 1, 2015, and Supplemental Specifications, are available for review and printing at the following site <http://www.tn.gov/tdot/article/transportation-construction-2015-standard-specifications>. The charge for Plans and/or Cross-sections can be found on the Plans Order form on the TDOT Construction website. This charge will be applicable before the letting and for three months after the letting. Plans ordered after the three month period will be furnished at \$2.00 per sheet. Individual Plan sheets and individual Standard Drawings will be furnished at \$2.00 per sheet. Tabulations of bids will be furnished at \$0.50 per sheet. Standard Drawing Books will be furnished at \$100.00 per book.

A sales tax of 9.25% will be added to the above charges when there is in-state delivery. There will be a minimum charge of \$2.00 on any purchase. All documents will be furnished without refund and transmitted at your risk.

When two or more contractors wish to bid together in a joint venture, each contractor will be required to make a written request for such a proposal to the Construction Division. This request shall be signed by an authorized signatory of each firm.

Requests for joint venture proposals may be made in person or by telephone. However, the proposal for said joint venture will not be issued until the request in writing, as set forth above, is received by the Construction Division.

ALTERNATE BID ITEMS

There will be projects that will have numerous alternates. The Contractor will be required to bid on only one alternate for each construction item. The proper procedure for entering alternate bids is to enter prices for the intended alternate item(s) of construction and leave the undesired alternate item(s) of construction blank.

SUBCONTRACTOR BIDDERS LIST

The apparent low bidder for each project must provide a list of all subcontractors who provided a quote to perform work. The list shall be provided electronically on the TDOT form "Certification Regarding Subcontractor Bid Quotes" (Bidders List). The apparent low bidder shall submit this form before the close of business (4:30 PM, Central Time) five (5) calendar days after the date on which bids are required to be submitted (e.g., if bids are required to be submitted on a Friday, then the completed form is due by 4:30 PM on the following Wednesday). Emergency contracts will not require a bidders list. Failure to complete and submit this form within the time period required may result in the rejection of the bid.

BID GUARANTY

Each bid must be accompanied by an electronic bid bond or a Cashier's or Certified Check made payable to the Department of Transportation or Irrevocable Letter of Credit naming the Department as beneficiary (for Mowing and Litter projects only) in an amount equaling not less than five percent (5%) of the amount bid.

If the bidder's bond is offered as guaranty, the bond must be submitted electronically via Internet Bidding, must be made by a surety company qualified and authorized to transact business in the State of Tennessee and must be acceptable to the Department.

If a check is offered as guaranty, the check must be in the Department's possession by 10:00 A.M. the day of the bid opening and must be attached to the signed Proposal Guaranty Form, which is available at the web address <http://www.tdot.state.tn.us/construction>. The check of the successful bidder will be cashable at the discretion of the Commissioner, pending the satisfactory execution and acceptance of the contract and the contract bond.

Mowing and Litter Projects Only: If an Irrevocable Letter of Credit is offered as guaranty, the Proposal Guaranty Irrevocable Letter of Credit Form must be signed by an authorized official of an authorized financial institution and in the Department's possession by 10:00 A.M. the day of the bid opening. The form is available at the web address <http://www.tn.gov/tdot/section/tdot-construction-division>.

John Schroer
Commissioner

The following information applies to Federal-Aid construction projects:

NOTICE TO ALL BIDDERS

To report bid rigging activities call:

1-800-424-9071

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m. eastern time. Anyone with knowledge of possible bid

rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

T A B L E O F C O N T E N T S

Instruction to Bidders

Supplemental Specifications to The Standard Specifications		Revision Date
Supplemental Specification to Section 100 -----		11/16/15
Supplemental Specification to Section 200 -----		11/16/15
Supplemental Specification to Section 300 -----		11/16/15
Supplemental Specification to Section 400 -----		11/16/15
Supplemental Specification to Section 500 -----		11/16/15
Supplemental Specification to Section 600 -----		11/16/15
Supplemental Specification to Section 900 -----		11/16/15

Special Provision Regarding:	Special Provision No.	Revision Date
Employing and Contracting with Illegal Immigrants -----	102 I	
Tennessee Department of Transportation Standard Specifications for Road and Bridge Construction -----	102 LC	03/30/15
Buy America Requirements -----	106 A	
Availability of Rights-of Way -----	107 C	
Water Quality & Storm Water Permits -----	107 FP	12/22/14
Project Specific Water Quality Permits		
Specialty Items -----	108 A	
Project Completion and Liquidated Damages -----	108 B	
Utility Specifications -----	790	
Equal Employment Opportunity -----	1230	
Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246) -----	1231	
Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246) -----	1232	10/19/12
Disadvantaged Business Enterprise Participation -----	1246	11/10/08
Required Contract Provisions (Federal-Aid Construction Contracts) -----	1273	05/01/12
Tennessee Department of Transportation Minimum Wage Scales For Federal-Aid Construction and State Funded Construction	1320	01/11/16
Federal Wage Rates		
State Wage Rates		
Proposal		
Proposal Certification		
Proposal Guaranty Bond		
Proposal Guarantee		
Contract		
Contract Payment and Performance Bond		

S T A T E

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T E N N E S S E E

SHEET 2 of 2

PROJECT NO. 18038-3241-14

(REV.03/28/16)

COUNTY CUMBERLAND

A T T E N T I O N

It shall be the bidders responsibility to confirm that the Contract Proposal contains all the documents indicated on the Table of Contents.

Should any omissions occur, the appropriate documents may be obtained from the Construction Division, upon request.

STATE

OF

TENNESSEE

January 1, 2015

(Rev. 3-30-15)

(Rev. 11-16-15)

Supplemental Specifications - Section 100

of the

Standard Specifications for Road and Bridge Construction

January 1, 2015

Subsection 102.11 (pg. 18), 3-30-15; Add the following to the second paragraph “The Department may retain the Proposal Guaranty, not as a penalty, but as liquidated damages in the event a bidder does not have a license at the time of award.”

Subsection 104.04 (pg. 27), 3-30-15; Add the following as the first full paragraph on page 27: “If a holiday falls on Saturday or Sunday, do not close lanes or restrict traffic from the preceding Friday at 6 am to the following Monday at 6 am.”

Subsection 105.06 (pg. 40), 3-30-15; Replace 2nd sentence of 1st paragraph with “The contractor must attend a preconstruction conference arranged by the Engineer.”

Subsection 109.01 (pg. 98-100) **11-16-15**; Measurement of Quantities, E. Weight Remove and replace the following:

The scales shall be checked by an independent certified scale company. The check shall be performed on a semiannual basis; January through June and July through December. The results shall be maintained onsite and made available for review to Departmental personnel. If deficiencies are reported, all corrections shall be performed, documented, and verified prior to supplying material for TDOT projects.”

Subsection 109.04 - C, 4 (pg. 106), 3-30-15; Replace c. “Idle or standby cost will be not be paid for more than 8 hours in a day or 40 hours in a week” with “Idle or standby cost will not be paid for more than 8 hours in a day or 40 hours in a week”.

STATE

OF

TENNESSEE

(Rev. 5-18-15)
(Rev. 11-16-15)

January 1, 2015

Supplemental Specifications - Section 200
of the
Standard Specifications for Road and Bridge Construction
January 1, 2015

Subsection 204.06 – 2 (pg.152-154), 5-18-15; Replace Tables 204.06 with the following:
1. General Use Flowable Fill

Table 204.06-2: Specification Limits for General Use Flowable Fill

Property	Specification Limit
Load Application (ASTM D6024)	24 hours maximum in any condition
Consistency	15 inches minimum tested as specified in this 204.06.B.1

Page 153

2. Excavatable Flowable Fill (EFF)

Table 204.06-3: Specification Limits for EFF

Property	Specification Limit
Air content (ASTM D6023)	Maximum 30% ⁽¹⁾
Load Application (ASTM D6024)	24 hours maximum in any condition
Consistency	15 inches minimum as tested per 204.06.B.1
Compressive strength (ASTM D4832) ⁽²⁾	30 psi minimum at 28 days

⁽¹⁾ When using air entrained mixture design

⁽²⁾ ASTM D4832 4 x 8 inch cylinder molds may be used. The preferred capping method to be used is wetsuit neoprene restrained in rigid retainers.

3. Early Strength Flowable Fill (ESFF)

Table 204.06-4: Specification Limits for ESFF

Property	Specification Limit
Air content (ASTM D6023)	Maximum 30% ⁽¹⁾
Load Application (ASTM D6024)	6 hours maximum in any condition
Consistency	15 inches minimum as tested per 204.06.B.1
Compressive strength (ASTM D4832) ⁽²⁾	30 psi minimum at 24 hours

⁽¹⁾ When using air entrained mixture design
⁽²⁾ ASTM D4832 4 x 8 inch cylinder molds may be used. The preferred capping method to be used is wetsuit neoprene restrained in rigid retainers.

Subsection 204.06 (pages. 153-154) 11-16-15; Delete the following sentence:

“2. Excavatable Flowable Fill -

“3. Early Strength Flowable Fill -

STATEOFTENNESSEE

(Rev. 11/16/15)

January 1, 2015

Supplemental Specifications - Section 300**of the****Standard Specifications for Road and Bridge Construction****January 1, 2015****Subsection 307.03** (pg. 246) 11-16-15; Modify the following:

B. Recycled Asphalt Pavement for Bituminous Plant Mix Base, Table 307.03-3

Table 307.03-3: Mixtures Using RAP

Mix Type	% RAP (Non-processed) ⁽¹⁾	Maximum % RAP (Processed) ⁽²⁾	Maximum % RAP Processed & Fractionated ⁽³⁾	Maximum Particle Size (inches)
307-ACRL	0	00	-	-
307-AS	0	00	15	-
307-A	15	20	35	1-1/2
307-B	15	30	35	1-1/2
307-BM	15	30	35	3/4
307-BM2	15	30	35	3/4
307-C	15	30	35	3/8
307-CW	15	30	35	1/2
307-CS	0	15	25	5/16

⁽¹⁾ "Non-processed" refers to RAP that has not been crushed and screened or otherwise sized prior to its use.

⁽²⁾ "Processed" refers to RAP that has been crushed and screened or otherwise sized such that the maximum recycled material particle size is less than that listed in Table 307.03-3 prior to entering the dryer drum.

⁽³⁾ "Fractionated" refers to RAP that has been processed over more than one screen, producing sources of various maximum particle sizes (e.g., 3/4 to 1/2 inch, 1/2 inch to #4, etc.). The Contractor may use

the larger percentages of fractionated RAP specified only if individual fractions of two different maximum particle size are introduced into the plant as separate material sources for increased control.

⁽⁴⁾ RAP for 307-AS must be processed in a manner such that the minimum particle size is no smaller than 3/4" prior to solvent extraction. For RAP containing gravel as coarse aggregate, the maximum allowable RAP content shall be 10%.

2. Recycled Asphalt Shingles (RAS) RAS may be included to a maximum of 3% of the total weight of the mixture.

Subsection 313.03 (pg. 273) 11-16-15; B. Bituminous Treated Permeable Base, Add the following sentence: "Recycled Asphalt Pavement (RAP) meeting the requirements of 307.03.B may be incorporated into asphalt treated permeable base up to 15% by weight of aggregate. RAP must be processed in a manner such that the minimum particle size is no smaller than 3/4" prior to solvent extraction. Treated permeable base mixtures containing RAP shall contain at least 65% virgin asphalt binder. For RAP containing gravel as a coarse aggregate, the maximum allowable RAP content shall be 10%"

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T E N N E S S E E

(Rev. 5-18-15)
(Rev. 7-13-15)
(Rev.11-16-15)

January 1, 2015

Supplemental Specifications - Section 400

of the

Standard Specifications for Road and Bridge Construction

January 1, 2015

Subsection 403.02 (pg. 285-286) 11-16-15; Bituminous Materials, add the following:
“Emulsified Asphalt, SS-1, SS-1h, CSS-1, CSS-1h, TST-1P, CQS-1h, CQS-1hp, TTT-1, TTT-2, TTT-3904.03”

Table 403.02-1: Tack Coat Application Temperatures

Material	Temperature Range
SS-1, SS-1h, CSS-1, TST-1P, CQS-1h, CQS-1hp and CSS-1h	60 to 140 °F
TTT-1	160 to 180 °F
TTT-2	120 to 160 °F
TTT-3	100 to 180 °F

Subsection 403.05 (pg. 286) 11-16-15; A. Emulsified Asphalt, Add the following paragraph at the end of the subsection:

“Take a minimum of 3 cores throughout the length of the project for informational tack coat shear testing. Include the underlying layer. Not required for mats less than one inch thick.”

Subsection 403.05 (pg. 287) 11-16-15;) B. Test Strip, modify the following:

“If placing the bituminous material upon a milled surface, apply the tack material at a rate of between 0.08 and 0.12 gallons of applied emulsion per square yard.”

Subsection 407.02 (pg. 300) 11-16-15; Materials, add the following at the end of the fourth paragraph:

“If anti-stripping additive, other than hydrated lime, meeting **921.06.B.1** is required, use approved in-line blending equipment, as specified in **407.04.A.6**, to add it at the mixing plant or inject it at the asphalt terminal. Provide manufacture’s documentation ensuring asphalt binders

will continue to meet requirements listed in Subsection **904** after anti-stripping additives are added.”

Subsection 407.06 (pg. 327), 5-18-15; - A. Pavers. Replace the entire first paragraph with the following:

“Bituminous pavers shall be self-contained, power-propelled units provided with an activated screed, equipped to be heated, and capable of spreading and finishing courses of bituminous plant mix material in lane widths applicable to the specified typical section and thickness shown on the Plans. All screed extensions shall be full assembly extensions, including activated and heated screeds. Pavers shall include throw-back blades, reverse augers, or equivalent to place mix beneath the auger gearbox. Auger extensions shall be incorporated in a manner such that the maximum distance from the augers to the end plate shall be 18 inches. Screed extensions may extend beyond the 18-inch maximum from auger extensions only when extending for short-term temporary deviations in pavement width such as driveways. Do not use strike-off boxes, with the exception of sections with continuously varying width.”

Subsection 407.15 (pg. 340) 11-16-15; C. Test Strips. Add the following paragraph after the 7th paragraph:

“Take an additional 3 cores after placement of the surface layer on the tack coat test strip described in subsection **403.05.B**. Include the underlying pavement layer for shear testing. These cores will be for informational testing only. Not required for mats less than one inch thick”

Subsection 407.20 (pg. 346) 5-18-15; Basis of Payment; B. Acceptance of Mixture; Modify the last paragraph as follows:

“When the total plan quantity of any mix is less than 1000 tons, the Department will accept the mix on the basis of visual inspection and Contractor Quality Control certification. The Department may run extraction, gradation analysis, or other tests deemed necessary for acceptance purposes.”

Subsection 407.20 (pg. 348) 11-16-15; Table 407.20 – 2, make the following change:

**Table 407.20-2: Acceptance Schedule of Payment
(Asphalt Plant Mix Characteristics)**

Characteristics	Pay Factor	Average Arithmetic Deviation of the Lot Acceptance Test from the JMF	
		1 Test	2 Tests or more
Asphalt Cement Content ⁽¹⁾	1.00	0.00-0.30	0.00-0.25
(Extraction or ignition oven)	0.95	0.31-0.35	0.26-0.30
	0.90	0.36-0.40	0.31-0.35
	0.80 ⁽²⁾	over 0.40	over 0.35
Gradation	1.00	0.00-6.50	0.00-5.70
3/8 inch sieve and larger	0.95	6.51-7.08	5.71-6.20
	0.90	7.09-7.66	6.21-6.69
	0.80 ⁽²⁾	over 7.66	over 6.69

Characteristics	Pay Factor	Average Arithmetic Deviation of the Lot Acceptance Test from the JMF	
		1 Test	2 Tests or more
Gradation	1.00	0.00-4.62	0.00-4.00
No. 4 sieve ⁽³⁾	0.95	4.63-5.20	4.01-4.50
	0.90	5.21-5.77	4.51-5.00
	0.80 ⁽²⁾	over 5.77	over 5.00

Subsection 407.20 (pg. 350) 11-16-15; B. 5. Acceptance for Mix Density on the Roadway, Replace the entire 2nd paragraph with the following:

“For density testing purposes, the Department will divide the pavement into lots of 1,000 tons. Five density tests will be performed in each lot and the average results compared with the requirements specified in Tables 407.15-1 to 407.15-4. At the beginning of a project or at any time it is deemed advisable, the Department may consider smaller lots to evaluate compaction methods or for other reasons as approved or directed by the Engineer.”

Subsection 411.03 (pg. 363) 11-16-15; 2. Recycled Asphalt Shingles (RAS), change the following: “Recycled Asphalt Shingles (RAS) may be included to a maximum of 3% of the total weight of mixture.”

Subsection 414.02 (pg. 369) 11-16-15; Materials, add the following paragraph:

“Ensure that no deleterious material is introduced into aggregate stockpiled at project site.” -

STATE

OF

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(Rev. 5-18-15)
(Rev. 11-16-15)

January 1, 2015

Supplemental Specifications - Section 500

of the

Standard Specifications for Road and Bridge Construction

January 1, 2015

Subsection 501.03 (pg. 395), 5-18-15; 3. Mix Design Submittal, Replace the first paragraph with the following: “Instead of the above mix design submittal, a request to use an existing design may be submitted for approval provided the design has been used on a state funded project within the last six (6) months. The approval of this concrete design submittal will not relieve the Contractor of the responsibility of providing concrete meeting the requirements of these Specifications. A temporary mix design may be issued if the 7-day or 14-day compressive strengths exceed the required 28-day strengths.”

Subsection 501.03 (pg. 399-402) 11-16-15; B. Quality Control and Acceptance of Concrete, adjust the following:

“1. Test to determine aggregate gradations (AASHTO T 27 with AASHTO T 11 when required). Conduct a combined belt gradation before work starts and at least daily to verify consistency if using a dynamic, multi-aggregate feed system.

3. Calibrate the weighing systems, aggregate feed flow rate and weigh bridges, water meters, and admixture dispensing systems before starting production.

4. Ensure accurate weighing or flow rate of the aggregates and cement, the proper metering of water and admixtures, and the quality of water.

6. Adjust mix proportions due to actual moisture content of both coarse and fine aggregates, with moisture content determined according to AASHTO T 255. If using a dynamic aggregate weighing system, multi-aggregate proportioning adjustments are to be made by using an in-bin moisture sensor.”

7. Conduct slump (AASHTO T119) or slump flow (ASTM C1611) and air tests (AASHTO T152).

Page 401- “Make, cure, and transport all early break cylinders (7-14 day, etc.) according to AASHTO T 23, and deliver to the Regional laboratory or other established satellite laboratories

for testing. **Make all early break cylinders (7-14 day, etc.) for self-consolidating concrete according to ASTM C1758, and deliver to the Regional laboratory or other established satellite laboratories for testing.**”

Page 402 - “Correct batch weights or aggregate feed flow rates to compensate for surface moisture on the aggregate at the time of use. The Contractor...”

Subsection 501.04 (pg. 402) 11-16-15; replace the following:

“A. Batching Plant, Multi-Aggregate Feed System, and Equipment,

1. General. The batching plant shall include bins, weighing hoppers or belt feeds with weigh bridges and load cells, and scales. If using cement in bulk,...

2. Bins and Hoppers- Add the following new paragraph under the existing paragraph

For multi-aggregate feed systems, provide bins as noted with variable size openings and variable speed belts. Each bin must have a calibrated moisture sensor to adjust aggregate feed flow rates. Assure consistent, uninterrupted aggregate flow and consistent belt speeds once aggregate feed system is calibrated.

3. Scales- Add the following new paragraph under the last paragraph in the section.

For multi-aggregate feed systems, provide a dual idler weight bridge with load cells to accurately weigh the actual aggregate flow rate.”

Subsection 501.04 (pg. 404) 11-16-15; B. Mixers, removed the complete 4th paragraph:
“

Subsection 501.17 (pg. 424) 11-16-15; A. Surface Testing, modify the following:

“3. Ramps where the design speed is greater than 40 miles per hour

(a) Test sections shall terminate 100 feet from a stop or slow speed yield condition

(b) Superelevated sections greater than 40 miles per hour design speed must be ground in accordance with **Table 501.17-1**

4. Ramps where the design speed is 40 miles per hour or less

(a) Test sections shall terminate 100 feet from a stop or slow speed yield condition

(a) Superelevated sections with a design speed of 40 miles per hour or less must be ground in accordance with **Table 501.17-2**

Subsection 501.17 (pg. 425) 11-16-15; B. Pay Factors and Required Corrective Action, modify the following:

“Payment factors and required corrective actions relative to profile indexes for ramps with design speeds of 40 MPH or less shall conform to Table 501.17-2.

Table 501.17-2: Pay Factors & Corrective Action for Ramps with Design Speeds of 40 mph or less

Profile Indexes	Pay Factor	Corrective Action
-----------------	------------	-------------------

<10 inches per mile	105%	None
10 to < 20 inches per mile	100%	None
20 to < 23 inches per mile	98%	Grind to 20 inches per mile
23 plus inches per mile	95%	Grind to 20 inches per mile

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STATE

OF

TENNESSEE

(Rev. 5-18-15)
(Rev.11-16-15)

January 1, 2015

Supplemental Specifications - Section 600

of the

Standard Specifications for Road and Bridge Construction

January 1, 2015

Subsection 604.02 (pg. 519) 11-16-15; C. 2nd paragraph, 1st sentence:

“Prior to construction, submit for approval shop drawings of the proposed precast structure and design calculations for any details which deviate from the standard box culvert drawings.”

Subsection 604.03 (pg. 522 and 523), 5-18-15; 2. Mix Design Submittal; Replace the first sentence of the last paragraph on page 522 with the following:

“Instead of the above mix design submittal, an existing design may be submitted for approval provided the design has been used on a state funded project within the last six (6) months.”

Subsection 604.03 (pg. 519-522) 11-16-15; A. Classification and Proportioning and Quality Assurance, modify the following:

“1a. Design and Production Parameters. Proportion the concrete based on a pre-determined minimum cement content, and a water-cement ratio that does not exceed the maximum shown in **Table 604.03-1**. Below this limit, adjust the quantity of water to meet the slump requirements. The fine aggregate shall not exceed 44% by volume calculation of the total aggregate, with the exception of slip formed Class A concrete incorporated into parapets and median barriers. For slip formed parapet and median barriers exclusively, the percentages of fine and coarse aggregate in an approved concrete mix design may be adjusted plus or minus 2%, such that the....

1b. Self-Consolidating Concrete (SCC) Design and Production Parameters. Proportion the concrete based on a pre-determined minimum cement content, and a water-cement ratio that does not exceed the maximum shown in **Table 604.03-4**. The fine aggregate shall not exceed 50% by volume calculation of the total aggregate volume. Maximum size of coarse aggregate shall not exceed a No. 67 stone. The Contractor may elect to use SCC as an alternate/option in replacement of Class A concrete.

Document mixture adjustments in the field book and daily concrete report. Ensure that the adjusted mix complies with all of the performance criteria specified in **Table 604.03-4**.

Table 604.03-4: Composition of Self-Consolidating Concrete

Class of Concrete	Min 28-Day Compressive Strength (psi)	Min Cement Content (pound per cubic yard)	Maximum Water/Cement Ratio (pound/pound)	Air Content % (Design \pm production tolerance)	Slump Flow (inches)
SCC (2,3,4,5)	3,000 ⁽¹⁾	564	0.45	6 \pm 1	25 \pm 4

(1) Or as shown on the Plans or approved shop drawings.

(2) Acceptance range for the T50 test in accordance with ASTM C1611 shall be between 2-7 seconds.

(3) Passing ability in accordance with ASTM C1621 shall be less than 2 inches for acceptance.

(4) Visual Stability Index (VSI) shall not exceed 1.0 as per ASTM C1611 for acceptance.

(5) Static segregation as measured by ASTM C 1610 shall not exceed 20%.

Include chemical admixtures in the self-consolidating concrete mixture as specified in Table 604.03-5 based on the ambient air temperature and expected weather conditions. Approved viscosity modifying admixtures (VMA) may be used as part of the chemical admixtures if they are shown in the approved mixture design.

Table 604.03-5: Use of Chemical Admixtures

Class of Concrete	Temperature less than 85 °F and falling	Temperature 85 °F or greater and rising
SCC	Type A or F Type S (Viscosity Modifying)	Type D or G or A and B Type S (Viscosity Modifying)

Dosage rates for any admixtures incorporated into the concrete shall be stated during the mix design submittal process. All admixtures shall be compatible and from the same manufacturer.

2. **Mix Design Submittal.** Submit the proposed concrete design to the Engineer for approval. Develop the design using saturated surface dry aggregate weights and trial batches meeting the requirements of these Specifications....

As a minimum, include the following information in the proposed concrete design submittal:

1. Source of all aggregates
2. Brand and type of cement
3. Source and class of fly ash (if used)
4. Source and grade of ground granulated blast furnace slag (if used)

5. Specific gravity of cement
6. Specific gravity of the fly ash (if used)
7. Specific gravity of the ground granulated blast furnace slag (if used)
8. Admixtures (if used)
9. Gradations of aggregates
10. Specific gravity of aggregates (saturated surface dry)
11. Air content (if air entrainment is used)
12. Percentage of fine aggregate of the total aggregate (by volume)
13. Slump
14. Weight per cubic yard
15. Yield
16. Temperature of plastic concrete
17. Water/cement ratio (pound/pound)
18. 7-day compressive strength (minimum of three 4-inch x 8-inch cylinders)
19. 14-day compressive strength (minimum of three 4-inch x 8-inch cylinders)
20. 28-day compressive strength (minimum of three 4-inch x 8-inch cylinders)
21. Weight of each material required to produce a cubic yard of concrete

In addition to the above mentioned items, for self-consolidating concrete include as a minimum the following information in the proposed SCC design submittal:

22. Slump flow, VSI, and T50, in accordance with ASTM C1611, shall be required in place of the slump test.
23. Passing ability in accordance with ASTM C1621.
24. Static segregation in accordance with ASTM C1610.
25. 7-day compressive strength (minimum of three 4-inch x 8-inch cylinders), in accordance with ASTM C1758.
26. 14-day compressive strength (minimum of three 4-inch x 8-inch cylinders), in accordance with ASTM C1758.
27. 28-day compressive strength (minimum of three 4-inch x 8-inch cylinders), in accordance with ASTM C1758.

Self-consolidating concrete (Classes SCC and P-SCC) shall be verified prior to placement either at the ready mix facility or prestressed plant. The submitted mix design shall be reviewed by Headquarters Materials and Tests for specification compliance. The concrete producer shall then perform a trial batch verification of the submitted mix design in the presence of Regional Materials and Tests. The trial batch will ensure that all batch quantities and target admixture dosage rates are acceptable and meet TDOT specification prior to full mix design approval. If using a previously approved SCC design additional verification of the trial batch is not required. All quantities and identified admixture target dosage rates shall meet the tolerances specified in **501.09**.

Subsection 604.14 (pg. 542) 11-16-15; Consistency of Concrete, modify the following: “The slump of the concrete when measured according to AASHTO T 119 shall meet **604.03 - 1A**. **The slump flow of self-consolidating concrete when measured according to ASTM C1611 shall meet 604.03 1B.**”

Subsection 604.15 (pg. 542-543) 11-16-15; B. Concrete Acceptance Cylinders, modify the following:

“The Department will test the specimens for compressive strength according to AASHTO T 22. Provide the necessary concrete for making test specimens and adequate curing and storage facilities at no additional cost to the Department.

Concrete cylinders submitted for testing beyond 28 days shall comply with the strength requirements specified in Table 604.15-1.

Table 604.15-1: Strength Requirements

Class of Concrete	Compressive Strength (psi) at:			
	Less than 31 days	31 to 42 days	42 to 43 days	43 days to 56 days
A, S, CP, SCC	3,000	3,300		3,500
D, L	4,000	4,400		4,600
X	Plans Requirement (Req)	Req. + Req. * (10%)		Req. + Req. * (15%)

If the acceptance cylinders fail to meet the specified strengths, the Contractor may drill core samples from the hardened concrete as verification of concrete strength instead of using the concrete cylinders. The Contractor must provide QC data from companion cylinders that meet or exceed the required strength, and TDOT Materials and Test shall perform a nondestructive test using a Swiss Hammer on the concrete to prove required strength is achieved. If the above mentioned requirements are met, the Contractor may then elect to drill a maximum of three core samples per set of cylinders from the hardened concrete. The Contractor shall obtain the cores in accordance with the Department’s Standard Operating Procedure 4-2, and bear all costs of obtaining the cores and repairing the core holes.”

Subsection 604.27 (pg. 560) 11-16-15; Rideability of New or Resurfaced Bridge Decks and Roadway Approaches, A. General, modify the following:

“On all highway sections with a posted speed greater than 40 miles per hour, the following rideability provisions shall apply to new or resurfaced bridge decks and roadway approaches, ”

Subsection 615.09 (pg. 644) 11-16-15; Proportioning and Mixing of Concrete, modify the following:

Table 615.09-1: Composition of Prestress Concrete Classes

Class of Concrete	Minimum 28-Day Compressive Strength (psi)	Minimum Pounds Cement per Cubic Yard	Maximum Water/Cement Ratio (pound/pound)	Air Content %	Slump or Slump Flow (inches)
P	5,000 ⁽¹⁾	658	0.45	0-8 ⁽²⁾	2 ± 1 ⁽³⁾
P-SCC ⁽⁴⁾	5,000 ⁽¹⁾	658	0.45	0-6 ⁽²⁾	25 ± 4

(1) Or as shown on the Plans or approved shop drawings.

(2) Air entraining is optional with the Contractor, unless otherwise shown on the Plans or shop drawings.

(3) Not to exceed 3 inches before the addition of high range admixtures, and not to exceed 10 inches after the addition of high range admixtures. If water-cement ratio is equal to or less than 0.35 then the maximum slump is 10 inches. If the water-cement ratio is 0.36 – 0.45, the maximum slump is 8 inches.

(4) Maximum coarse aggregate size of a No. 67 stone.

Comply with all applicable provisions of **604.03** except as modified herein.

Submit a concrete design to the Department for review and approval. In addition to the proportions, identify in the design submittal the source or brand of all materials and the type of cement to be used. The Contractor may use Type I or Type III cement, unless otherwise specified. Do not use calcium chloride. Use a retardant admixture when the ambient temperature is 75 °F or higher.

The slump of the concrete shall be 2 inches with a tolerance of ±1 inch at the time of placement. When an approved superplasticizer is to be used, the slump of the concrete shall be the same as above before the superplasticizer is added to the mix. After the addition of the superplasticizer, the slump may be increased to a maximum of 8 inches at the time of placement.

The slump flow of self-consolidating concrete shall be determined and within the design and production tolerances stated in **Table 615.09-1**. Include chemical admixtures in the self-consolidating concrete mixture as specified in **Table 604.03-5** based on the ambient air temperature and expected weather conditions. Approved viscosity modifying admixtures (VMA) may be used as part of the chemical admixtures if they are shown in the approved mixture design.

Handle, measure, and batch materials; mix concrete; and comply with the limitations of mixing as specified in 501.09, 501.10, and 501.11, respectively.

Make concrete test specimens for **Class P** and **Class P-SCC**, in accordance with AASHTO T 23 and **ASTM C1758** respectively, to determine the adequacy of the concrete design and the minimum time at which the stress may be applied to the concrete. Cure the test specimens used to determine the time at which stress may be applied in the same manner and under the same conditions as the bridge members. The initial curing of specimens to determine the

design strength of the concrete shall be as specified above with additional curing water, as provided in AASHTO...

Subsection 615.17 (pg. 652), 5-18-15; Table 615.17-1: Manufacturing Tolerances in Standard Sections, Replace the following:

Table 615.17-1: Manufacturing Tolerances in Standard Sections

Description	Tolerance	
	I-Sections	Box Sections
Nominal Depth	$\pm 1/2$ inch	$\pm 1/2$ inch
Nominal Width	$\pm 1/2$ inch	$\pm 1/2$ inch
Nominal Length	Computed Elastic Shortening $\pm 1/2$ inch	Computed Elastic Shortening $\pm 1/2$ inch
Variation in Straightness, inches	$1/4$ inch x (Total Length in feet)/10	$1/4$ inch x (Total Length in feet)/10
Variation in Camber, inches	Beams in any 1 span not more than: $1/8$ inch x (Total Length in feet)/10	Beams in any 1 span not more than: $1/8$ inch x (Total Length in feet)/10
Location of Voids	-----	Length $\pm 1/2$ in Wall Thickness $\pm 1/2$ in
Bearing	Full Bearing - Full Width of Beam	Full Bearing on at Least $2/3$ of Width of Beam
Tendon Placement	$\pm 1/2$ inch	$\pm 1/2$ inch
Reinforcing Steel Placement	$\pm 1/2$ inch	$\pm 1/2$ inch
Reinforcing Steel Concrete Cover	$\pm 1/2$ inch	$\pm 1/2$ inch
Reinforcing Steel Splice Lengths	Minus 1- $1/2$ inches	Minus 1- $1/2$ inches

STATE

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(Rev. 5-18-15)
(Rev. 11-16-15)

January 1, 2015

Supplemental Specifications - Section 900

of the

Standard Specifications for Road and Bridge Construction

January 1, 2015

Subsection 903.01 - Table 903.01-1 (pg. 920) , 5-18-15; Replace Note (1) with the following:

“(1)If the fine aggregate is manufactured from crushed stone and if material finer than the No. 200 sieve consists of the dust of fracture, essentially free from clay or shale, this limit may be increased to 5%.

Subsection 903.03 (pg. 922-923) 11-16-15; Coarse Aggregate for Concrete, modify the following:

“Coarse aggregate in Portland cement concrete bridge decks and overlays on interstates and four or more lane highways consisting of Size No. 57 shall meet 903.24.

The coarse aggregates for travel lanes and bridge decks shall be crushed and consist of stone, slag, gravel, quartzite, gneiss, or combination thereof with an absorption of plus 4 material not to exceed 5%. Do not use uncrushed gravel, pea gravel, or any other uncrushed particles. Crushed gravel, if used, shall consist of siliceous washed particles after processing, of which at least 70% by count of the material retained on the No. 4 sieve contains a minimum of two fractured faces. One face shall be fractured for the approximate average diameter or thickness of the particle. ”

Table 903.03-1: Coarse Aggregate Sizes

Application	Coarse Aggregate Size ⁽¹⁾
Structural concrete	No. 57
Self-Consolidating concrete	Maximum-No.67
Prestressed concrete	No. 57 or 67
Precast concrete	Any size fraction
Concrete curbing placed by machine-extrusion methods	No. 7, 57, 67, or 78
Cement treated permeable base ⁽²⁾	No. 57

(1) Gradation shall conform to [903.22](#).
(2) Aggregate shall meet the quality requirements specified below.

Subsection 903.05 – B. Type B Aggregate (pg. 927), 5-18-15; Replace 3. With the following: “Do not use material having a clay content greater than 12%, as determined by hydrometer analysis performed in accordance with AASHTO T 88. Material may be used having a clay content exceeding 12% if a plasticity index-fines product does not exceed 3 when calculated by the following formula:

Subsection 903.06 (pg. 930) 11-16-15; C. Combined Aggregate Grading, Add the following sentence at the end of the first paragraph:

“For mixtures including recycled asphalt pavement, RAP, and/or recycled asphalt shingles, RAS, stockpiles will not be considered as contributing to the required minimum of three stockpile sizes.”

Subsection 903.11 (pg. 934) 11-16-15; Aggregate for Asphaltic Concrete Surface Coarses (Hot Mix), add the following sentence at the end of the first paragraph:

“For mixtures including recycled asphalt pavement, RAP, and/or recycled asphalt shingles, RAS, stockpiles will not be considered as contributing to the required minimum of three stockpile sizes.”

Subsection 903.11 (pg. 934) 11-16-15; A. Coarse Aggregate (retained on a No. 4 sieve), modify the following:

“Provide aggregate, consisting of crushed stone, crushed slag, crushed gravel, crushed granite, crushed quartzite, crushed gneiss, or natural combinations of these materials.”, “3. Combined aggregate shall consist of siliceous particles processed from washed material, of which at least 70% by count of the material retained on the No. 4 sieve shall have a minimum of two fractured faces, one of which must be fractured for the approximate average diameter or thickness of the particle. Do not add pea gravel or uncrushed particles. The absorption of the crushed aggregate retained on the No. 4 sieve shall not exceed 5% when tested in accordance with AASHTO T 85.”

Subsection 903.11 (pg. 934), 5-18-15; A. Coarse Aggregate (retained on a No. 4 sieve) Replace with the following:

“2. Material retained on the No. 4 sieve shall contain a maximum of 10% elongated pieces (length greater than five times the average thickness)”

Subsection 903.12 (pg. 938) 11-16-15; A. Aggregate for Slurry Seal, delete as shown:

“the aggregate shall be crushed slag, crushed granite, or crushed stone (crushed stone as specified in 90.24), meeting the requirements of ASTM D692, except the gradation shall be as specified in Table 903.12-1...”

Subsection 903.12 (pg. 939) 11-16-15; B. Aggregate for Micro-Surface: delete as shown:

“of the aggregate shall be crushed slag...”

Subsection 903.24 (pg. 946), 5-18-15; *Modify the following:*

“Provide coarse aggregate consisting of crushed gravel, crushed granite, crushed slag, crushed quartzite, crushed gneiss, or crushed sandstone. Other crushed aggregate may be used provided it has the chemical, physical, and performance characteristics specified in Table 903.24-1.”

Subsection 904.01 (pg. 948) 11-16-15; Asphalt Cements, add the following between the 4th and 5th paragraphs:

“Polyphosphoric acid may be used as a modified not exceeding 0.5% by weight of asphalt binder and may only be used when the primary modifier is one of the styrene-based products listed above.”

Subsection 904.01 (pg 955-956) 5-18-15; *Modify the following:*

“Only obtain asphalt cement for use on Department projects from Certified Asphalt Cement Suppliers that have an approved Quality Control Plan in accordance with the Department’s Standard Operating Procedures.

Asphalt cement shall conform to AASHTO M 320 and Department procedures. Direct Tension testing is not required.

Instead of PG 64-22, the Contractor may use asphalt cement graded to PG 67-22. PG 67-22 shall conform to the requirements of AASHTO M 320 when the applicable tests are conducted at 67 °C and -12 °C, and the dynamic shear of the rolling thin film, pressure aged vessel sample is tested at 26.5 °C.

To modify the asphalt cement high-temperature grade properties, properly blend styrene butadiene (SB), styrene butadiene styrene (SBS), or styrene butadiene rubber (SBR) to a PG 64-22 or PG 67-22 base asphalt.

In addition to the above requirements, asphalt cements shall meet the requirements specified in Table 904.01-1.

Table 904.01-1: Requirements for Asphalt Cement

Property*	PG 64-22, PG 67-22	PG 70-22	PG 76-22	PG 82-22
Non-recoverable creep compliance at 3.2kPa, Jnr(3.2), kPa ⁻¹ at 64°C, Max	4.5	1.0	0.5	0.5
% Difference in Non-Recoverable Creep Compliance, Jnr(diff) at 64°C, %, Max	75	75	75	75

* Tested in accordance with AASHTO T350.

All modified grades shall meet the requirements for Indication of Elastic response as defined in Appendix X1 of AASHTO M332.

Furnish a certification to the Engineer on each project stating that the asphalt cement provided meets the Department’s specification. Ensure that quality control and compliance testing are completed in accordance with the asphalt supplier’s approved quality control plan and Department procedures.

In addition, the asphalt cement supplier shall provide a temperature-viscosity curve for PG 64-22 and PG 67-22 asphalt cements with a recommended mixing temperature range. In order to develop a temperature-viscosity curve, it may be necessary to run the viscosity test at a higher temperature, based on the softening point of the modified asphalt cement.

Subsection 904.03 (pg. 951) 11-16-15; Emulsified Asphalts, Add “TTT-3” to 904.03-1 with the following requirements:

Saybolt-Furol Viscosity @ 77 °F, seconds	10-100
Particle Charge	Positive
Sieve Test, %	0.1 Max
Residue by Distillation ⁽¹⁾	
Residue, %	50 Min
Demulsibility, %	65 Min
Penetration	40-90

¹-Distill at 350°F

Subsection 904.03 (pg.954), 5-18-15; Replace with the following:

Subsection 904.03, Table 904.03-1(c). Modify as follows for TTT-1:

Table 904.03-1(c): Test Requirements for Emulsified Asphalt

Practices	AASHTO Test Method	CRS-2P	RS-2	RS-1	TTT-1	TTT-2
Saybolt-Furol Viscosity @ 77 °F, seconds	T59	n/a	n/a	20-100	20-100	10-100
Saybolt-Furol Viscosity @ 122 °F, seconds	T59	100-400	75-400	n/a	n/a	n/a
Storage Stability Test, 24- h, %	T59	1 Max	1 Max	1 Max	1 Max	1 Max
5-day Settlement, %	T59	n/a	n/a	n/a	n/a	n/a
Particle Charge	T59	Positive	n/a	n/a	n/a	Positive
Sieve Test, %	T59	0.1 Max	0.1 Max	0.1 Max	0.1 Max	0.1 Max
Residue by	T59	<i>Evaporation</i>	Distillation	Distillation	Distillation	Distillation ⁽¹⁾
Residue, %	T59	65 Min	63 Min	55 Min	50 Min	50 Min
Demulsibility, %	T59	40 Min	60 Min	60 Min	n/a	n/a
Distillate, %	T59	n/a	n/a	n/a	n/a	n/a
Oil Test, %	T59	n/a	n/a	n/a	n/a	n/a
Stone Coating	T59	n/a	n/a	n/a	n/a	n/a
Float Test, seconds	T50	n/a	n/a	n/a	n/a	n/a
Penetration	T49	75-175	100-200	100-200	0-20	40-90
Elastic Recovery, % ⁽²⁾	T301	50 Min	n/a	n/a	n/a	n/a
Ductility @ 77 °F, cm	T51	40 Min	40 Min	40 Min	n/a	n/a
Ductility @ 40 °F, cm	T51	n/a	n/a	n/a	n/a	n/a
R&B Softening Point, °F	T53	125 Min	n/a	n/a	60-75	n/a
Original G*/sind @ 82 °C	T315	n/a	n/a	n/a	1.0 Min	n/a

⁽¹⁾ Distill at 350 °F

⁽²⁾ Straight-sided mold, 20-cm elongation, 5min hold, 25 °C

Subsection 908.04 (pg. 968), 5-18-15, High Strength Bolts, A. Specifications; Add the following to the first paragraph:

“Unless otherwise shown on the Plans, mechanically galvanize all bolts, nuts and washers in accordance with ASTM B695 Class 50.”

Subsection 921.01 (pg. 1049), 5-18-15, Water; Replace with the following:

For mixing concrete, use water that is reasonably clean and free of oil, salt, acid, alkali, sugar, vegetable matter, and other substances injurious to the finished product. Water provided by a municipal utility may be used without testing.

All other water shall have quality results submitted in accordance with the frequency listed in Table 921.01-01. All water quality results shall adhere to Table 921.01-2.

Table 921.01-1 Testing Frequency for Mixing Water

Water Source	Testing Frequency ⁽¹⁾
Municipal	NA
Non-Municipal	Every 3 months; tested annually after 4 consecutive passing tests

(1) The frequency may vary at the discretion of the Department.

Table 921.01-2 Quality Requirements for Mixing Water

Maximum Concentration in Mixing Water	Limits	ASTM Test Method ⁽¹⁾
Chloride Ion Content, ppm	500	C114
Alkalies as (NaO2 + 0.658 K2O), ppm	600	C114
Sulfates as SO4, ppm	3000	C114
Total Solids by mass, ppm	50000	C1603
pH	4.5-8.5	⁽²⁾
Resistivity, Minimum, kohm-cm	0.500	D1125
Soluble Carbon Dioxide, ppm	600	D513
Calcium and Magnesium, ppm	400	D511
Iron, ppm	20	⁽²⁾
Phosphate, ppm	100	D4327

(1) Other methods (EPA or those used by water testing companies) are generally acceptable.

(2) No ASTM method available.

Subsection 921.06 (pg.1051) 11-16-15; B. Bituminous Additives - 1. Anti-Stripping Additive, modify the following: “Use hydrated lime conforming to AASHTO M 303 or other heat-stable asphalt anti-stripping additive containing no ingredient harmful to the bituminous material or the workmen and that does not appreciably alter the specified characteristics of the bituminous material when added in the recommended proportions.”

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T E N N E S S E E

January 1, 2015 |

REV: 2/5/07 |

SPECIAL PROVISION

REGARDING

EMPLOYING AND CONTRACTING WITH ILLEGAL IMMIGRANTS

The State shall endeavor to do business only with those contractors and subcontractors that are in compliance with the Federal Immigration and Nationality Act. This policy shall apply to all State Contractors including subcontractors. This policy statement is issued to establish implementation guidance to procuring state agencies and contractors reflecting the requirements of Governor’s Executive Order #41, An Order Regarding Compliance with Federal and State Laws Related to Employing and Contracting with Illegal Immigrants, and the requirements of Public Acts of 2006, Chapter Number 878 of the State of Tennessee (codified at *Tennessee Code Annotated*, Title 12, Chapter 4, Part 1).

1. The Contractor hereby attests, certifies, warrants, and assures that the Contractor shall not knowingly utilize the services of an illegal immigrant in the performance of this Contract and shall not knowingly utilize the services of any subcontractor who will utilize the services of an illegal immigrant in the performance of this Contract. The Contractor shall reaffirm this attestation, in writing, by submitting to the State a completed and signed copy of the “Attestation form” provided by the Department, semi-annually during the period of this Contract.
2. Prior to the use of any subcontractor in the performance of this Contract, and semi-annually thereafter, during the period of this Contract, the Contractor shall obtain and retain a current, written attestation that the subcontractor shall not knowingly utilize the services of an illegal immigrant to perform work relative to this Contract and shall not knowingly utilize the services of any subcontractor who will utilize the services of an illegal immigrant to perform work relative to this Contract.
3. The Contractor shall maintain records for its employees used in the performance of this Contract. Said records shall include a completed federal Department of Homeland Security Form I-9, *Employment Eligibility Verification*, for each employee and shall be subject to review and random inspection at any reasonable time upon reasonable notice by the State.
4. The Contractor understands and agrees that failure to comply with this section will be subject to the sanctions of Public Chapter 878 of 2006 for acts or omissions occurring after its effective date. This law requires the Commissioner of Finance and

Administration to prohibit a contractor from contracting with, or submitting an offer, proposal, or bid to contract with the State of Tennessee to supply goods or services for a period of one year after a contractor is discovered to have knowingly used the services of illegal immigrants during the performance of this contract.

For the Purposes of this policy, “illegal immigrant” shall be defined as a non-citizen who has entered the United State of America without federal government permission or stayed in this country beyond the period allowed by a federal government-issued visa authorizing the non-citizen to enter the country for specific purposes and a particular time period.

Compliance and non-compliance procedures will be as specified in the Tennessee Department of Finance and Administration’s Policy on “Ensuring Compliance with Federal Immigration Laws by State Contractors and Subcontractors”.

S T A T E

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T E N N E S S E E

January 1, 2015

(Rev. 03-30-15)

SPECIAL PROVISION

REGARDING

TENNESSEE DEPARTMENT OF TRANSPORTATION STANDARD

SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION

DESCRIPTION

Any and all references concerning the March 1, 2006 Standard Specifications for Road and Bridge Construction shall be interpreted as the January 1, 2015 Standard Specifications for Road and Bridge Construction.

The following Special Provisions have been incorporated into the January 1, 2015 Standard Specifications for Road and Bridge Construction:

- 107SHP
- 407G
- 411TL
- 411TLD
- 411OGFC
- 716ST

Any reference to these Special Provisions shall refer to the January 1, 2015 Standard Specifications for Road and Bridge Construction.

STATE

OF

TENNESSEE

(Rev. 6-19-95)
(Rev. 6-1-04)
(Rev. 06-20-2011)

January 1, 2015

SPECIAL PROVISION

REGARDING

BUY AMERICA REQUIREMENTS

All manufacturing processes for iron and steel products, and coatings applied thereon, used in this project shall occur in the United States except that if the proposal has bid items for furnishing domestic and foreign iron and steel, the bidder will have the option of (1) submitting a bid for furnishing domestic iron and steel, or (2) submitting a bid for furnishing domestic iron and steel and a bid for furnishing foreign iron and steel. If option (2) is chosen the bid will be tabulated on the basis of (a) the total bid price using the bid price for furnishing domestic iron and steel and, (b) the total bid price using the bid price for furnishing foreign iron and steel.

For the total bid based on furnishing foreign iron and steel to be considered for award, the lowest total bid based on furnishing domestic iron and steel must exceed the lowest total bid based on furnishing foreign iron and steel by more than 25 percent. The 25 percent differential applies to the total bid for the entire project, not just the bid prices for the steel or iron products.

Iron and steel products are defined as products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed from iron and steel made in the United States. Iron products are included, however, pig iron and processed, pelletized, and reduced iron ore may be purchased outside the United States.

Manufacturing begins with initial melting and continues through the coating stage. Any process which modifies chemical content, physical size or shape, or the final finish is considered a manufacturing process. Coatings include epoxy, galvanizing, painting or any other surface protection that enhances the value and/or durability of a material.

The contractor shall provide a certification to the Engineer with each shipment of iron and steel products to the project site that the manufacturing processes for the iron and steel products occurred in the United States. No steel shall be placed until the contractor ensures the requirements of this Special Provision are met.

The above requirements do not prevent a minimal use of foreign materials, if the cost of such materials used does not exceed 0.1 percent of the total contract cost or \$2,500.00, whichever is greater. If steel

not meeting the requirements of this Special Provision is used, the contractor shall provide a written statement to the Department prior to its use indicating where the steel will be incorporated in the work, the value of the steel, the percentage of the contract amount, and the appropriate invoices shall be submitted as documentation.

The contractor shall be responsible for all cost associated with any steel that is permanently incorporated into the project that does not meet the requirements of this Special Provision without prior written approval from the Department, up to and including removal and replacement.

**State of Tennessee
Department Of Transportation
Right Of Way Division**

Statement Of Availability

3/9/16

County : Cumberland
Pin No.: 100268.03
Project No. : 18038-3241-14
Total number of Tracts: 3
Description : Reconstruction: SR-101 (Peavine Rd.), From
Firetower Rd. to East of Westchester
Dr./Catoosa Blvd. (Construction of 161 KV
Electric Line Relocation)

All Right-Of-Way is available with the exception of 3 tracts
as shown below:

<u>Tract No.</u>	<u>Anticipated Availability Date</u>
Stone tract	9/7/16
Cottrell tract	9/7/16
Cumberland Co. Bank tract	3/7/17

S T A T E

O F

T E N N E S S E E

January 1, 2015

Rev. 11-22-11
Rev. 02-13-12
Rev. 12-22-14

SPECIAL PROVISION

REGARDING

WATER QUALITY AND STORM WATER PERMITS

Scope

The conditions of this Special Provision apply to all construction on this project pursuant to the following:

1. Section 404 of the Federal Clean Water Act (33 U.S.C. §1344), and all implementing regulations, including without limitation regulations of the U.S. Army Corps of Engineers governing permits for discharges of dredged or fill material into waters of the United States in 33 CFR Part 323; and
2. The Tennessee Water Quality Control Act (T.C.A. §69-3-101, et seq.) and all implementing regulations, including without limitation the Rules of the Tennessee Department of Environment and Conservation governing NPDES permits in Chapter 1200-4-10, and Aquatic Resource Alteration permits in Chapter 1200-4-7; and
3. Section 26a of the TVA Act of 1933 as amended (49 Stat. 1079, 16 U. S. C. sec. 831y1.) and all implementing regulations, including without limitation the regulations of the Tennessee Valley Authority governing construction in the Tennessee River System in 18 C.F.R., Part 1304; and
4. The Tennessee Wildlife Resources Agency Reelfoot Lake Watershed Management permit program (T.C.A. section 70-5-1.), and all implementing regulations, including without limitation regulations authorizing any activity, practice, or project which has or is likely to have the effect of diverting surface or subsurface water from the Lake or have the effect of draining or otherwise removing water from Reelfoot Lake; and
5. Coast Guard Bridge Permit (USCG) (Section 9 of the Rivers and Harbors Appropriation Act of 1899) and all implementing regulations, including but not without limitation for projects which impact streams deemed navigable by the U.S. Coast Guard.

Responsibility

It is understood and agreed that the Contractor assumes all responsibilities of the permittee as indicated in the permit that relates to protection of the "waters of the United States" and/or "waters of the State of Tennessee."

It is also understood and agreed that the Contractor shall be responsible for obtaining any additional permits required by the Contractor's method of construction, including without

limitation haul roads, temporary channels or temporary ditches, or off-site waste and/or borrow areas.

It is also understood that the Contractor shall be responsible for implementing the provisions of the Water Quality (including, but not limited to, TDEC ARAP, USACE 404, TVA Section 26a, Coast Guard, TWRA) and Storm Water [including, but not limited to, National Pollution Discharge Elimination System (NPDES), Statewide Stormwater Management Plan (SSWMP)] Permits and requirements that pertain to construction activities.

The Contractor by signing this contract is indicating that the Contractor has reviewed a copy of the permit provisions, including NPDES Permit provisions at <http://www.tdot.state.tn.us/construction/permits/npdes.pdf>, the site specific SWPPP, the contract plans, Standard Specifications and contract Special Provisions and finds the permit requirements and erosion prevention and sediment control (EPSC) procedures to be reasonable, workable, and binding.

It is also understood that the Contractor shall not be released from the project site responsibilities under the NPDES permit provisions until the Notice of Termination (NOT) is submitted to TDEC by the TDOT Regional Construction Supervisor. The NOT is a certification that the construction project site is permanently stabilized and that all construction related discharges have ceased. This means that the use of EPSC measures to alleviate concerns of surface erosion and transport of sediment to surface water conveyances or to waters of the state is no longer necessary. Furthermore, it means that permanent controls, hard surfaces and/or vegetation, employed at the site are deemed adequate to prevent erosion and sediment transport and no other potential sources of construction-related pollution are on the project.

It is also understood that the Contractor shall not be released from any warranty provided for EPSC plantings, including sod and trees. If the entire project is complete as outlined in **Subsection 105.15** of the **Standard Specifications**, the Contractor shall be required to supply a performance bond as outlined in **Subsection 802.15** of the **Standard Specifications** to cover any warranty for EPSC plantings.

NPDES Permit Required Action

The Contractor (or their representative) shall accompany the EPSC inspector (TDOT personnel or TDOT hired consultant) on all EPSC inspections of the entire construction project including permitted locations and potentially impacted streams as well as attend all QA/QC Project Assessments.

EPSC Inspections shall be conducted as required in the most current TN Construction General Permit.

EPSC inspections shall be performed on the schedule established in the TN Construction General Permit until the site is permanently stabilized to determine if the permit requirements are being met. Where sites or portion(s) of construction sites have been temporarily stabilized, or runoff is unlikely due to winter conditions (e.g. site covered with snow or ice), such inspection only has to be conducted once per month until thawing or precipitation results in runoff or construction activity resumes. Written notification of the intent to change the inspection frequency and the justification for such request must be submitted to the TDOT Project Supervisor and the TDEC Central Office before proceeding.

An individual representing the Contractor, who holds a current TDEC “*Fundamentals of Erosion Prevention and Sediment Control Level I*” certification shall accompany the EPSC inspector on all required EPSC inspections. The Contractors project supervisor(s) shall also hold

a current TDEC “*Fundamentals of Erosion Prevention and Sediment Control Level I*” certification. Proof of required personnel training for the individual(s) shall be provided to the TDOT Project Supervisor prior to beginning of construction.

The TDOT EPSC inspector shall document all deficiencies on the required TDOT EPSC Inspection Report form (provided in the SWPPP). The Contractor (or their representative) shall sign the TDOT EPSC Inspection Report form and any supporting documentation indicating that he is in agreement with the report, recommendations and repair schedule as stated within the documentation.

Additionally, the Contractor shall make necessary maintenance and repairs relative to deficiencies in these permit conditions or requirements within twenty-four (24) hours after an inspection identifies the maintenance or repair need, and/or when directed to do so by the TDOT Project Supervisor, unless conditions make a particular activity impracticable. Any such conditions that make immediate repairs impracticable shall be documented and provided to the TDOT Project Supervisor, via the inspection report, and be accompanied by an expected repair schedule based on forecasted weather conditions.

The Contractor further agrees that he will execute two (2) copies of the Notice of Intent (NOI) form of the permit (provided by the Department), indicating his acceptance of the stipulations contained therein. The Contractor further agrees, that should he fail to execute said copies and return them to the TDOT Construction Division within ten (10) calendar days after submittal of the contract proposal to him, that the Department may at its discretion cancel the award with the Contractor forfeiting his bid bond.

Further, the Contractor agrees to review the site specific Stormwater Pollution Prevention Plan (SWPPP) that will be made available prior to or at the pre-construction conference, for any additional EPSC requirements. The Contractor shall sign and submit two copies of the SWPPP signature page (provided by the Department within the site specific SWPPP). The Contractor may submit for review and approval changes/revisions to the SWPPP to better prevent erosion and sediment transport at any time after contract execution. Rejection of any submittals does not relieve the contractor of any liability for appropriate Best Management Practices (BMPs).

If at any time during this contract, the requirements for the Water Quality Permits and/or the Storm Water Permits for Construction Related Activities are changed/revised/updated, the Contractor shall be notified in writing by the Department of such requirements. The Contractor shall comply with the new requirements within thirty (30) days of the Department notification.

If at any time the Contractor becomes aware that sedimentation is occurring or has occurred in streams impacted by the specified project, the Contractor shall immediately notify the TDOT Project Supervisor to evaluate the EPSC measures employed. A determination of the cause for sedimentation will be made by the Department. The Contractor shall immediately repair or replace defective EPSC measures, and install, as applicable, additional or other EPSC measures with the goal of eliminating future sedimentation. Once a remediation plan is provided by the Department, the Contractor shall, within twenty-four (24) hours after notification, begin the remediation as required. Based on the cause of sedimentation, the Department will determine if the cost of remediation will be performed at the Contractor’s expense.

Failure to Comply

In the event a Notice of Violation (NOV) or Order pursuant to the Tennessee Water Quality Control Act or the Federal Clean Water Act is issued on this project, any and all fines will be the

sole responsibility of the Contractor as outlined in **Subsection 107.01** of the **Standard Specifications for Road and Bridge Construction**.

Failure of the Contractor to comply with this Special Provision or take immediate corrective actions required within twenty-four (24) hours (unless documented conditions make a particular maintenance or repair activity impracticable immediately) shall be reason for the TDOT Project Supervisor to suspend all other work on the Project, except erosion prevention and sediment control (EPSC) and traffic control, applying non-refundable deductions of monies from the Contract per calendar day from monies due to the Contractor for any EPSC work on the Project. This deduction can be made for each location, as determined by the TDOT Project Supervisor, for each calendar day that the deficiency is allowed to remain and charged as item description "*Failure to Comply with Permit Deduction*". A deduction shall be made from monies due the Contractor, not as a penalty, but as liquidated damages, as indicated in **Subsection 108.07** of the **Standard Specifications for Road and Bridge Construction January 1, 2015**, as amended.

If the Contractor does not make necessary corrections/adjustments in a timely manner as required above, the Department will implement the provisions of **Subsection 209.07 and Subsection 109.08** of the **Standard Specifications for Road and Bridge Construction** that provides for the Department making repairs and recovering the costs thereof from the Contractor. The Department will not participate in any payment or reimbursement for fines and will not authorize time extensions due to delays in project progress for work stoppage, to remedy the violations stated within the NOV, required by the TDOT Project Supervisor as stated in **Subsection 105.01** of the **Standard Specifications for Road and Bridge Construction**.

Khalid Ahmed

From: Khalid Ahmed
Sent: Tuesday, November 03, 2015 3:15 PM
To: Ken Flynn; Tommy Paul; Peggy B. Jernigan; Steve Langford; Shawn Allen; Jamie Fitzpatrick
Cc: John Hewitt; DJ Wiseman; K.Brandon Chance; Rob Howard; Ben Brown; Jennifer Stover; Robert Rodgers; Jeremy Sims; Wesley Huguen; Hugh Hannah; Andrew Wisniewski
Subject: Permit distribution PIN 100268.03
Attachments: Storm waterTDOT-NOC TNR191482.pdf

18038-1230-04
PIN 100268.03
SR-101, Peavine Road, Construct 161KV Electric Line Relocation from Firetower Rd to east of Westchester Dr/Catoosa Blvd
Cumberland County

The Department received the following permit(s):
Nationwide Section 404 Permit (File # LRN 2015-00364)
TVA 26a Permit (RLR # 269987)
401 Water Quality Certification (NRS # 14.28)
NPDES CGP NOC (TNR # 191482)

A copy of the NPDES CGP is attached, due to the file size, I have uploaded the water quality permit package to TDOT FTP site –TDOT to TDOT with the file name : Water quality permits PIN 100268.03. It will also be available in Environmental Division filenet.

Construction forces should be made aware that these permits and all environmental special notes and commitments are applicable to the contract.

All permits required for this project have been received.

If you have any questions or we can provide further assistance, please contact me.

Thanks,



Khalid Ahmed | Senior Transportation Project Specialist
Environmental Division | Natural Resources Office
TDOT Environmental Permits Office Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334
P. 615-253-0021
Khalid.Ahmed@tn.gov
tn.gov/tdot



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
NASHVILLE DISTRICT, CORPS OF ENGINEERS
REGULATORY BRANCH
3701 BELL ROAD
NASHVILLE, TENNESSEE 37214

27 October 2015

SUBJECT: File # LRN-2015-00364; TDOT PIN 100268.03 – 161 kV Electric Transmission Line Relocation – Along SR-101 Peavine RD from Firetower RD to Lakeview DR – Various Tributaries – Cumberland County, TN. Nationwide Permit Verification.

ATTN: Mr. Khalid Ahmed
Tennessee Department of Transportation
505 Deaderick ST, STE 900, J.K. Polk BLDG
Nashville, TN 37243

Mr. Ahmed:

This is in response to your application for a Department of the Army (DA) permit for the subject work. This project has been assigned File # LRN-2015-00364. Please refer to this number in any future correspondence regarding this project.

The proposed project includes installation of a 6.5-mile 161 kV electric transmission line north of SR-101 in Cumberland County, TN. The project begins near Firetower RD near 35.9855°, -84.9593°. The project ends near Lakeview DR near 36.0100°, -84.8938°. The project will include: vegetation removal to provide a 100-foot wide cleared Right of Way, electric transmission lines, transmission towers designed as a single pole installed into the existing ground, and permanent 12-foot wide rock armored low water crossings across 19 streams. No equipment will enter Waters of the U.S. except in locations of the permanent rock armored low water crossings. To ensure that no fill is discharged into Waters of the U.S. during land clearing operations, trees to be removed within Waters of the U.S. will be removed to ground surface level or above, with the stump and root ball to remain undisturbed. Resulting mulch will be discharged into an upland area. Disturbed areas will be seeded and mulched shortly after disturbance. As documented in the approved project drawings, BMPs will be utilized throughout construction to minimize impacts.

The transmission line ROW will intersect jurisdictional streams at a total of 34 discrete locations. Of these locations, 15 will include vegetation removal impacts only with no discharge of fill below the Ordinary High Water Mark (OHWM), while 19 will include vegetation removal impacts and permanent 12-foot wide rock armored low water crossings. Each armored low water crossing will impact no more than 0.005 acres of stream. There will be a total of 204 CY of fill placed within the OHWM of jurisdictional streams across the entire project; however, there will be no change in pre-construction contours. Impacts to streams will be mitigated through the purchase of 216 credits from the Tennessee Stream Mitigation Program

The transmission line ROW will intersect jurisdictional wetlands at a total of seven discrete locations. Of these locations, five will include vegetation removal impacts only with no discharge of fill below the OHWM, while two (WTL-6 & WTL-8) will include vegetation removal impacts and permanent 12-foot wide rock armored low water crossings constructed within the wetland boundaries. The armored low water crossings will impact a total of 0.021 acres of wetland. There will be a total of 31 CY of fill placed within the OHWM of jurisdictional wetlands across the entire project. Impacts to wetlands will be mitigated through the purchase of 0.23 credits from the Tennessee Wetland Fund.

Based upon the submitted information, to the extent the U.S. Army Corps of Engineers has jurisdiction over the proposed activity, we have determined that the proposed project meets the criteria of DA Nationwide Permit (NWP) #12 Utility Line Activities, which became effective 19 March 2012, provided work is performed in accordance with the plans and conditions submitted with the application. The work shall be constructed in accordance with the enclosed plans, NWP #14 Special Conditions, and NWP General Conditions.

This verification is valid until 19 March 2017 unless the NWP authorization is modified, suspended, or revoked. If the work has not been completed by that time, please contact this office to obtain verification that the permit is still valid.

This verification does not obviate your responsibility to obtain and abide by all other federal, state, and local permits or approvals required. In addition, it does not grant any property rights or exclusive privileges and does not authorize any injury to the property or rights of others.

If changes in the location or plans of the work are necessary, revised plans must be submitted promptly to this office. No deviation shall be made in the approved plans without first obtaining approval from this office. NWP authorization may be modified, suspended, or revoked and individual permit authorization may be required for failure to comply with any of the NWP conditions. Please sign and return the enclosed Compliance Certification form upon completion of the work.

If you have any questions, please contact Mr. Will Worrall at 615-369-7513, or e-mail william.e.worrall@usace.army.mil.

Sincerely,



Eric G. Reusch
Chief, East Section
Regulatory Branch
Operations Division

Enclosures:

1. Special Conditions (2 pages)
2. Approved Plans and Location Maps (21 pages)
3. USFWS Biological Opinion (52 pages)
4. Compliance Certification
5. Nationwide Permit #14 Specific Conditions
6. Nationwide Permit General Conditions

Copies Furnished:
Andrew Wisniewski
TDOT

Heather Hamilton
TVA

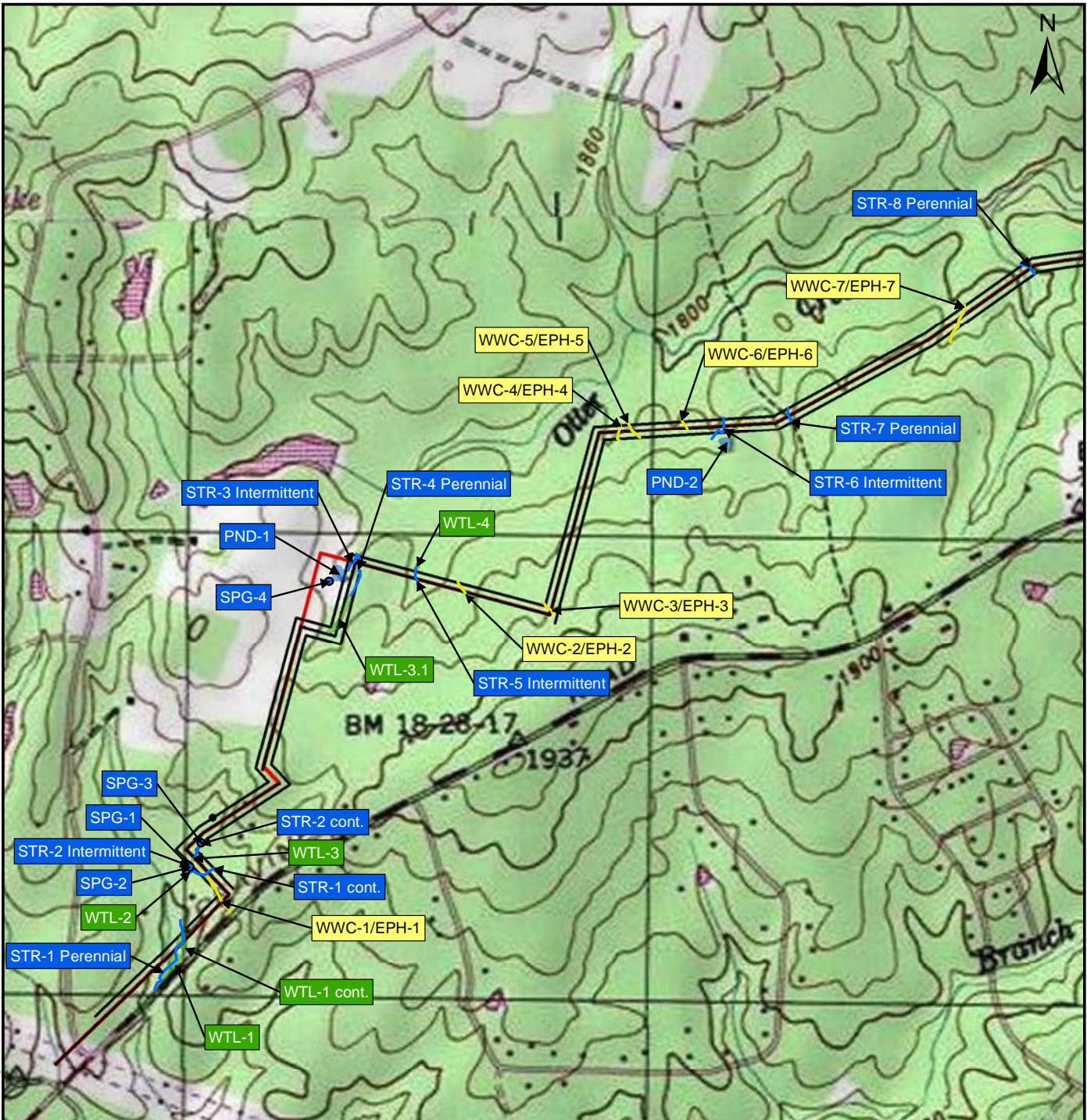
SPECIAL CONDITIONS FOR

LRN-2015-00364

TDOT PIN 100268.03 – 161 kV Electric Transmission Line Relocation – Along SR-101 Peavine RD from Firetower RD to Lakeview DR – Various Tributaries – Cumberland County, TN.

1. Endangered Species Act (ESA) Compliance: This U.S. Army Corps of Engineers (Corps) permit does not authorize you to take a threatened or endangered species, in particular the Northern Long-Eared Bat (*Myotis septentrionalis*). In order to legally take a listed species, you must have a separate authorization under the ESA (e.g., an ESA Section 10 permit, or a Biological Opinion under ESA Section 7, with “incidental take” provisions with which you must comply). The enclosed Biological Opinion (BiOp) prepared by the U.S. Fish and Wildlife Service (USFWS), dated 19 October 2015, contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with “incidental take” that is also specified in the BiOp. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached BiOp, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BiOp, where a take of the listed species occurs, would constitute an unauthorized take, and it would constitute non-compliance with your Corps permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its BiOp, and with the ESA.
2. Wetland In-Lieu Fee (ILF) Credit Purchase: Prior to impacting waters of the United States, the Permittee shall provide verification to the Corps that 0.23 federal ILF credits have been purchased from the Tennessee Wetland Fund ILF (LRN-2011-00206). The required verification shall reference this project's permit number (LRN-2015-00364).
3. Stream In-Lieu Fee Program (ILF) Credit Purchase: Prior to impacting waters of the United States, the Permittee shall provide verification to the Corps that 216 federal ILF credits have been purchased from the Tennessee Stream Mitigation Program ILF (LRN-2011-00711). The required verification shall reference this project's permit number (LRN-2015-00364).

4. Land Clearing Operations: To ensure that no unauthorized fill is discharged into Waters of the U.S. during land clearing operations, trees to be removed within Waters of the U.S. will be removed to ground surface level or above, with the stump and root ball to remain undisturbed in the existing soil. Resulting mulch will be discharged into an upland area.
5. Rock Armored Low Water Crossings: Rock armored low water vehicle crossings shall not exceed 12-feet in width and shall utilize clean machined rip-rap and geotextile only. Each structure shall be embedded into the stream channel and placed in such a manner as to not obstruct flow or allow washout during heavy rain events.



Legend

- New Alignment
- Old Alignment

REFERENCE

USGS TOPOGRAPHIC MAP/ ARCGIS MAP SERVICE:
[HTTP://GOTO.ARCGISONLINE.COM/MAPS/USA_TOPO_MAPS](http://goto.arcgisonline.com/maps/usa_topo_maps),
 ACCESSED 1/9/2015

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ISSUED FOR: TDOT

ISSUED BY: 
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
 325 Seaboard Lane, Ste 170, Franklin, TN 37067
 Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL
 St. Louis, MO * Export, PA * Detroit, MI

Environmental Boundaries Map (Topo)
 SR-101 (Peavine Rd.)
 Volunteer Electric CO-OP (VEC)
 Powerline Location; Cumberland County
 P.E.: 18038-1230-04; PIN: 100268.03

DWN BY: CDH
 APPRVD BY: RH

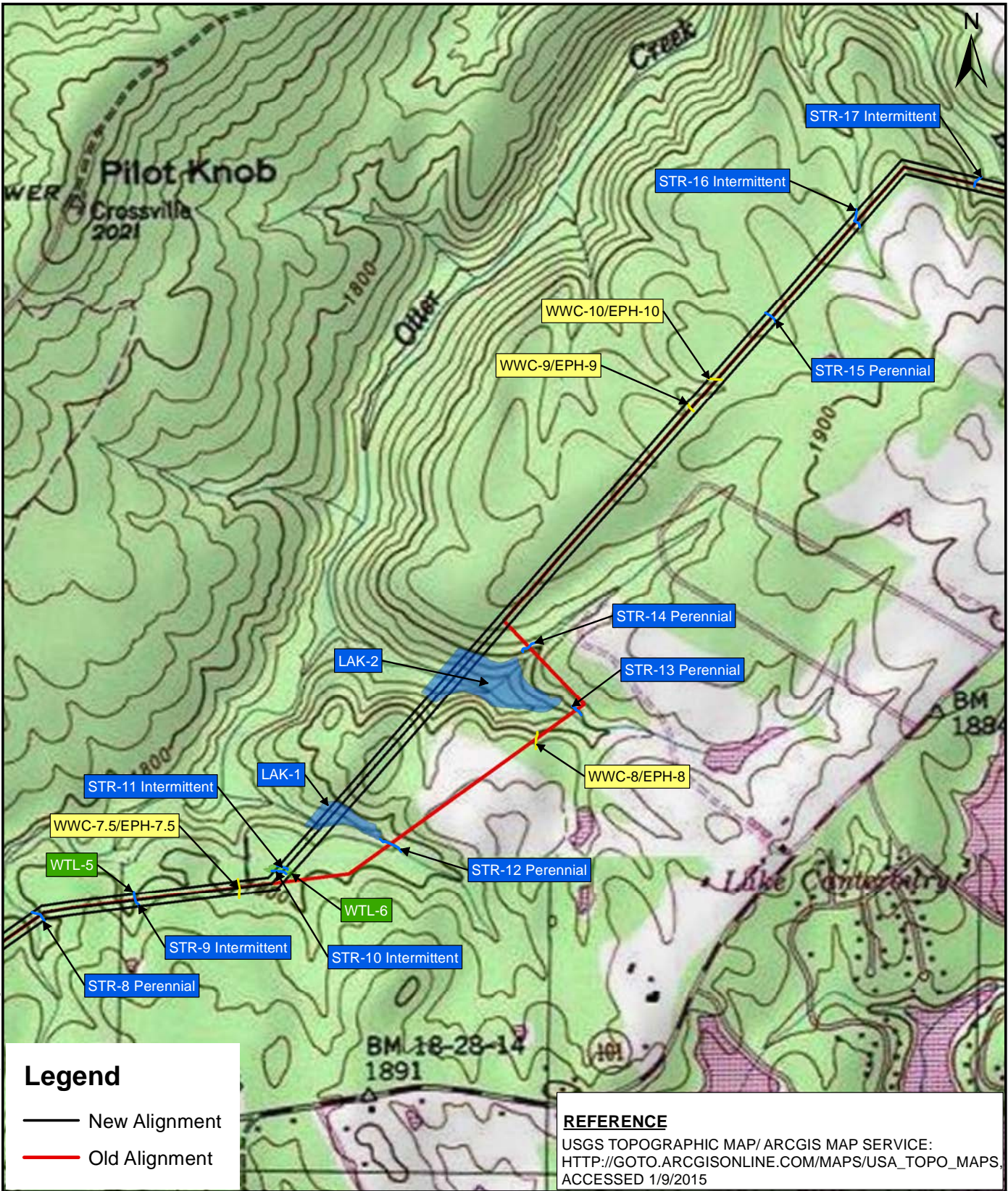
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DATE: 01-09-15

PROJECT NO.: 140-149

FIGURE: 1
 SHEET 1 OF 3

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Legend

- New Alignment
- Old Alignment

REFERENCE

USGS TOPOGRAPHIC MAP/ ARCGIS MAP SERVICE:
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 ACCESSED 1/9/2015

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ISSUED FOR: TDOT

ISSUED BY: **CIVIL & ENVIRONMENTAL CONSULTANTS, INC.**
 325 Seaboard Lane, Ste 170, Franklin, TN 37067
 Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL
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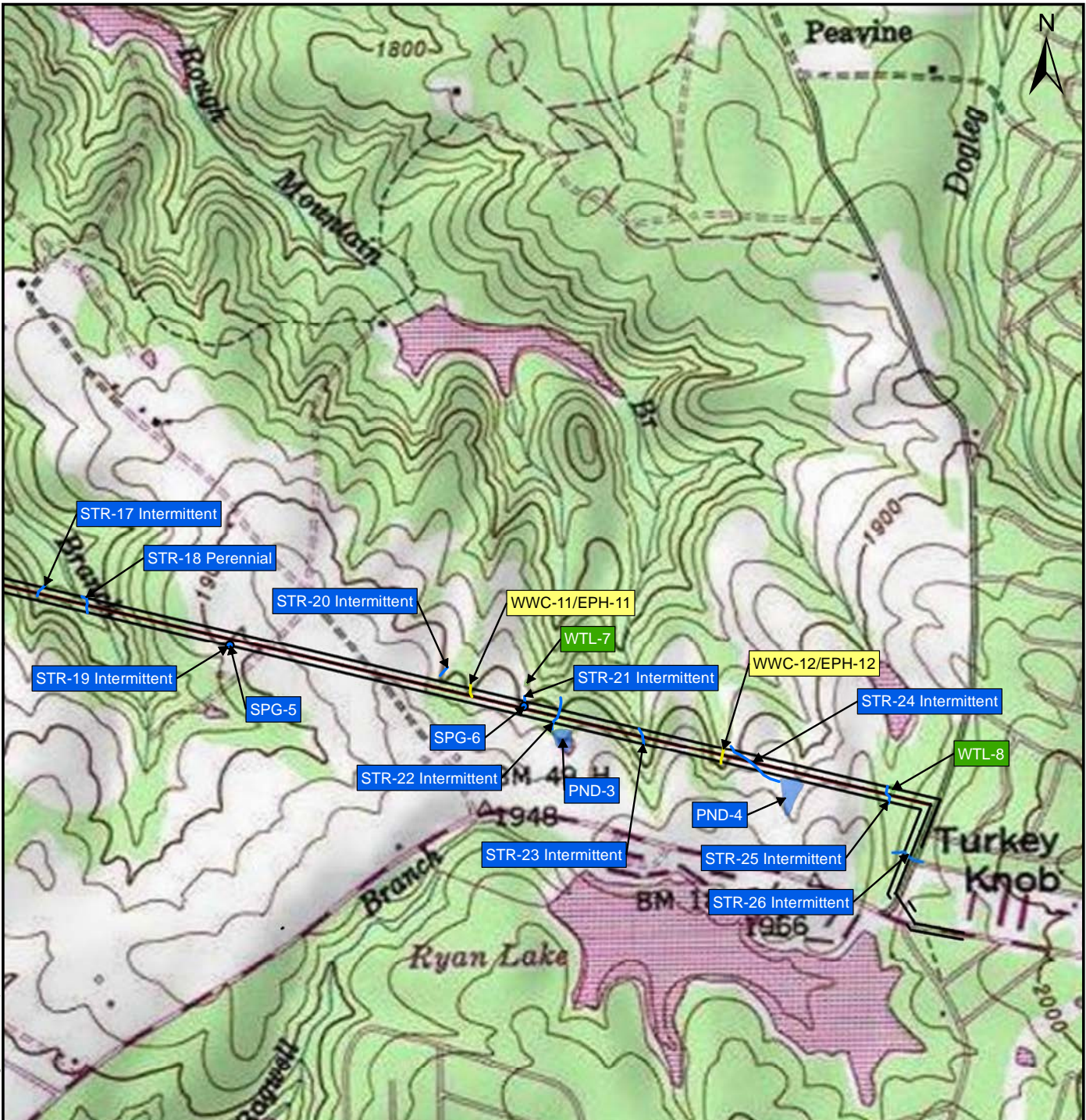
Environmental Boundaries Map (Topo)
 SR-101 (Peavine Rd.)
 Volunteer Electric CO-OP (VEC)
 Powerline Location; Cumberland County
 P.E.: 18038-1230-04; PIN: 100268.03

DWN BY: CDH
 APPRVD BY: RH
 SCALE: 1:12,000 DATE: 01-09-15

PROJECT NO.: 140-149

FIGURE: 1
 SHEET 2 OF 3

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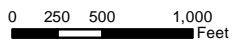


Legend

- New Alignment
- Old Alignment

REFERENCE

USGS TOPOGRAPHIC MAP/ ARCGIS MAP SERVICE:
[HTTP://GOTO.ARCGISONLINE.COM/MAPS/USA_TOPO_MAPS](http://goto.arcgisonline.com/maps/usa_topo_maps),
 ACCESSED 1/9/2015



ISSUED FOR: TDOT

ISSUED BY:
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
 325 Seaboard Lane, Ste 170, Franklin, TN 37067
 Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL
 St. Louis, MO * Export, PA * Detroit, MI

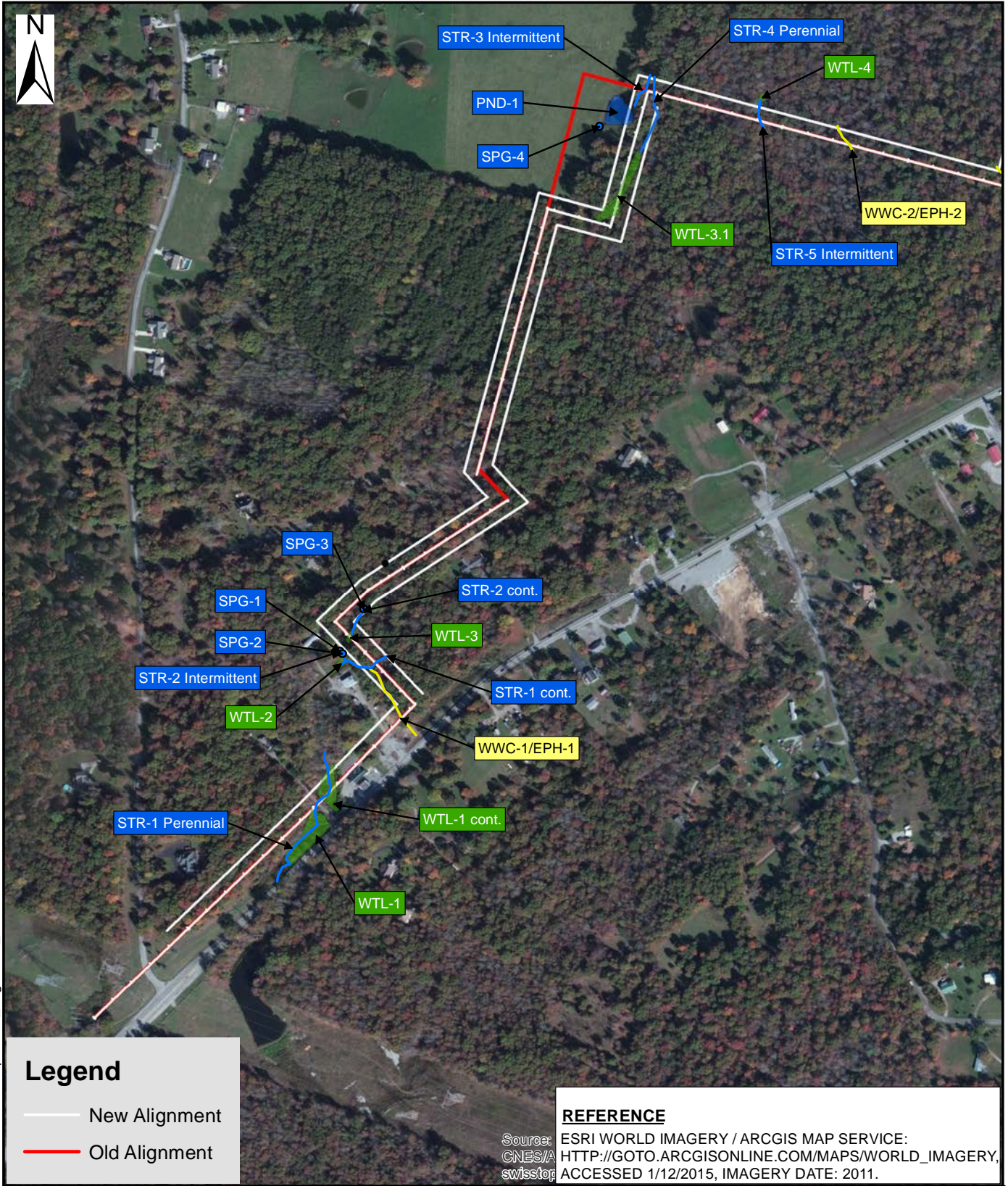
Environmental Boundaries Map (Topo)
 SR-101 (Peavine Rd.)
 Volunteer Electric CO-OP (VEC)
 Powerline Location; Cumberland County
 P.E.: 18038-1230-04; PIN: 100268.03

DWN BY: CDH
 APPRVD BY: RH
 SCALE: 1:12,000
 DATE: 01-09-15

PROJECT NO.: 140-149

FIGURE: 1
 SHEET 3 OF 3

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- New Alignment
- Old Alignment

REFERENCE

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 ACCESSED 1/12/2015, IMAGERY DATE: 2011.

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ISSUED FOR: TDOT

ISSUED BY: **CEC**
 CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
 325 Seaboard Lane, Ste 170, Franklin, TN 37067
 Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL
 St. Louis, MO * Export, PA * Detroit, MI

Environmental Boundaries Map (Aerial)
 SR-101 (Peavine Rd.)
 Volunteer Electric CO-OP (VEC)
 Powerline Location; Cumberland County
 P.E.: 18038-1230-04; PIN: 100268.03

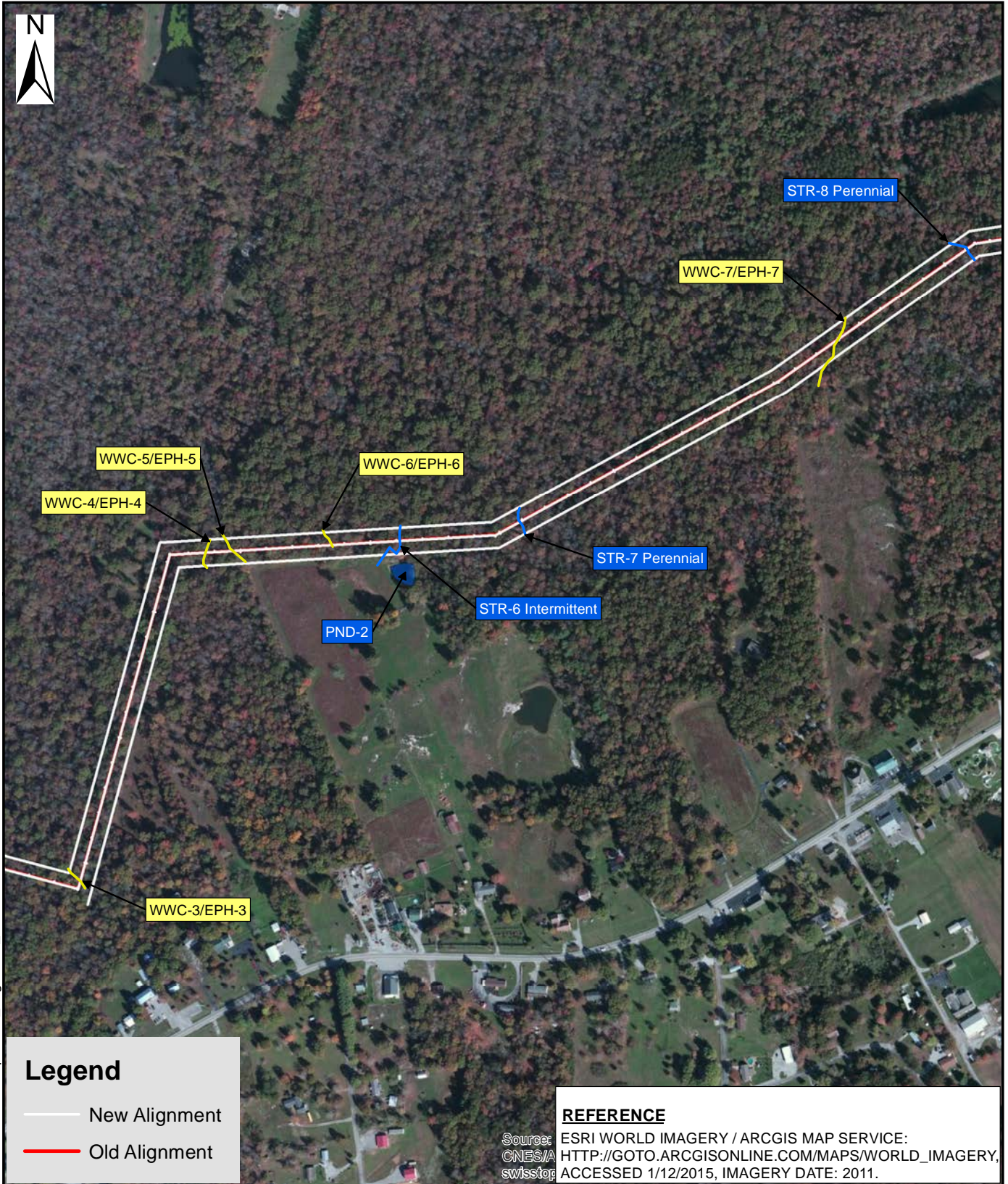
DWN. BY: CDH
 APPRVD BY: RH

SCALE: 1:6,000

DATE: 01-09-15

PROJECT NO.: 140-149

FIGURE: 2
 SHEET 1 OF 7



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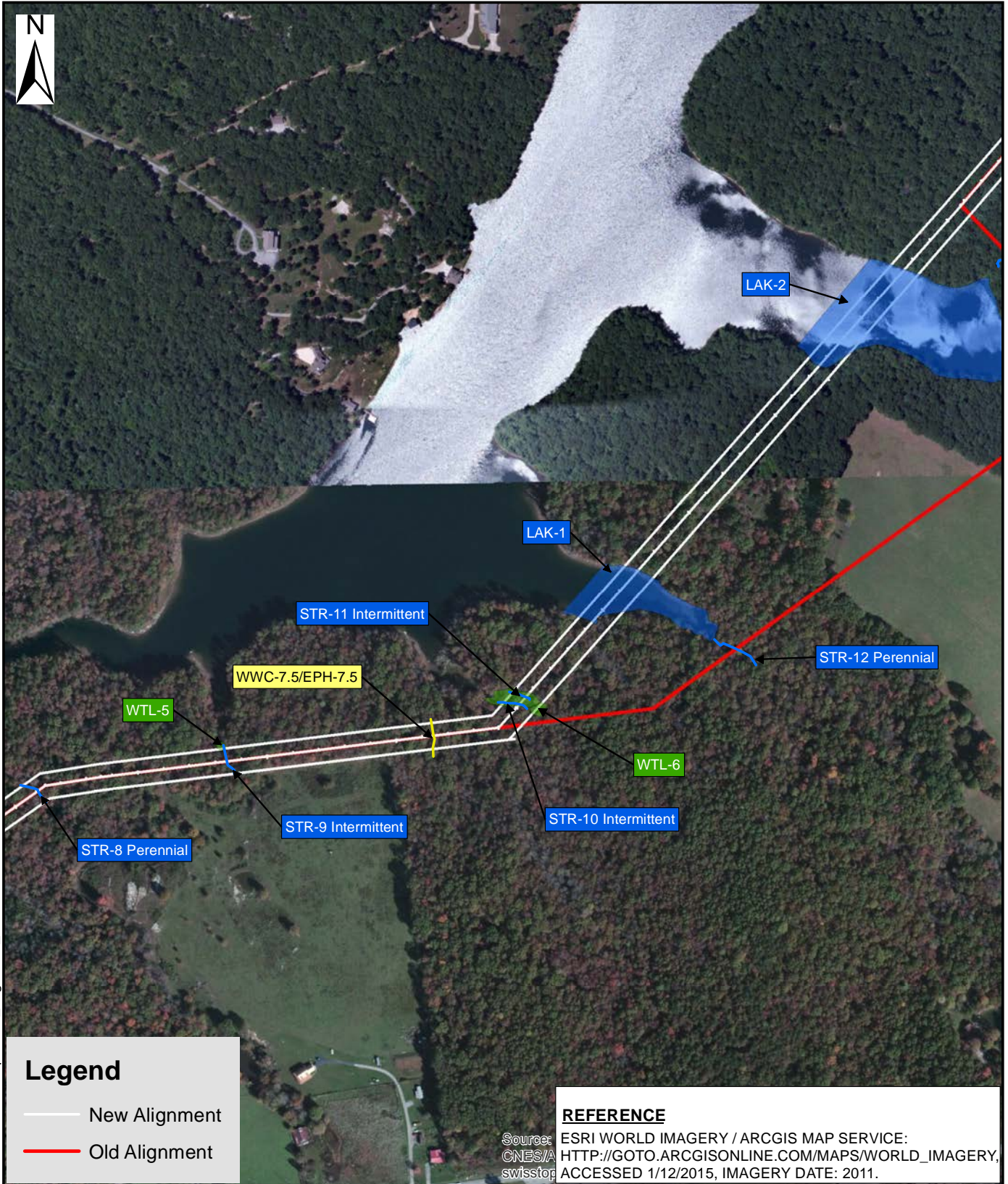
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— Old Alignment

REFERENCE

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	ISSUED FOR: TDOT		Environmental Boundaries Map (Aerial) SR-101 (Peavine Rd.) Volunteer Electric CO-OP (VEC) Powerline Location; Cumberland County P.E.: 18038-1230-04; PIN: 100268.03	
			ISSUED BY:  CIVIL & ENVIRONMENTAL CONSULTANTS, INC. 325 Seaboard Lane, Ste 170, Franklin, TN 37067 Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL St. Louis, MO * Export, PA * Detroit, MI	
DWN. BY: CDH APPRVD BY: RH	SCALE: 1:6,000 DATE: 01-09-15	PROJECT NO.: 140-149	FIGURE: 2 SHEET 2 OF 7	



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- Old Alignment

REFERENCE

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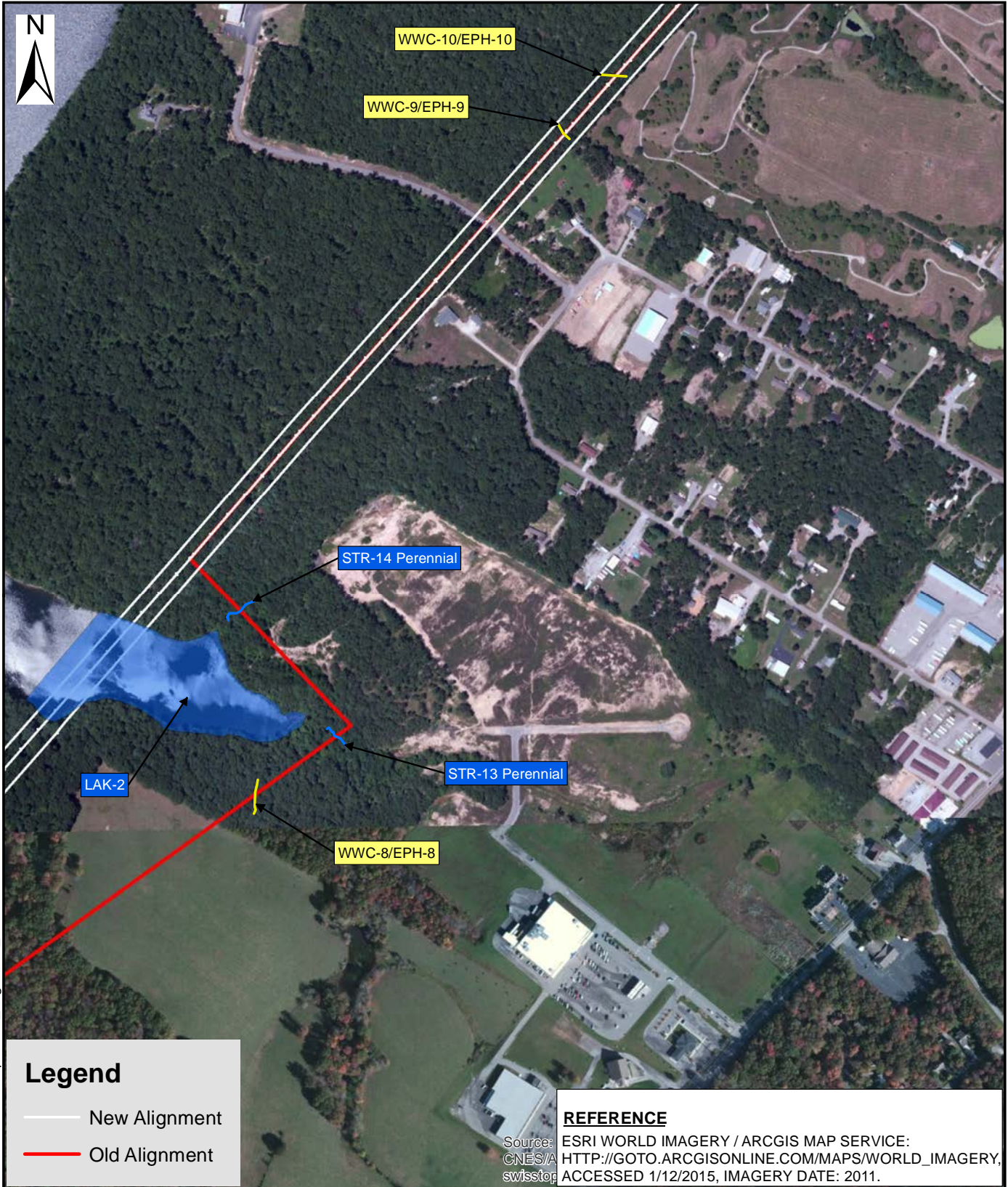


ISSUED FOR: TDOT

ISSUED BY: **CIVIL & ENVIRONMENTAL CONSULTANTS, INC.**
 325 Seaboard Lane, Ste 170, Franklin, TN 37067
 Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL
 St. Louis, MO * Export, PA * Detroit, MI

Environmental Boundaries Map (Aerial)
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 Powerline Location; Cumberland County
 P.E.: 18038-1230-04; PIN: 100268.03

DWN. BY: CDH	SCALE: 1:6,000	DATE: 01-09-15	PROJECT NO.: 140-149	FIGURE: 2
APPRVD BY: RH				SHEET 3 OF 7



Legend

- New Alignment
- Old Alignment

REFERENCE

Source: ESRI WORLD IMAGERY / ARCGIS MAP SERVICE:
 HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY,
 swisstop
 ACCESSED 1/12/2015, IMAGERY DATE: 2011.

0 125 250 500 Feet



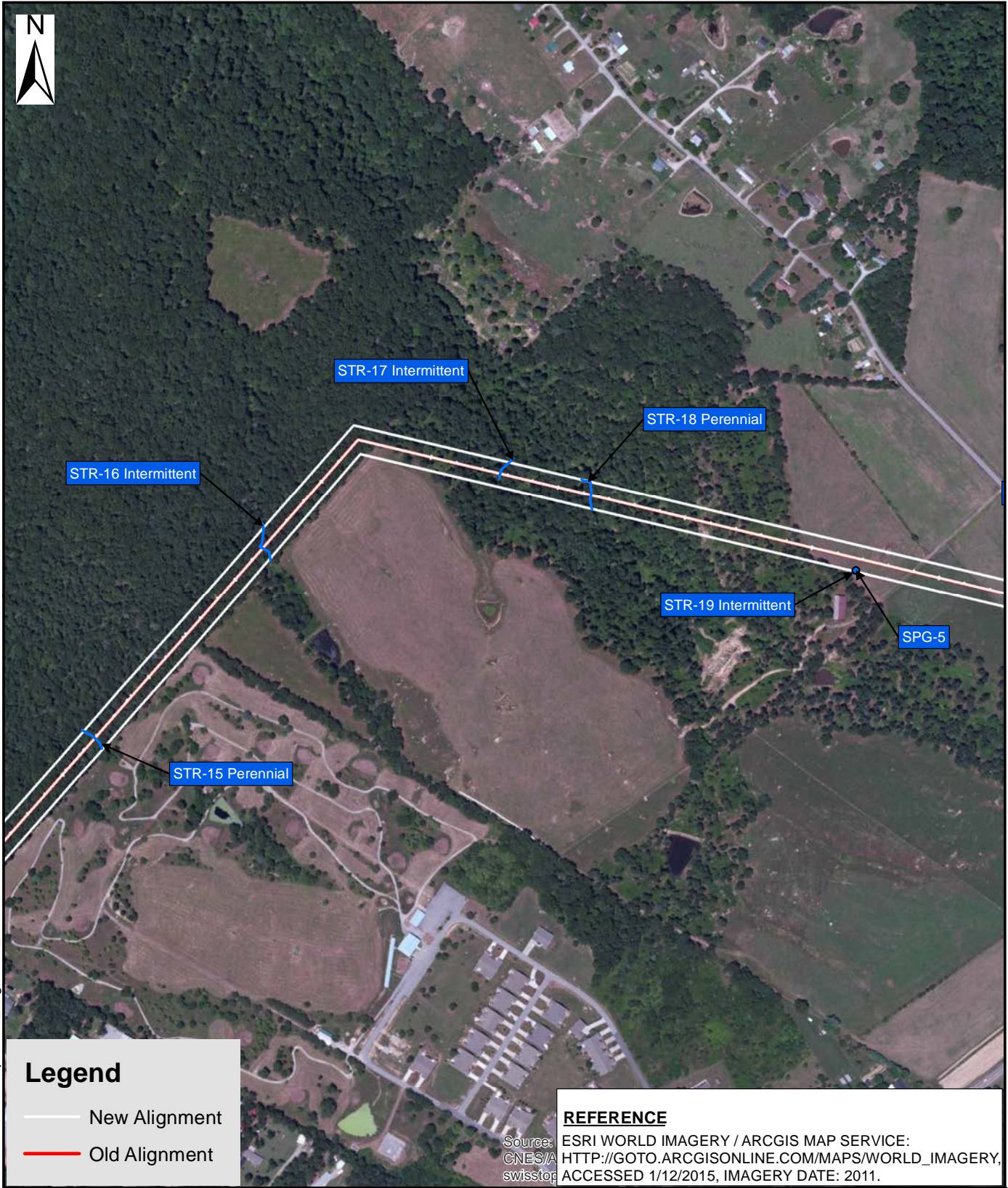
ISSUED FOR: TDOT

ISSUED BY: 
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
 325 Seaboard Lane, Ste 170, Franklin, TN 37067
 Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL
 St. Louis, MO * Export, PA * Detroit, MI

Environmental Boundaries Map (Aerial)
 SR-101 (Peavine Rd.)
 Volunteer Electric CO-OP (VEC)
 Powerline Location; Cumberland County
 P.E.: 18038-1230-04; PIN: 100268.03

DWN. BY: CDH	SCALE: 1:6,000	DATE: 01-09-15	PROJECT NO.: 140-149	FIGURE: 2
APPRVD BY: RH				SHEET 4 OF 7

Document Path: P:\2014\140-149-GIS\Maps\New_Alignment_Aerial.mxd



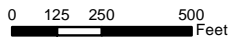
Document Path: P:\2014\140-149-GIS\Maps\New_Alignment_Aerial.mxd

Legend

- New Alignment
- Old Alignment

REFERENCE

Source: ESRI WORLD IMAGERY / ARCGIS MAP SERVICE:
 HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY,
 swisstop ACCESSED 1/12/2015, IMAGERY DATE: 2011.




ISSUED FOR: TDOT

Environmental Boundaries Map (Aerial)
 SR-101 (Peavine Rd.)
 Volunteer Electric CO-OP (VEC)
 Powerline Location; Cumberland County
 P.E.: 18038-1230-04; PIN: 100268.03



ISSUED BY: 
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 325 Seaboard Lane, Ste 170, Franklin, TN 37067
 Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL
 St. Louis, MO * Export, PA * Detroit, MI

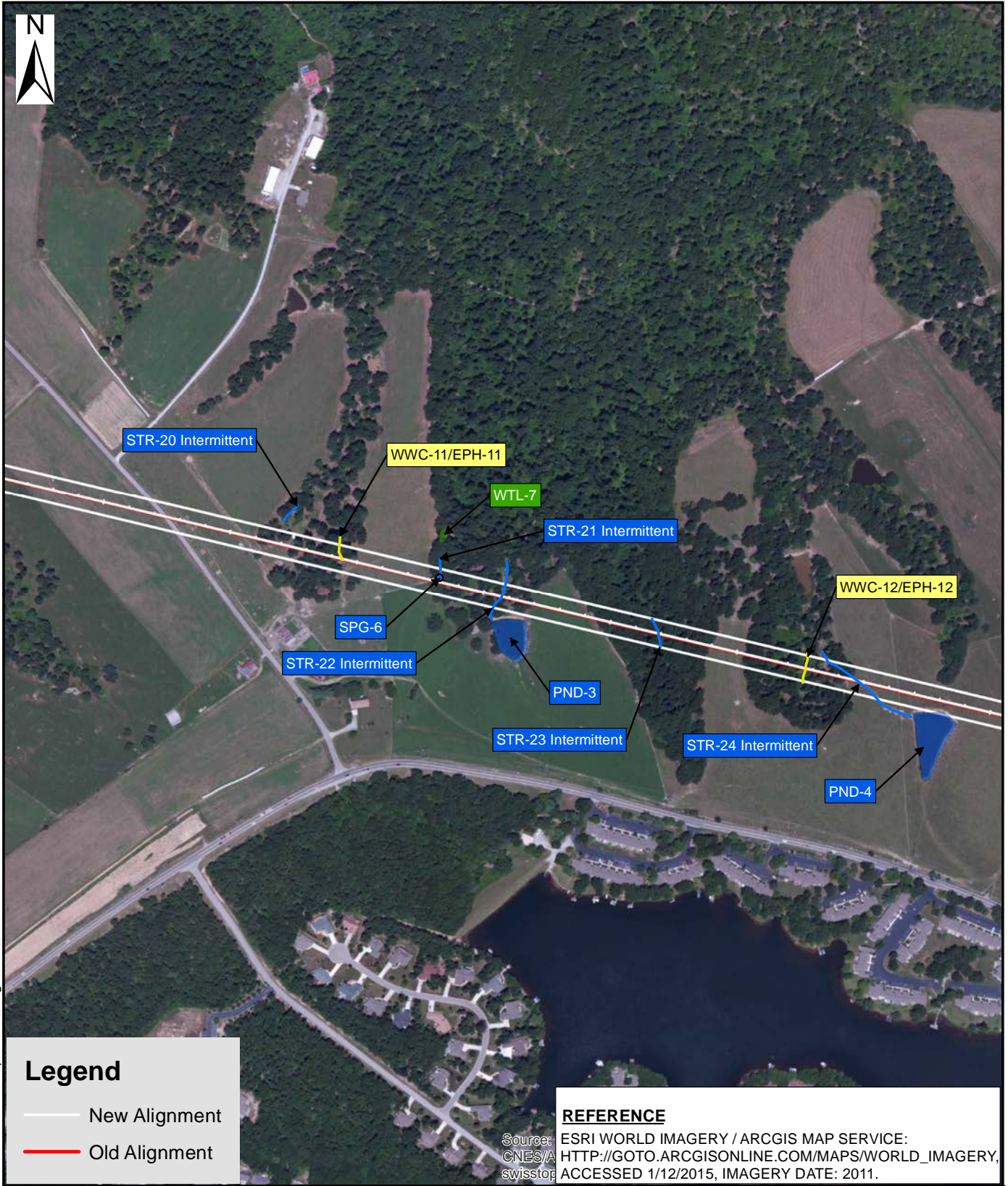
DWN. BY: CDH
 APPRVD BY: RH 

SCALE: 1:6,000

DATE: 01-09-15

PROJECT NO.: 140-149

FIGURE: 2
 SHEET 5 OF 7



Legend

- New Alignment
- Old Alignment

REFERENCE

Source: ESRI WORLD IMAGERY / ARCGIS MAP SERVICE:
 HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY,
 swisstop ACCESSSED 1/12/2015, IMAGERY DATE: 2011.

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
0 125 250 500 Feet



ISSUED FOR: TDOT

ISSUED BY: 
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
 325 Seaboard Lane, Ste 170, Franklin, TN 37067
 Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL
 St. Louis, MO * Export, PA * Detroit, MI

Environmental Boundaries Map (Aerial)
 SR-101 (Peavine Rd.)
 Volunteer Electric CO-OP (VEC)
 Powerline Location; Cumberland County
 P.E.: 18038-1230-04; PIN: 100268.03

DWN BY: CDH
 APPRVD BY: RH 

SCALE: 1:6,000

DATE: 01-09-15

PROJECT NO.: 140-149

FIGURE: 2
 SHEET 6 OF 7



Legend

- New Alignment
- Old Alignment

REFERENCE

Source: ESRI WORLD IMAGERY / ARCGIS MAP SERVICE:
 CNES/A HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY,
 swisstop ACCESSSED 1/12/2015, IMAGERY DATE: 2011.

0 125 250 500 Feet

ISSUED FOR: TDOT

Environmental Boundaries Map (Aerial)
 SR-101 (Peavine Rd.)
 Volunteer Electric CO-OP (VEC)
 Powerline Location; Cumberland County
 P.E.: 18038-1230-04; PIN: 100268.03



ISSUED BY: **CEC**
 CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
 325 Seaboard Lane, Ste 170, Franklin, TN 37067
 Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL
 St. Louis, MO * Export, PA * Detroit, MI

DWN. BY: CDH
 APPRVD BY: RH *[Handwritten Signature]*

SCALE: 1:6,000

DATE: 01-09-15

PROJECT NO.: 140-149

FIGURE: 2
 SHEET 7 OF 7

Document Path: P:\2014\140-149-GIS\Maps\New_Alignment_Aerial.mxd

Approved Plans and Location Maps

FEATURE SUMMARY TABLE:													
Location Information						Permits Needed			Impacts				
Location #	Feature Name	Stream Designation	Latitude Longitude	Stationing	FEMA Map Designation	TDEC	CORP	TVA	Existing Feature Characteristics	Proposed Impact	Impact Acres to Waters of the US (AC)	Volume of Material (CY)	Mitigation Needed
1	STR-1 Unnamed Tributary to North Creek	Perennial	35.9854° 84.9595°	12+00	Map not available	General Aquatic Resource Permit	NW12	Section 26A or Letter of No Objection	•152 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•152 ft. of vegetation removal	0.001		-
2	STR-1 Unnamed Tributary to North Creek	Intermittent		16+50	Map not available	General Aquatic Resource Permit	NW13	Section 26A or Letter of No Objection	•135 ft. of open channel.	•135 ft. of vegetation removal	0.001		-
2	STR-2 Unnamed Tributary to North Creek	Intermittent	35.9874° 84.9588°	19+46	Map not available	General Aquatic Resource Permit	NW12	Section 26A or Letter of No Objection	•133 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•133 ft. of vegetation removal •12 ft. rock ford for equipment crossing	0.001	1.3	-
4	STR-3 Unnamed Tributary to Otter Creek	Intermittent	35.9933° 84.9549°	49+66	Map not available	General Aquatic Resource Permit	Non-Notification - Nationwide #12 (no-verification needed): • A section 10 permit is not required • Mechanized land clearing in forested wetlands for the ROW is not occurring • Discharge results in the loss of less than a tenth of an acre • Utility line does not exceed 500 linear feet in waters of the US excluding overhead lines AND does not run parallel to a stream bed within jurisdictional area All conditions of the Nationwide #12 General Permit will be followed during construction.	Section 26A or Letter of No Objection	•155 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•155 ft. of vegetation removal •12 ft. rock ford for equipment crossing	0.001	1.4	-
4	STR-4 Unnamed Tributary to Otter Creek	Perennial	35.9933° 84.9547°	49+94	Map not available	General Aquatic Resource Permit	Non-Notification - Nationwide #12 (no-verification needed): See Location 4 for conditions of the Non-Notification	Section 26A or Letter of No Objection	•127 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•127 ft. of vegetation removal •12 ft. rock ford for equipment crossing	0.001	1.7	-
5	STR-5 Unnamed Tributary to Otter Creek	Intermittent	35.9930° 84.9534°	54+10	Map not available	General Aquatic Resource Permit	NW12	Section 26A or Letter of No Objection	•114 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•114 ft. of vegetation removal •12 ft. rock ford for equipment crossing	0.001	1.3	-
6	STR-6 Unnamed Tributary to Otter Creek	Intermittent	35.9958° 84.9460°	86+13	Map not available	General Aquatic Resource Permit	Non-Notification - Nationwide #12 (no-verification needed): See Location 4 for conditions of the Non-Notification	Section 26A or Letter of No Objection	•121 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•121 ft. of vegetation removal •12 ft. rock ford for equipment crossing	0.001	1.4	-
7	STR-7 Unnamed Tributary to Otter Creek	Perennial	35.9961° 84.9444°	90+72	Map not available	General Aquatic Resource Permit	Non-Notification - Nationwide #12 (no-verification needed): See Location 4 for conditions of the Non-Notification	Section 26A or Letter of No Objection	•121 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•121 ft. of vegetation removal •12 ft. rock ford for equipment crossing	0.002	2.6	-
8	STR-8 Unnamed Tributary to Otter Creek	Perennial	35.9989° 84.9385°	111+10	Map not available	General Aquatic Resource Permit	Non-Notification - Nationwide #12 (no-verification needed): See Location 4 for conditions of the Non-Notification	Section 26A or Letter of No Objection	•114 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•114 ft. of vegetation removal •12 ft. rock ford for equipment crossing	0.002	29.3	-
9	STR-9 Unnamed Tributary to Otter Creek	Intermittent	35.9992° 84.9361°	118+44	Map not available	General Aquatic Resource Permit	NW12	Section 26A or Letter of No Objection	•114 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•114 ft. of vegetation removal •12 ft. rock ford for equipment crossing	0.001	3.1	-
10	STR-10 Unnamed Tributary	Intermittent	35.9997° 84.9322°	130+10	Zone x	General Aquatic Resource Permit	NW12	Section 26A or Letter of No Objection	•96 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•96 ft. of vegetation removal •12 ft. rock ford for equipment crossing	0.000	22.2	-
10	STR-11 Unnamed Tributary	Intermittent	35.9998° 84.9322°	130+51	Zone x	General Aquatic Resource Permit	NW12	Section 26A or Letter of No Objection	•66 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•66 ft. of vegetation removal •12 ft. rock ford for equipment crossing	0.000	0.3	-
11	LAK-1/STR-12		36.0005° 84.9297°	134+40-137+10.	Zone x	General Aquatic Resource Permit	Non-Notification - Nationwide #12 (no-verification needed): See Location 4 for conditions of the Non-Notification	Section 26A or Letter of No Objection	130 ft. of open stream	130 ft. of vegetation removal	-		-
12	LAK-2		36.0005° 84.9246°	147+50-152+50	Zone x	General Aquatic Resource Permit	Non-Notification - Nationwide #12 (no-verification needed): See Location 4 for conditions of the Non-Notification	Section 26A or Letter of No Objection	110 ft. of open stream	110 ft. of vegetation removal	-		-
13	STR-15 Unnamed Tributary to Otter Creek	Perennial	36.0113° 84.9194°	186+51	Zone x	General Aquatic Resource Permit	Non-Notification - Nationwide #12 (no-verification needed): See Location 4 for conditions of the Non-Notification	Section 26A or Letter of No Objection	•121 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•121 ft. of vegetation removal •12 ft. rock ford for equipment crossing	0.002	2.4	-
14	STR-16 Unnamed Tributary to Otter Creek	Intermittent	36.0133° 84.9172°	196+64	Zone x	General Aquatic Resource Permit	Non-Notification - Nationwide #12 (no-verification needed): See Location 4 for conditions of the Non-Notification	Section 26A or Letter of No Objection	•144 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•144 ft. of vegetation removal •12 ft. rock ford for equipment crossing	0.001	52.0	-
15	STR-17 Unnamed Tributary to Otter Creek	Intermittent	36.0141° 84.9141°	207+71	Zone x	General Aquatic Resource Permit	Non-Notification - Nationwide #12 (no-verification needed): See Location 4 for conditions of the Non-Notification	Section 26A or Letter of No Objection	•111 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•111 ft. of vegetation removal •12 ft. rock ford for equipment crossing	0.001	1.8	-
16	STR-18 Bee Branch	Perennial	36.0139° 84.9129°	211+36	Zone x	General Aquatic Resource Permit	Non-Notification - Nationwide #12 (no-verification needed): See Location 4 for conditions of the Non-Notification	Section 26A or Letter of No Objection	•111 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•111 ft. of vegetation removal •12 ft. rock ford for equipment crossing	0.005	55.6	-
17	STR-20 Unnamed Tributary to Rough Mountain Branch	Intermittent	36.0125° 84.9044°	236+42	Zone x	General Aquatic Resource Permit	Non-Notification - Nationwide #12 (no-verification needed): See Location 4 for conditions of the Non-Notification	Section 26A or Letter of No Objection	•108 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•108 ft. of vegetation removal •12 ft. rock ford for equipment crossing	0.001	0.9	-
18	STR-21 Unnamed Tributary to Rough Mountain Branch	Intermittent	36.0118° 84.9025°	243+28	Zone x	General Aquatic Resource Permit	NW12	Section 26A or Letter of No Objection	•49 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•49 ft. of vegetation removal	-		-
19	STR-22 Unnamed Tributary to Rough Mountain Branch	Intermittent	36.0159° 84.9016°	245+70	Zone x	General Aquatic Resource Permit	Non-Notification - Nationwide #12 (no-verification needed): See Location 4 for conditions of the Non-Notification	Section 26A or Letter of No Objection	•112 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•112 ft. of vegetation removal •12 ft. rock ford for equipment crossing	0.001	1.3	-
20	STR-23 Unnamed Tributary to Rough Mountain Branch	Intermittent	36.0111° 84.8996°	252+00	Zone x	General Aquatic Resource Permit	Non-Notification - Nationwide #12 (no-verification needed): See Location 4 for conditions of the Non-Notification	Section 26A or Letter of No Objection	•104 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•104 ft. of vegetation removal •12 ft. rock ford for equipment crossing	0.001	22.2	-
21	STR-24 Unnamed Tributary to Rough Mountain Branch	Intermittent	36.0104° 84.8968°	259+74	Map not available	General Aquatic Resource Permit	Non-Notification - Nationwide #12 (no-verification needed): See Location 4 for conditions of the Non-Notification	Section 26A or Letter of No Objection	•119 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•119 ft. of vegetation removal •12 ft. rock ford for equipment crossing	0.001	1.2	-
22	STR-25 Unnamed Tributary to Rough Mountain Branch	Intermittent	36.0100° 84.8938°	269+74	Map not available	General Aquatic Resource Permit	NW12	Section 26A or Letter of No Objection	•119 ft. of open channel. •See enclosed Environmental Boundaries Report for more information	•119 ft. of vegetation removal •12 ft. rock ford for equipment crossing	0.001	1.7	-
Project Totals:													

Approved Plans and Location Maps

WET WEATHER CONVEYANCE SUMMARY TABLE:								
Location Information				Impact Description				Comments
Feature Name	Latitude	Longitude	Station	Brief Impact Description	Total Existing Feature Length (ft.)	Total Proposed Feature Length (ft.)	Total Feature Impact Area (ac.)	Location-Specific Miscellaneous Comments
WWC-2/EPH-2	35.9927°	84.9522°	57+50	Vegetation Removal	165	165	0.0	-
WWC-3/EPH-3	35.9923°	84.9501°	64+00	Vegetation Removal	160	160	0.0	-
WWC-4/EPH-4	35.9958°	84.9485°	78+80	Vegetation Removal	110	110	0.0	-
WWC-5/EPH-5	35.9958°	84.9481°	79+70	Vegetation Removal	130	130	0.0	-
WWC-6/EPH-6	35.9959°	84.9469°	83+40	Vegetation Removal	130	130	0.0	-
WWC-7/EPH-7	35.9978°	84.9403°	105+00	Vegetation Removal	200	200	0.0	-
WWC-7.5/EPH-7.5	35.9994°	84.9334°	126+50	Vegetation Removal	100	100	0.0	-
WWC-9/EPH-9	36.0094°	84.9216°	177+30	Vegetation Removal	110	110	0.0	-
WWC-10/EPH-10	36.0100°	84.9209°	180+40	Vegetation Removal	130	130	0.0	-
WWC-11/EPH-11	36.0121°	84.9038°	239+40	Vegetation Removal	60	60	0.0	-
					1,395	1,395	0.000	-

Approved Plans and Location Maps

WETLAND SUMMARY TABLE:															
Location Information													Mitigation Description		
Location #	Feature Name	Latitude	Longitude	Station	Existing Wetland Area (ac.)	Type of Impact	Fill Impact Area (SF)	Wetland Fill Volume (CY)	Vegetation Removal (SF)	Vegetation Removal (ac.)	Fill Impact Acreage for Rock Ford(ac.)	Vegetation Removal minus Fill Impact for Rock Ford (ac.)	Wetland Debit Rock Ford(ac.) (@ 2:1 ratio)	Wetland Debit Vegetation Removal (ac.) (51% lost function @ 2:1 ratio)	Wetland Mitigation
1	WTL-1A	35.9855°	84.9593°	11+60	0.399	Vegetation Removal Only	0.0	0.0							
1	WTL-1B	35.9857°	84.9592°	12+20	0.100	Vegetation Removal Only	0.0	0.0							
2	WTL-3	35.9876°	84.9588°	28+80	0.029	Vegetation Removal Only	0.0	0.0							
3	WTL-3-1	35.9716°	84.9801°	45+50	0.230	Vegetation Removal Only	0.0	0.0							
9	WTL-5	35.9994°	84.9361°	118+35	0.012	Vegetation Removal Only	0.0	0.0							
10	WTL-6	35.9997°	84.9320°	130+50	0.240	Vegetation Removal and Wetland Fill	600.0	22.2	6316.0	0.145	0.015	0.130	0.03	0.13	Tennessee Mitigation Fund
22	WTL-8	36.0100°	84.8936°	270+20	0.093	Vegetation Removal and Wetland Fill	240.0	8.9	2750.0	0.063	0.006	0.058	0.01	0.06	Tennessee Mitigation Fund
Project Totals:						0.000					0.021	0.188	0.04	0.19	-
											WETLAND MITIGATION GRAND TOTAL		0.23		

EROSION PREVENTION AND SEDIMENT CONTROL NOTES

STREAM/WETLAND

- (1) ANY WORK WITHIN THE STREAM CHANNEL AREA (E.G., FOR PIER FOOTING, RIP-RAP PLACEMENT, MULTI-BARREL CULVERT/BRIDGE CONSTRUCTION, ETC.) SHALL BE SEPARATED FROM FLOWING WATER OR EXPECTED FLOW PATH AND PERFORMED DURING LOW FLOW CONDITIONS. ALL ITEMS USED WITHIN THE STREAM CHANNEL AREA FOR DIVERSION OF FLOW (OR EXPECTED FLOW), UNLESS SPECIFIED IN THE PLANS, SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE COST OF OTHER ITEMS. THIS NOTE EXCLUDES ANY ITEMS SPECIFIED IN THE PLANS FOR THE TEMPORARY DIVERSION CHANNELS, EC-STR-31 AND TEMPORARY DIVERSION CULVERTS, EC-STR-32 FOR SINGLE BARREL CULVERT CONSTRUCTION.
- (2) A 30 FOOT NATURAL A 30 FOOT NATURAL RIPARIAN BUFFER ZONE ADJACENT TO AND ON BOTH SIDES OF THE RECEIVING STREAM SHALL BE PRESERVED, TO THE MAXIMUM EXTENT PRACTICABLE, DURING CONSTRUCTION ACTIVITIES AT THE SITE. BUFFER ZONES ARE NOT SEDIMENT CONTROL MEASURES AND SHOULD NOT BE RELIED UPON AS PRIMARY SEDIMENT CONTROL MEASURES. THE RIPARIAN BUFFER ZONE SHALL BE ESTABLISHED BETWEEN THE TOP OF THE STREAM BANK AND THE DISTURBED CONSTRUCTION AREA. THE 30 FOOT CRITERION FOR THE WIDTH OF THE BUFFER ZONE CAN BE ESTABLISHED ON AN AVERAGE WIDTH BASIS AT A PROJECT, AS LONG AS THE MINIMUM WIDTH OF THE BUFFER ZONE IS MORE THAN 15 FEET AT ANY MEASURED LOCATION. EVERY ATTEMPT SHALL BE MADE FOR CONSTRUCTION ACTIVITIES NOT TO TAKE PLACE WITHIN THE BUFFER ZONES. BEST MANAGEMENT PRACTICES (BMPs) PROVIDING EQUIVALENT PROTECTION AS THE NATURAL RIPARIAN ZONE MAY BE USED. A JUSTIFICATION FOR USE AND DESIGN EQUIVALENCY SHALL BE DOCUMENTED WITHIN THE SWPPP. THE ENVIRONMENTAL AND ROADWAY DESIGN DIVISIONS SHALL REVIEW AND APPROVE THIS REVISION OF THE SWPPP BEFORE DISTURBANCE OF THE SITE PROCEEDS, UNLESS PREVIOUSLY EXEMPT IN THE NPDES CONSTRUCTION GENERAL PERMIT. WHERE ISSUED, ARAP/401 REQUIREMENTS WILL PREVAIL IF IN CONFLICT WITH THESE BUFFER ZONE REQUIREMENTS.

NPDES

- (3) NO WORK SHALL BE STARTED UNTIL THE CONTRACTOR'S PLAN FOR THE STAGING OF THEIR OPERATIONS, INCLUDING THE PLAN FOR STAGING OF TEMPORARY AND PERMANENT EPSC MEASURES, HAS BEEN ACCEPTED BY THE ENGINEER. THE CONTRACTOR'S EPSC PLAN SHALL INCORPORATE AND SUPPLEMENT, AS ACCEPTABLE, THE BASIC EPSC DEVICES ON THE EPSC PLAN CONTAINED IN THE APPROVED SWPPP.
- (4) THE EPSC MEASURES AND/OR PLAN SHALL BE MODIFIED AS NECESSARY SO THAT THEY ARE EFFECTIVE AT ALL TIMES THROUGHOUT THE COURSE OF THE PROJECT.
- (5) THE ACCEPTED EPSC PLAN SHALL REQUIRE THAT EPSC MEASURES BE IN PLACE BEFORE CLEARING, GRUBBING, EXCAVATION, GRADING, CUTTING OR FILLING OCCURS, EXCEPT AS SUCH WORK MAY BE NECESSARY TO INSTALL EPSC MEASURES, INCLUDING WITHOUT LIMITATION AS FOLLOWS:
 - A. INITIAL CLEARING AND GRUBBING SHALL BE LIMITED TO THAT NECESSARY FOR THE INSTALLATION OF APPLICABLE EPSC MEASURES IN ACCORDANCE WITH THE ACCEPTED EPSC PLAN INCORPORATED INTO THE SWPPP.
 - B. NO OTHER CLEARING AND GRUBBING OPERATIONS SHALL BE STARTED BEFORE APPLICABLE EPSC MEASURES ARE IN PLACE IN ACCORDANCE WITH THE ACCEPTED EPSC PLAN INCORPORATED INTO THE SWPPP.
 - C. NO CULVERT OR BRIDGE CONSTRUCTION SHALL BE STARTED BEFORE APPLICABLE EPSC MEASURES ARE IN PLACE IN ACCORDANCE WITH THE ACCEPTED EPSC PLAN INCORPORATED INTO THE SWPPP.
 - D. NO GRADING, EXCAVATION, CUTTING, FILLING, OR OTHER EARTHWORK SHALL BE STARTED BEFORE EPSC MEASURES ARE IN PLACE IN ACCORDANCE WITH THE ACCEPTED EPSC PLAN INCORPORATED INTO THE SWPPP.
- (6) PERMANENT EPSC MEASURES SHALL BE INITIATED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OF ANY SEQUENCE OR PHASE. TEMPORARY OR PERMANENT STABILIZATION SHALL BE INITIATED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHEN CONSTRUCTION ACTIVITIES ON A PORTION OF THE SITE ARE TEMPORARILY CEASED AND EARTH DISTURBING ACTIVITIES WILL NOT RESUME UNTIL AFTER 14 CALENDAR DAYS. PERMANENT STABILIZATION WITH PERENNIAL VEGETATION OR OTHER PERMANENTLY STABLE NON-ERODING SURFACE SHALL REPLACE

ANY TEMPORARY MEASURES AS SOON AS PRACTICABLE. UNPACKED GRAVEL CONTAINING FINES (SILT AND CLAY SIZED PARTICLES) OR CRUSHER-RUN WILL NOT BE CONSIDERED A NON-ERODIBLE SURFACE.

- (7) STEEP SLOPES (A NATURAL OR CREATED SLOPE OF 35% GRADE (2.8H:1V) OR GREATER REGARDLESS OF HEIGHT) SHALL BE TEMPORARILY STABILIZED NO LATER THAN 7 CALENDAR DAYS AFTER CONSTRUCTION ACTIVITY ON THE SLOPE HAS TEMPORARILY OR PERMANENTLY CEASED.
- (8) EXCEPT AS OTHERWISE SPECIFIED, THERE ARE NO KNOWN SPECIAL ENVIRONMENTAL FACTORS PRESENT ON THIS PROJECT THAT INDICATE A NEED FOR SEASONAL LIMITATIONS ON THE CLEARING, GRUBBING, EXCAVATION, GRADING, CUTTING OR FILLING OPERATIONS OR ON THE TOTAL AREA OF EXPOSED SOIL.

UTILITY RELOCATION

- (9) IT IS THE RESPONSIBILITY OF THE STATE UTILITY CONTRACTOR INSTALLER TO PROTECT FROM EROSION EXPOSED EARTH RESULTING FROM THEIR OPERATIONS AND TO PROVIDE FOR CONTAINMENT OF SEDIMENT THAT MAY RESULT FROM THEIR WORK. PRIOR TO BEGINNING WORK, ADEQUATE MEASURES MUST BE IN PLACE TO TRAP ANY SEDIMENT THAT MAY TRAVEL OFF-SITE IN THE EVENT OF RAIN. DURING THE PROGRESSION OF THEIR WORK, EXPOSED EARTH AREAS SHALL BE STABILIZED AS SOON AS POSSIBLE TO PREVENT EROSION. AT NO TIME SHALL EXPOSED EARTH RESULTING FROM THEIR OPERATIONS HAVE UNPROTECTED ACCESS TO FLOWING OFF-SITE AND ENTERING WATERS OF THE STATE/U.S.
- (10) IN REGARD TO EROSION PREVENTION AND SEDIMENT CONTROL (EPSC), TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC) REGULATIONS APPLY TO THE STATE UTILITY CONTRACTORS IN THIS PROJECT, THEREFORE, THE STATE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE STORM WATER POLLUTIONS PREVENTION PLANS (SWPPP). THE STATE CONTRACTOR IS RESPONSIBLE FOR EPSC MEASURES RELATED TO UTILITY CONSTRUCTION INCLUDED IN THE STATE CONTRACT WORK.
- (11) THE UTILITY CONTRACTOR SHALL RESTORE ALL AFFECTED WET WEATHER CONVEYANCES TO THE EXISTING TOPOGRAPHIC CONDITIONS (AS APPROVED BY THE TDOT PROJECT ENGINEER).
- (12) THE UTILITY CONTRACTOR WILL PROVIDE APPROPRIATE EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURES TO REPLACE IN-PLACE EPSC MEASURES REMOVED TO FACILITATE THE INSTALLATION OF UTILITIES. REPLACEMENT OF EPSC MEASURES WILL BE COORDINATED WITH THE TDOT PROJECT ENGINEER BEFORE COMMENCING WORK.
- (13) UTILITY CROSSINGS FOR PERENNIAL STREAMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH TDOT STANDARDS AND NO WORK SHALL BE CONDUCTED IN FLOWING WATERS. TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC) REGULATIONS APPLY TO UTILITIES IN THIS PROJECT IN REGARD TO EROSION PREVENTION AND SEDIMENT CONTROL (EPSC). THE STATE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE STORM WATER POLLUTION PREVENTION PLANS (SWPPP).
- (14) IN REGARD TO EROSION PREVENTION AND SEDIMENT CONTROL (EPSC), TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC) REGULATIONS APPLY TO THE STATE UTILITY CONTRACTORS IN THIS PROJECT, THEREFORE, THE STATE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE STORM WATER POLLUTIONS PREVENTION PLANS (SWPPP). THE STATE CONTRACTOR IS RESPONSIBLE FOR EPSC MEASURES RELATED TO UTILITY CONSTRUCTION INCLUDED IN THE STATE CONTRACT WORK.

ECOLOGY

- (2) DUE TO CONCERNS FOR THE BLACK MOUNTAIN DUSKY SALAMANDER, DESMOGNATHUS WELTERI, TWRA REQUESTS A PRESENCE/ABSENCE SURVEY/SWEEP OF THE RIPARIAN AREAS ADJACENT TO STREAMS WITHIN THE PROJECT LIMITS PRIOR TO CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL CONTACT TDOT ECOLOGY SECTION FOUR WEEKS PRIOR TO START OF CONSTRUCTION.

EROSION PREVENTION AND SEDIMENT CONTROL LEGEND		
SYMBOL	ITEM	STD. DWG.
★ SFB ★ SFB ★ SFB ★	SILT FENCE WITH WIRE BACKING	EC-STR-3C
★ SCK ★ SCK ★	FILTER SOCK	EC-STR-8
× HVF × HVF	HIGH VISIBILITY FENCE	S-F-1
○	POLE EXCAVATION SOIL TEMPORARY STORAGE	
▨	AREAS TO BE SEEDED AS DIRECTED BY THE ENGINEER	
PCF	PERMANENT CONSTRUCTION FORD	EC-STR-25

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2015	STP-101(21)	59

ESTIMATED ROADWAY QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
209-03.22	FILTER SOCK (18 INCH)	L.F.	25750
209-08.02	TEMPORARY SILT FENCE (WITH BACKING)	L.F.	7100
209-09.01	SANDBAGS	BAG	962
209-20.03	POLYETHYLENE SHEETING (6 MIL. MINIMUM)	S.Y.	3375
707-08.11	HIGH-VISIBILITY CONSTRUCTION FENCE	L.F.	6450
709-05.05	MACHINED RIP-RAP (CLASS A-3)	TON	1500
740-10.03	GEOTEXTILE (TYPE III)(EROSION CONTROL)	S.Y.	2400
801-01	SEEDING (WITH MULCH)	UNIT	1800
801-01.07	TEMPORARY SEEDING (WITH MULCH)	UNIT	1800
801-01.16	BONDED FIBER MATRIX HYDROMULCH (W/PERMANENT SEED)	UNIT	400

NOTE: ALL QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER.

OUTFALL POINTS	
OUTFALL	AREA (ACRES)
1	11.5
2	4.1
3	16.97
4	3.34
5	4.12
6	9.51
7	11.79
8	3.48
9	6
10	6.45
11	4.38

PHASING NOTES

PHASE 1: EROSION PREVENTION AND SEDIMENT CONTROLS ARE TO BE INSTALLED INCLUDING BUT NOT LIMITED TO SILT FENCING, FILTER SOCKS, AND HIGH VISIBILITY FENCING. PERMANENT CONSTRUCTION FORDS ARE TO BE CONSTRUCTED. TREES ARE TO BE SHREDDED TO GROUND WITH STUMP AND ROOT BALL TO REMAIN, THE RESULTING MULCH SHALL BE SPREAD EVENLY ACROSS PROJECT EASEMENT.

PHASE 2: ELECTRICAL POLES AND WIRING ARE TO BE INSTALLED. EXCAVATION MATERIAL SHALL BE TEMPORARILY STORED DURING POLE INSTALLATION. EXISTING EPSC MEASURES ARE TO REMAIN AND BE MAINTAINED.

PHASE 3: NON-DEGRADABLE EPSC MEASURES SHALL BE REMOVED INCLUDING BUT NOT LIMITED TO SILT FENCING AND HIGH VISIBILITY FENCING. AREAS LACKING IN VEGETATION SHALL BE SEEDED AT THE DIRECTION OF THE ENGINEER.

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EROSION PREVENTION AND SEDIMENT CONTROL NOTES, LEGEND & DETAILS

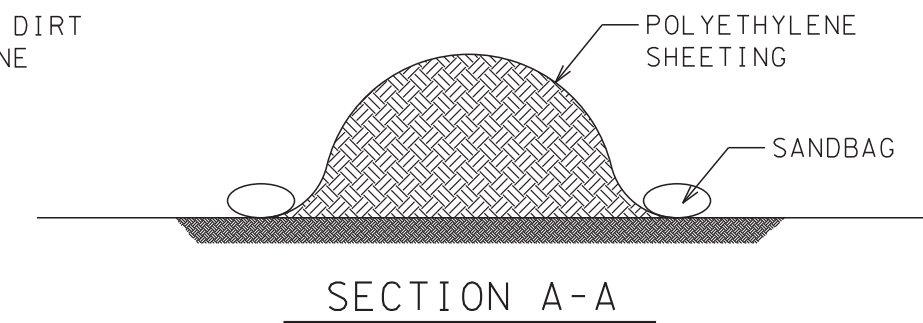
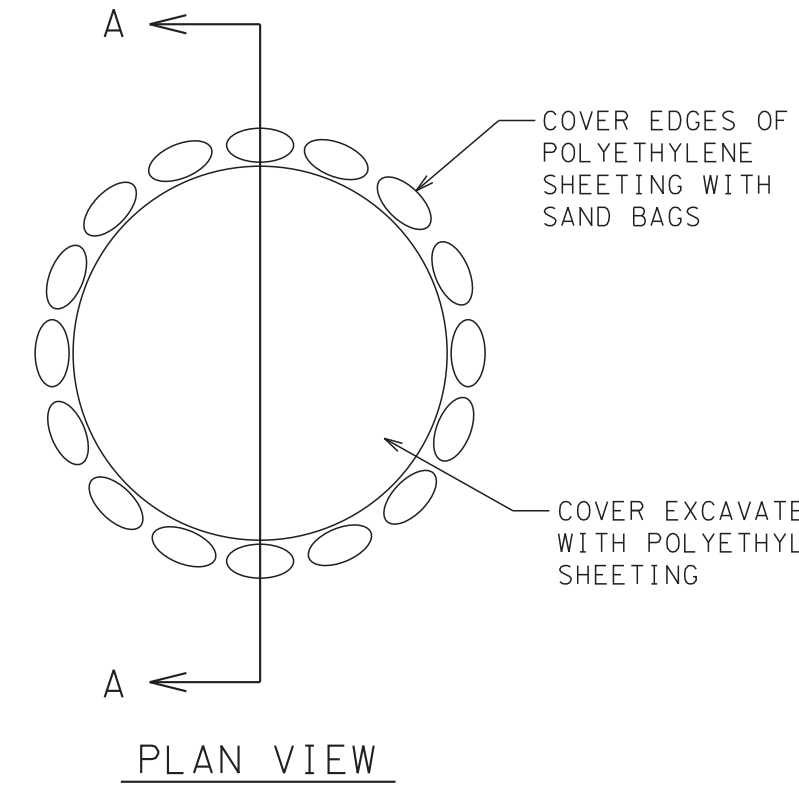
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2015	STP-101(21)	60

STREAM TABLE		
STREAM	METHOD OF CROSSING (L' X W')	DESCRIPTION OF IMPACTION
STR-1	N/A	VEGETATION REMOVAL (152')
STR-1.1	N/A	VEGETATION REMOVAL (135')
STR-2	ROCK FORD (105 x 12)	VEGETATION REMOVAL (133')
STR-3	ROCK FORD (40 x 12)	VEGETATION REMOVAL (155')
STR-4	ROCK FORD (64 x 12)	VEGETATION REMOVAL (127')
STR-5	ROCK FORD (73 x 12)	VEGETATION REMOVAL (114')
STR-6	ROCK FORD (150 x 12)	VEGETATION REMOVAL (121')
STR-7	ROCK FORD (130 x 12)	VEGETATION REMOVAL (121')
STR-8	ROCK FORD (66 x 12)	VEGETATION REMOVAL (114')
STR-9	ROCK FORD (108 x 12)	VEGETATION REMOVAL (114')
STR-10	ROCK FORD (50 X 12)	VEGETATION REMOVAL (96')
STR-11	ROCK FORD (50 X 12)	VEGETATION REMOVAL (66')
STR-12/LAKE-1	N/A	N/A
LAKE - 2	N/A	N/A
STR-14	N/A	N/A
STR-15	ROCK FORD (96 x 12)	VEGETATION REMOVAL (121')
STR-16	ROCK FORD (117 x 12)	VEGETATION REMOVAL (144')
STR-17	ROCK FORD (75 x 12)	VEGETATION REMOVAL (111')
STR-18	ROCK FORD (125 x 12)	VEGETATION REMOVAL (111')
STR-19	N/A	N/A
STR-20	ROCK FORD (120 x 12)	VEGETATION REMOVAL (108')
STR-21	N/A	VEGETATION REMOVAL (49')
STR-22	ROCK FORD (117 x 12)	VEGETATION REMOVAL (112')
STR-23	ROCK FORD (50 x 12)	VEGETATION REMOVAL (104')
STR-24	ROCK FORD (42 x 12)	VEGETATION REMOVAL (199')
STR-25	ROCK FORD (75 x 12)	VEGETATION REMOVAL (119')
STR-26	N/A	N/A

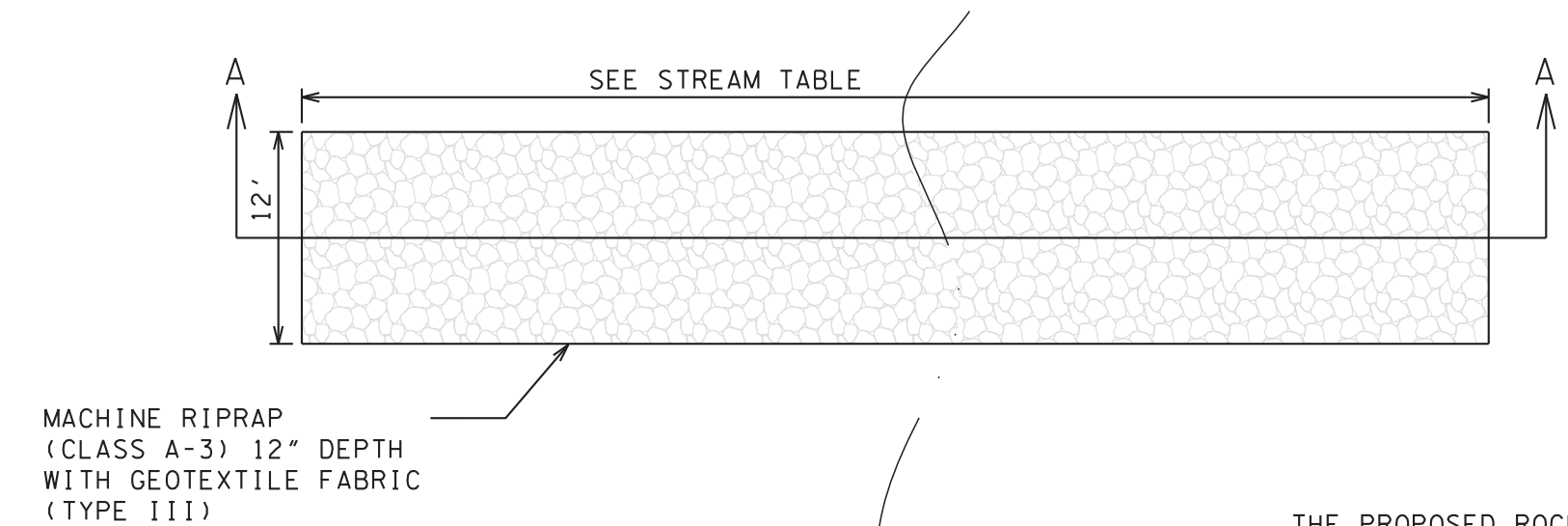
See updated table

WETLAND TABLE			
WETLAND	TYPE OF IMPACTION	TOTAL AREA OF WETLAND (Ac.)	AREA OF IMPACT (Ac.)
WTL-1A	Vegetation Removal	0.398	0.057
WTL-1B	Vegetation Removal	0.100	0.079
WTL-2	Vegetation Removal	0.074	0.000
WTL-3	Vegetation Removal	0.029	0.029
WTL-3-1	Vegetation Removal	0.230	0.230
WTL-4	Vegetation Removal	0.033	0.000
WTL-5	Vegetation Removal	0.012	0.003
WTL-6	Vegetation Removal	0.240	0.145
WTL-7	Vegetation Removal and Wetland Fill	0.042	0.000
WTL-8	Vegetation Removal and Wetland Fill	0.093	0.006

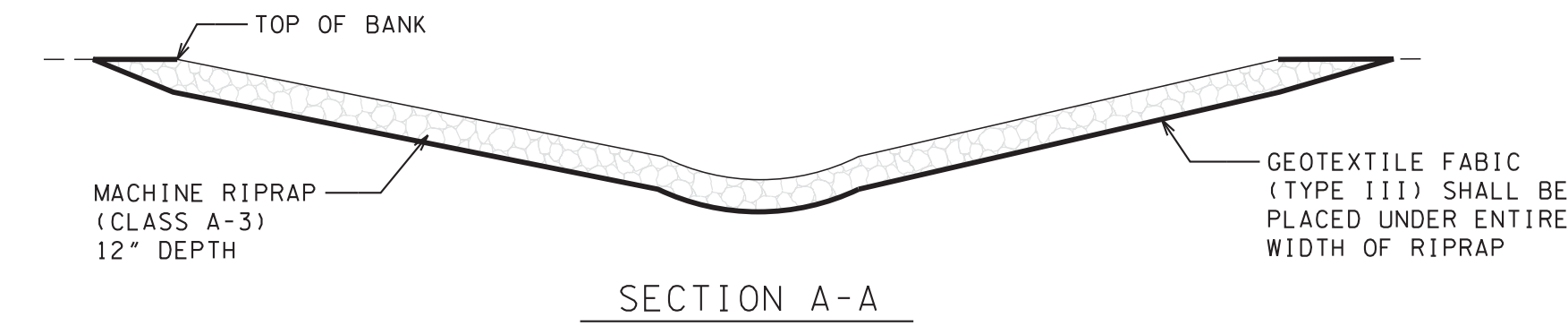
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POLE EXCAVATION SOIL TEMPORARY STORAGE DETAIL NOT TO SCALE



THE PROPOSED ROCK FORDS SHALL BE EMBEDDED INTO THE STREAM CHANNELS AND PLACED IN SUCH A MANNER AS TO NOT OBSTRUCT FLOW OR ALLOW WASHOUT DURING HEAVY RAIN EVENTS.



PERMANENT CONSTRUCTION FORD NOT TO SCALE

R.O.W. ACQUISITION TABLE																
TRACT NO.	PROPERTY OWNERS	COUNTY RECORDS				TOTAL AREA ACRES			AREA TO BE ACQUIRED ACRES			AREA REMAINING ACRES		EASEMENT (SQUARE FEET)		
		TAX MAP NO.	PARCEL NO.	DEED DOCUMENT REFERENCE		LEFT	RIGHT	TOTAL	LEFT	RIGHT	TOTAL	LEFT	RIGHT	PERM. DRAINAGE	SLOPE	CONST.
				BK.	PAGE											
1	WILLIAM F. GRAHAM	088	16.01	1007	1139	4.686		4.686	1.038		1.038	3.648				
2	RALPH T. ELLIOTT	088	15.02	1402	1712	3.058		3.058	2687 S.F.		2687 S.F.	2.996				
3	GAMA MANAGEMENT INC	088	15.01	1212	219	0.466		0.466	0.466		0.466					
4	BETTY J PARSONS	088	15.00	1189	1226	2.697		2.697	0.445		0.445	2.252				
5	COLONIAL SQUARE LLC	089	02.01	1196	1486		9.160	9.160		3.110	3.110		6.050			
6	J.H. GRAHAM III, TRUSTEE	089	01.01	357	591	3.300		3.300	0.159		0.159	3.141				
7	GARY WARREN WHITTAKER	089	01.00	1240	1462	25.000		25.000	1.216		1.216	23.784				
8	TIMOTHY JAY AND CYNTHIA POTTER	089	04.03	523	5		18.260	18.260		1.262	1.262		16.998			
9	JAMES P JR AND JUDY A SMITH	076	08.00	1021	1	59.833	3.187	63.020	0.965	0.850	1.815	58.868	2.337			
10	LOWELL R POTTER TRUST	076	07.00	1032	454	164.800		164.800	6.452		6.452	158.348				
11	STONE FAMILY LP	076	20.00	1063	889	499.800		499.800	13.023		13.023	486.777				
15	STONE FAMILY LP	076	23.04	1063	889	172.500		172.500	6.943		6.943	165.557				
16	BETTY TURNER	077	01.03	1196	1173	7.279	114.721	122.000	1.652	1.864	3.516	5.627	112.857			
17	ANDREW H TURNER	077	01.00	1229	2395	170.811	24.389	195.200	3.519	3.344	6.863	167.292	21.045			
18	ANDREW H TURNER	077	01.02	1229	2395	182.154	28.146	210.300	3.098	2.976	6.074	179.268	24.97			
19	CUMBERLAND CO BANK	077		242	318	2.275	0.497	2.772	0.497	0.649	1.146		1.626			

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STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION

EROSION PREVENTION AND SEDIMENT CONTROL NOTES, LEGEND & DETAILS

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2015	STP-101(21)	61

PROJECT COMMITMENTS			
COMMITMENT ID	SOURCE DIVISION	DESCRIPTION	STA./LOCATION
EDHZ001	ENVIRONMENTAL DIVISION, HAZARDOUS MATERIALS	Some of the soil on Tract 3 [Project STP-101(16)], located at 2529 Peavine Road (former C and K Market) Crossville, Cumberland County, Tennessee, that was used to backfill the tank pit excavation has concentrations of benzene and xylenes that are above TDUST residential Initial Screening Levels (ISLs), but below commercial ISLs. In order to prevent direct contact with the soil and possible exposure through contact and/or ingestion, contractors should follow their company's Health and Safety Plan regarding use of proper personal protective equipment (PPE) for work activities in this location. It is recommended that all personnel use engineered controls (rubber boots, gloves) and good hygienic practices if they must come into contact with the soil. If excess soil is generated at this location, it must not be removed from the tract without prior approval by the TDOT Hazmat Section. Contact TDOT Hazmat at 615-532-8684 for further information or to obtain a copy of the UST Closure Report.	Tract 3 [Project STP - 101(16)], located at 2529 Peavine Road (former C and K Market)

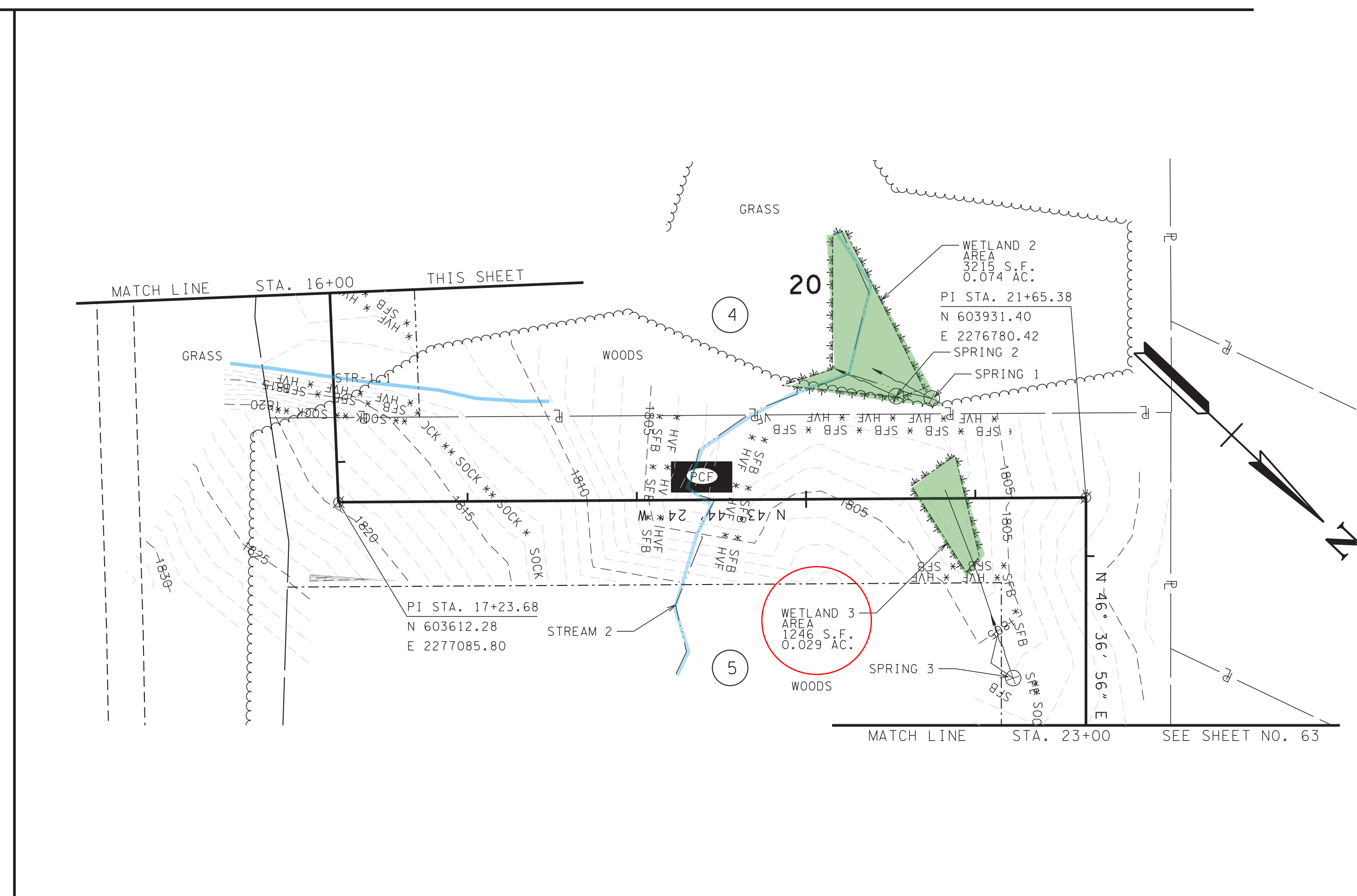
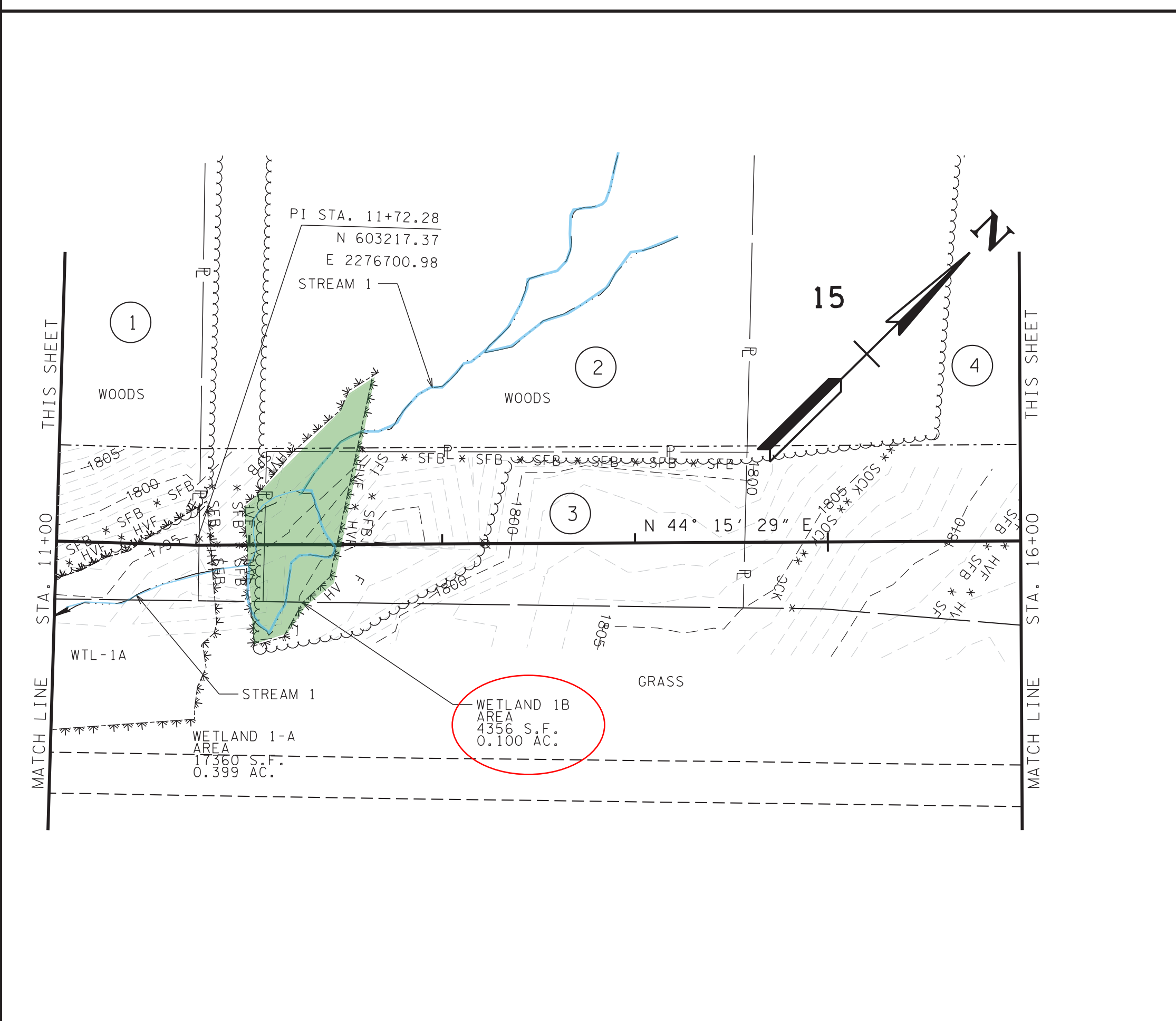
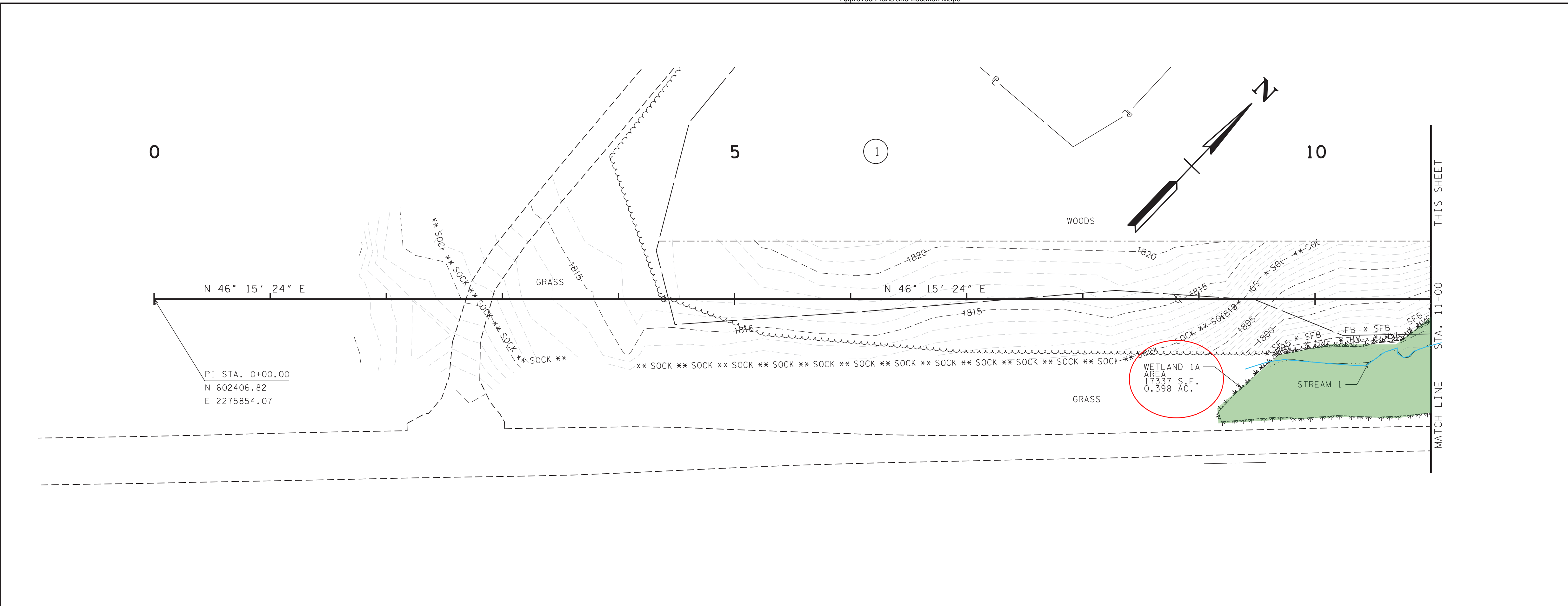
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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

**EROSION
PREVENTION
AND SEDIMENT
CONTROL NOTES,
LEGEND & DETAILS**

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2015	STP-101(21)	62



PHASE 1

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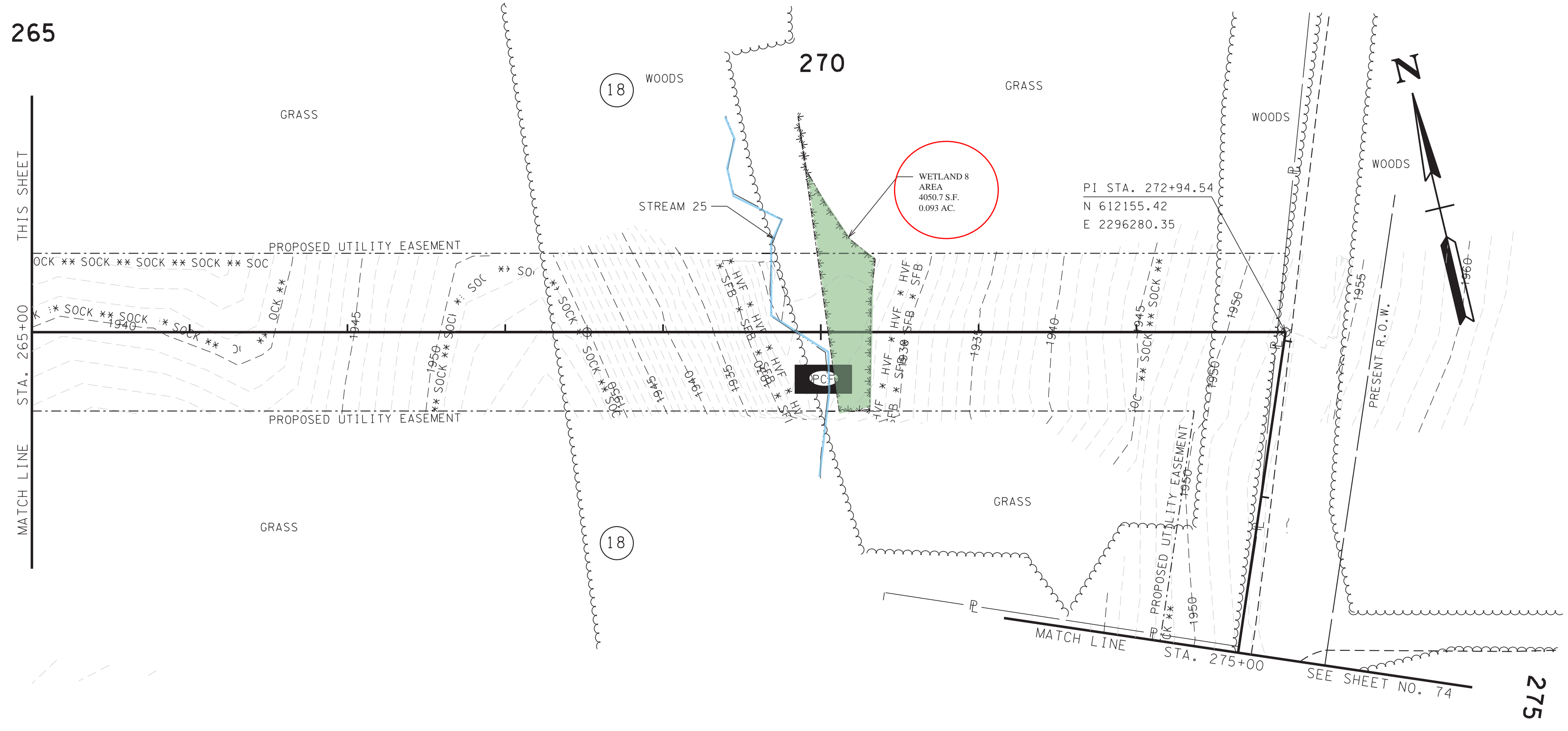
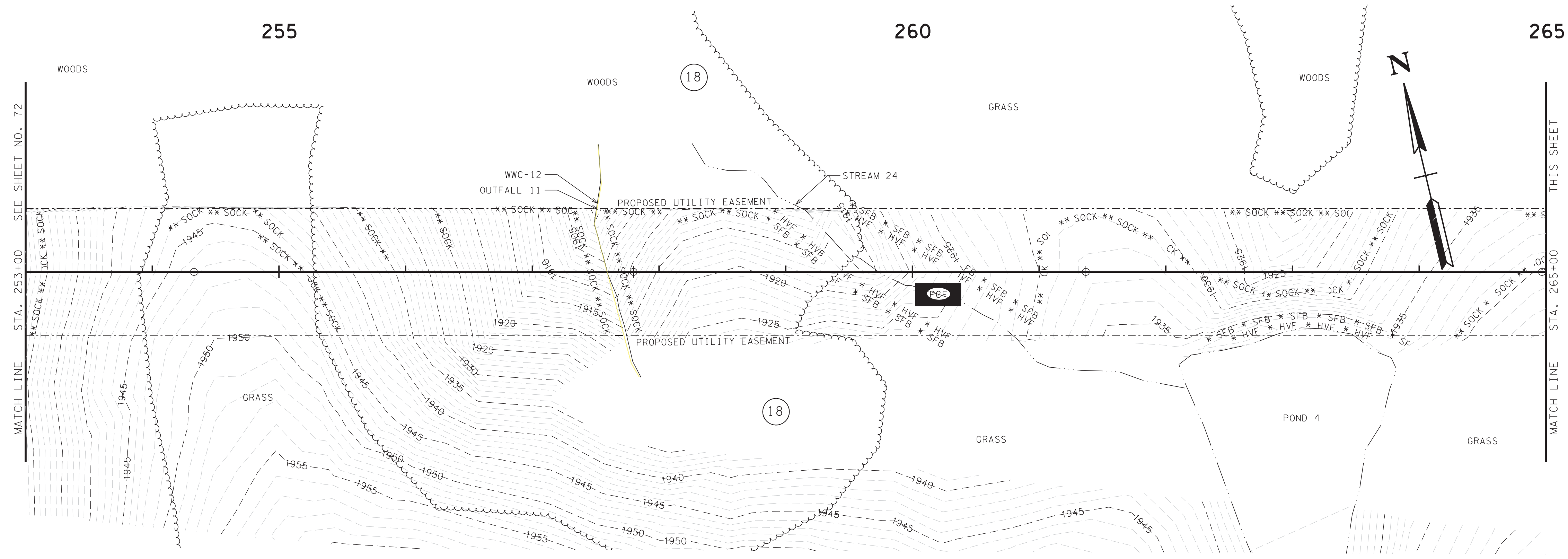
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

STA. 0+00 TO STA. 23+00
SCALE: 1" = 50'

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2015	STP-101(21)	73



PHASE 1

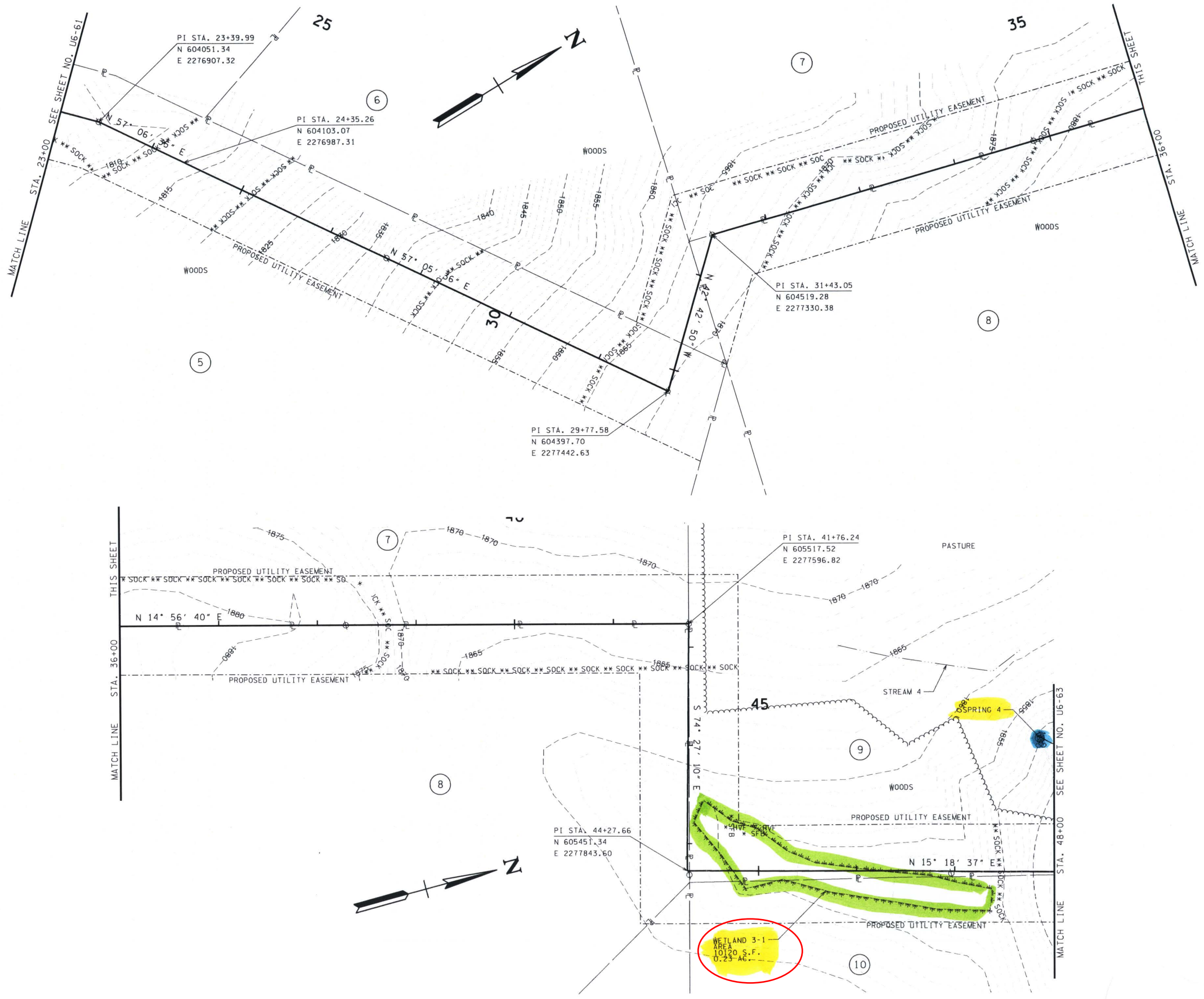
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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EROSION PREVENTION AND SEDIMENT CONTROL PLAN
STA. 263+00 TO STA. 285+00
SCALE: 1" = 50'

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2015	APD-52(48)	U6-62



PHASE 1

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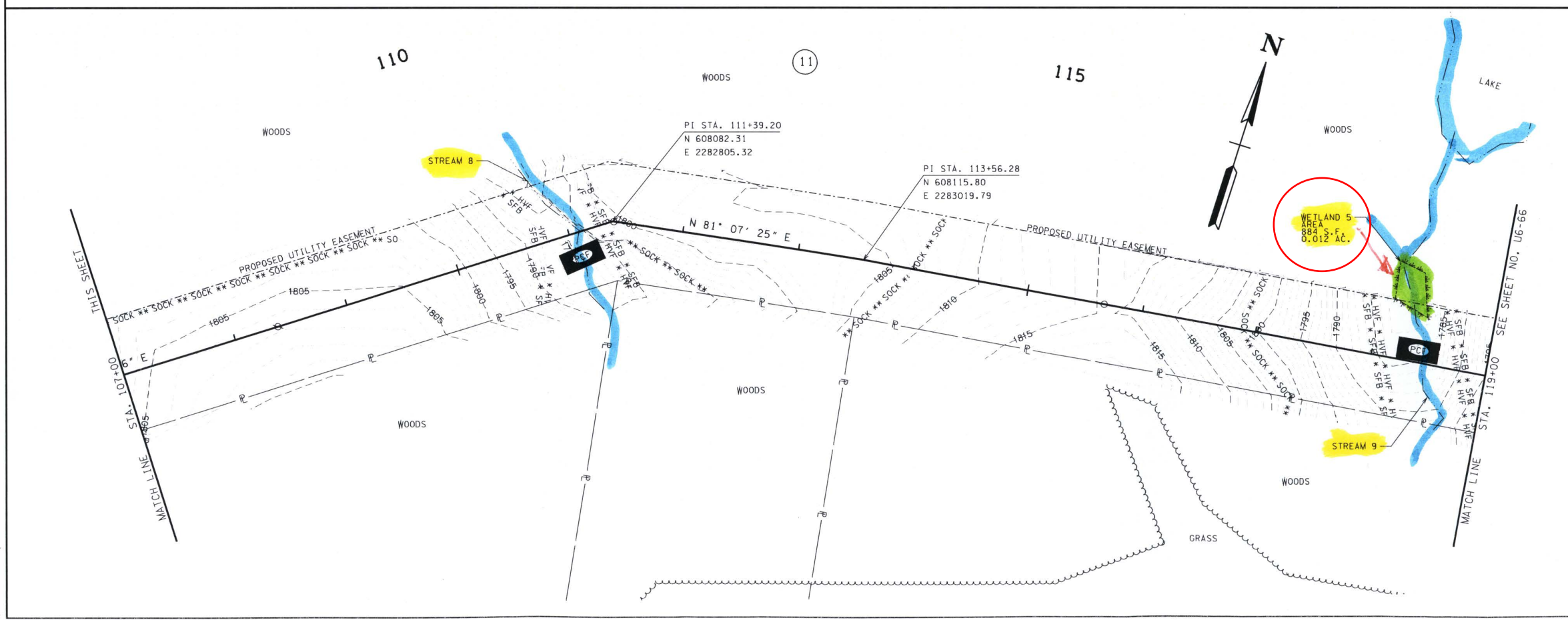
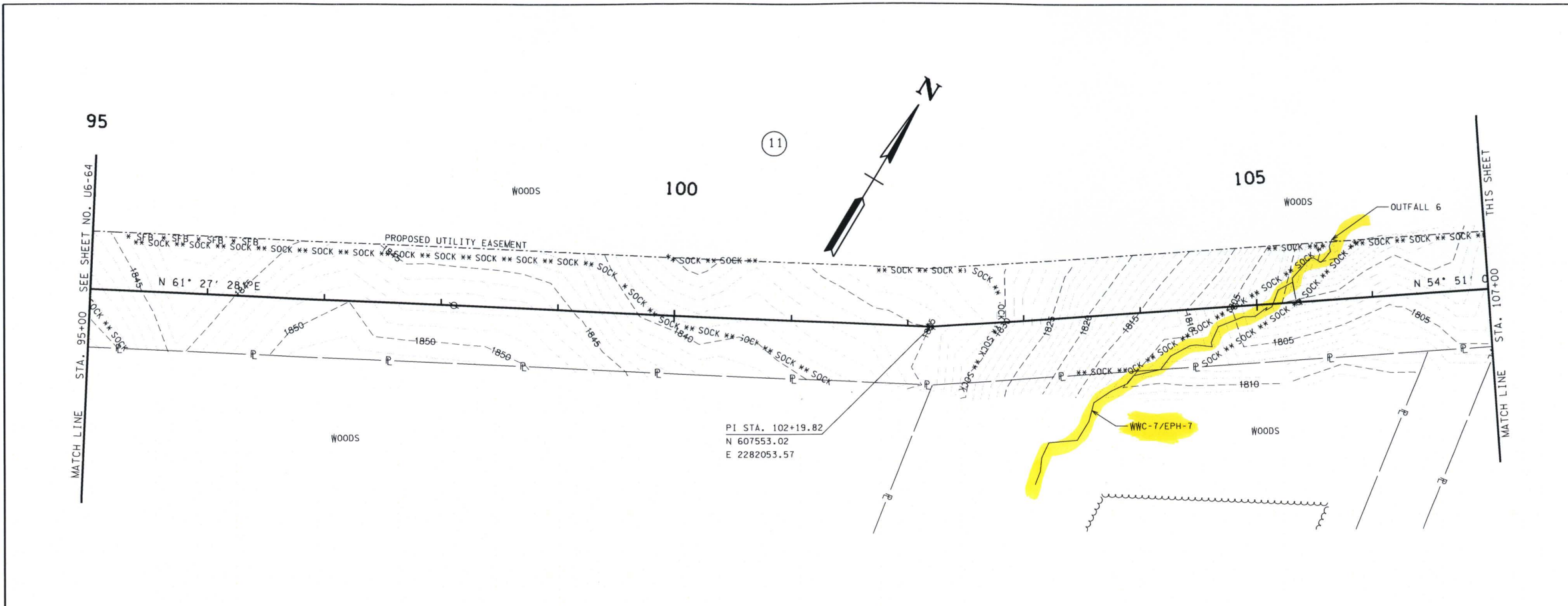
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

**EROSION
PREVENTION
AND SEDIMENT
CONTROL PLAN**

STA. 23+00 TO STA. 48+00
SCALE: 1" = 50'

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2015	APD-52(48)	U6-65



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PLANS**

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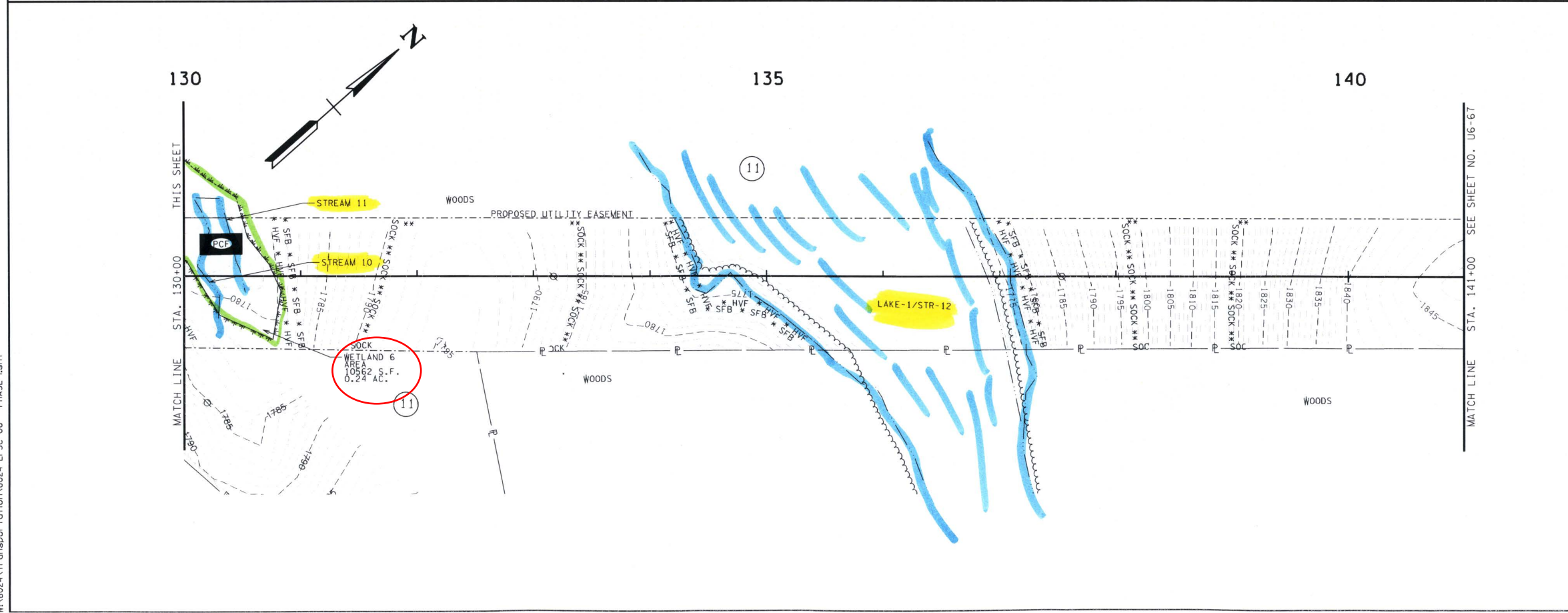
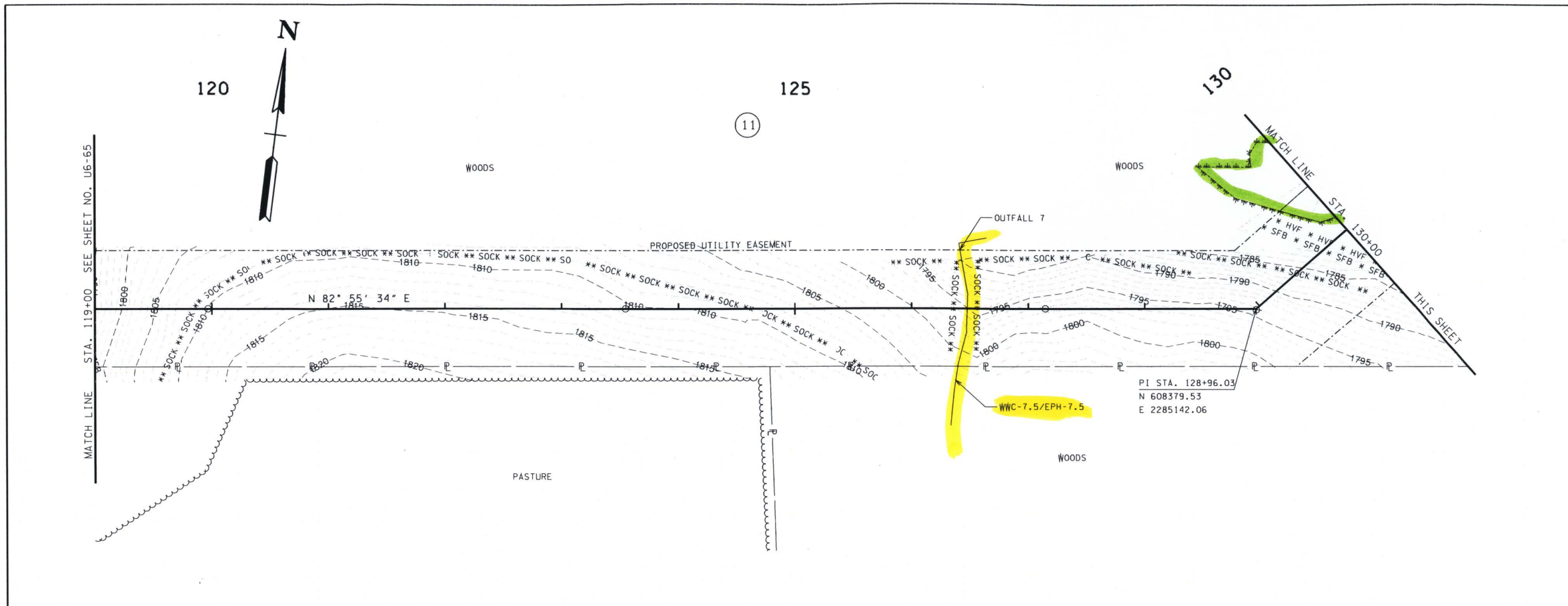
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

**EROSION
PREVENTION
AND SEDIMENT
CONTROL PLAN**

STA. 95+00 TO STA. 119+00
SCALE: 1" = 50'

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2015	APD-52(48)	U6-66



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DEPARTMENT OF TRANSPORTATION

**EROSION
PREVENTION
AND SEDIMENT
CONTROL PLAN**

STA. 119+00 TO STA. 143+00
SCALE: 1" = 50'

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1

Biological Opinion

Relocation of a Volunteer Electric Cooperative Powerline for Widening of State Route 101

FWS Log #04E00000-2015-F-0899

Prepared by:
U.S. Fish and Wildlife Service
Tennessee Field Office
Cookeville, Tennessee



Mary Jennings

10-19-15

Mary Jennings, Field Supervisor

Date

Executive Summary

The U.S. Fish and Wildlife Service (Service) has completed this biological opinion to determine the effects of tree clearing and routine maintenance activities for the proposed relocation of a 161 kV Volunteer Electric Cooperative (VEC) powerline for widening of State Route (SR) 101 (Peavine Road [Rd.]) from Firetower Rd to east of Westchester Rd in Cumberland County, Tennessee, and its effects to the threatened northern long-eared bat (NLEB) (*Myotis septentrionalis*) per section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

The proposed action would involve relocation of approximately 5.4 miles (mi) of electric transmission line along new alignment near the Fairfield Glade Community in Cumberland County, Tennessee. The project proponent is the Tennessee Department of Transportation (TDOT), a federally designated representative for the Federal Highway Administration (FHWA). The FHWA submitted a request for formal consultation to the Service in June 2015, which included a biological assessment indicating that the proposed action would likely adversely affect the NLEB. The Service determined the biological assessment was complete and advised FHWA on August 5, 2015, that formal consultation had been initiated and that the biological opinion would be provided no later than November 22, 2015.

The Service has concluded in this biological opinion that the proposed action is not likely to jeopardize the continued existence of the NLEB. The Service reached this conclusion by examining the current status of the species, the environmental baseline for the action area, and various possible effects to the species (including direct, indirect, interrelated and interdependent effects of the proposed federal action, and cumulative effects of other non-federal future actions that may occur in the action area, including state, tribal, local or private activities, and are reasonably certain to occur in the project area). Our analysis was then measured against the definition of jeopardy, defined in the “Biological Opinion” section of this document.

In this biological opinion, the Service has determined that the proposed action may adversely affect and result in incidental take of the NLEB. For this biological opinion, the incidental take would be exceeded when the take exceeds: (1) 46 NLEBs, which is what has been exempted from the prohibitions of section 9 by this biological opinion. Reasonable and prudent measures (RPMs) to minimize the take, and terms and conditions (T&Cs), that must be observed when implementing those RPMs, have been included in this biological opinion.

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Consultation History

- July 9, 2013 TDOT to the Service’s Tennessee Field Office (TFO) requesting guidance as to whether TDOT should conduct a bat survey. Our office responded recommending bat surveys because the transmission line would be largely on new alignment (Rob Howard via email exchange to John Griffith).
- August 1, 2013 TFO to TDOT providing an environmental review of the project and recommending an assessment to determine potential effects to the endangered Indiana bat from removal of suitable summer roosting habitat (Mary Jennings via letter to Rob Howard).
- November 6, 2013 TDOT to TFO transmitting bat survey results with positive findings for the proposed NLEB (Rob Howard via email to John Griffith).
- November 15, 2013 TFO to TDOT providing information on the newly proposed status of the NLEB and our project section 7 clearance (Mary Jennings via letter to Rob Howard).
- May 16, 2014 CEC to TFO requesting concurrence for a bat survey proposal to assess potential impacts to the proposed NLEB (Casey Hertwig via email to David Pelren).
- May 20, 2014 TFO to CEC providing concurrence on methodology and adequacy of a proposed bat survey (David Pelren via email to Casey Hertwig).
- November 6, 2014 TDOT to TFO transmitting bat survey results with repeated tracking of a female NLEB to a roost tree just outside of the alignment (Rob Howard via letter to Mary Jennings).
- November 24, 2014 TFO to TDOT providing our project section 7 clearance and concurrences of “not likely to jeopardize” for the proposed NLEB and “not likely to adversely affect” for the Indiana bat (Mary Jennings via letter to Rob Howard).
- May 1, 2015 TDOT to TFO requesting a “not likely to adversely affect” finding for the threatened NLEB in place of the “not likely to jeopardize” finding provided prior to listing (Matt Richards via email to John Griffith).
- May 4, 2015 TFO to TDOT stating that the project falls outside of the scope of the new programmatic agreement between the Federal Highway Administration (FHWA), the Federal Railway Administration, and the Service because it is on new alignment. The bat tracking indicated that the project likely falls within foraging habitat for a maternal colony of NLEBs. This project may require formal consultation (John Griffith via email to Matt Richards).

- May 5, 2015 TDOT to TFO clarifying their determination of “not likely to adversely affect” for the NLEB and further requesting our concurrence on this finding (Matt Richards via email to Mary Jennings).
- May 8, 2015 TDOT to TFO asking for a decision on whether we concur with their finding to which we responded that we could not concur with a “not likely to adversely affect” determination (Matt Richards via email to Mary Jennings).
- June 11, 2015 TDOT to TFO inquiring concerning the protocol for submission of a BA to address potential effects to the NLEB. We reiterated our position in response and suggested that they move forward with submittal of the BA to FHWA requesting formal consultation (Rob Howard via email to John Griffith).
- July 10, 2015 FHWA to TFO providing a biological assessment with a “may affect, likely to adversely affect” (LTAA) determination for the NLEB and request for formal consultation (Leigh Ann Tribble via letter to Mary Jennings).
- August 5, 2015 TFO provided a letter to FHWA to notify it that initiation of formal consultation under section 7 of the Act was complete and that the Service would issue a biological opinion on or before November 22, 2015 (Mary Jennings via letter to Gary Fottrell).

Biological Opinion

A biological opinion is the document required under the Act that states the opinion of the Service as to whether a proposed federal action is likely to jeopardize the continued existence of listed species, or result in the destruction or adverse modification of designated critical habitat (DCH). This biological opinion addresses the effects to the NLEB resulting from relocation of a 161 kV VEC powerline for widening of SR 101 from Firetower Rd to east of Westchester Rd in Cumberland County, Tennessee.

Critical habitat is the specific areas within the geographic area, occupied by the species at the time it was listed, that contain the physical or biological features that are essential to the conservation of threatened and endangered species and that may need special management or protection. DCH may also include areas that were not occupied by the species at the time of listing, but are essential to its conservation. The Act requires federal agencies to use their authorities to conserve threatened and endangered species and to consult with the Service about actions that they carry out, fund or authorize to ensure that they will not destroy or adversely modify critical habitat that has been federally designated under the Act (this requirement applies only to federal agency actions or federally-funded or permitted activities; it is not applicable to activities carried out by private landowners, unless there is a federal “nexus”, e.g., federal funds or authorizations involved). The prohibition against destruction and adverse modification of critical habitat protects such areas in the interest of conservation. No critical habitat has been designated for the NLEB, so none exists in the vicinity of the proposed action. Therefore DCH will not be considered as part of this consultation or discussed further in this biological opinion.

“To jeopardize the continued existence of a listed species” means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of the species (50 CFR §402.02). This biological opinion examines whether the activities associated with relocation and maintenance of the SR 101 VEC powerline are likely to jeopardize the continued existence of the NLEB.

Section 9 of the Act and regulations issued under section 4(d) of the Act prohibit the taking of endangered and threatened species, respectively, without special exemption. Federal agencies may obtain such exemption through the “Incidental Take Statement” of a biological opinion that supports a non-jeopardy finding for their proposed actions. Incidental take is take that results from a federal action but is not the purpose of the action. It may be allowed when the Service approves it through an incidental take statement. The statement includes the amount or extent of anticipated take due to the federal action, RPMs to minimize the take, and T&Cs that must be observed when implementing those RPMs.

The 4(d) rule recently issued with the listing decision for the NLEB adopted the general provisions and take prohibitions at 50 CFR §17.31 and §17.32 to this species with certain exceptions. These exceptions include all activities in areas as yet unaffected by white-nose syndrome (WNS), which is the primary factor contributing to the species’ decline. Within WNS affected areas, activities excepted from take prohibitions are specifically defined, including forest management that avoids impacts to sites that the species is known to occupy. Excepted activities do not require special exemption for incidental taking. The 4(d) rule does not exempt federal

agencies from coordination with the Service under section 7 of the Act. Because the proposed action is along new alignment, the exceptions of the 4(d) rule do not apply to this project.

Description of the Proposed Action

TDOT proposes relocation of approximately 5.4 mi of the 161kV electric transmission line, currently in the right-of-way of SR-101 (Peavine Rd), along new alignment toward the Fairfield Glade Community in Cumberland County, Tennessee. The relocation would begin at Fire Tower Rd and terminate just east of Westchester Drive/Catoosa Boulevard in Fairfield Glade (Figure 1). Once relocated, Volunteer Electric Cooperative (VEC) would resume operation and maintenance of the power line. Relocation of the line would allow for necessary lane additions and improvements to SR-101.

The proposed project involves clearing, construction, and operation and maintenance activities. Construction activities would include removal of trees and shrubs, building access and haul roads, pole installation and suspension of transmission lines. Construction methods would require use of heavy equipment (e.g. bull dozers, trucks, and excavators) and various machinery for tree removal. During the operation phase, the project area would routinely be subject to maintenance-related activities such as mowing, trimming and herbicide application.

Figure 1. Proposed alignment for the SR 101 VEC Powerline Relocation Project (borrowed from TDOT's BA).



TDOT would undertake measures to minimize adverse effects to the NLEB. In an effort to avoid direct harm to roosting NLEBs, TDOT would require all tree removal to occur between November 1 and March 31. All construction-related activities would occur within limits of right-of-way or temporary construction easements. The equipment staging and areas for fueling and maintenance would be situated away from wetland areas and streams. The TDOT Environmental Division would properly obtain all required Federal and State permits prior to commencing construction. Inspectors from TDOT staff or a representative would ensure that the project is constructed according to industry standards. In effort to protect aquatic habitats within the project area that the NLEB may utilize, proper erosion and sediment control measures would be implemented throughout construction. The site would be stabilized upon completion of the project in accordance with the standards set forth by the Tennessee Department of Environment and Conservation.

The Service has estimated the project action area to include approximately 65.5 acres (ac), encompassing a 100-foot wide swath for approximately 5.4 mi from Firetower Rd to east of

Westchester Rd. This action area (located on U.S Geological Survey Dorton and Fox Creek 7.5 minute quadrangle maps) contains acreage of terrestrial (64.9 ac) and aquatic areas (0.57 ac) affected by the project, and includes portions of 25 streams within the Otter Creek and North Creek watersheds, including Rough Mountain Branch, Bee Branch, and 23 unnamed streams in Cumberland County, Tennessee. Figure 1 illustrates these areas included in the project footprint. This 65.5 ac area has been identified as the action area for reasons that will be explained and discussed in the “EFFECTS OF THE ACTION” section of this consultation.

Status of the Species/Critical Habitat

The NLEB was listed as a threatened species under a final rule on May 4, 2015 (80 FR 17974). An interim rule under the authority of section 4(d) of the Act, providing measures that are necessary and advisable for conservation of the NLEB, also became effective on May 4, 2015. The public comment period on the interim rule closed out on July 1, 2015, and the Service will publish a final rule amending the interim rule after all comments have been received and considered (80 FR 17974). Critical habitat has not been proposed for the NLEB.

Species Description

The NLEB is a medium-sized bat species, weighing an average 5 - 8 g (0.18- to 0.28-oz), with females tending to be slightly larger than males (Caceres and Pybus 1997). Pelage colors include medium to dark brown fur on its back, dark brown, but not black, ears and wing membranes, and tawny to pale-brown fur on the ventral side (Nagorsen and Brigham 1993; Whitaker and Mumford 2009). As indicated by its common name, the NLEB is distinguished from other *Myotis* species by its large ears, that average 17 mm (0.67-in) (Whitaker and Mumford 2009) and, when laid forward, extend beyond the nose but less than 5 mm (0.20-in) beyond the muzzle (Caceres and Barclay 2000). The tragus is long (averaging 9mm [0.35-in]), pointed, and often curved (Nagorsen and Brigham 1993; Whitaker and Mumford 2009).

Life History

Life Span

Adult longevity for the NLEB is estimated to be up to 18.5 years (Hall et al. 1957), with the greatest recorded age of 19 years based on banding records (Kurta 1995). Most mortality for NLEB and many other species of bats occurs during the juvenile stage (Caceres and Pybus 1997).

Diet

The NLEB has a diverse diet including moths, flies, leafhoppers, caddisflies and beetles (Nagorsen and Brigham 1993; Brack and Whitaker 2001; Griffith and Gates 1985), with diet composition differing geographically and seasonally (Brack and Whitaker 2001). Feldhamer et al. (2009) noted close similarities of all *Myotis* diets in southern Illinois, while Griffith and Gates (1985) found significant differences between the diets of NLEBs and little brown bats. The most common insects found in the diets of NLEBs were moths and beetles (Brack and Whitaker 2001; Feldhamer et al. 2009; Dodd et al. 2012), with arachnids also being a common prey item (Feldhamer et al. 2009).

Life Cycle

Staging, Spring Migration and Summer Roosting

Spring staging for the NLEB is the time period between winter hibernation and spring migration to summer habitat (Whitaker and Hamilton 1998). During this time, bats begin to gradually emerge from hibernation, exit the hibernacula to feed, but re-enter the same or alternative hibernacula to resume daily bouts of torpor (Whitaker and Hamilton 1998). The staging period for the NLEB is likely short in duration (Whitaker and Hamilton 1998; Caire et al. 1979). In Missouri, Caire et al. (1979) found that NLEBs moved into the staging period in mid-March through early May. Variation in timing (onset and duration) of staging for Indiana bats was based on latitude and weather (U.S. Fish and Wildlife Service 2007); similarly, timing of staging for NLEBs is likely based on these same factors. The spring migration period typically runs from mid-March to mid-May (Easterla 1968; Caire et al. 1979; Whitaker and Mumford 2009). In Michigan, Kurta et al. (1997) determined that by early May, two-thirds of the *Myotis* species, including the NLEB, had dispersed to summer roosting habitat.

The NLEB typically occupies summer roosting habitat from mid-May through mid-August each year. Female summer home-range size may range from 19 to 172 hectares (ha) (47 to 425 ac) (Lacki et al. 2007). Owen et al. (2003) estimated average maternal home range size to be 65 ha (161 ac). NLEBs actively form colonies in the summer (Foster and Kurta 1999) and exhibit fission-fusion behavior (Garroway and Broders 2007), where members frequently coalesce to form a group (fusion), but composition of the group is in flux, with individuals frequently departing to be solitary or to form smaller groups (fission) before returning to the main unit (Barclay and Kurta 2007).

Maternity colonies, consisting of females and young, are generally small, numbering from about 30 (Whitaker and Mumford 2009) to 60 individuals (Caceres and Barclay 2000); however, one group of 100 adult females was observed in Vermilion County, Indiana (Whitaker and Mumford 2009). Lereculeur (2013) observed a maternity colony comprised of at least 114 NLEBs on Catoosa Wildlife Management Area (WMA), but determined the mean colony size of the study to be 11 individuals. Maternity colonies in two studies in West Virginia supported a range of 7 to 88 individuals (Owen et al. 2002) and 11 to 65 individuals, respectively, with a mean size of 31 (Menzel et al. 2002). Lacki and Schwierjohann (2001) found that the number of bats within a given roost declined as the summer progressed. Pregnant females formed the largest aggregations (mean=26) and post-lactating females formed the smallest aggregations (mean=4). Other studies have also found that the number of individuals roosting together in a given roost typically decreases from pregnancy to post-lactation (Foster and Kurta 1999; Lacki and Schwierjohann 2001; Garroway and Broders 2007; Perry and Thill 2007; Johnson et al. 2012).

Birthing within the colony tends to be synchronous, with the majority of births occurring around the same time (Krochmal and Sparks 2007). NLEBs generally give birth in late May or early June (Easterla 1968; Caire et al. 1979; Whitaker and Mumford 2009) to a single pup (Barbour and Davis 1969). However, birth may occur as late as July (Whitaker and Mumford 2009); Broders et al. (2006) estimated a parturition date of July 20 in New Brunswick. Lactating and post-lactating females were observed in mid-June in Missouri (Caire et al. 1979), July in New Hampshire and Indiana (Sasse and Pekins 1996; Whitaker and Mumford 2009), and August in Nebraska (Benedict et al. 2000). Juvenile volancy often occurs by 21 days after birth (Kunz 1971; Krochmal and Sparks 2007) and has been documented as early as 18 days after birth

(Krochmal and Sparks 2007). Subadults were captured in late June in Missouri (Caire et al. 1979), early July in Iowa (Sasse and Perkins 1996), and early August in Ohio (Mills 1971).

NLEBs switch roosts often (Sasse and Perkins 1996), typically every two to three days (Foster and Kurta 1999; Owen et al. 2002; Carter and Feldhamer 2005; Timpone et al. 2010). A 2004 study by Jackson tracked 30 NLEBs over two years and found the mean number of different roost used by each bat to be 8.6 (with a range of 2 to 11). Consequently, they have a need for multiple, suitable roosts to be available within close proximity of each other.

Fall Migration, Swarming, Mating and Hibernation

Fall migration typically occurs between mid-August and mid-October (80 FR 17987). While the NLEB is not considered a long-distance migratory species, short regional migratory movements between seasonal habitats (summer roosts and winter hibernacula) have been documented between 56 km (35 mi) and 89 km (55 mi) (Griffin 1945; Caire et al. 1979; Nagorsen and Brigham 1993). Griffin (1940a) reported that a banded male NLEB had traveled from one hibernaculum in Massachusetts to another in Connecticut over the 2-month period of February to April, a distance of 89 km (55 mi).

NLEBs have shown a high degree of philopatry (tendency to return to the same location) for a hibernaculum (Pearson 1962), although they may not return to the same hibernaculum in successive seasons (Caceres and Barclay 2000). Banding studies in Ohio, Missouri and Connecticut documented return rates to hibernacula of 5% (Mills 1971), 4.6% (Caire et al. 1979), and 36% (Griffin 1940b), respectively. An experiment showed an individual bat returned to its home cave up to 32 km (20 mi) away after being removed three days prior (Stones and Branick 1969).

The swarming season fills the time between the summer and winter seasons (Lowe 2012), and the purpose of swarming behavior may include: introduction of juveniles to potential hibernacula, copulation and stopping over sites on migratory pathways between summer and winter regions (Kurta et al. 1997; Parsons et al. 2003; Lowe 2012; Randall and Broders 2014). The swarming season for some species of the genus, *Myotis*, begins shortly after females and young depart maternity colonies (Fenton 1969). During this time, both male and female NLEBs are present at swarming sites (often with other species of bats).

Heightened activity and congregation of transient bats around caves and mines is observed during swarming, followed by increased sexual activity and bouts of torpor prior to winter hibernation (Fenton 1969; Parsons et al. 2003; Davis and Hitchcock 1965). For the NLEB, the swarming period may occur between July and early October, depending on latitude within the species' range (Hall and Brenner 1968; Fenton 1969; Caire et al. 1979; Kurta et al. 1997; Lowe 2012). The NLEB may investigate several cave or mine openings during the transient portion of the swarming period, and some individuals may use these areas as temporary daytime roosts or roost in forest habitat adjacent to these sites (Kurta et al. 1997; Lowe 2012). Many of the caves and mines associated with swarming are also used as hibernacula for several species of bats, including the NLEB (Fenton 1969; Whitaker and Rissler 1992; Kurta et al. 1997; Glover and Altringham 2008; Randall and Broders 2014).

Little is known about NLEB roost selection outside of caves and mines during the swarming period. Lowe (2012) documented NLEBs in the Northeast roosting in both, coniferous and deciduous trees or stumps as far away as 3 mi (7 km) from the swarming site. Although Lowe (2012) hypothesized that tree roosts used during the fall swarming season would be similar to

summer roosts, there was a difference found between summer and fall in the variation in distances bats traveled from the capture site to roost, roost orientation and greater variation of roost types (e.g., roost species, size, decay class) in the fall. Greater variation among roosts during the swarming season may be a result of the variation in energy demands that individual NLEBs exhibit during this time (Barclay and Kurta 2007; Lowe 2012).

NLEBs hibernate during the winter months to conserve energy from increased thermoregulatory demands and reduced food resources. To increase energy savings, individuals enter a state of torpor, when internal body temperatures approach ambient temperature, metabolic rates are significantly lowered and immune function declines (Thomas et al. 1990; Thomas and Geiser 1997; Bouma et al. 2010).

In general, NLEBs arrive at hibernacula in August or September, enter hibernation in October and November, and emerge from the hibernacula in March or April (Caire et al. 1979; Whitaker and Hamilton 1998; Amelon and Burhans 2006). However, hibernation may begin as early as August (Whitaker and Rissler 1992). In Copperhead Cave (a mine) in west-central Indiana, the majority of NLEBs enter hibernation during October (Whitaker and Mumford 2009). In northern latitudes, such as in upper Michigan's copper-mining district, hibernation may begin as early as late August and continue for eight to nine months (Stones and Fritz 1969; Fitch and Shump 1979).

Typically, NLEBs were not abundant and composed a small proportion of the total number of bats observed hibernating in a hibernaculum (Barbour and Davis 1969; Mills 1971; Caire et al. 1979; Caceres and Barclay 2000). Although usually observed in small numbers, the species typically inhabits the same hibernacula with large numbers of other bat species, and occasionally are found in clusters with these other bat species. Other species that commonly occupy the same habitat include little brown bat, big brown bat, eastern small-footed bat (*Myotis leibii*), tri-colored bat (*Perimyotis subflavus*) and Indiana bat (Swanson and Evans 1936; Griffin 1940b; Hitchcock 1949; Stones and Fritz 1969). Whitaker and Mumford (2009), however, infrequently found NLEBs hibernating beside little brown bats, Indiana bats or tri-colored bats. Barbour and Davis (1969) found that the species was rarely recorded in concentrations of more than 100 in a single hibernaculum.

NLEBs have been observed moving among hibernacula throughout the winter, which may further decrease population estimates (Griffin 1940b; Whitaker and Rissler 1992; Caceres and Barclay 2000). Whitaker and Mumford (2009) found that the species flies in and out of some mines and caves in southern Indiana throughout the winter. In particular, the bats were active at Copperhead Cave periodically all winter, with NLEBs being more active than other species (such as little brown bats and tri-colored bats) hibernating in the cave. Though NLEBs fly outside of hibernacula during the winter, they do not feed; therefore, the function of this behavior is not well understood (Whitaker and Hamilton 1998). It has been suggested, however, that such bat activity during winter could be due in part to disturbance by researchers (Whitaker and Mumford 2009).

NLEBs exhibit significant weight loss during hibernation (80 FR 17987). In southern Illinois, Pearson (1962) found an average weight loss of 20% during hibernation in male NLEBs, with individuals weighing an average of 6.6 g (0.2 oz) prior to January 10, and those collected after that date weighing an average of 5.3 g (0.2 oz). Whitaker and Hamilton (1998) reported a weight loss of 41 to 43% over the hibernation period for NLEBs in Indiana. In eastern Missouri, male

NLEBs lost an average of 3 g (0.1 oz), or 36%, during the hibernation period (late October through March), and females lost an average of 2.7 g (0.1 oz), or 31% (Caire et al. 1979).

Habitat Characteristics and Use

Winter Hibernacula Habitat

NLEBs predominantly overwinter in hibernacula that include caves and abandoned mines (80 FR 17987). Hibernacula used by NLEBs vary in size from large, with large passages and entrances (Raesly and Gates 1987), to much smaller hibernacula (Kurta 2013). These hibernacula have relatively constant, cooler temperatures (32 to 48° F) (Raesly and Gates 1987; Caceres and Pybus 1997; Brack 2007), with high humidity and no air currents (Fitch and Shump 1979; van Zyll de Jong 1985; Raesly and Gates 1987; Caceres and Pybus 1997). The sites favored by NLEBs are often in very high humidity areas, to such a large degree that droplets of water are often observed on their fur (Hitchcock 1949; Barbour and Davis 1969). NLEBs, like eastern small-footed bats and big brown bats, typically prefer cooler and more humid conditions than little brown bats, but are less tolerant of drier conditions than eastern small-footed bats and big brown bats (Hitchcock 1949; Barbour and Davis 1969; Caceres and Pybus 1997).

NLEBs are typically found roosting in small crevices or cracks in cave or mine walls or ceilings, sometimes with only their noses and ears visible, and thus are easily overlooked during surveys (Griffin 1940b; Barbour and Davis 1969; Caire et al. 1979; van Zyll de Jong 1985; Caceres and Pybus 1997; Whitaker and Mumford 2009). Caire et al. (1979) and Whitaker and Mumford (2009) commonly observed individuals exiting caves with mud and clay on their fur, also suggesting the bats were roosting in tighter recesses of hibernacula. Additionally, NLEBs have been found hanging in the open, although not as frequently as in cracks and crevices (Barbour and Davis 1969; Whitaker and Mumford 2009). Whitaker and Mumford (2009) observed three NLEBs roosting in the hollow core of stalactites in a small cave in Jennings County, Indiana, in 1968.

To a lesser extent, NLEBs have also been observed over-wintering in other types of habitat that resemble cave or mine hibernacula, including abandoned railroad tunnels, (U.S. Fish and Wildlife Service 2015). Also, in 1952, three NLEBs were found hibernating near the entrance of a storm sewer in central Minnesota (Goehring 1954). Kurta et al. (1997) found NLEBs hibernating in a hydroelectric dam facility in Michigan. In Massachusetts, NLEBs have been found hibernating in the Sudbury Aqueduct (Massachusetts Division of Fisheries and Wildlife 2012). Griffin (1945) found NLEBs in Massachusetts during December in a dry well and commented that these bats may regularly hibernate in “unsuspected retreats” in areas where caves or mines are not present. Although confamilial (belonging to the same taxonomic family) bat species (*e.g.*, big brown bats) have been found using non-cave or mine hibernacula, including attics and hollow trees (Neubaum et al. 2006; Whitaker and Gummer 1992), to date, NLEBs have only been observed over-wintering in suitable caves, mines or habitat with the same types of conditions as found in suitable caves or mines. Anecdotal reports indicate there may be other landscape features being used by NLEBs during the winter that have yet to be formally documented.

Summer Roosting Habitat

During summer, NLEBs roost singly or in colonies underneath bark or in cavities, crevices or hollows of both, live and dead trees and/or snags (Sasse and Pekins 1996; Foster and Kurta 1999; Owen et al. 2002; Carter and Feldhamer 2005; Perry and Thill 2007; Timpone et al. 2010).

Males' and non-reproductive females' summer roost sites may also include cooler locations, including caves and mines (Barbour and Davis 1969; Amelon and Burhans 2006). NLEBs have also been observed roosting in colonies in human-made structures, such as in buildings, in barns, on utility poles, behind window shutters, and in bat houses (Mumford and Cope 1964; Barbour and Davis 1969; Cope and Humphrey 1977; Burke 1999; Sparks et al. 2004; Amelon and Burhans 2006; Whitaker and Mumford 2009; Timpone et al. 2010; Bohrman and Fecske 2013; Kath, 2013, personal communication).

The NLEB appears to be somewhat flexible in tree roost selection, selecting varying roost tree species and types of roosts throughout its range. NLEBs have been documented to roost in many species of trees, including: black oak (*Quercus velutina*), northern red oak (*Quercus rubra*), silver maple (*Acer saccharinum*), black locust (*Robinia pseudoacacia*), American beech (*Fagus grandifolia*), sugar maple (*Acer saccharum*), sourwood (*Oxydendrum arboreum*) and shortleaf pine (*Pinus echinata*) (Mumford and Cope 1964; Clark et al. 1987; Sasse and Pekins 1996; Foster and Kurta 1999; Lacki and Schwierjohann 2001; Owen et al. 2002; Carter and Feldhamer 2005; Perry and Thill 2007; Timpone et al. 2010). NLEBs most likely are not dependent on certain species of trees for roosts throughout their range; rather, many tree species that form suitable cavities or retain bark will be used by the bats opportunistically (Foster and Kurta 1999). Carter and Feldhamer (2005) hypothesized that structural complexity of habitat or available roosting resources are more important factors than the actual tree species.

In the majority of NLEB telemetry studies, roost trees consist predominantly of hardwoods (Foster and Kurta 1999; Lacki and Schwierjohann 2001; Broders and Forbes 2004). Broders and Forbes (2004) reported that female NLEB roosts in New Brunswick were 24 times more likely to be shade-tolerant, deciduous trees than conifers. Of the few NLEB telemetry studies in which conifers represented a large proportion of roosts, most were reported as snags (Cryan et al. 2001; Jung et al. 2004). Overall, these data suggest that hardwood trees most often provide the structural and microclimate conditions preferred by maternity colonies and groups of females, which have more specific roosting needs than solitary males (Lacki and Schwierjohann 2001), although softwood snags may offer more suitable roosting habitat for both genders than hardwoods (Perry and Thill 2007; Cryan et al. 2001). One reason deciduous snags may be preferred over conifer snags is increased resistance to decay, and consequently, roost longevity of the former (U.S. Fish and Wildlife Service 1998).

Many studies have documented the NLEB's selection of both live trees and snags, with a range of 10 to 53% selection of live roosts (Sasse and Pekins 1996; Foster and Kurta 1999; Lacki and Schwierjohann 2001; Menzel et al. 2002; Carter and Feldhamer 2005; Perry and Thill 2007; Timpone et al. 2010). Foster and Kurta (1999) found 53% of roosts in Michigan were in living trees, whereas in New Hampshire, 66% of roosts were in live trees (Sasse and Pekins 1996). The use of live trees versus snags may reflect the availability of such structures in study areas (Perry and Thill 2007) and the flexibility in roost selection when there is a sympatric bat species present (e.g., Indiana bat) (Timpone et al. 2010). Most telemetry studies describe a greater number of dead than live roosts (Cryan et al. 2001; Lacki and Schwierjohann 2001; Timpone et al. 2010; Silvis et al. 2012). A significant preference for dead or dying trees was reported for NLEBs in Kentucky (Silvis et al. 2012), Illinois and Indiana; in South Dakota (Cryan et al. 2001) and West Virginia, NLEB roost plots contained a higher than expected proportion of snags (Owen et al. 2002). Moreover, most studies reporting a higher proportion of live roosts included trees that had visible signs of decline, such as broken crowns or dead branches (Foster and Kurta 1999;

Ford et al. 2006). Thus, the tendency for NLEBs (particularly large maternity colonies) to use healthy live trees appears to be fairly low.

Canopy coverage at NLEB roosts has ranged from 56% in Missouri (Timpone et al. 2010, to 66% in Arkansas (Perry and Thill 2007), to greater than 75% in New Hampshire (Sasse and Pekins 1996), to greater than 84% in Kentucky (Lacki and Schwierjohann 2001). Studies in New Hampshire and British Columbia have found that canopy coverage around roosts is lower than in available stands (Sasse and Pekins 1996). Females tend to roost in more open areas than males, likely due to increased solar radiation, which aids pup development (Perry and Thill 2007). Fewer trees surrounding maternity roosts may also benefit juvenile bats that are starting to learn to fly (Perry and Thill 2007). However, in southern Illinois, NLEBs were observed roosting in areas with greater canopy cover than in random plots (Carter and Feldhamer 2005). Roosts are also largely selected below the canopy, which could be due to the species' ability to exploit roosts in cluttered environments; their gleaning behavior suggests an ability to easily maneuver around obstacles (Foster and Kurta 1999; Menzel et al. 2002).

Results from studies have found the diameters of roost trees selected by NLEBs vary greatly. Some studies have found that the DBH of NLEB roost trees was greater than random trees (Lacki and Schwierjohann 2001), and others have found both DBH and height of selected roost trees to be greater than random trees (Sasse and Pekins 1996; Owen et al. 2002). However, other studies have found that roost tree mean DBH and height did not differ from random trees (Menzel et al. 2002; Carter and Feldhamer 2005). Based on a consolidation of data from across the NLEB's range (Sasse and Pekins 1996; Foster and Kurta 1999; Lacki and Schwierjohann 2001; Owens et al. 2002; Schultes 2002; Carter and Feldhamer 2005; Perry and Thill 2007; Lacki et al. 2009; Timpone et al. 2010; Lowe 2012; Perry, 2014, personal communication; Lereculeur 2013), roost tree DBH most commonly used (close to 80% of over 400 documented maternity tree roosts) by NLEB maternity colonies ranged from 10 - 25 centimeters (4 - 10 in).

Lacki and Schwierjohann (2001) have found that NLEBs roost more often on upper and middle slopes than lower slopes, which suggests a preference for higher elevations, possibly due to increased solar heating. Silvis et al. (2012), found that selection of mid- and upper slope roost areas may also be a function of the landscape position, where forest stands are most subjected to disturbance (e.g., wind, more intense fire, more drought stress, higher incidence of insect attack) which, in turn, creates suitable roost conditions among multiple snags and trees within the stand.

Some studies have found tree roost selection to differ slightly between male and female NLEBs. Some studies have found male NLEBs more readily using smaller diameter trees for roosting than females, suggesting males are more flexible in roost selection than females (Lacki and Schwierjohann 2001; Broders and Forbes 2004; Perry and Thill 2007). In the Ouachita Mountains of Arkansas, both sexes primarily roosted in pine snags, although females roosted in snags surrounded by fewer midstory trees than did males (Perry and Thill 2007). In New Brunswick, Canada, Broders and Forbes (2004) found that there was spatial segregation between male and female roosts, with female maternity colonies typically occupying more mature, shade-tolerant deciduous tree stands, and males occupying more conifer-dominated stands. Data from West Virginia at the Fernow Experimental Forest and the former Westvaco Ecosystem Research Forest (both of which contain relatively unmanaged, older, mature stands; early successional/mid-age stands; and fire-modified stands) suggests that females choose smaller diameter, suppressed understory trees, whereas males often chose larger, sometimes canopy-dominant trees for roosts, perhaps in contrast to other tree roosting myotis such as Indiana bats

(Menzel et al. 2002; Ford et al. 2006; Johnson et al. 2009). A study in northeastern Kentucky found that males did not use colony roosting sites and were typically found occupying cavities in live hardwood trees, while females formed colonies more often in both hardwood and softwood snags (Lacki and Schwierjohann 2001). However, males and non-reproductively active females are found roosting within home ranges of known maternity colonies the majority of the time (1,712 of 1,825 capture records or 94%) within Kentucky (U.S. Fish and Wildlife Service 2014), suggesting little segregation between reproductive females and other individuals in summer.

Foraging Habitat

NLEBs are nocturnal foragers and use hawking (catching insects in flight) and gleaning (picking insects from surfaces) behaviors in conjunction with passive acoustic cues (Nagorsen and Brigham 1993; Ratcliffe and Dawson 2003). Broders et al. (2006) and Henderson and Broders (2008) found foraging areas (of either sex) to be six or more times larger than roosting areas. The mean distance between roost trees and foraging areas of radio-tagged individuals in New Hampshire was 620 m [2,034.1 feet (ft)] (Sasse and Perkins 1996).

Emerging at dusk, most hunting occurs above the understory, 1 to 3 m (3 to 10 ft) above the ground, but under the canopy (Nagorsen and Brigham 1993) on forested hillsides and ridges, rather than along riparian areas (Brack and Whitaker 2001; LaVal et al. 1977). This coincides with data indicating that mature forests are an important habitat type for foraging NLEBs (Caceres and Pybus 1997). Occasional foraging also takes place over small forest clearings and water, and along roads (van Zyll de Jong 1985). Foraging patterns indicate a peak activity period within five hours after sunset followed by a secondary peak within eight hours after sunset (Kunz 1973).

Population Dynamics

NLEB populations appear to have been fairly stable prior to the discovery of WNS (See “White-nose syndrome” under Threats section), but populations have since experienced dramatic declines. Post-WNS hibernacula counts available from the northeast U.S., where the epizootic began, show the most substantial population declines for the NLEB. Turner et al. (2011) compared the most recent pre-WNS count to the most recent post-WNS count for six cave bat species and reported a 98 percent total decline in the number of hibernating NLEBs at 30 hibernacula in New York, Pennsylvania, Vermont, Virginia, and West Virginia through 2011. For the final listing rule, the Service conducted an analysis of additional survey information at 103 sites across 12 U.S. States and Canadian provinces (New York, Pennsylvania, Vermont, West Virginia, Virginia, New Hampshire, Maryland, Connecticut, Massachusetts, North Carolina, New Jersey, and Quebec) and found comparable declines in winter colony size. At these sites, total NLEB counts declined by an average of 96 percent after the arrival of WNS; 68 percent of the sites declined to zero NLEBs, and 92 percent of sites declined by more than 50 percent. Frick et al. (2015) consider the NLEB now extirpated from 69 percent of the hibernacula in Vermont, New York, Pennsylvania, Maryland, Virginia, and West Virginia that had colonies of NLEB prior to WNS. Langwig et al. (2012) reported that 14 populations of NLEBs in New York, Vermont, and Connecticut became locally extinct within 2 years due to the disease.

Long-term summer survey data (including pre- and post-WNS) for the NLEB, where available, corroborate the population decline evident in hibernacula survey data. For example, summer surveys from 2005 – 2011 near Surry Mountain Lake in New Hampshire showed a 98 percent decline in capture success of NLEB post-WNS, which is similar to the hibernacula data for the State (a 95 percent decline) (Moosman et al. 2013). Other data, much of it received as comments on the proposed listing rule from State wildlife agencies, demonstrate that various measures of summer NLEB abundance and relative abundance (mist net surveys, acoustic surveys) have declined following detection of WNS in the State.

Status and Distribution

Most records of NLEBs have been from winter hibernacula surveys (Caceres and Pybus 1997). Historically, the species was found in greater abundance in the northeastern and portions of the midwestern and southeastern U.S., and the Canadian Provinces of Quebec and Ontario, with increased sightings during swarming and hibernation (Caceres and Barclay 2000). However, throughout the majority of the species' range, it was patchily distributed, and historically, less common in the western portions of the range (Amelon and Burhans 2006). A single historical record (winter 1954) from Jackson County, Florida, indicates that the species was observed in a cave in that locality. However, since that observation, historical and recent surveys at this cave and 12 other caves in Jackson County have not found the NLEB (Florida Fish and Wildlife Conservation Commission 2013).

The NLEB is found in the U.S. from Maine to North Carolina on the Atlantic Coast, westward to eastern Oklahoma and north through the Dakotas, even reaching into eastern Montana and Wyoming. The species' current range includes the following 37 states: Alabama, Arkansas, Connecticut, Delaware, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Vermont, Virginia, West Virginia, Wisconsin, and Wyoming, and the District of Columbia (Nagorsen and Brigham 1993; Caceres and Pybus 1997). In Canada, it is found from the Atlantic Coast, westward to the southern Yukon Territory and eastern British Columbia (Nagorsen and Brigham 1993; Caceres and Pybus 1997).

More than 1,100 NLEB hibernacula have been identified throughout the species' range in the United States (U.S.), although many hibernacula contain only a few (one to three) individuals (Whitaker and Hamilton 1998). NLEBs are documented in hibernacula in 29 of 37 states (these states are identified in the "Status and Distribution" section) in the species' range (80 FR 17976). Known hibernacula (sites with one or more winter records of NLEBs) include: Alabama (2), Arkansas (41), Connecticut (8), Delaware (2), Georgia (3), Illinois (21), Indiana (25), Kentucky (119), Maine (3), Maryland (8), Massachusetts (7), Michigan (103), Minnesota (11), Missouri (more than 269), Nebraska (2), New Hampshire (11), New Jersey (7), New York (90), North Carolina (22), Oklahoma (9), Ohio (7), Pennsylvania (112), South Carolina, (2), South Dakota (21), Tennessee (58), Vermont (16), Virginia (8), West Virginia (104), and Wisconsin (67) (80 FR 17976). Other states within the species' range have no known hibernacula (due to no suitable

hibernacula present, lack of survey effort or existence of unknown retreats) (80 FR 17976). The species typically roosts in small crevices or cracks on cave or mine walls, or ceilings; therefore, they are easily overlooked during surveys and usually observed in small numbers (Griffin 1940b; Barbour and Davis 1969; Caire et al. 1979; Van Zyll de Jong 1985; Caceres and Pybus 1997; Whitaker and Mumford 2009).

In Tennessee, NLEBs have been observed in both summer mist-net surveys and winter hibernacula counts. Summer mist-net surveys from 2002 through 2013 resulted in the capture of more than 1,000 individuals, including males and juveniles or pregnant, lactating or post-lactating adult females (Flock 2014). During the winter of 2009–2010, the Tennessee Wildlife Resources Agency (TWRA) began tracking NLEB populations and has since documented NLEBs in 58 hibernacula, with individual hibernaculum populations ranging from 1 to 136 individuals (Flock 2014). According to TWRA, Tennessee has over 9,000 caves and less than 2% of those have been surveyed, which led them to suggest that there could be additional unknown NLEB hibernacula in the state (Tennessee Wildlife Resources Agency 2013).

Threats

White-nose syndrome

WNS is an emerging infectious wildlife disease caused by a fungus of European origin, *Pseudogymnoascus destructans*, which poses a considerable threat to hibernating bat species throughout North America, including the NLEB (Service 2011). WNS is responsible for unprecedented mortality of insectivorous bats in eastern North America (Blehert et al. 2009; Turner et al. 2011). The first evidence of the disease (a photo of bats with fungus) was documented near Albany, New York, on February 16, 2006, but WNS was not actually discovered until January 2007, when it was found at four additional caves in the same vicinity (Blehert et al. 2009). Since that time, WNS has spread rapidly throughout the eastern portions of the NLEB range in the U.S. and Canada. As of February 2015, WNS was confirmed in 25 of the 37 U.S. States within the species' range and in 5 Canadian provinces (80 FR 18000). Spores of the fungus disperse to new locations primarily through bat-to-bat contact (Kunz and Reichard 2010); however, evidence suggests that humans may also transport spores between locations (USGS National Wildlife Health Center 2014), which is likely how the fungus arrived in North America.

Although the dispersal rate of *P. destructans* across the landscape and the onset of WNS after the fungus arrives at a new site are variable, it appears unlikely that any site within the range of the NLEB is not susceptible to WNS. Some evidence suggests that certain microclimatic conditions may hinder disease progression at some sites, but given sufficient exposure time, WNS has had similar impacts on NLEBs everywhere the disease is documented. Absent direct evidence that some NLEBs exposed to the fungus do not contract WNS, available information suggests that the disease will eventually spread throughout the species' range.

The final listing rule for the NLEB provides additional details about WNS and its effects on the species, which we do not summarize further here.

Conservation Efforts to Reduce WNS

In partnership with several other State, Federal, and Tribal agencies, the Service developed “A National Plan for Assisting States, Federal Agencies, and Tribes in Managing White-Nose Syndrome Bats” (<https://www.whitenosesyndrome.org/national-plan/white-nose-syndrome-national-plan>). Canada has developed a comparable plan, allowing for a broader coordinated response to the disease in both countries. The multi-agency, multi-organization WNS response team, under the U.S. National Plan and in coordination with Canadian partners, has and continues to develop recommendations, tools, and strategies to slow the spread of WNS, minimize disturbance to hibernating bats, and improve conservation strategies for affected bat species. Some of these include:

- decontamination protocols to prevent human transport of fungal spores;
- cave management strategies and BMPs;
- forestry BMPs; nuisance wildlife control operator BMPs;
- transportation and bridge BMPs;
- hibernacula microclimate monitoring recommendations;
- wildlife rehabilitator BMPs; and
- a bat species ranking document for conservation actions.

In 2009, the Service also issued a recommendation for a voluntary moratorium on all caving activity in States known to have hibernacula affected by WNS, and all adjoining States, unless conducted as part of an agency-sanctioned research or monitoring project (Service 2009). These recommendations have been reviewed annually and a revised version, including a multi-agency endorsement through the national WNS Steering Committee, is expected soon. Though not mandatory or required, many State, Federal, and Tribal agencies, along with other organizations and entities, operating within the NLEB’s range have incorporated the recommendations and protocols in the WNS National Plan in their own local response plans.

Research is also under way to develop control and treatment options for WNS-infected bats and environments. Several potential treatments are in various stages of development. At this time, none have been tested on the NLEB, and none have been demonstrated safe or effective for any bat species. A landscape-scale approach to reduce the impacts of WNS is still at least a few years away.

Other Threats

The final listing rule for the NLEB describes known threats to the species under each of the five statutory factors for listing decisions, of which disease/predation, discussed above, is the dominant factor. We summarize here the findings of the final listing rule regarding the other four factors that are relevant to this consultation.

Human and non-human modification of hibernacula, particularly altering or closing hibernacula entrances, is considered the next greatest threat after WNS to the NLEB. Some modifications, e.g., closure of a cave entrance with structures/materials besides a bat-friendly gate, can cause a

partial or complete loss of the utility of a site to serve as hibernaculum. Humans can also disturb hibernating bats, either directly or indirectly, resulting in an increase in energy-consuming arousal bouts during hibernation (Thomas 1995; Thomas et al. 1990).

During the summer, NLEB habitat loss is primarily due to forest conversion, and to a lesser degree, forest management. Throughout the range of NLEB, forest conversion is expected to increase due to commercial and urban development, energy production and transmission, and natural changes. Forest conversion causes loss of potential habitat, fragmentation of remaining habitat, and if occupied at the time of the conversion, direct injury or mortality to individuals. Forest management activities, unlike forest conversion, typically result in temporary impacts to the habitat of NLEBs, but like forest conversion, may also cause direct injury or mortality to individuals. The net effect of forest management may be positive, neutral, or negative, depending on the type, scale, and timing of various practices. The primary potential benefit of forest management to the species is perpetuating forests on the landscape that provide suitable roosting and foraging habitat. The primary potential impacts of forest management are greatly reduced with the use of various measures that avoid or minimize effects to bats and their habitat, e.g., limiting the size of clearcuts, avoiding or minimizing timber harvest during the flightless period for bat pups, leaving sufficient numbers of snags and other trees suitable as roosts following harvests, etc.

Wind energy facilities are known to cause mortality of NLEBs. While mortality estimates vary between sites and years, sustained mortality at particular facilities could cause declines in local populations. Wind energy development within portions of the species' range is projected to continue.

Climate change may also affect this species, as NLEBs are particularly sensitive to changes in temperature, humidity, and precipitation. Climate change may indirectly affect the NLEB through changes in food availability and the timing of hibernation and reproductive cycles.

Environmental contaminants, in particular insecticides, other pesticides, and inorganic contaminants, such as mercury and lead, may also have detrimental effects on NLEBs. Contaminants may bio-accumulate (become concentrated) in the tissues of bats, potentially leading to a myriad of sub-lethal and lethal effects.

Categorization of Caves/Hibernacula

A species' recovery plan has not yet been developed for the NLEB. Therefore, at this date, the Service has not assigned NLEB cave or hibernacula priority levels based on biological significance, location, winter population sizes, vulnerability, etc.

Recovery

A recovery plan for the NLEB has not yet been developed. Therefore, no recovery criteria for delisting the species (recovering the species to the point that it no longer requires protection under the Act) currently exists.

Environmental Baseline

The project area is located in the Cumberland Plateau and Mountains Major Land Resource Area near the Fairfield Glade community in northeast Cumberland County. It lies within the Otter Creek (HUC 12 060102080203) and North Creek (HUC 12 060102080305) watersheds. Area topography ranges from flat or rolling open areas with fringe wetlands bordering water bodies to steep forested gorges comprised of oak/hickory forests, first order streams, and slope wetlands. The dominant hardwood species in the area are oak, hickory, and maple. Predominant land practices include light agricultural (e.g. hay production), residential development, and service industry. No caves are recorded near the project area.

Status of the species within the action area

The Service has estimated the project action area to include a total of approximately 65.5 ac encompassing a 100-foot wide swath for approximately 5.4 mi from Firetower Rd to east of Westchester Rd. This action area (located on U.S Geological Survey Dorton and Fox Creek 7.5 minute quadrangle maps) contains acreage of terrestrial and aquatic areas affected by the project, and includes portions of 25 streams within Otter Creek and North Creek watersheds.

Bat surveys were conducted for the proposed widening of SR 101 from Lakeview Drive to east of Westchester Drive/Catoosa Boulevard in Fairfield Glade from July 28 through July 31, 2014. Mist netting efforts at three sites resulted in the capture of five bats, including one female NLEB. The captured NLEB was fitted with a transmitter and repeatedly tracked over a period of four days to the porch of a house (Figure 3). No other roosting structures were identified during the study.

A mist netting survey for the proposed relocated SR 101 VEC powerline was performed during the period of May 23 through June 3, 2014, at five sites with suitable netting locations. Efforts resulted in the capture of seven bats, including one female NLEB. The captured NLEB was fitted with a transmitter and repeatedly tracked for seven days to a red oak (*Quercus rubra*) snag just outside of the project limits (Figure 4). An emergence count effort for two nights at the tree resulted in observations of 10 bats (four on the first night and six on the next). The emerging bats were not identified to species, but the tree evidently houses a colony of bats that could well be NLEBs.

Based on the positive results of these two SR 101 studies, we believe that NLEBs utilize the proposed corridor for roosting and foraging. We have further mined data from a 2012 summer roosting ecology study at nearby Catoosa WMA (Figure 2), which further suggests high occupancy rates of NLEB in the area.

Figure 2. Catoosa Wildlife Management Area

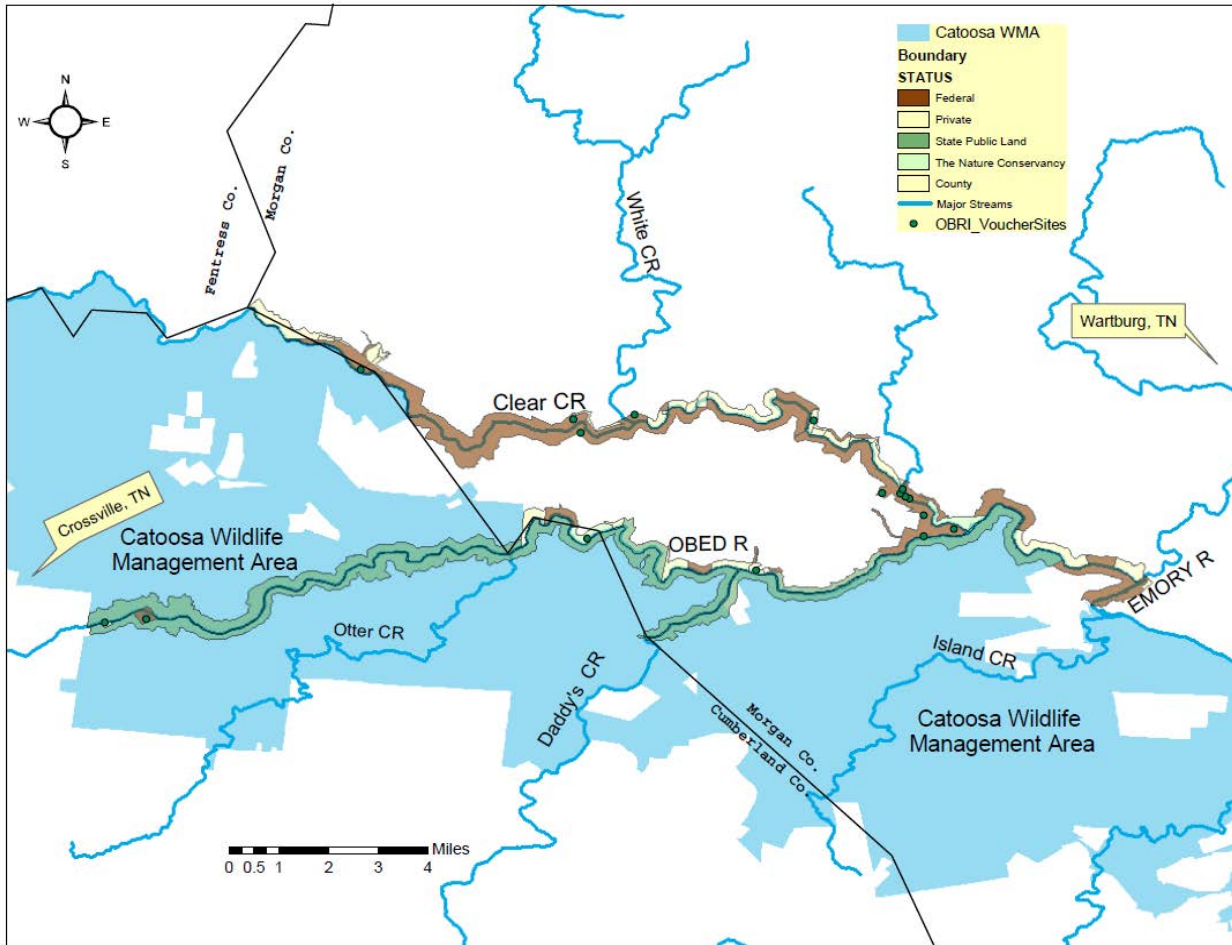


Figure 3. Survey sites and roost location for the proposed widening of SR 101 from Lakeview Drive to east of Westchester Drive/Catoosa Boulevard in Fairfield Glade (borrowed from TDOT's Indiana Bat Survey Report).

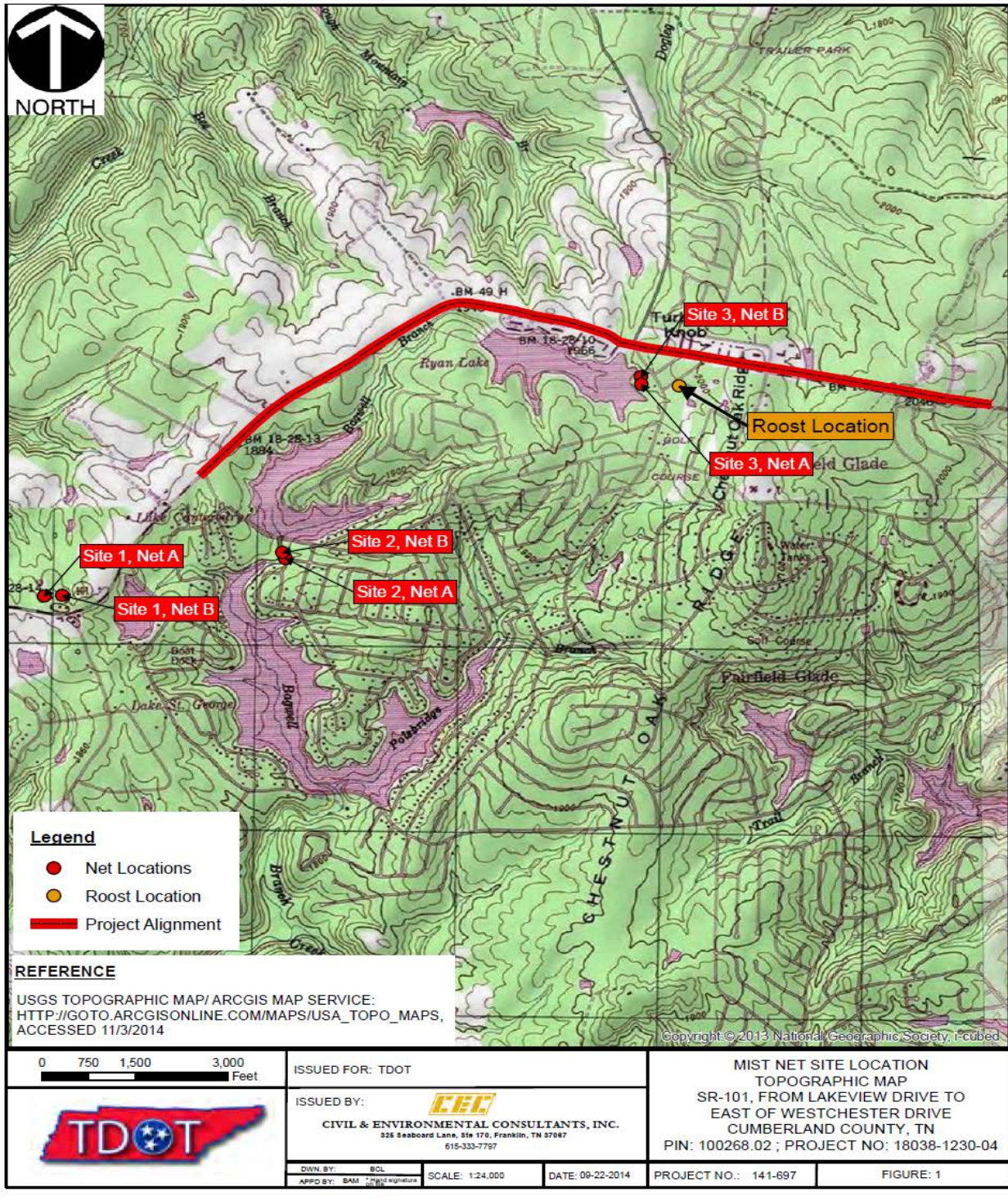
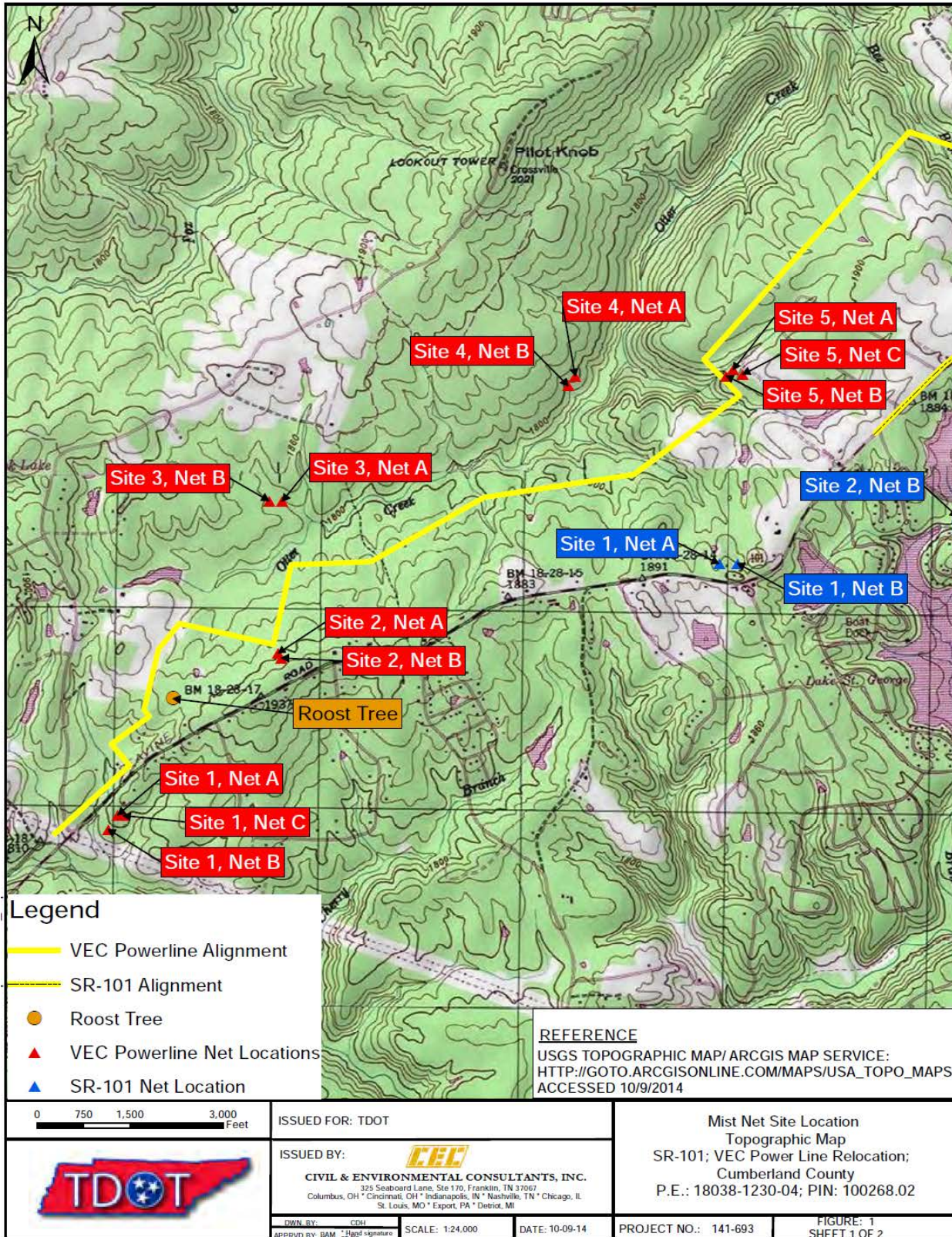


Figure 4. Survey sites and roost location for the proposed SR 101 VEC Powerline Relocation Project (borrowed from TDOT's Indiana Bat Survey Report).



Factors affecting species environment within the action area

Within the action area, we are unaware of any land use practices affecting the NLEB. The project would be constructed on new alignment through an area with current use in forestland and light agriculture (hay production). The portions of 25 streams that could potentially be affected by construction and maintenance of the relocated powerline appear to be unaltered. The project would not require encapsulation of any of the stream portions.

Methodology for Occupied Acreage and Population-Level Effects Estimation

Surveys in 2014 for the SR 101 VEC powerline relocation netted a female NLEB approximately 175 ft from the proposed corridor. The captured NLEB was fitted with a transmitter and repeatedly tracked for seven days to a red oak (*Quercus rubra*) snag approximately 110 m (360 ft) east of the project limits (Howard 2015). Surveys also took place for the proposed SR 101 widening project. One female NLEB was captured approximately 650 feet from the corridor of the proposed powerline relocation and tracked to a porch for four days, some 615 ft from the proposed powerline corridor. The action area is, therefore, believed to occur within the known, occupied range of the species.

The occupancy rate is calculated by the number of mist net survey sites where at least one individual was captured as a ratio of the total number of mist net sites surveyed. We have combined available information from these two SR 101 survey efforts with the results from the nearby Catoosa WMA roosting ecology study (Lereculeur 2013) to arrive at an occupancy rate estimate. At least one individual NLEB was captured at all eight unique sites netted over 17 nights on Catoosa WMA. During the SR 101 surveys, NLEBs were caught at two mist net sites out of the eight netted. These combined data result in captures of at least one NLEB at 10 out of 16 unique sites or a 62.5% occupancy rate.

Northern long-eared bat colony size (numbers of bats and home range)

Two important studies give a range of 30 to 60 adult females per colony (see *Staging, Spring Migration and Summer Roosting*). Given the number of colonies that the action area likely supports, we then estimate total NLEB numbers in the occupied available habitat assuming a 1:1 adult female/adult male ratio and a maximum of one pup per female. For purposes of this biological opinion, we use 45 females per colony (the mid-point of the 30 to 60 range) as the basis for estimating bat numbers. Therefore, for each colony present within the action area, we assume a NLEB population is comprised of 45 adult females, 45 sympatric adult males and 45 juveniles following parturition.

Telemetry-based studies estimate a relatively small, mean summer home range size for individual NLEBs: 161 ac (ranging from 44 to 241 ac) (Owen et al. 2003); and 179 ac (ranging from 46 to 425 ac) (Lacki et al. 2009). To compare these home-range areas with data on travel distances, the radius of a circle (although home ranges are not necessarily circular) of these sizes is 1,492 ft and 1,574 ft, respectively. Adult females and volant juveniles forage nightly departing from a day roost, and individuals switch roosts frequently (see *Staging, Spring Migration and Summer Roosting*). In two studies, individual bats used up to five roosts in less than 19 days (Sasse and Perkins 1996), and up to five roosts in less than 13 days (Timpone et al. 2010). The

distance traveled between consecutive roosts varies widely from 20 ft (Foster and Kurta 1999) to 2.4 mi (Timpone et al. 2010). Likewise, the distance traveled between roost trees and foraging areas, based on data from telemetry studies, varies widely (e.g., a mean of 1,975 ft) (Sasse and Perkins 1996) and a mean of 3,609 ft (Henderson and Broders 2008). Circles with a radius of these distances have an area of 281 ac and 939 ac, respectively, which is larger than the individual home range size reported in the literature.

The home range of a colony (i.e., the collective area used by its members over the course of a summer), is necessarily larger than the home range of an individual, due both to the variability of individual behavior and because the center of individual bat activity shifts with frequent roost changes over the course of a summer season. Based on reported maximum individual home range and travel distances between roosts, and between roosts and foraging areas described above, we use 1,000 ac for purposes of this biological opinion as the area a colony uses. Within this area, one or more members of a colony and sympatric adult males would likely appear in mist net or acoustic surveys.

For comparison with data on travel distances, a 1,000-ac circle has a radius of 3,724 ft, or 0.71 mi. This radius is about half of the 1.5-mi radius from NLEB capture records that the Service commonly uses for the purpose of identifying actions that may affect habitats the species is known to use, which is different than the purposes that we use 1,000 ac as the size of a colony (i.e., estimating population size and numbers of individuals affected by activities). The larger radius of 1.5 mi accounts for the highly variable travel distances between roosts and foraging areas reported in the literature, how colonies may overlap and exchange members on the landscape, and how the shape of a home range is not necessarily as compact as a circle.

The numbers of NLEB non-volant bat pups and adult female bats affected by the clearing activities for the SR 101 VEC powerline relocation project depend on whether roosting areas are located within these activity areas. The survey results conducted for this project indicate that a maternal tree is present within a few hundred feet of the proposed corridor. Maternity roosting areas are a subset of the 1,000-ac colony size that we described in the above paragraph. Silvis et al. (2014) estimated roosting areas using telemetry methods for three colonies in Kentucky, both before and after winter removal of selected roost trees from two of the colonies. Roosting area size ranged from 3 ac to 144 ac (1.3 ha to 58.3 ha). Perry and Thill (2007) found roost trees concentrated in a 5-ac area (2 ha). Carter and Feldhamer (2005) reported that ten telemetered female NLEBs, tracked for an average of 3.9 nights each, used 19 roost trees encompassing an area of 460 ac (186.3 ha). Broders et al. (2006) and Henderson and Broders (2008) found that foraging areas were six or more times larger than roosting areas. One sixth of our 1,000-acre colony size is 167 ac, which is larger than the largest roosting area Silvis et al. (2015) reported, but smaller than the roosting area Carter and Feldhamer (2005) reported. For purposes of this biological opinion, we use a roosting area of 167 ac.

Northern long-eared bat home range overlap

Lacking information about the degree of spatial overlap between NLEB maternity colonies, we assume that colonies within the action area do not overlap (i.e., we assume that 1,000 ac of occupied habitat supports one colony). The estimated occupancy rate of NLEBs within the action area is 62.5% (see *Methodology for Occupied Acreage and Population-Level Effects Estimation*,

above); however, it is unlikely that the limited acreage within the project area would experience colony-range overlap. If incorrect, the possible effect of this assumption is to underestimate the population size within the action area (i.e., 1,000 ac supports more than one colony).

An analysis of mist net survey data in Kentucky, cited in the final listing rule for the northern long-eared bat (80 FR 17974), indicates that most males and non-reproductive females are captured in the same locations as reproductively active females (1,712 of 1,825 capture records, or 94%), suggesting substantial overlap in the summer home range of reproductive females and other individuals. The Service further analyzed this data to determine the percentage of capture locations for males and non-reproductive females that were not locations for reproductive female captures or within 3 mi of a reproductive female capture location (Ziewitz, personal communication, 2015). Of 909 capture locations, 87 (9.6%) did not have reproductively active females and were more than 3 mi from captures of reproductive females, suggesting a $100 - 9.6 = 90.4\%$ overlap between the home range of individuals belonging to maternity colonies and other individuals.

Although the summer home ranges of adult males and adult females appear to substantially overlap, males tend to roost singly and select roost trees in stands with different characteristics than the roosting areas of maternity colonies (Ford et al. 2006; Perry and Thill 2007). The size of adult male roosting areas is not reported in the literature; however, Ford et al. (2006) noted that in each instance where a telemetered male in a West Virginia study relocated its roost, none moved more than 100 meters (approximately 328 ft) to alternative roosts, suggesting that the roost-area concept is also applicable to adult male NLEBs. To avoid underestimating effects to maternity colonies, we have assigned a relatively large area to maternity colony roost areas (167 ac, see *Northern long-eared bat colony size [numbers of bats and occupied area]*, above). For the analyses, we need to also estimate effects to roosting adult males in addition to females and pups (i.e., estimating the number of bats affected by disturbance in roosting areas); therefore, we include males in computing the density of bats for the 167-ac maternity colony roosting area, recognizing that adult females and adult males do not necessarily roost in the same stands.

Northern long-eared bat population estimate

Using the total 54.6 ac of potential NLEB suitable habitat, calculated from imagery provided in the biological assessment, we estimate that 34.1 ac within the action area are occupied by NLEBs, including one maternity colony with 90 adults and 45 pups:

- $54.6 \text{ forested ac} \times 0.625 \text{ occupancy rate} = 34.1 \text{ occupied ac}$;
- $34.1 \text{ occupied ac} \times 0.9043 \text{ overlap with males} = 30.9 \text{ colony-occupied ac}$;
- $30.9 \text{ ac} \div 1,000 \text{ ac per colony} = .03 \text{ (or 1) colony}$;
- $1 \text{ colony} \times 45 \text{ adult females per colony} = 45 \text{ adult females}$; and
- $45 \text{ adult females} + 1 \text{ adult male per female} + 1 \text{ pup per female} = 90 \text{ adults and 45 juveniles (or 135 NLEBs)}$.

As described in the final listing rule (80 FR 17979), a regional population estimate of about four million NLEBs in six midwestern states (Illinois, Indiana, Iowa, Ohio, Michigan and Missouri)

was derived from capture ratios of NLEBs to Indiana bats and hibernacula counts of the latter. However, the area within the range of the NLEB for ten southeastern states (Alabama, Arkansas, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina and Tennessee) is comparable that of the six midwestern states (both are about 200 million ac in size). The northern tier of states in the southeast (Arkansas, Tennessee, Kentucky and North Carolina) may support similar bat densities as the six Midwestern states, while the southern tier of states, situated on the southern extreme of the species' range, may support lower densities, perhaps half as much or less, although sufficient survey data is unavailable to confirm this. Rough calculations, based on these broad assumptions, yield an estimate of about three million NLEB for the 11 southern states in the range of the species. The 54.6 ac of suitable NLEB habitat within the action area is less than 0.00000003% of the area encompassed by the range of the species in these southern states and 90 bats is 0.00003% of the estimated three million NLEBs found in this region.

Estimated number of individuals affected by ongoing, routine maintenance activities, based on population estimates and occupancy rates for northern long-eared bats

The biological assessment provides projected acreages, locations and timeframes for various ongoing, routine activities included in this consultation. Therefore, we used NLEB population estimates and the occupancy rate from above, locations and timeframes for the included activities to estimate the number of individuals that could be affected by these various activities in our effects analyses below.

Because no hibernacula or caves are recorded near the project area, the analyses below does not include consideration of seasonal concentrations of bats in areas near hibernacula or environmental changes to these areas (beneficial and adverse), which could affect a greater number of individuals per acre than our methodology using projected summer bat densities predicts. If hibernacula were nearby, greater number of individuals per acre could be affected by activities affecting occupied habitats during swarming (areas near hibernacula for mating and preparation for hibernation) and following emergence from hibernacula in the spring, when they likely stage in the same areas in preparation for migration to summer habitats.

Our calculations for estimating the effects to NLEBs, corresponding to each stressor-exposure-response pathway that we identify, are estimated using the methodology and data described below:

- (a) annual, active-season, or non-volant-season extent (ac) of the proposed activity causing the stressor, depending on the pathway;
- (b) total forest habitat ac;
- (c) percent of the forest habitat receiving the activity ($a \div b$);
- (d) percent of forested habitat that NLEBs use at a time and in a manner that the stressor could affect causing a specific type of individual response;
- (e) expected overlap (ac) of the activity and the NLEB-occupied area ($b \times c \times d$); and
- (f) expected number of individuals affected ($e \times$ bat density in the occupied area).

In the final step of the calculations described above, the density we multiply by the expected area of overlap depends on the manner in which NLEBs use the habitat exposed to the stressor. In the preceding example, non-volant pups in roosting areas are the individuals responding to the stressor, and the density is 45 pups per 167 ac (0.2695). Based on the data and assumptions identified in the *Northern long-eared bat population estimate* section, we arrive at the following NLEB densities in Table 1, below:

Table 1. Densities of Northern Long-eared Bats in the Action Area by Habitats and Life Cycles.

Habitat	Northern Long-eared Bat Individuals	Number	Acres	Density
Summer home range	Adult females and sympatric adult males	45 + 45 = 90	1000 / 0.94 = 1,064	0.0846
Roosting areas	Non-volant pups	45	167	0.2695
Summer home range	Adult females, volant juveniles and sympatric adult males	135	1.064	0.1269
Roosting areas	Adult females, volant juveniles and sympatric adult males	135	167	0.8084

This methodology generates results in terms of numbers of individual NLEBs affected, but we must acknowledge its inherent imprecision. It relies on assumptions about specific occupancy rates and applies constant values for colony size, sex ratios, etc., that we believe are reasonable and based on best available information, but which are either uncertain or variable across the action area. Although it is coarse, this methodology provides a transparent basis for quantifying effects for interpretation relative to the status of the species, which the purpose of an effects analysis in a biological opinion.

Effects of the Action

This section addresses the direct and indirect effects of the Action on the NLEB, including the effects of interrelated and interdependent activities. Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action, but are later in time and reasonably certain to occur.

Effects Analysis Methodology

For each of the construction activities described in the section entitled “Description of the Proposed Action”, we apply the following steps to analyze effects.

- **Literature Review** – We review best available science and commercial information about how the activity may affect the NLEB.
- **Stressor-Exposure-Response Pathways** – Based on the literature review, we identify the stressor(s) (alteration of the environment that is relevant to the species) that may result from the proposed activity.
 - For each stressor, we identify the circumstances for an individual bat’s exposure to the stressor (overlap in time and space between the stressor and a NLEB).
 - Given exposure, we identify the likely individual response(s), both positive and negative. For this consultation, we group responses into one of four categories:
 - annoyance (e.g., construction-related pollution in a foraging area, causing bats to forage elsewhere);
 - reduced fitness (e.g., reduced food resources, reduced suitable roosting sites);
 - harass (e.g., day-time disturbance in a roosting area, causing bats to flee and increasing the likelihood of predation); and
 - harm (e.g., wintertime harvesting of a tree used by NLEBs resulting in increased stress or other injury to returning bats).
 - For each pathway, we consider how proposed conservation measures may reduce the severity of the stressor or the probability of an individual bat’s exposure (e.g., water quality measures to prevent introduction of pollutants into area streams).
- **Population-Level Effects** – For each pathway, we apply the total acreage of forested clearing, bat occupancy rates, and bat density within occupied areas to estimate population-level effects (numbers of individual bats included in the pathway).

Land Management

Literature Review for Effects of Land Management

Activity – Tree removal:

Clearcutting is considered even-aged management and begins with complete, or nearly complete, removal of existing timber to create a new stand with young trees of approximately the same age. Clearcutting numerous small stands of different age classes can form a diverse assemblage of habitats (Taylor 2006).

In the short term, increased sunlight exposure to unharvested trees may improve microclimate conditions for roosting Indiana bats (Bennett and Braun 2004). Sun exposure on suitable roosting trees results in warmer roosting conditions. This is thought to be especially important for maternity colonies because the warmer temperature from sunlight exposure helps development of fetal and juvenile young (Racey 1982; MacGregor, personal communication, 2004). Clearcutting creates edge habitat for bat foraging. Smaller, irregular-shaped units are better for bats than larger blocks. A flush of herbaceous growth following timber removal can provide rich food sources for insects preyed upon by bats (Taylor 2006).

It is unknown how many roosts are critical to the survival of a colony of NLEBs. There would be fewer live roost trees and snags available to bats as a result of the permanent removal of all standing timber and snags within the project area. These impacts could result in reductions in NLEB populations due to loss of maternity roosting sites. The temporary nature of the use of

roost trees by Indiana bats dictates that several must be available in an area if the colony is to return to the same area and raise their young successfully (U.S. Fish and Wildlife Service 2006).

Disturbance associated with timber harvest activities could cause NLEBs to flee or abandon day-time roosts, which increases the likelihood of predation. Gardner et al. (1991) reported that Indiana bats continued to roost and forage in an area with active timber harvest. Callahan (1993) attributed the abandonment of a primary roost tree by Indiana bats to disturbance from a bulldozer clearing brush adjacent to the tree.

Activity – Utility maintenance:

Studies suggest that bats avoid noisy areas. Bennett and Braun (2004) indicated that noise associated with tree cutting on a National Forest (NF), regardless of the felling method used, can cause an Indiana bat to flush, which could result in harm or harassment of the bat by altering its normal behavior pattern and possibly make it more susceptible to various predators during daylight hours or result in mortality.

Activity – Invasive plant management:

Although it is likely that use of herbicides influence prey availability for bats, the influence of the chemicals applied, the ecological context and bat-prey relationships have not been well studied (Hayes and Loeb 2007). The primary effect of herbicides on wildlife communities is through alterations to forest structure and plant species composition; herbicides often have an indirect influence on insect populations by changing the abundance and composition of plant communities on which insect communities rely (Guynn et al. 2004). These effects in North American forests are generally short term (less than 5 years) and response by wildlife is very species specific (Guynn et al. 2004; Lautenschlager and Sullivan 2004; Miller and Wigley 2004).

No data are available on the effects of herbicide treatments on insects commonly consumed by bats and, depending on the herbicide used and implementation of the treatments, herbicide treatments may either have negative or positive effects on bats and their prey (Hayes and Loeb 2007). Herbicides may increase habitat quality for some bat species by decreasing structural complexity (i.e., clutter) within mature forest stands and helping to establish a diverse herbaceous plant community (Guynn et al. 2004).

Some pesticides (i.e., organophosphate insecticides) are generally short-lived in the environment and do not accumulate in food chains. However, risk of exposure to bats is still possible due to direct exposure from spraying or ingesting insects that have recently been sprayed but have not died, or both (Clark 1988). Organophosphate and carbamate insecticides are acutely toxic to mammals. Bats may lose their motor coordination from direct application and are unlikely to survive in the wild in an incapacitated state lasting more than 24 hr (Plumb and Budde 2011).

Activities – Water resources protection, soil conservation:

Forest-management practices that eliminate or limit access to water or degrade water quality through siltation can negatively affect bats (Taylor 2006). Bats prefer less polluted waters (Biscardi et al. 2007). Riparian areas are one of the highest quality foraging habitats available to bats (Taylor 2006). Therefore, it is imperative to protect water quality and their prey base in

streams and wetlands. Bats must also have daily access to clean water for drinking, especially during lactation and periods of increased activity. Some bat species, such as the gray bat, usually roost near or forage over water (Taylor 2006).

Stressor-Exposure-Response Pathways for Land Management

The alterations of the environment (stressors) associated with land management that are relevant to the NLEB include noise/vibration, removing roost trees, temporary reductions in preferred forage species, indirect exposure to herbicides, changes in plant community composition and abundance, thinning mid-story clutter adjacent to roost trees, disturbance (noise, machinery exhaust, human activity) associated with timber harvest, removing foraging habitat, water quality and soil erosion. Based upon the description of the action and the proceeding literature review, we identify the following five pathways of NLEB to construction and maintenance.

Pathway 1

Activity – Tree removal.

Stressor – removal of roost trees; disturbance (noise, machinery exhaust, human activity) associated with harvest.

Exposure (time) – Inactive season, indirect effects during October 15 through March 31 inoccupancy period.

Resource affected - Roost trees, and foraging habitat.

Individual response - Take in the form of harass.

Interpretation – Removal of roosting habitat and loss of riparian area would occur. Timber harvesting would involve clearcutting operations that would fell all stems. Seasonal restrictions have been implemented requiring removal of trees from October 15 to March 31 to reduce potential for direct harm to bats. Approximately 54.6 ac of potential NLEB suitable habitat would be removed for the project.

Pathway 2

Activity –Utility maintenance.

Stressor – Noise, removing vegetative regrowth.

Exposure (time) – Year-round, direct effect (during April 1 through September 30 occupancy period). Indirect effect during post-implementation.

Resource affected – Individual NLEBs and foraging habitat.

Individual response - Harass (fleeing from disturbance), removal of roost trees, harm if loss of foraging habitat.

Interpretation - Noise or removal of vegetation near a roost tree may cause a NLEB to flush, which could result in harassment of the bat by altering its normal behavior pattern and possibly make it more susceptible to various predators during daylight hours. Excessive noise may result in a NLEB abandoning a roost tree. If pregnant females are required to search for new roosting habitat due to disturbances, it is assumed such effort would place additional stress on them at a

time when fat reserves are low or depleted, and they are already stressed from the energy demands of migration. This could lead to injury or death of non-volant young if present in a roost because of their inability to fly and escape, mothers might drop them in their haste to quickly remove them from the roost tree or non-volant pups might be abandoned. Pregnant female bats might also reabsorb embryos or have spontaneous abortions as a result of maternity roost disturbances. Removal of foraging habitat may temporarily decrease foraging opportunities or cause bats to seek new foraging sites, which may be of lesser quality. Bats may be required to travel further to forage, due to loss of foraging habitat, placing additional stress on them at a time when fat reserves are low or depleted, and they are already stressed from the energy demands of migration.

Pathway 3

Activity - Invasive plant management.

Stressor – Temporary reductions in preferred forage species (Lepidoptera, Coleoptera and Diptera); direct exposure to herbicides.

Exposure (time) – Year-round, direct or indirect effect during April 1 through September 30 occupancy period.

Resource affected – NLEBs.

Individual response – Temporary reductions in preferred forage species (Lepidoptera, Coleoptera and Diptera) for NLEBs as a result of herbicides changing the abundance and composition of plant communities which insects rely upon, take in the form of harm; inadvertent introduction of herbicides into area streams affecting water quality and forage species, take in the form of harm or lethal.

Interpretation – Temporary reductions in preferred forage species would be insignificant due to the species adapting their foraging behavior to feed upon other available flying insects. The Service believes that consumption of insects, exposed to one or more of these chemicals, would have no measurable effects on bats due to the limited amount of product applied in areas actually frequented by bats.

Herbicide application methods would likely include spot treatments using low pressure backpack sprayers and broadcast treatments using mobile equipment (e.g., tractor or UTV with a boom sprayer).

Pathway 4

Activity – Water resources protection.

Stressor – Water quality.

Exposure (time) – Year-round, indirect effects.

Resource affected – NLEBs.

Individual response – Water quality impacts from increased temperatures and siltation associated with loss of riparian cover within the project area. Short term water quality impacts from maintenance activities.

Interpretation - Insectivorous bats commonly forage over bodies of water, and their food intake is partially comprised of emergent, aquatic insects. Bats feeding on insects exposed to toxins such as herbicides and potentially other contaminants would be at risk of exposure to bioaccumulation of these contaminants; they could also be exposed to such contaminants from drinking directly from water bodies where contaminants have been introduced.

Pathway 5

Activity – Soil conservation.

Stressor – Soil erosion.

Exposure (time) – Year-round, indirect effects.

Resource affected – NLEB

Individual response – Reduced potential for harm from protective measures addressing soil erosion.

Interpretation – Soil conservation measures result in less soil erosion and less impacts to water quality. Insectivorous bats commonly forage over bodies of water, and their food intake is partially comprised of emergent, aquatic insects. Excessive sediment input into water bodies can impact water quality, and potentially reduce insect species, which conversely reduces forage opportunities for bats.

Estimation of Population Effects from Land Management

Using the methodology described under the “Amount or Extent of Take Anticipated” section, we estimate that up to 46 NLEB adults or pups would be harassed or harmed annually by the activities described. Pathways 2 and 3 could each result in harassment or harm to 23 adults and non-volant juveniles (46 total) annually. The number of individual NLEBs affected by the other pathways (Pathways 1, 4, and 5) described under land management activities could not be quantified.

Of the adults and young harassed or harmed from Pathways 2 and 3 (46), if 75% are harassed and 25% are harmed, a total of 35 would be harassed and 11 would be harmed. Of the pups impacted by these two Pathways (16), if 75% are harassed and 25% are harmed, a total of 12 would be harassed and 4 would be harmed.

Interrelated and Interdependent Actions

An interrelated activity is an activity that is part of the proposed action and depends on the proposed action for its justification. An interdependent activity is an activity that has no independent utility apart from the action under consultation. No interrelated and interdependent actions have been identified for this project.

Summary of Effects

Harass

Tree removal (Pathway 1) would occur in during winter months and would not result in direct harm of NLEB adults or juveniles. However, indirect harassment or harm could occur from loss of roosting structures.

Utility maintenance (Pathway 2) could directly affect NLEBs as a result of noise causing a bat to flush, which could result in harassment of the bat by altering its normal behavior pattern and possibly make it more susceptible to various predators during daylight hours. Adults and volant juveniles would be harassed by these operations.

Harm

Utility maintenance (Pathway 2) could directly affect NLEBs as a result of noise causing a NLEB to abandon a roost tree and search for new roosting habitat due to disturbances. Removal of foraging habitat may temporarily decrease foraging opportunities or cause bats to seek new foraging sites, which may be of lesser quality. If bats are required to travel further to secure new roosts or locate foraging habitat, it could place additional stress on pregnant females at a time when fat reserves are low or depleted, and they are already stressed from the energy demands of migration. This could lead to injury of non-volant young if present in a roost because of their inability to fly and escape. Pregnant female bats might also reabsorb embryos or have spontaneous abortions as a result of maternity roost disturbances.

Invasive plant management (Pathway 3) could result in temporary reductions in preferred forage species as a result of herbicides changing the abundance and composition of plant communities which insects rely upon, but such potential effects to the NLEB would be insignificant due to the species adapting its foraging behavior to feed upon other available flying insects. Consumption of insects, exposed to one or more chemicals would have no measurable effects on NLEBs due to the limited amount of product applied in areas actually frequented by them. However, direct exposure from inadvertently spraying one of the herbicides on a bat or inside of a roost could physically harm a bat. Adults and juveniles (non-volant and volant) would be harmed by invasive plant management.

Lethal

Utility maintenance (Pathway 2) could result in the death of NLEBs by causing pregnant female bats to reabsorb embryos or have spontaneous abortions as a result of maternity roost disturbances. If disturbances cause bats to abandon maternal roosts, this could lead to the death of non-volant young if mothers drop them while escaping or if pups are deserted.

Beneficial

No beneficial effects have been identified for this project.

Cumulative Effects

In the context of a consultation, cumulative effects are the effects of future state, tribal, local or private actions that are reasonably certain to occur in the action area. Future federal actions that

are unrelated to the proposed action are not considered, because they require separate consultation under section 7 of the Act.

The proposed action is a relocation of approximately 5.4 mi of the 161kV electric transmission line, currently in the right-of-way of SR-101 (Peavine Rd), along new alignment toward the Fairfield Glade Community in Cumberland County, Tennessee. Relocation of the line would allow for necessary lane additions and improvements to SR-101. Once relocated, the new transmission line would be entirely under Volunteer Electric Cooperative (VEC) ownership and management. No cumulative effects are anticipated as a result of the project.

Conclusion

The action area encompasses small acreage presumed to be entirely occupied by the NLEB. After reviewing the current status of the NLEB, the environmental baseline for the action area, and the effects of the proposed action (relocation of a VEC powerline), it is the Service's biological opinion that the project in Cumberland County, Tennessee, as proposed, is not likely to jeopardize the continued existence of the NLEB because: 1) the action area is small relative to range-wide distribution of the species, and therefore, only a small fraction of its overall population would be affected by the action, 2) the likelihood of this species being affected would be minimized with implementation of the proposed conservation measures in the biological assessment (e.g., all tree removal would occur between November 1 and March 31; all construction-related activities would occur within limits of right-of-way or temporary construction easements; equipment staging and areas for fueling and maintenance would be situated away from aquatic features; permits would be obtained prior to construction; the project would be constructed according to industry standards; erosion and sediment control measures would be implemented; and the site would be stabilized upon completion of the project; etc.), 3) some components of the proposed action would provide beneficial effects to the NLEB (e.g., increasing herbaceous growth for insects, which would provide increased numbers of insects for bats to prey upon; protection of water resources provides clean water for drinking and protects their insect prey base; protection of soils with proper sediment control measures prevents siltation of project area streams, etc.).

Incidental Take Statement

Section 9 of the Act and federal regulation under section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the T&Cs of this Incidental Take Statement.

Regarding the NLEB, the 4(d) rule, issued with the listing decision for the species, adopted the take prohibitions at 50 CFR §17.31 and §17.32 with certain exceptions. These exceptions apply to all activities in areas yet unaffected by WNS as well as certain defined activities excepted from the take prohibitions within the WNS “buffer zone” of the NLEB. The action area of this consultation is entirely within the current WNS “buffer zone”. Because this project would be constructed on new alignment, the excepted prohibitions under the 4(d) rule do not apply.

The measures described below are non-discretionary, and must be undertaken by FHWA, so that they become binding conditions of any permits for the exemption in section 7(o)(2) to apply. FHWA has a continuing duty to regulate the activities covered by this Incidental Take Statement. If FHWA: (1) fails to assume and implement the T&Cs or (2) fails to adhere to the T&Cs of the Incidental Take Statement through enforceable terms that are added to the permit, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, FHWA must report the progress of the action and its impact on the species to the Service as specified in the Incidental Take Statement [50 CFR §402.14 (1)(3)] (see “Terms and Conditions” section).

Amount or Extent of Take Anticipated

The amount of incidental taking of NLEBs per year (see “Summary of Effects” section) that the Service anticipates will result from projects implemented under this consultation is not more than that indicated in Table 2, below.

Table 2. Amount of Incidental Take.

Number of Northern Long-eared Bats	Life Stage	Form of Take
29	Adults and volant juveniles	Harass
4	Non-volant juveniles	Harass
9	Adults and volant juveniles	Harm
2	Non-volant juveniles	Harm
1	Adults and volant juveniles	Lethal
1	Non-volant juveniles	Lethal

The Service anticipates incidental take of NLEBs will be difficult to detect for the following reasons:

1. the individuals are small and NLEBs occupy forested summer habitats where they are difficult to find;
2. NLEBs form small (approximately 10-100 individuals and 30-60 individuals, respectively), widely dispersed maternity colonies under loose bark or in the cavities of trees, and males and non-reproductive females may roost individually, which makes finding the species or occupied habitats difficult;

3. finding dead or injured specimens during or following project implementation is unlikely;
4. avoidance and minimization measures will minimize the level of incidental take;
5. most incidental take will be non-lethal and undetectable (e.g., bats fleeing disturbances caused by proposed activities, which increases the risk of death or injury by predation);
6. tree clearing activities would occur outside of the species' April 1 – October 14 occupation period.

Due to the difficulty of detecting take of NLEBs, TDOT will monitor the extent of taking using the acreages of forested habitats altered by the proposed action, including a total of 54.6 ac of NLEB summer habitat.

Effect of the Take

In the preceding biological opinion, the Service has determined that the anticipated level of incidental take is not likely to jeopardize the continued existence of the NLEB (see “Conclusion” section).

Reasonable and Prudent Measures

The Service believes the following RPMs are necessary or appropriate to minimize the taking of the NLEB that is incidental to the action:

1. Effects to NLEBs shall be avoided or minimized by implementation of protective measures.
2. Water quality measures shall be adhered to throughout construction.
3. TDOT shall ensure proper monitoring and reporting for the duration of the project.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 (50 CFR §17.31 and §17.32) of the Act, AAFB must comply with the following T&Cs, which carry out the RPMs described above. These T&Cs are non-discretionary.

1. The FHWA and TDOT will agree to implement the proposed action as described in the biological assessment, the biological assessment's supporting documentation, and this biological opinion and adhere to the most recent and up-to-date BMPs to prevent materials from entering the area streams. This may include revising the SWPPP as necessary throughout the duration of the project. This Term and Condition supports RPMs 1 and 2.
2. The FHWA and TDOT shall ensure that tree removal occurs from October 15 through March 31 to ensure that reproductive activities [*i.e.*, roost tree location, birthing, and pup rearing] are not affected by construction activities. This Term and Condition supports RPM 1.

3. The equipment refueling/maintenance areas and landings for all heavy equipment and trucks will be located at an upland site, a minimum of 150 ft from all streams in the project area. The location of these areas will be provided to TDOT in an updated SWPPP. The contractor cannot refuel or service equipment within 150 ft of any stream. This Term and Condition supports RPMs 1 and 2.
4. TDOT's Environmental Comprehensive Inspections staff (Comprehensive Inspections Office) will conduct site visits once a month, and EPSC inspectors will conduct inspections weekly while active construction is ongoing to ensure that BMPs and water quality control measures are in place and properly functioning. Inspections will be documented and available for the Service to review upon request. This Term and Condition supports RPM 3.

The RPMs, with their implementing T&Cs are designed to minimize the impact of incidental take that might otherwise result from the proposed action. The Service believes that no more than 46 NLEBs within the 54.6 ac of forested area containing potentially suitable male roost sites, maternity roosts, foraging habitat and travel corridors will be incidentally taken. If, during the course of the action, this level of incidental take is exceeded, such incidental take would represent new information requiring reinitiating of consultation and review of the RPMs provided. FHWA must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the RMPs.

Conservation Recommendations

Section 7(a)(1) of the Act directs federal agencies to use their authorities to further its purposes by conducting conservation programs for the benefit of threatened and endangered species. Conservation recommendations are discretionary activities that an action agency may undertake to minimize or avoid the adverse effects of a proposed action, implement recovery plans or develop information useful to the conservation of listed species. The Service offers the following conservation recommendations to the FHWA:

1. Assist with WNS investigations, by:
 - a. providing funding for monitoring of status/health of known NLEB bat colonies; and
 - b. collecting samples for ongoing or future studies.
2. Support research on summer habitat requirements for NLEBs across Tennessee that:
 - a. investigates habitat characteristics in areas where pre- and post-WNS NLEB occurrences are documented, acoustically or captures (e.g., forest type, cover, distance to water, etc.); and

- b. considers NLEB post-project use (via acoustics, radio telemetry, etc.) of an area to better understand how clearing for linear transportation projects may affect this species.

Reinitiation Notice

This concludes formal consultation on the actions outlined in the consultation request. As written in 50 CFR Section 402.16, reinitiation of formal consultation is required where discretionary FHWA involvement or control over the action have been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the FHWA actions that may affect listed species or critical habitat in a manner or to an extent not considered in this biological opinion; (3) the FHWA action is later modified in a manner that causes an effect to the listed species or critical habitat not considered in this biological opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease until reinitiation.

For this biological opinion, the incidental take would be exceeded when the take exceeds what has been exempted from the taking prohibitions under 50 CFR §17.31 and §17.32 by this biological opinion. The Service appreciates the cooperation of FHWA during this consultation. We wish to continue working with you and your staff regarding this action. For further coordination please contact John Griffith of my staff at 931/525-4995.

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APPENDIX A

The following list includes previous biological opinions, issued for adverse effect and completed for northern long-eared bat populations, which identified incidental take.

PROJECTS	SERVICE OFFICE AND DATE BO ISSUED	NLEB INCIDENTAL TAKE (IT) FORM	TAKE EXEMPTED or SURROGATE MEASURE TO MONITOR
Ouachita NF Wolf Pen Gap Trail Complex	Arkansas FO December 2013		6 ac
Monongahela NF West Virginia Ongoing Activities on the Forest	West Virginia FO January 2015		19,241 ac over the life of the project
Federal Highways Administration North Carolina Division activities in eastern North Carolina (Divisions 1-8)	Raleigh, North Carolina FO March 2015		10,223 ac over the next 5 years
Kentucky FO Participation in Conservation Memoranda of Agreement for the Indiana Bat and/or NLEB	Kentucky FO April 2015	803 individuals Harm and Harass; some small indeterminable portion will be harm but most take will be from harassment.	Surrogate of acreage of suitable habitat up to 10,000 ac over a 5 year period with no more than 2,000 ac per year.
SR 641 – Terre Haute Bypass	Bloomington, Indiana FO April 2015	No more than 1 individual NLEB every 2 years as a result of traffic collision	No additional habitat loss is expected at this stage of the project
Fort Drum Military Installation 2015-2017	New York FO April 2015	0-3 pups per year associated with smoke and obscurant operations conducted in June or July	
Mark Twain NF Forested Land and Resource Management Plan	Missouri FO April 2015		166,947 ac (of which 165,924 ac are exempt by the 4d rule) resulting in 338 ac
I-69, Evansville to Indianapolis, Indiana highway Conference Opinion	Bloomington, Indiana FO April 2015	90 individual female/juveniles over the next 16 years	486 forested ac
Hiawatha NF Forested Land and Resource Management Plan	East Lansing, Michigan FO May 2015		78,515 ac (of which 78,021 are exempt by the 4d rule) Resulting in 494 ac 435 Structures (410 general maintenance) 25 potential demolitions
Huron-Manistee NF Forested Land and Resource Management Plan	East Lansing, Michigan FO May 2015		135,999 ac (of which 131,401 are exempt by the 4d rule) resulting in 4,598 ac 2 structures per year for a max of 20

			structures in 10 years demolished (155 structures general maintenance)
Ottawa NF Forested Land and Resource Management Plan	East Lansing, Michigan FO May 2015		92,608 ac and 600 additional trees (of which 92,510 ac and 600 trees are exempt by the 4d rule) resulting in 100 ac
General Services Administration's Construction and Operation of the Proposed U.S. Department of State, Bureau of Diplomatic Security Foreign Affairs Security Training Center	Virginia FO May 2015	14 total individuals in the form of harm or harassment (5 individuals during the late summer and fall of 2015 during construction 8 individuals during winter season vegetation clearing 1 individual could be taken as a result of noise levels from proposed operations)	
Shawnee NF Harris Branch Project	Marion Illinois Sub-Office June 2015		225 ac
Savannah District, Corps of Engineers Nationwide Permit Program in Georgia	Georgia FO June 2015		1,000 ac of forested land annually
New York State Department of Transportation	New York FO June 2015	Small number of pups	Associated with no more than 4.66 ac of potential NLEB habitat All other anticipated incidental take is exempt by the 4d rule
USFS Southern Region Forest Land and Resource Management Plans	Region 4 July 2015	25,735 Harass adults and volant juveniles 5,666 Harm non-volant juveniles	486,498 ac annually of harassment between April and October 318,771 ac annually for harm (overlaps with harassment ac) occurring between May1 – July 15
Savannah District, Corps of Engineers; Russell Creek Reservoir	Georgia FO July 2015		180 ac of forested habitat
Georgia Farm Services Agency Programs	Georgia FO July 2015		1,000 ac over the next 5 years

ATTENTION

YOU ARE REQUIRED TO SUBMIT THIS SIGNED
CERTIFICATION REGARDING THE COMPLETED
ACTIVITY AND ANY REQUIRED MITIGATION.

I hereby certify that the work authorized by Permit # LRN-2015-00364
was completed in accordance with the U.S. Army Corps of Engineers
authorization, including any general or special conditions.

Permittee Signature

Date_____

Submit this signed certification to the address below:

ATTN: William E. Worrall
U.S. Army Corps of Engineers
Regulatory Branch
3701 Bell Road
Nashville, TN 37214



US Army Corps
of Engineers®
Nashville District

Nationwide Permit

No. 12, Utility Line Activities

Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than ½-acre of waters of the United States for each single and complete project.

Utility lines: This NWP authorizes the construction, maintenance, or repair of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines, in all waters of the United States, provided there is no change in pre-construction contours. A “utility line” is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term “utility line” does not include activities that drain a water of the United States, such as drainage tile or french drains, but it does apply to pipes conveying drainage from another area.

Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody.

Utility line substations: This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with a power line or utility line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than ½-acre of waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

Foundations for overhead utility line towers, poles, and anchors: This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not cause the loss of greater than ½-acre of non-tidal waters of the United States. This NWP does not authorize discharges into nontidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and

elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize utility lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (See 33 CFR Part 322). Overhead utility lines constructed over section 10 waters and utility lines that are routed in or under section 10 waters without a discharge of dredged or fill material require a section 10 permit.

This NWP also authorizes temporary structures, fills, and work necessary to conduct the utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if any of the following criteria are met: (1) The activity involves mechanized land clearing in a forested wetland for the utility line right-of-way; (2) a section 10 permit is required; (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet; (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to or along a stream bed that is within that jurisdictional area; (5) discharges that result in the loss of greater than $\frac{1}{10}$ -acre of waters of the United States; (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or (7) permanent access roads are constructed in waters of the United States with impervious materials. (See general condition 31.)

(Sections 10 and 404)

Note 1: Where the proposed utility line is constructed or installed in navigable waters of the United States (i.e., section 10 waters) within the coastal United States, the Great Lakes, and United States territories, copies of the pre-construction notification and NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the utility line to protect navigation.

Note 2: Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the utility line must be removed upon completion of the work, in accordance with the requirements for temporary fills.

Note 3: Pipes or pipelines used to transport gaseous, liquid, liquescent, or slurry substances over navigable waters of the United States are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to Section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the United States associated with such pipelines will require a section 404 permit (see NWP 15).

Note 4: For overhead utility lines authorized by this NWP, a copy of the PCN and NWP verification will be provided to the Department of Defense Siting Clearinghouse, which will evaluate potential effects on military activities.



US Army Corps
of Engineers®
Nashville District

Nationwide Permit General Conditions

The following General Conditions must be followed in order for any authorization by NWP to be valid:

- 1. Navigation.** (a) No activity may cause more than a minimal adverse effect on navigation. (b) Any safety lights and signals prescribed by the US Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the US. (c) The permittee understands and agrees that, if future operations by the US require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the US. No claim shall be made against the US on account of any such removal or alteration.
- 2. Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.
- 3. Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.
- 4. Migratory Bird Breeding Areas.** Activities in waters of the US that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.
- 5. Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.
- 6. Suitable Material.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).
- 7. Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.
- 8. Adverse Effects From Impoundments.** If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.
- 9. Management of Water Flows.** To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).
- 10. Fills Within 100-Year Floodplains.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.
- 11. Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.
- 12. Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the US during periods of low-flow or no-flow.
- 13. Removal of Temporary Fills.** Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.
- 14. Proper Maintenance.** Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.
- 15. Single and Complete Project.** The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.
- 16. Wild and Scenic Rivers.** No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, US Forest Service, US Fish and Wildlife Service).
- 17. Tribal Rights.** No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.
- 18. Endangered Species.** (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed. (b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary. (c) Non-federal permittees must submit a pre-construction notification (PCN) to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the

district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the PCN must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete PCN. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from Corps. (d) As a result of formal or informal consultation with the USFWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWP. (e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the USFWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the US to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. (f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the USFWS and NMFS at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.noaa.gov/fisheries.html> respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for obtaining any "take" permits required under the USFWS's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the USFWS to determine if such "take" permits are required for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied. (b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary. (c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity

may have the potential to cause effects and notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA is complete. (d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps. (e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment. (a) Discharges of dredged or fill material into waters of the US are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters. (b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal: (a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the US to the maximum extent practicable at the project site (i.e., on site). (b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal. (c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this

requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332. (1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment. (2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered. (3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) – (14) must be approved by the district engineer before the permittee begins work in waters of the US, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). (4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided. (5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan. (d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment. (e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the US, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs. (f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses. (g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management. (h) Where certain functions and services of waters of the US are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or USEPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the US authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the US for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature: "When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

Transferee

Date

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include: (a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions; (b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification

must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and (c) The signature of the permittee certifying the completion of the work and mitigation.

31. Pre-Construction Notification (PCN). (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a PCN as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either: (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or (2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2). (b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information: (1) Name, address and telephone numbers of the prospective permittee; (2) Location of the proposed project; (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the US expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans); (4) The PCN must include a delineation of wetlands, other special aquatic sites, and waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the US. The 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate; (5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan. (6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated

critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and (7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act. (c) Form of PCN Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used. (d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level. (2) For all NWP activities that require PCN notification and result in the loss of greater than 1/2-acre of waters of the US, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require PCN notification and will result in the loss of greater than 300 linear feet of intermittent and ephemeral stream bed, and for all NWP 48 activities that require PCN notification, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (USFWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO)), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the PCN notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each PCN notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5. (3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act. (4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of PCN notifications to expedite agency coordination.

Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project.



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102

July 2, 2015

Khalid Ahmed
Tennessee Department of Transportation
505 Deaderick Street, Suite 900
Nashville, TN 37243

Subject: §401 Water Quality Certification
TDOT Application NRS 14.280
SR 101 161KV Transmission Line Relocation

Location: State Route 101
Crossville, Cumberland County, TN
Emory River Watershed
Western Impact Limit: Latitude: 35.9854 Longitude: -84.9595
Eastern Impact Limit: Latitude: 36.0100 Longitude: -84.8936

Dear Mr. Ahmed:

We have reviewed and approved your application to relocate 161KV transmission lines along State Route 101 from Firetower Road to Lakeview Drive in Cumberland County. Authorized waterbody impacts include a total of 2,731 linear feet of permanent riparian vegetation removal along 21 streams and two impoundments, construction of 12-foot permanent rock fords across 19 streams, and a total of 0.59 acres of permanent vegetation impact within six wetlands. The impacts to the State's resources will be offset through the purchase of 228 credits from the Tennessee Stream Mitigation Program (TSMP) Upper Tennessee Service Area and the purchase of 0.59 credits from the Tennessee Wildlife Federation Tennessee Mitigation Fund.

The planned activity was reviewed and the Division has reasonable assurance that the activity as proposed in accordance with all permit conditions herein will not violate applicable water quality standards and has issued the attached permit (enclosed). This permit may also serve as a §401 water quality certification (pursuant to 40 C.F.R. §121.2).

The state of Tennessee may modify, suspend or revoke this authorization or seek modification or revocation should the state determine that the activity results in more than an insignificant violation of applicable water quality standards or violation of the TWQCA. Failure to comply with permit terms may result in penalty in accordance with T.C.A. §69-3-115.

It is the responsibility of the permittee to read and understand all permit conditions before the project begins. If you need any additional information or clarification, please contact me at 615-253-0709 or by e-mail at Robert.J.Wayne@tn.gov.

Sincerely,

A handwritten signature in blue ink that reads "Robert J. Wayne". The signature is written in a cursive style with a large initial "R".

Robert Wayne,
Natural Resources Unit
Enclosure: §401 Water Quality Certification

Cc: Andrew Wisniewski, TDOT
Cookeville EFO
USACE, Nashville District
Crossville MS4
File Copy



AQUATIC ALTERATION RESOURCE PERMIT NRS 14.280

Pursuant to §401 of *The Federal Clean Water Act* (33 U.S.C. 1341), any applicant for a Federal license or permit to conduct any activity which may result in any discharge into the waters of the U.S., shall provide the federal licensing or permitting agency a certification from the State in which the discharge originates or will originate. Accordingly, the Division of Water Resources requires reasonable assurance that the activity will not violate provisions of *The Tennessee Water Quality Control Act of 1977* (T.C.A. §69-3-101 et seq.) or provisions of §§301, 302, 303, 306 or 307 of *The Clean Water Act*.

Subject to conformance with accepted plans, specifications and other information submitted in support of the application, pursuant to 33 U.S.C. 1341 the State of Tennessee hereby certifies the activity described below. This shall serve as authorization under T.C.A. §69-3-101 et seq.

PERMITTEE Khalid Ahmed
 Tennessee Department of Transportation
 505 Deaderick Street, Suite 900
 Nashville, TN 37243

AUTHORIZED WORK: Authorized waterbody impacts include a total of 2,731 linear feet of permanent riparian vegetation removal and maintenance along 21 streams and two impoundments, construction of 12-foot permanent rock fords across 19 streams, and a total of 0.59 acres of permanent vegetation removal and maintenance within six wetlands. The impacts to the State's resources will be offset through the purchase of 228 credits from the Tennessee Stream Mitigation Program (TSMP) Upper Tennessee Service Area and the purchase of 0.59 credits from the Tennessee Wildlife Federation Tennessee Mitigation Fund.

LOCATION: State Route 101
 Crossville, Cumberland County, TN
 Emory River Watershed
Western Impact Limit: Latitude: 35.9854 Longitude: -84.9595
Eastern Impact Limit: Latitude: 36.0100 Longitude: -84.8936

EFFECTIVE DATE: July 2, 2015

EXPIRATION DATE: July 1, 2020



Tisha Calabrese Benton
Director, Division of Water Resources

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PART I

Authorized Work:

Authorized waterbody impacts include a total of 2,731 linear feet of permanent riparian vegetation removal, nineteen, 12-foot permanent rock ford crossings, and a total of 0.59 acres of permanent vegetation impact within six wetlands.

STR-1 - Unnamed Tributary to North Creek

Latitude: 35.9854, Longitude: -84.9595

STA 12+00

- a. Permanent removal and maintenance of 152 feet of riparian vegetation

STR-2 - Unnamed Tributary to North Creek

Latitude: 35.9874, Longitude: -84.9588

STA 19+46

- a. Permanent removal and maintenance of 133 feet of riparian vegetation
- b. Installation of a permanent 12-foot rock ford crossing
- c. Mitigation required for 12 feet at 1:1 ratio = 12 debits

STR-3 – Unnamed Tributary to Otter Creek

Latitude: 35.9933, Longitude: -84.9549

STA 49+66

- a. Permanent removal and maintenance of 155 feet of riparian vegetation
- b. Installation of a permanent 12-foot rock ford crossing
- c. Mitigation required for 12 feet at 1:1 ratio = 12 debits

STR-4 – Unnamed Tributary to Otter Creek

Latitude: 35.9933, Longitude: -84.9547

STA 49+94

- a. Permanent removal and maintenance of 127 feet of riparian vegetation
- b. Installation of a permanent 12-foot rock ford crossing
- c. Mitigation required for 12 feet at 1:1 ratio = 12 debits

STR-5 – Unnamed Tributary to Otter Creek

Latitude: 35.9930, Longitude: -84.9534

STA 54+10

- a. Permanent removal and maintenance of 114 feet of riparian vegetation
- b. Installation of a permanent 12-foot rock ford crossing
- c. Mitigation required for 12 feet at 1:1 ratio = 12 debits

STR-6 – Unnamed Tributary to Otter Creek

Latitude: 35.9958, Longitude: -84.9460

STA 86+13

- a. Permanent removal and maintenance of 121 feet of riparian vegetation
- b. Installation of a permanent 12-foot rock ford crossing
- c. Mitigation required for 12 feet at 1:1 ratio = 12 debits

STR-7 – Unnamed Tributary to Otter Creek

Latitude: 35.9961, Longitude: -84.9444

STA 90+72

- a. Permanent removal and maintenance of 121 feet of riparian vegetation
- b. Installation of a permanent 12-foot rock ford crossing
- c. Mitigation required for 12 feet at 1:1 ratio = 12 debits

STR-8 – Unnamed Tributary to Otter Creek

Latitude: 35.9989, Longitude: -84.9385

STA 111+10

- a. Permanent removal and maintenance of 114 feet of riparian vegetation
- b. Installation of a permanent 12-foot rock ford crossing
- c. Mitigation required for 12 feet at 1:1 ratio = 12 debits

STR-9 – Unnamed Tributary to Otter Creek

Latitude: 35.9992, Longitude: -84.9361

STA 118+44

- a. Permanent removal and maintenance of 114 feet of riparian vegetation
- b. Installation of a permanent 12-foot rock ford crossing
- c. Mitigation required for 12 feet at 1:1 ratio = 12 debits

STR-10 – Unnamed Tributary to Otter Creek

Latitude: 35.9997, Longitude: -84.9322

STA 130+10

- a. Permanent removal and maintenance of 96 feet of riparian vegetation
- b. Installation of a permanent 12-foot rock ford crossing
- c. Mitigation required for 12 feet at 1:1 ratio = 12 debits

STR-11 – Unnamed Tributary to Otter Creek

Latitude: 35.9998, Longitude: -84.9322

STA 130+51

- a. Permanent removal and maintenance of 66 feet of riparian vegetation
- b. Installation of a permanent 12-foot rock ford crossing
- c. Mitigation required for 12 feet at 1:1 ratio = 12 debits

STR-12/Lake 1 – Impoundment of Otter Creek

Latitude: 36.0005, Longitude: -84.9297

STA 134+40 to 137+10

- a. Permanent removal and maintenance of 130 feet of riparian vegetation

Lake-2 – Impoundment of Otter Creek

Latitude: 36.0005, Longitude: -84.9246

STA 147+50 to 152+50

- a. Permanent removal and maintenance of 110 feet of riparian vegetation

STR-15 – Unnamed Tributary to Otter Creek

Latitude: 36.0113, Longitude: -84.9194

STA 186+51

- a. Permanent removal and maintenance of 121 feet of riparian vegetation
- b. Installation of a permanent 12-foot rock ford crossing
- c. Mitigation required for 12 feet at 1:1 ratio = 12 debits

STR-16 – Unnamed Tributary to Otter Creek

Latitude: 36.0133, Longitude: -84.9172

STA 194+64

- a. Permanent removal and maintenance of 144 feet of riparian vegetation
- b. Installation of a permanent 12-foot rock ford crossing
- c. Mitigation required for 12 feet at 1:1 ratio = 12 debits

STR-17 – Unnamed Tributary to Otter Creek

Latitude: 36.0141, Longitude: -84.9141

STA 207+71

- a. Permanent removal and maintenance of 111 feet of riparian vegetation
- b. Installation of a permanent 12-foot rock ford crossing
- c. Mitigation required for 12 feet at 1:1 ratio = 12 debits

STR-18 – Bee Branch

Latitude: 36.0139, Longitude: -84.9129

STA 211+36

- a. Permanent removal and maintenance of 111 feet of riparian vegetation
- b. Installation of a permanent 12-foot rock ford crossing
- c. Mitigation required for 12 feet at 1:1 ratio = 12 debits

STR-20 – Unnamed Tributary to Rough Mountain Branch

Latitude: 36.0125, Longitude: -84.9044

STA 236+42

- a. Permanent removal and maintenance of 108 feet of riparian vegetation
- b. Installation of a permanent 12-foot rock ford crossing
- c. Mitigation required for 12 feet at 1:1 ratio = 12 debits

STR-21 – Unnamed Tributary to Rough Mountain Branch

Latitude: 36.0118, Longitude: -84.9025

STA 243+28

- a. Permanent removal and maintenance of 49 feet of riparian vegetation

STR-22 – Unnamed Tributary to Rough Mountain Branch

Latitude: 36.0159, Longitude: -84.9016

STA 245+70

- a. Permanent removal and maintenance of 112 feet of riparian vegetation
- b. Installation of a permanent 12-foot rock ford crossing
- c. Mitigation required for 12 feet at 1:1 ratio = 12 debits

STR-23– Unnamed Tributary to Rough Mountain Branch

Latitude: 36.0111, Longitude: -84.8996

STA 252+00

- a. Permanent removal and maintenance of 104 feet of riparian vegetation
- b. Installation of a permanent 12-foot rock ford crossing
- c. Mitigation required for 12 feet at 1:1 ratio = 12 debits

STR-24– Unnamed Tributary to Rough Mountain Branch

Latitude: 36.0104, Longitude: -84.8968

STA 259+74

- a. Permanent removal and maintenance of 199 feet of riparian vegetation
- b. Installation of a permanent 12-foot rock ford crossing
- c. Mitigation required for 12 feet at 1:1 ratio = 12 debits

STR-25– Unnamed Tributary to Rough Mountain Branch

Latitude: 36.0100, Longitude: -84.8938

STA 269+74

- a. Permanent removal and maintenance of 119 feet of riparian vegetation
- b. Installation of a permanent 12-foot rock ford crossing
- c. Mitigation required for 12 feet at 1:1 ratio = 12 debits

WTL-1A, WTL-1B

Latitude: 35.9855, Longitude: -84.9593

STA-11+60, 12+20

- a. Permanent removal and maintenance of 0.14 acres of wetland vegetation
- b. Mitigation required for 0.14 acres at 1:1 ratio = 0.14 debits

WTL-3

Latitude: 35.9876, Longitude: -84.9588

STA-28+80

- a. Permanent removal and maintenance of 0.03 acres of wetland vegetation
- b. Mitigation required for 0.03 acres at 1:1 ratio = 0.03 debits

WTL-3-1

Latitude: 35.9716, Longitude: -84.9801

STA-45+50

- a. Permanent removal and maintenance of 0.23 acres of wetland vegetation
- b. Mitigation required for 0.23 acres at 1:1 ratio = 0.23 debits

WTL-5

Latitude: 35.9994, Longitude: -84.9361

STA-118+35

- a. Permanent removal and maintenance of 0.003 acres of wetland vegetation
- b. Mitigation required for 0.003 acres at 1:1 ratio = 0.003 debits

WTL-6

Latitude: 35.9997, Longitude: -84.9320
STA-130+50

- a. Permanent removal and maintenance of 0.15 acres of wetland vegetation
- b. Mitigation required for 0.15 acres at 1:1 ratio = 0.15 debits

WTL-8

Latitude: 36.0100, Longitude: -84.8936
STA-270+20

- a. Permanent removal and maintenance of 0.04 acres of wetland vegetation
- b. Mitigation required for 0.04 acres at 1:1 ratio = 0.04 debits

Special Conditions:

- a. Unless stated otherwise, all work shall be accomplished in conformance with the accepted plans, specifications, data and other information submitted in support of application NRS14.280
- b. The use of herbicide or other chemical treatment for vegetation maintenance within and adjacent to Waters of the State is prohibited.
- c. Any cut vegetation must be removed from Waters of the State and placed in an upland location or disposed of offsite.
- d. The use of monofilament-type erosion control netting or blanket is prohibited.
- e. All rock fords shall be placed as to mimic the existing/proposed contours of the stream channel. Rock shall be countersunk and placed at the grade with the existing stream substrate. Rock shall not be placed in a manner that would permanently disrupt the movement of fish and aquatic life.
- f. Best Management Practices (BMPs) shall be stringently implemented throughout the construction period to prevent sediments, oils, or other project-related pollutants from being discharged into waters of the state. All spills must be reported to the appropriate emergency management agency, and measures shall be taken immediately to prevent the pollution of waters of the state, including groundwater, should a spill occur.
- g. Impacts to wet weather conveyances shall be accomplished in conformance with the Tennessee Department of Environment and Conservation's (TDEC) "General Permit for the Alteration of Wet Weather Conveyances."
- h. Construction and removal of bridges, culverts, and rock fords shall be in the dry to the maximum extent practicable, by diverting flow utilizing cofferdams, berms, and/or temporary channels or pipes. Temporary diversion channels shall be protected by non-erodible material and lines to the expected high water level.
- i. The permitted shall notify this office of project completion within thirty (30) days of completion.
- j. Permittee is responsible for any permanent reduction or loss of instream flow resulting from authorized activities.
- k. Streambeds shall not be used as linear transportation routes for construction equipment. Permanent stream crossings shall be limited to one point in the construction area and EPSC measures shall be utilized where stream banks are disturbed.

General Conditions:

- a. It is the responsibility of the applicant to convey all terms and conditions of this permit to all contractors. A copy of this permit, approved plans and any other documentation pertinent to the activities authorized by this permit shall be maintained on site at all times during periods of construction activity.
- b. Work shall not commence until the applicant has received the federal §404 permit from the U. S. Army Corps of Engineers, a §26a permit from the Tennessee Valley Authority or authorization under a Tennessee NPDES Storm Water Construction Permit where necessary. The applicant is responsible for obtaining these permits.
- c. Adverse impact to formally listed state or federal threatened or endangered species or their critical habitat is prohibited.
- d. All work shall be carried out in such a manner as will prevent violations of water quality criteria as stated in Rule 0400-40-03-.03 of the Rules of the Tennessee Department of Environment and Conservation. This includes, but is not limited to, the prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of waters of the state for any of the uses designated by Rule 0400-40-04. These uses include fish and aquatic life (including trout streams and naturally reproducing trout streams), livestock watering and wildlife, recreation, irrigation, industrial water supply, domestic water supply, and navigation.
- e. Impacts to waters of the state other than those specifically addressed in the plans and this permit are prohibited. All streams, springs and wetlands shall be fully protected prior, during and after construction until the area is stabilized. Any questions, problems or concerns that arise regarding any stream, spring or wetland either before or during construction, shall be addressed to the Division of Water Resource's Cookeville Environmental Field Office (931-432-4015), or the permit coordinator in the division's Natural Resources Unit (615-532-0709).
- f. Appropriate steps shall be taken to ensure that petroleum products or other chemical pollutants are prevented from entering waters of the state. All spills must be reported to the appropriate emergency management agency, and measures shall be taken immediately to prevent the pollution of waters of the state, including groundwater, should a spill occur.
- g. This permit does not authorize adverse impacts to cultural, historical or archeological features or sites.

PART II

Mitigation Requirements and Monitoring Procedures

Required Mitigation Activities

1. To mitigate for stream resource value losses resulting from the authorized project not otherwise addressed, the applicant shall purchase 228 stream mitigation in-lieu fee credits from the Tennessee Stream Mitigation Program Upper Tennessee Service Area. Please be advised that the stream impacts associated with this mitigation are not authorized to proceed until the specified mitigation credits have been reserved. Payment must be made within 60 days of invoice. **Proof of credit purchase shall be submitted to this office within 30 days of payment.** With the purchase of the stream mitigation credits, legal responsibility for completion of this stream mitigation is legally transferred to the Tennessee Stream Mitigation Program.

2. To mitigate for wetland resource value losses resulting from the authorized project not otherwise addressed, the applicant shall purchase 0.59 wetland mitigation bank credits from the Tennessee Wildlife Federation Tennessee Mitigation Program. Please be advised that the wetland impacts associated with this mitigation are not authorized to proceed until the specified mitigation credits have been purchased. Payment must be made within 60 days of invoice. Proof of credit purchase shall be submitted to this office within 30 days of payment. With the purchase of the wetland mitigation credits, legal responsibility for completion of this stream mitigation is legally transferred to the Tennessee Wildlife Federation Tennessee Mitigation Program.

Falsifying Results and/or Reports

Knowingly making any false statement on any report required by this permit or falsifying any result may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Water Pollution Control Act, as amended, and in Section 69-3-115 of the Tennessee Water Quality Control Act.

PART III

Duty to Reapply

Permittee is not authorized to work after the expiration date of this permit. In order to receive authorization beyond the expiration date, the permittee shall submit such information and forms as are required to the Director of Water Resources. Such applications must be properly signed and certified.

Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

Other Information

If the permittee becomes aware that he/she failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, then he/she shall promptly submit such facts or information.

Changes Affecting the Permit

Transfer/Change of Ownership

- a. This permit may be transferred to another party, provided there are no activity or project modifications, no pending enforcement actions, or any other changes which might affect the permit conditions contained in the permit, by the permittee if:
- b. The permittee notifies the Director of the proposed transfer at least 30 days in advance of the proposed transfer date;
- c. The notice includes a written agreement between the existing and new permittees containing a specified date for transfer of permit responsibility, coverage, and contractual liability between them; and

- d. The Director does not notify the current permittee and the new permittee, within 30 days, of his intent to modify, revoke, reissue, or terminate the permit, or require that a new application be filed rather than agreeing to the transfer of the permit.
- e. The permittee must provide the following information to the division in their formal notice of intent to transfer ownership:
 1. the permit number of the subject permit;
 2. the effective date of the proposed transfer;
 3. the name and address of the transferor;
 4. the name and address of the transferee;
 5. the names of the responsible parties for both the transferor and transferee;
 6. a statement that the transferee assumes responsibility for the subject permit;
 7. a statement that the transferor relinquishes responsibility for the subject permit;
 8. the signatures of the responsible parties for both the transferor and transferee, and;
 9. a statement regarding any proposed modifications to the permitted activities or project, its operations, or any other changes which might affect the permit conditions contained in the permit.

Change of Mailing Address

The permittee shall promptly provide to the Director written notice of any change of mailing address. In the absence of such notice the original address of the permittee will be assumed to be correct.

Noncompliance

Effect of Noncompliance

All discharges shall be consistent with the terms and conditions of this permit. Any permit noncompliance constitutes a violation of applicable State and Federal laws and is grounds for enforcement action, permit termination, permit modification, or denial of permit reissuance.

Reporting of Noncompliance

24-Hour Reporting

- a. In the case of any noncompliance which could cause a threat to public drinking supplies, or any other discharge which could constitute a threat to human health or the environment, the required notice of non-compliance shall be provided to the Division of Water Resources in the appropriate Environmental Field Office within 24-hours from the time the permittee becomes aware of the circumstances. (The Environmental Field Office should be contacted for names and phone numbers of environmental response personnel).
- b. A written submission must be provided within five (5) days of the time the permittee becomes aware of the circumstances unless this requirement is

waived by the Director on a case-by-case basis. The permittee shall provide the Director with the following information:

1. A description of the discharge and cause of noncompliance;
2. The period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue; and
3. The steps being taken to reduce, eliminate, and prevent recurrence of the non-complying discharge.

Scheduled Reporting

For instances of noncompliance which are not reported under subparagraph a. above, the permittee shall report the noncompliance by contacting the permit coordinator, and provide all information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the violation and the anticipated time the violation is expected to continue.

Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the waters of Tennessee resulting from noncompliance with this permit, including but not limited to, accelerated or additional monitoring as necessary to determine the nature and impact of the noncompliance. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

Liabilities

Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Notwithstanding this permit, the permittee shall remain liable for any damages sustained by the State of Tennessee, including but not limited to fish kills and losses of aquatic life and/or wildlife, as a result of the discharge of pollutants to any surface or subsurface waters. Additionally, notwithstanding this Permit, it shall be the responsibility of the permittee to conduct its discharge activities in a manner such that public or private nuisances or health hazards will not be created.

Liability under State Law

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or the Federal Water Pollution Control Act, as amended.

This permit does not preclude requirements of other federal, state or local laws. This permit also serves as a State of Tennessee Aquatic Resource Alteration Permit (ARAP) pursuant to the Tennessee Water Quality Control Act of 1977 (T.C.A. §69-3-101 et seq.).

The State of Tennessee may modify, suspend or revoke this permit or seek modification or revocation should the state determine that the activity results in more than an insignificant violation of applicable water quality standards or violation of the act. Failure to comply with permit terms may result in penalty in accordance with T.C.A. §69-3-115.

Reopener Clause

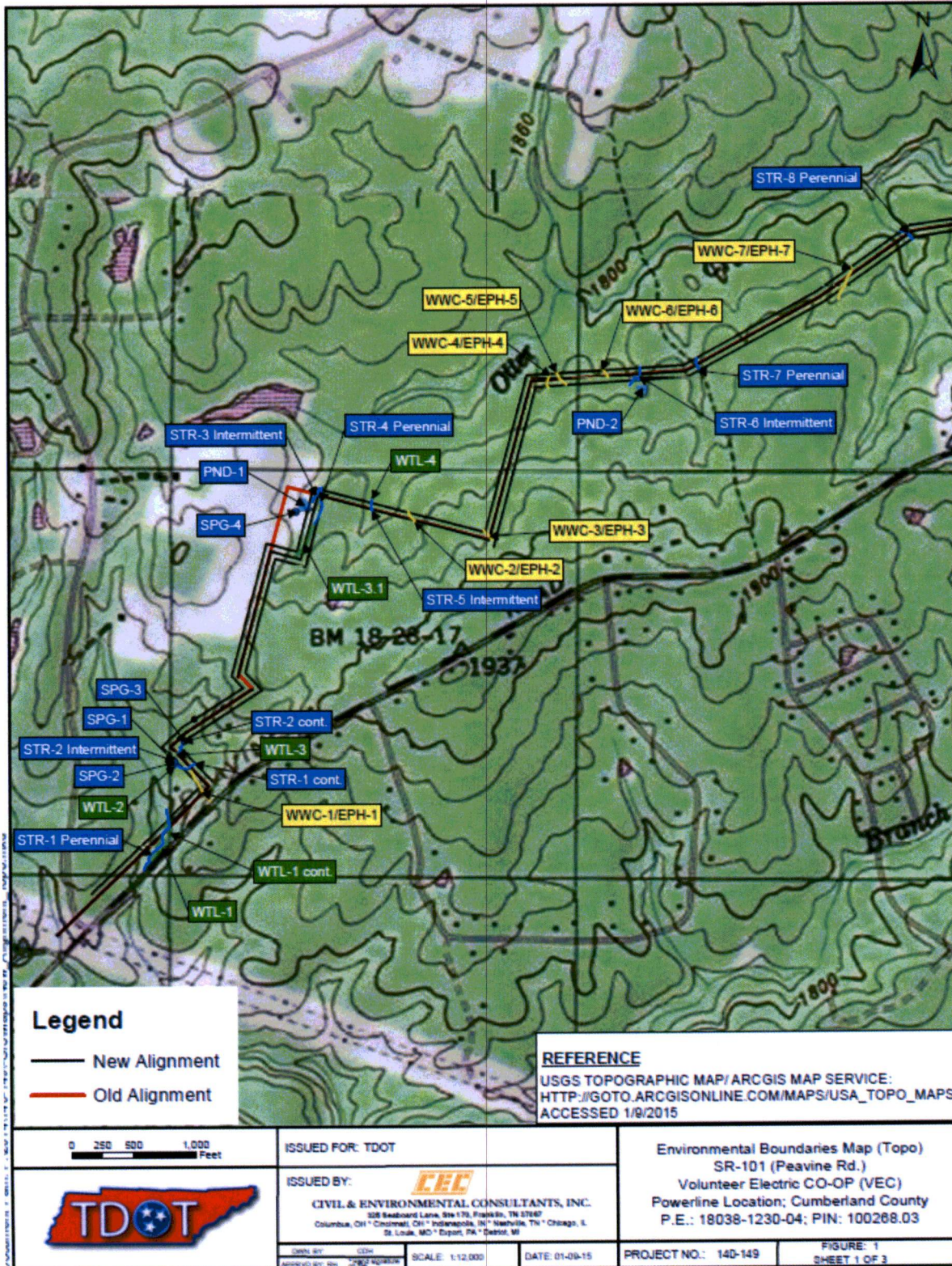
This permit may be revoked, suspended, or modified for cause, including:

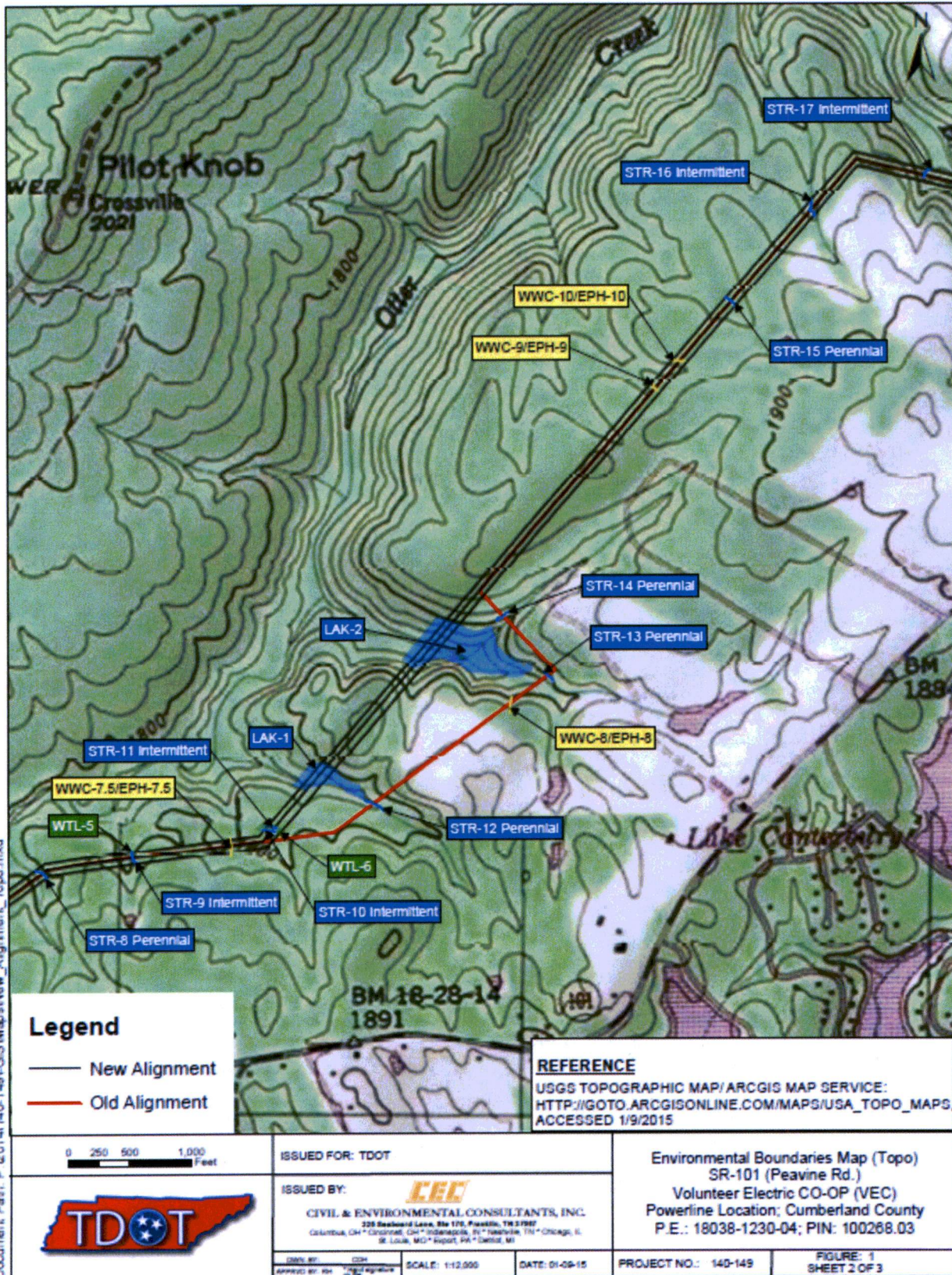
- (1) Violation of any of the terms or conditions of this permit or of T.C.A § 69-3-101 et. seq.;
- (2) Obtaining the permit by misrepresentation or failing to disclose fully all relevant facts;
- (3) A change in any condition that requires either a temporary or permanent change in the conditions of this permit.

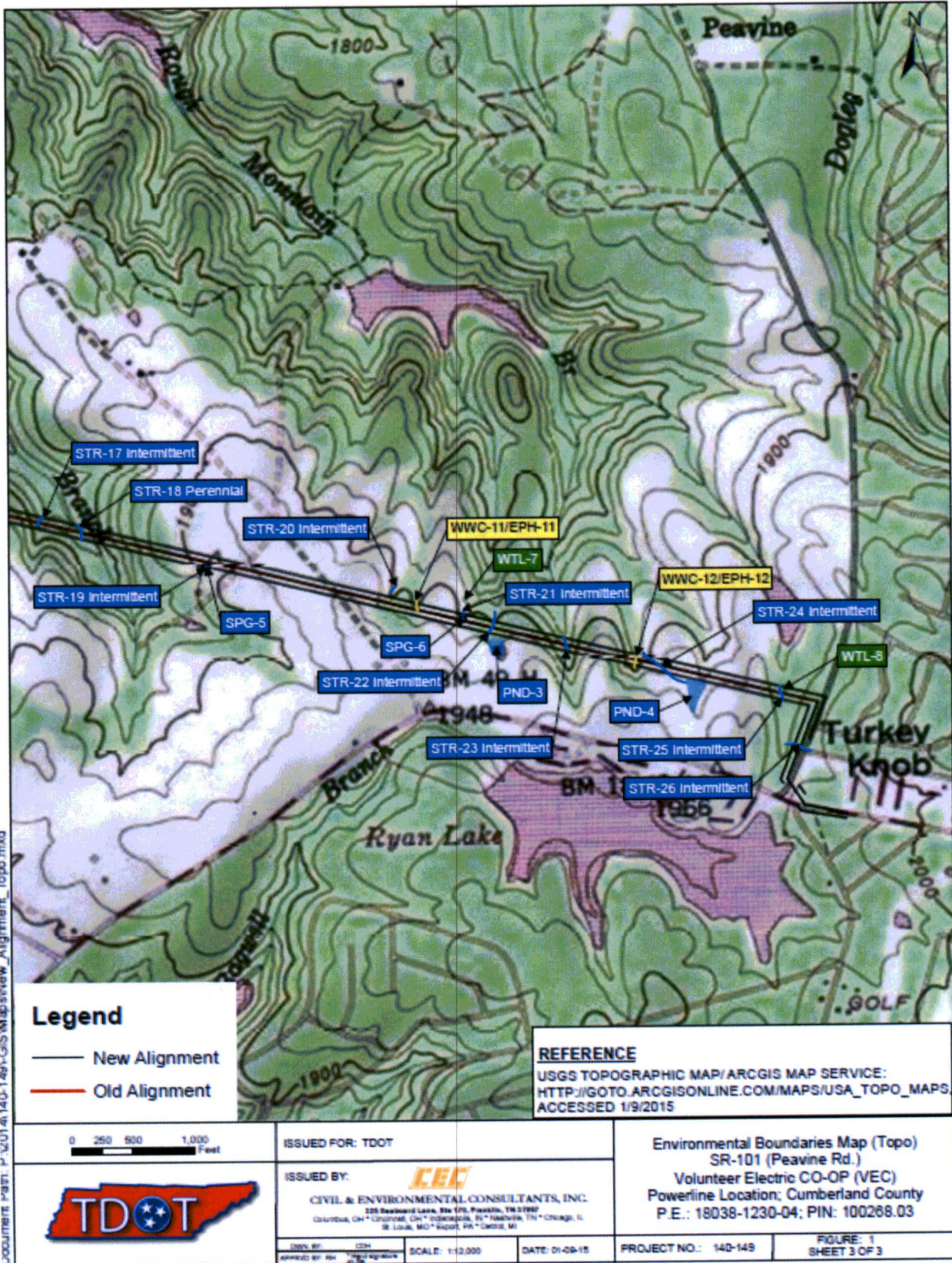
An appeal of this action may be made as provided in T.C.A. §69-3-105(i) and Rule 0400-40-05-.12 by submitting a petition for appeal. This petition must be filed within THIRTY (30) DAYS after public notice of the issuance of the permit. The petition must specify what provisions are being appealed and the basis for the appeal. It should be addressed to the technical secretary of the Tennessee Board of Water Quality, Oil and Gas at the following address: Tisha Calabrese Benton, Director, Division of Water Resources, William R. Snodgrass - Tennessee Tower, 11th Floor, 312 Rosa L. Parks Avenue, Nashville, Tennessee 37243-1102. Any hearing would be in accordance with T.C.A. §§69-3-110 and 4-5-301 et seq.

APPENDIX I

Location:

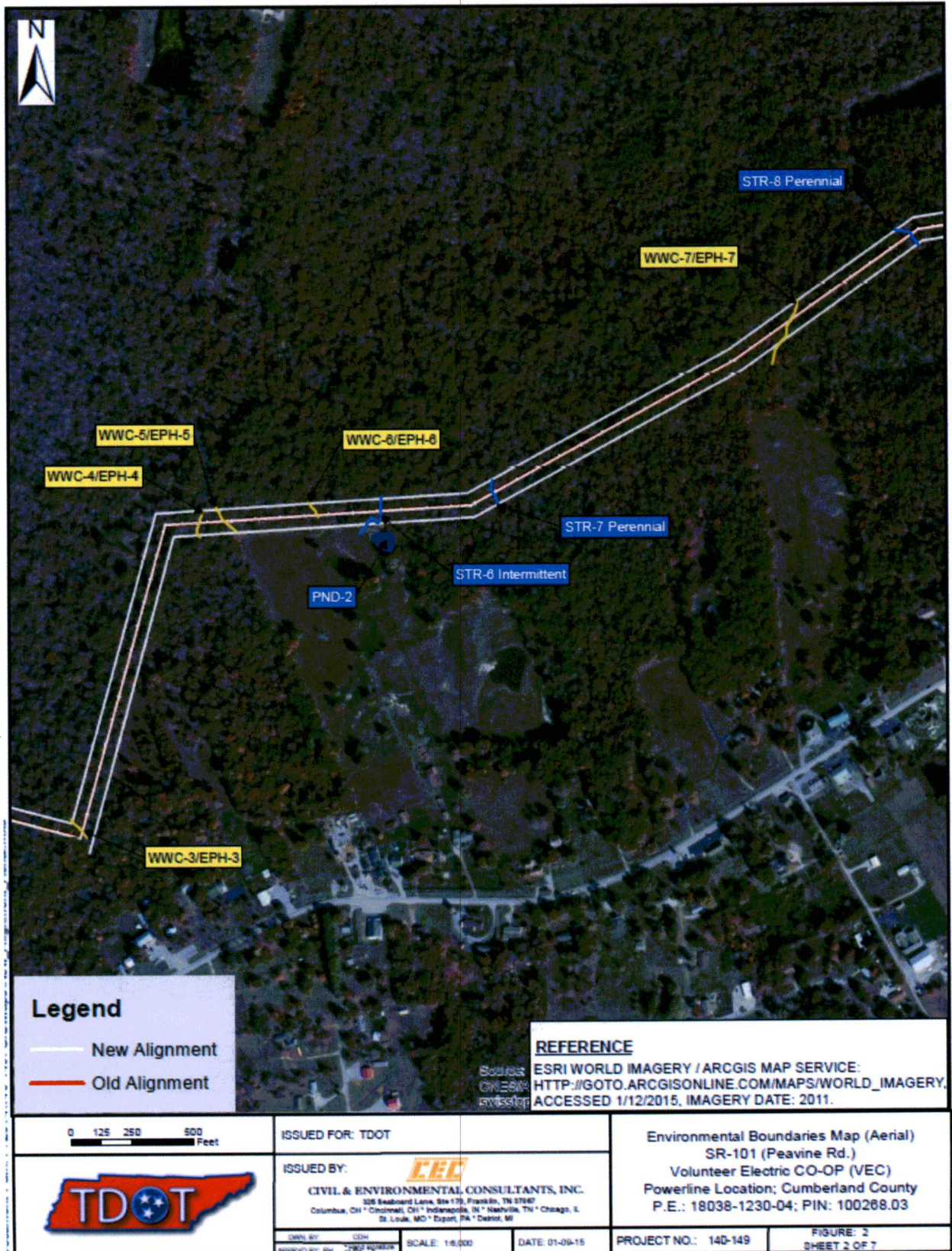


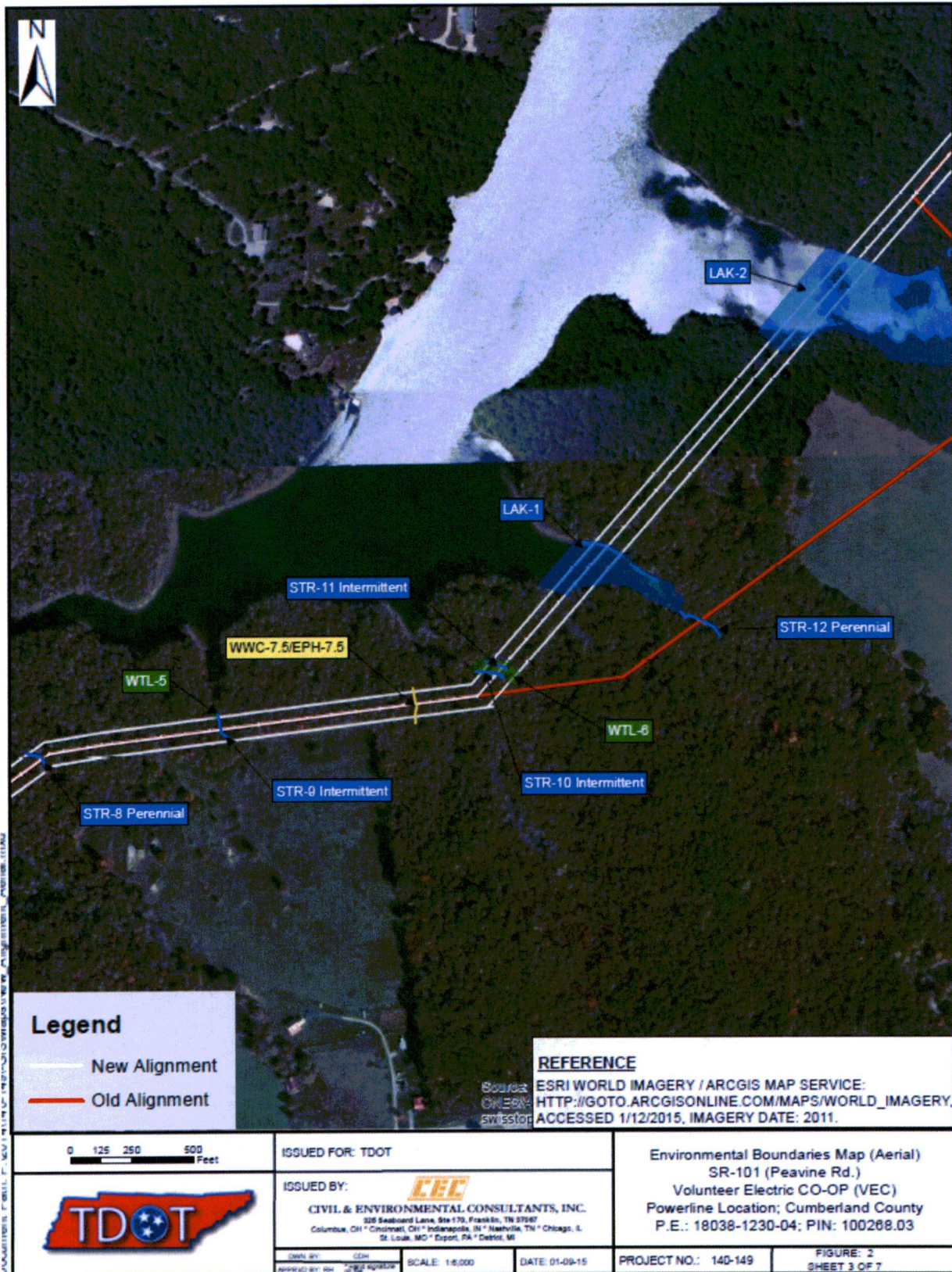




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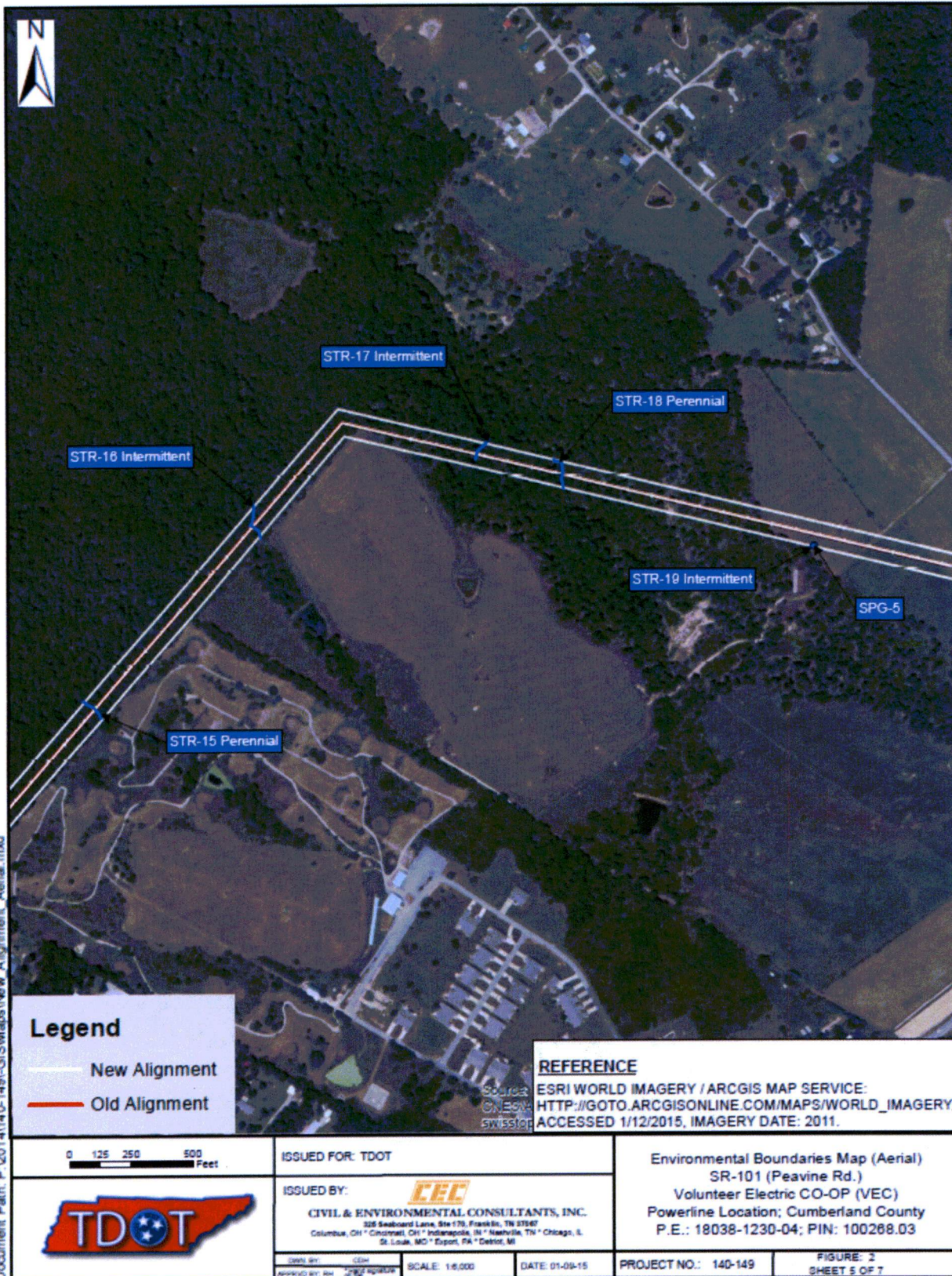








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Tennessee Valley Authority
Section 26a Approval

Permit # 269987	Reservoir Lenoir City - Off	Category 3
DOT Project # 18038-1230-04		

Name	Company	Address	Phone/Email
	Tennessee Department of Transportation	Suite 900, J.K. Polk Building 505 Deaderick Street Nashville TN 37243-0334	615-253-0021 Khalid.Ahmed@tn.us

Tract(s)

Subdivision/Lot(s)	Stream	Mile	Bank	Map Sheet(s)
Subdivision: N/A				117 Quad Sheet NW 116 Quad Sheet SW

The facilities and/or activities listed below are APPROVED subject to the plans and general and special conditions attached.

1. Utilities - Aerial - Electric

This permit SUPERSEDES all previous TVA approvals at this location including permits approved under land record numbers:

TVA Representative: Heather M Hamilton Date: 11/2/15

May require review by U.S. Army Corps of Engineers (USACE). Plans have been forwarded to the USACE.

No construction shall commence until you have written approval or verification that no permit is required.

Applicant is also responsible for all local and state approvals that may be required relating to water quality.

No construction shall commence until you have written approval or verification that no permit is required.

GENERAL AND STANDARD CONDITIONS

Section 26a

General Conditions

- 1) You agree to make every reasonable effort to construct and operate the facility authorized herein in a manner so as to minimize any adverse impact on water quality, aquatic life, wildlife, vegetation, and natural environmental values.
- 2) This permit may be revoked by TVA by written notice if:
 - a) the structure is not completed in accordance with approved plans;
 - b) if in TVA's judgment the structure is not maintained in a good state of repair and in good, safe, and substantial condition;
 - c) the structure is abandoned;
 - d) the structure or work must be altered or removed to meet the requirements of future reservoir or land management operations of the United States or TVA;
 - e) TVA finds that the structure has an adverse effect upon navigation, flood control, or public lands or reservations;
 - f) all invoices related to this permit are not timely paid;
 - g) you no longer have sufficient property rights to maintain a structure at this location; or
 - h) a land use agreement (e.g., license, easement, lease) for use of TVA land at this location related to this permit expires, is terminated or cancelled, or otherwise ceases to be effective.
- 3) If this permit for this structure is revoked, you agree to remove the structure, at your expense, upon written notice from TVA. In the event you do not remove the structure within 30 days of written notice to do so, TVA shall have the right to remove or cause to have removed, the structure or any part thereof. You agree to reimburse TVA for all costs incurred in connection with removal.
- 4) In issuing this Approval of Plans, TVA makes no representations that the structures or work authorized or property used temporarily or permanently in connection therewith will not be subject to damage due to future operations undertaken by the United States and/or TVA for the conservation or improvement of navigation, for the control of floods, or for other purposes, or due to fluctuations in elevations of the water surface of the river or reservoir, and no claim or right to compensation shall accrue from any such damage. By the acceptance of this approval, applicant covenants and agrees to make no claim against TVA or the United States by reason of any such damage, and to indemnify and save harmless TVA and the United States from any and all claims by other persons arising out of any such damage.
- 5) In issuing this Approval of Plans, TVA assumes no liability and undertakes no obligation or duty (in tort, contract, strict liability or otherwise) to the applicant or to any third party for any damages to property (real or personal) or personal injuries (including death) arising out of or in any way connected with applicant's construction, operation, or maintenance of the facility which is the subject of this Approval of Plans.
- 6) This approval shall not be construed to be a substitute for the requirements of any federal, state, or local statute, regulation, ordinance, or code, including, but not limited to, applicable building codes, now in effect or hereafter enacted. State 401 water quality certification may apply.
- 7) The facility will not be altered, or modified, unless TVA's written approval has been obtained prior to commencing work.
- 8) You understand that covered second stories are prohibited by Section 1304.204 of the Section 26a Regulations.
- 9) You agree to notify TVA of any transfer of ownership of the approved structure to a third party. Third party is required to make application to TVA for permitting of the structure in their name (1304.10). Any permit which is not transferred within 60 days is subject to revocation.
- 10) You agree to stabilize all disturbed areas within 30 days of completion of the work authorized. All land-disturbing activities shall be conducted in accordance with Best Management Practices as defined by Section 208 of the Clean Water Act to control erosion and sedimentation to prevent adverse water quality and related aquatic impacts. Such practices shall be consistent with sound engineering and construction principles; applicable federal, state, and local statutes, regulations, or ordinances; and proven techniques for controlling erosion and sedimentation, including any required conditions under Section 6 of the Standard Conditions.
- 11) You agree not to use or permit the use of the premises, facilities, or structures for any purposes that will result in draining or dumping into the reservoir of any refuse, sewage, or other material in violation of applicable standards or requirements relating to pollution control of any kind now in effect or hereinafter established.

- 12) The Native American Graves Protection and Repatriation Act and the Archaeological Resources Protection Act apply to archaeological resources located on the premises of land connected to any application made unto TVA. If LESSEE {or licensee or grantee (for easement) or applicant (for 26a permit)} discovers human remains, funerary objects, sacred objects, objects of cultural patrimony, or any other archaeological resources on or under the premises, LESSEE {or licensee, grantee, or applicant} shall immediately stop activity in the area of the discovery, make a reasonable effort to protect the items, and notify TVA by telephone (865-228-1374). Work may not be resumed in the area of the discovery until approved by TVA.
- 13) You should contact your local government official(s) to ensure that this facility complies with all applicable local floodplain regulations.
- 14) You agree to abide by the conditions of the vegetation management plan. Unless otherwise stated on this permit, vegetation removal is prohibited on TVA land.
- 15) You agree to securely anchor all floating facilities to prevent them from floating free during major floods.
- 16) You are responsible for accurately locating your facility, and this authorization is valid and effective only if your facility is located as shown on your application or as otherwise approved by TVA in this permit. The facility must be located on land owned or leased by you, or on TVA land at a location approved by TVA.
- 17) You agree to allow TVA employees access to your water use facilities to ensure compliance with any TVA issued approvals.
- 18) It is understood that you own adequate property rights at this location. If at any time it is determined that you do not own sufficient property rights, or that you have only partial ownership rights in the land at this location, this permit may be revoked. TVA may require the applicant to provide appropriate verification of ownership.
- 19) In accordance with 18 CFR Part 1304.9, Approval for construction covered by this permit expires 18 months after the date of issuance unless construction has been initiated.

Standard Conditions (Only items that pertain to this request have been listed.)

Additional Conditions

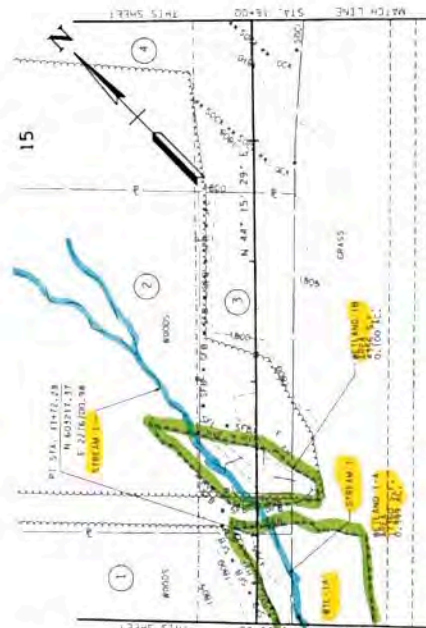
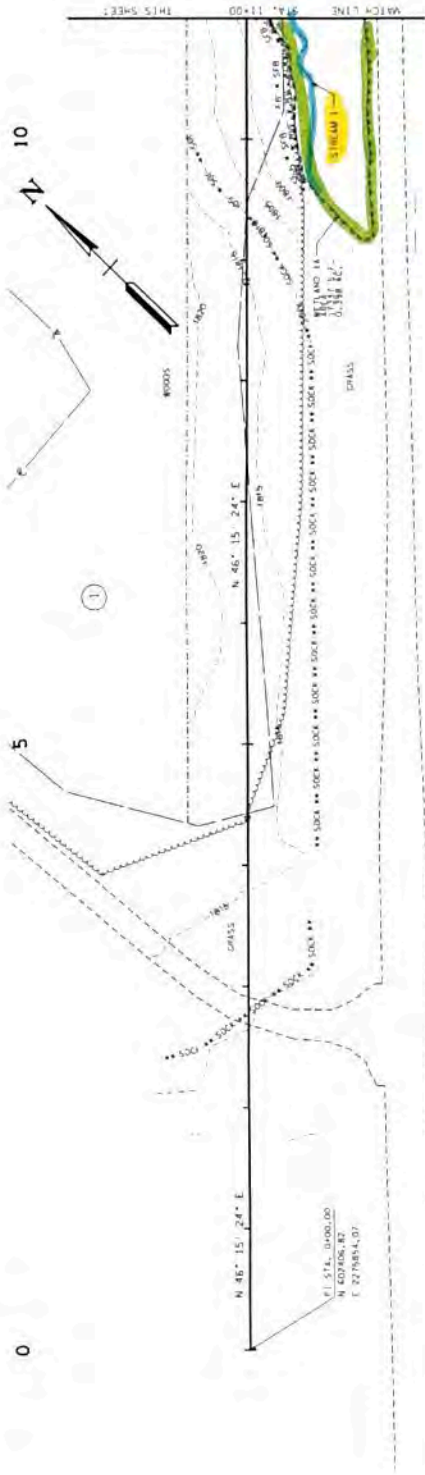
See next page

Additional Conditions

In order to be exempt from the prohibitions of section 9 (50 CFR §17.31 and §17.32) of the Act, TDOT must comply with the following Terms and Conditions (T&Cs), which carry out the Reasonable and Prudent Measures (RPMs) described in the Biological Opinion. These T&Cs are non-discretionary.

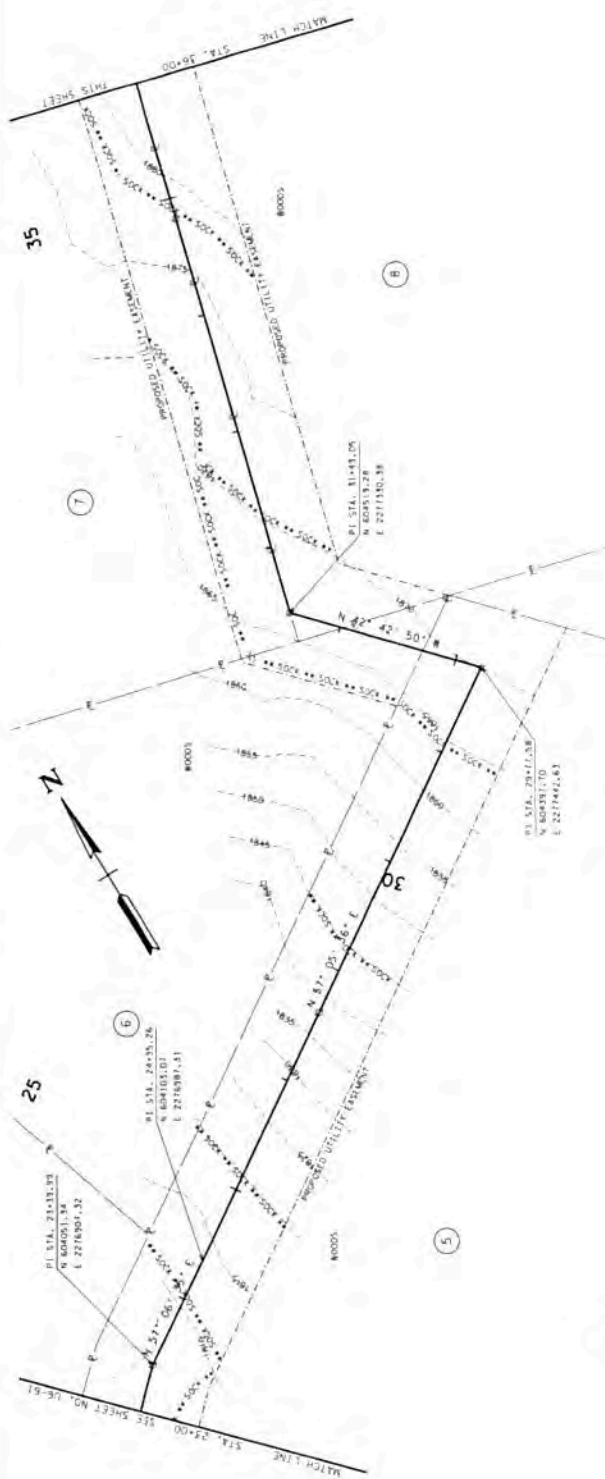
1. The Federal Highway Administration (FHWA) and the Tennessee Department of Transportation (TDOT) will agree to implement the proposed action as described in the biological assessment, the biological assessment's supporting documentation, and this biological opinion and adhere to the most recent and up-to-date Best Management Practices (BMPs) to prevent materials from entering the area streams. This may include revising the Storm Water Pollution and Prevention Plan (SWPPP) as necessary throughout the duration of the project. This Term and Condition supports RPMs 1 and 2.
2. The FHWA and TDOT shall ensure that tree removal occurs from October 15 through March 31 to ensure that reproductive activities [*i.e.*, roost tree location, birthing, and pup rearing] are not affected by construction activities. This Term and Condition supports RPM 1.
3. The equipment refueling/maintenance areas and landings for all heavy equipment and trucks will be located at an upland site, a minimum of 150 ft from all streams in the project area. The location of these areas will be provided to TDOT in an updated SWPPP. The contractor cannot refuel or service equipment within 150 ft of any stream. This Term and Condition supports RPMs 1 and 2.
4. TDOT's Environmental Comprehensive Inspections staff (Comprehensive Inspections Office) will conduct site visits once a month and Erosion Prevention and Sediment Control (EPSC) inspectors will conduct inspections weekly while active construction is ongoing to ensure that BMPs and water quality control measures are in place and properly functioning. Inspections will be documented and available for the Service to review upon request. This Term and Condition supports RPM 3.

TYPE	YEAR	PROJECT NO.	SHEET
CONV.	2015	APD 32-08	28 OF 30



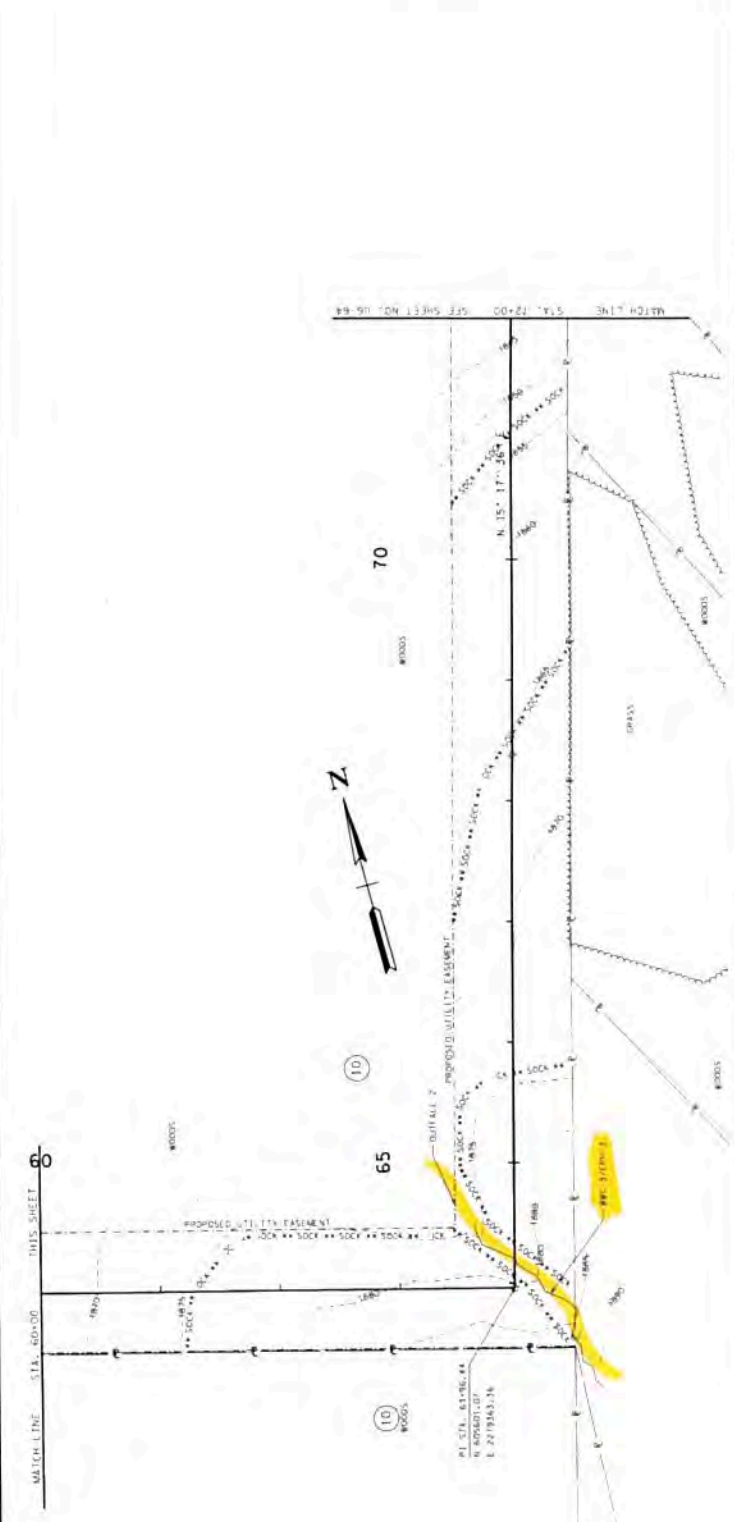
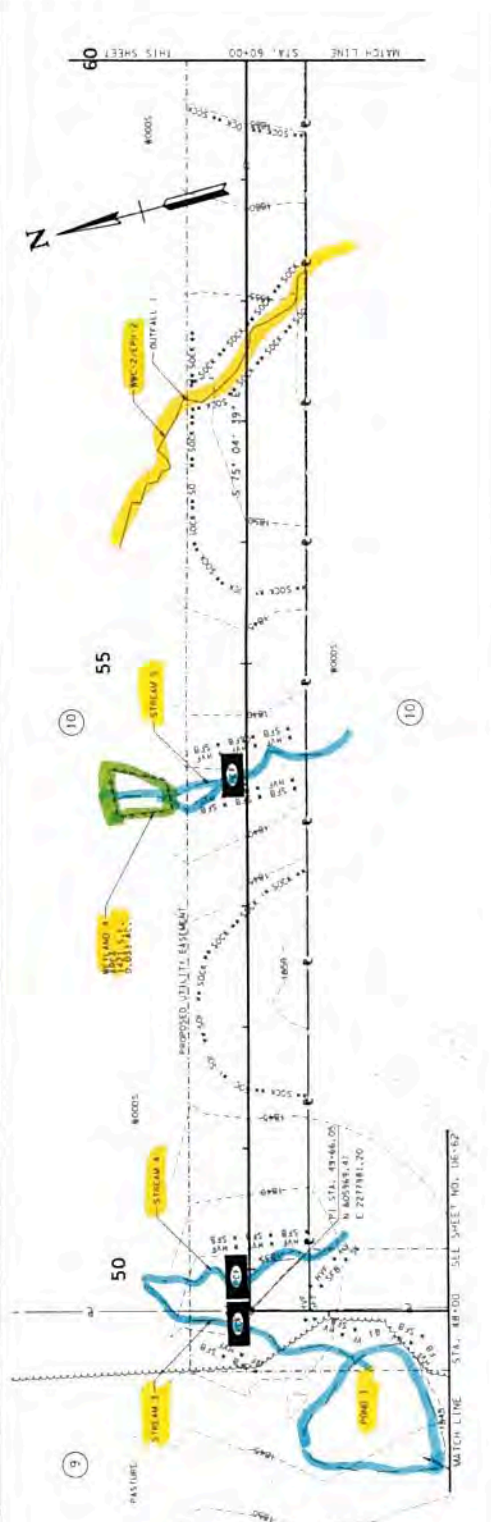
PHASE 1
 SCALE: 8"
**PRELIMINARY
 PLANS
 NOT FOR
 CONSTRUCTION**
 COORDINATES ARE NAD 83-92. FACTOR OF LOADS AND TIED TO THE TOTAL ELEVATIONS AND INCREASED TO THE 100% LEVEL.
 STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
**EROSION
 PREVENTION
 AND SEDIMENT
 CONTROL PLAN**
 STA. 0+00 TO STA. 25+00
 SCALE: 1"=50'

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONV.	2015	APD 52-140	44-02



PHASE 1
 SEALED BY:
**PRELIMINARY
 PLANS
 NOT FOR
 CONSTRUCTION**
 STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 EROSION
 PREVENTION
 AND SEDIMENT
 CONTROL PLAN
 STA. 25+00 TO STA. 44+00
 SCALE: 1" = 40'

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONV.	2015	110-2-148	15-12



PHASE I
 PRELIMINARY
 PLANS
 NOT FOR
 CONSTRUCTION

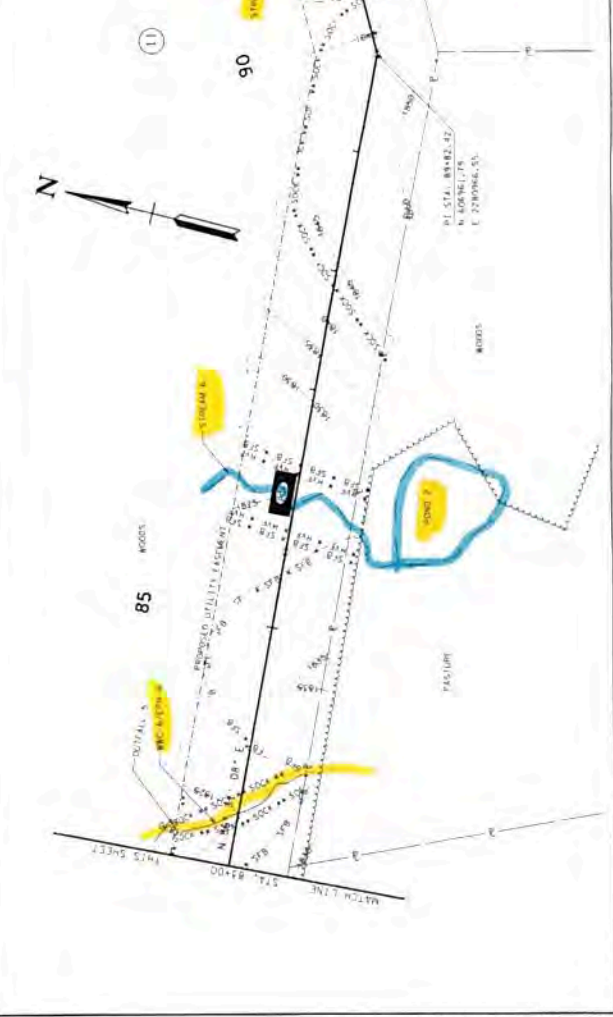
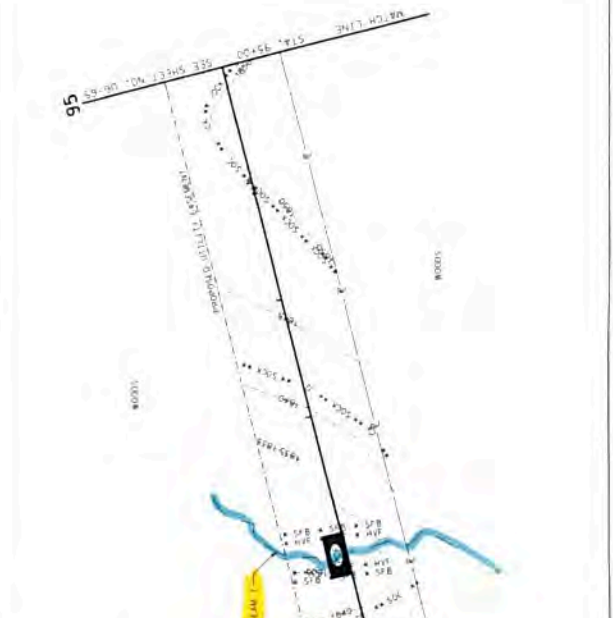
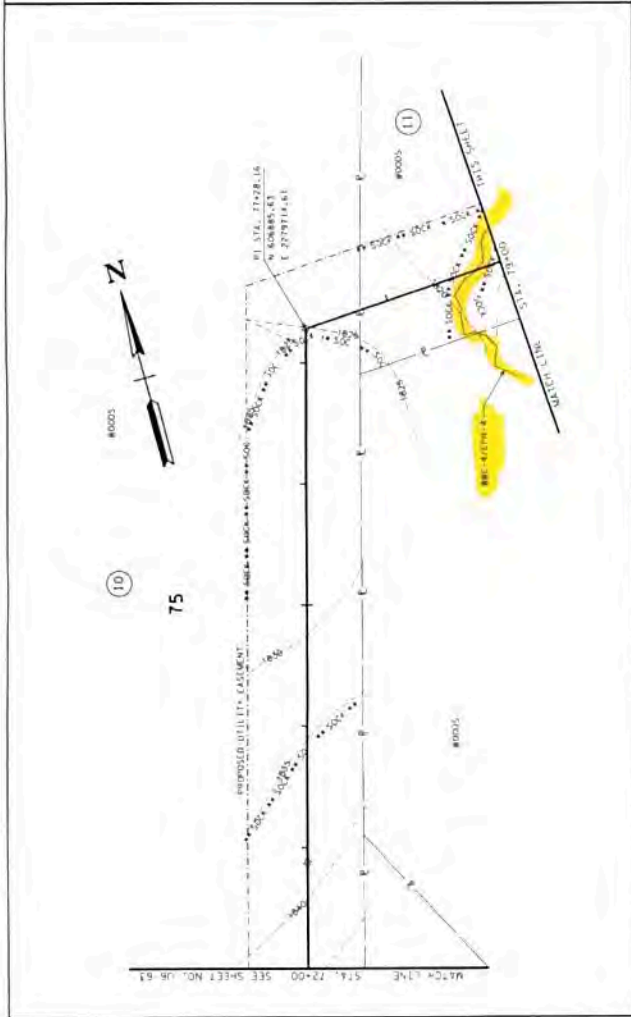
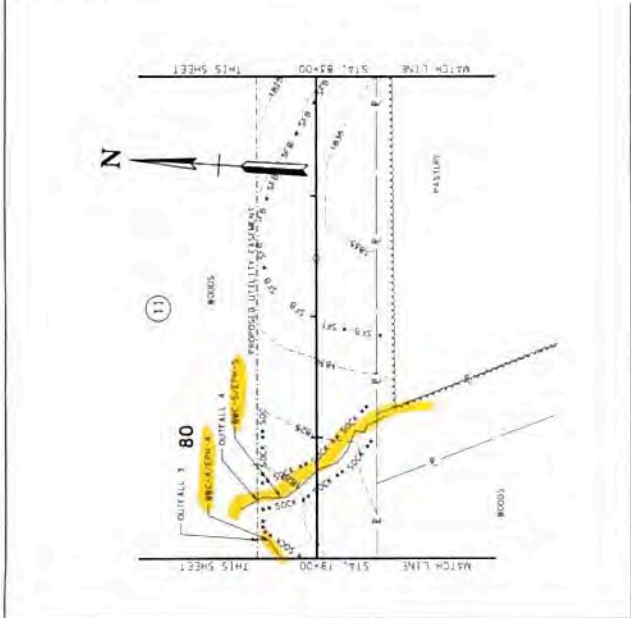
DESIGNED BY: [unreadable]
 CHECKED BY: [unreadable]
 DATE: [unreadable]

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION

EROSION
 PREVENTION
 AND SEDIMENT
 CONTROL PLAN

STA. 48+00 TO STA. 72+00
 SCALE: 1" = 50'

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONV.	2015	APD-52480	AS-6



PHASE 1
 PRELIMINARY
PLANS
 NOT FOR
 CONSTRUCTION

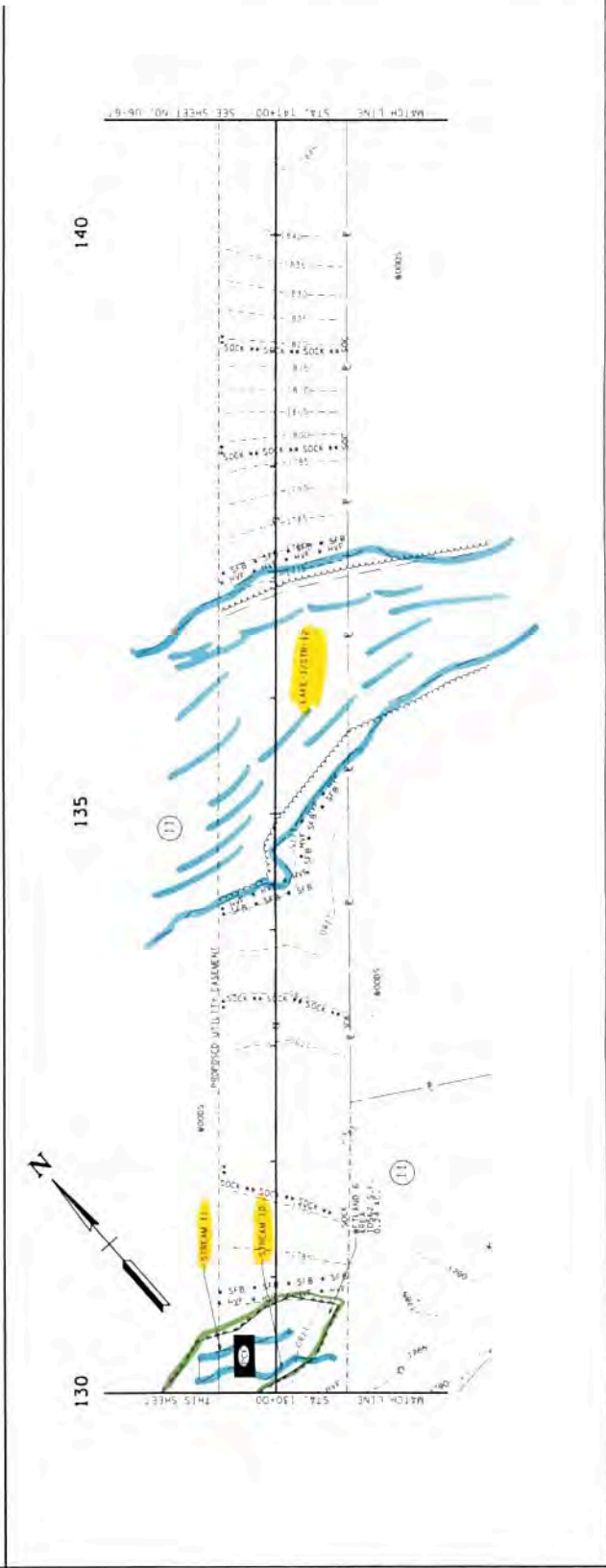
COMPUTER AIDED MAP PREPARATION
 AND DIMENSION ADJUSTMENT
 FACTOR OF 1.0000 AND REF. TO
 THE STATE OF TENNESSEE
 ATTACHED TO THE MAP.

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION

**EROSION
 PREVENTION
 AND SEDIMENT
 CONTROL PLAN**

STA. 72+00 TO STA. 95+00
 SCALE: 1"=50'

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONTR.	2015	APD-12746	18 OF 24



PHASE 1
 PRELIMINARY
 PLANS
 NOT FOR
 CONSTRUCTION

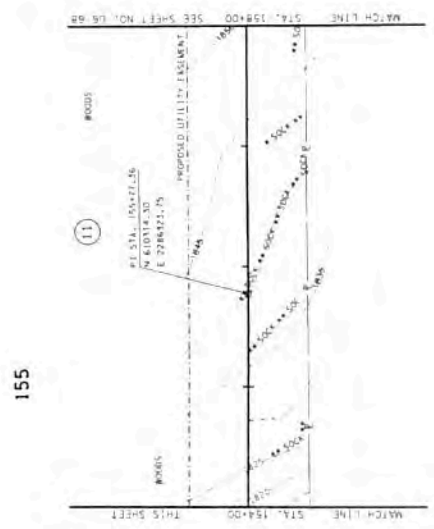
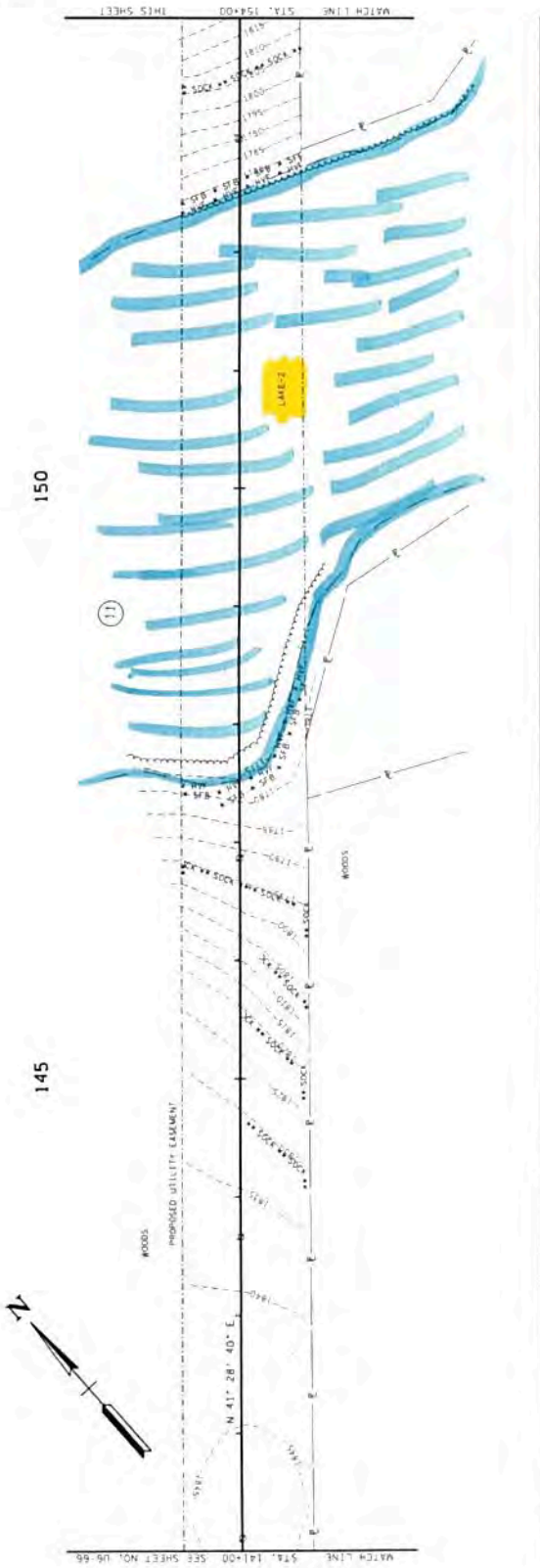
SEALD BY
 COORDINATE AND REDRAWN
 FOR THE PROJECT AND 1/2" TO
 THE ORIGINAL ELEVATIONS ARE
 ATTACHED TO THE 1/2" SHEET.

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION

EROSION
 PREVENTION
 AND SEDIMENT
 CONTROL PLAN

STA. 119+00 TO STA. 143+00
 SCALE: 1" = 50'

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONS.	2015	147-5710	145



PHASE 1
 PRELIMINARY
 PLANS
 NOT FOR
 CONSTRUCTION

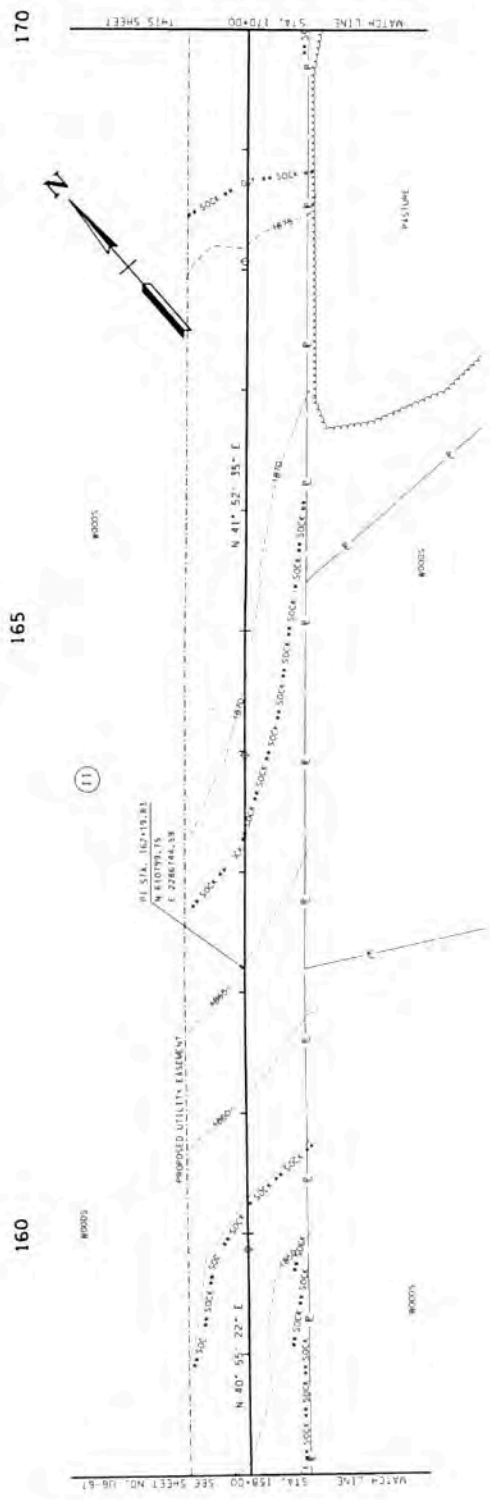
DESIGNED BY: [Redacted]
 CHECKED BY: [Redacted]
 APPROVED BY: [Redacted]
 FACTOR OF SAFETY: AND TIED TO THE ORIGINAL ELEVATIONS AND DIMENSIONS TO THE ORIGINAL.

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION

EROSION
 PREVENTION
 AND SEDIMENT
 CONTROL PLAN

STA. 143+00 TO STA. 168+00
 SCALE: 1" = 50'

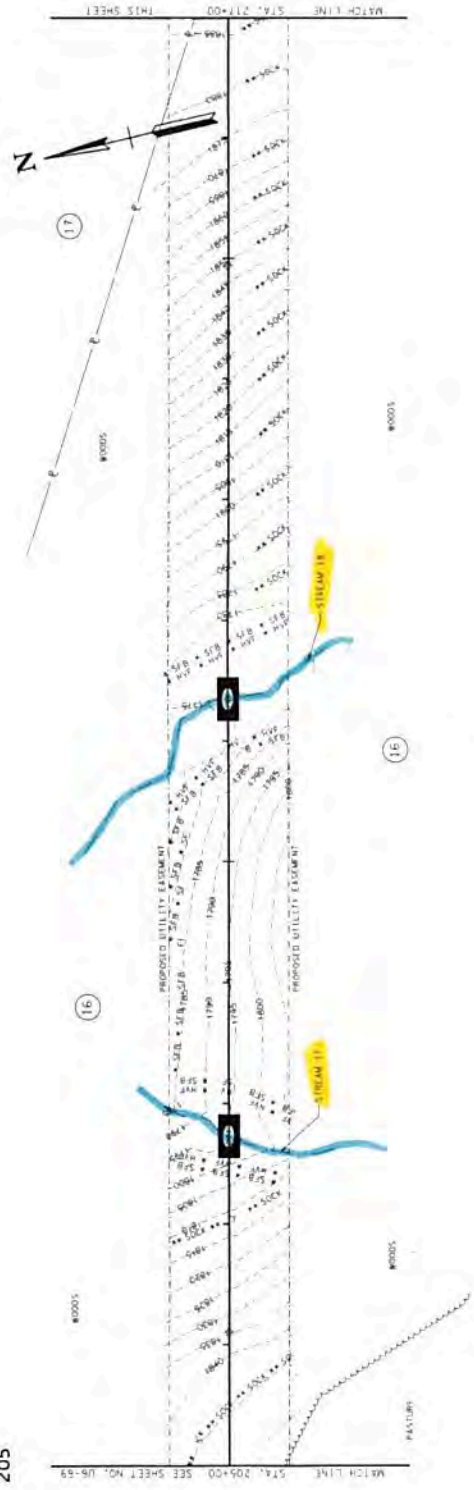
YEAR	PROJECT NO.	SHEET NO.
CONSTR.	4070-52480	14-64



PHASE 1
PRELIMINARY PLANS NOT FOR CONSTRUCTION
 CONSULT THE DESIGNER FOR THE LOCATION OF UTILITY EASEMENTS AND THE FACTOR OF LOADS. ANY CHANGES TO THE DESIGN SHALL BE REFERENCED TO THE DESIGNER.
 STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
EROSION PREVENTION AND SEDIMENT CONTROL PLAN
 STA. 168+00 TO STA. 192+00
 SCALE: 1" = 50'

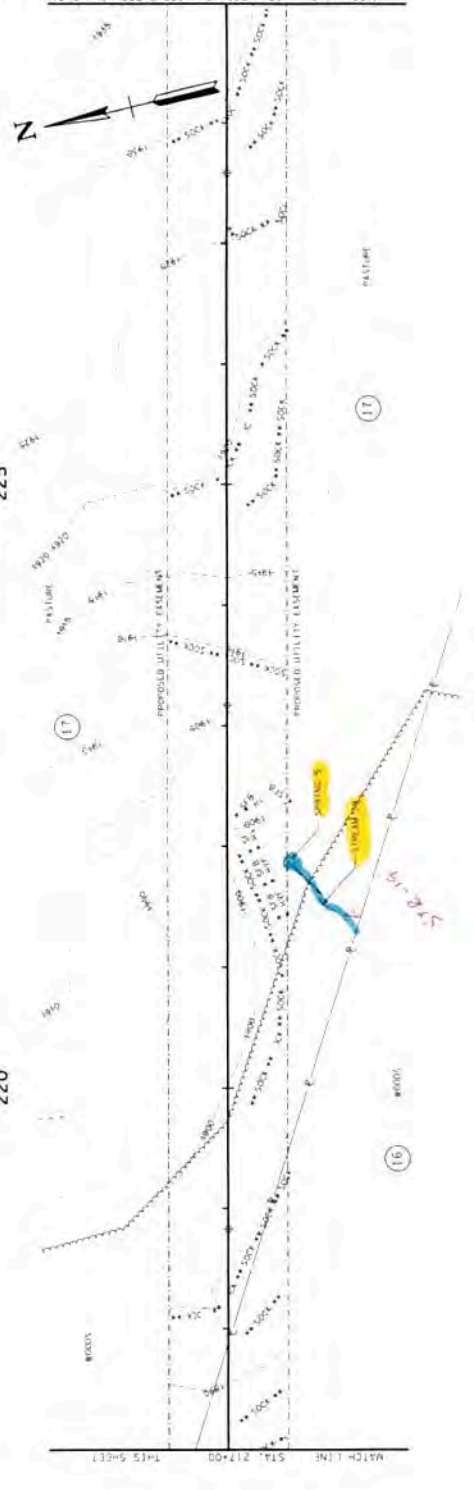
TYPE	YEAR	PROJECT NO.	SHEET
CONSTR.	2015	APD-52-08	36-12

205



220

225



PHASE 1

PRELIMINARY
PLANS
NOT FOR
CONSTRUCTION

DESIGNED BY:
L&L ENGINEERING, INC.
10000 W. 10TH AVE., SUITE 100
DENVER, CO 80202

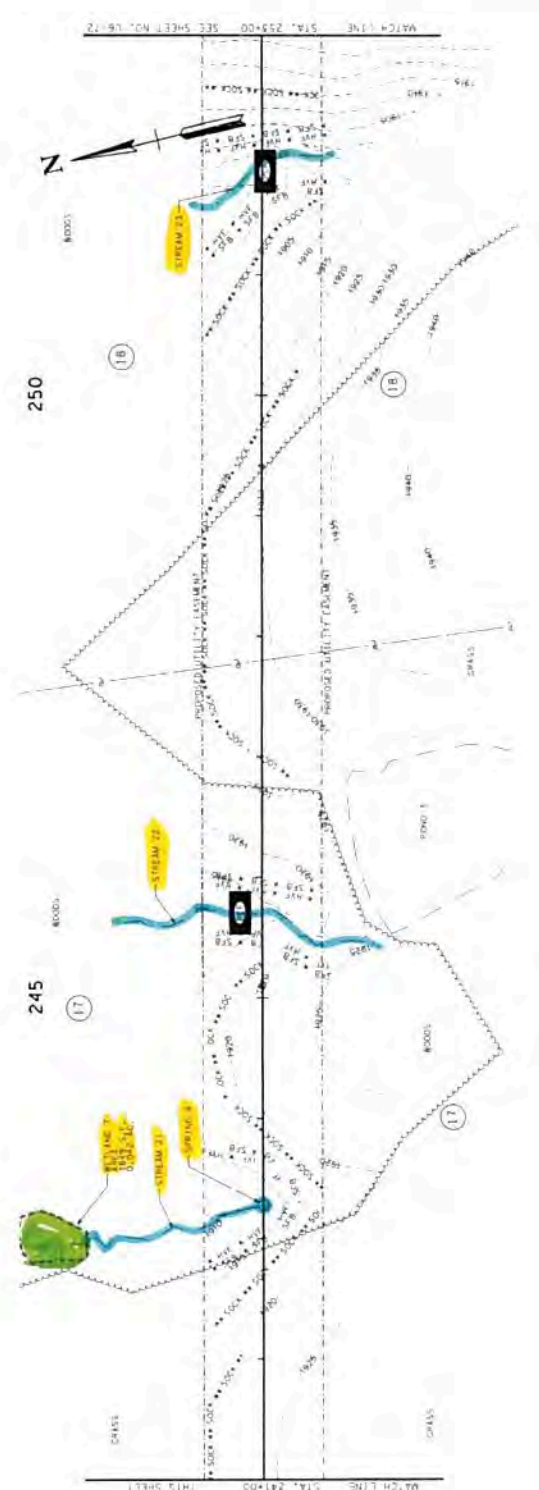
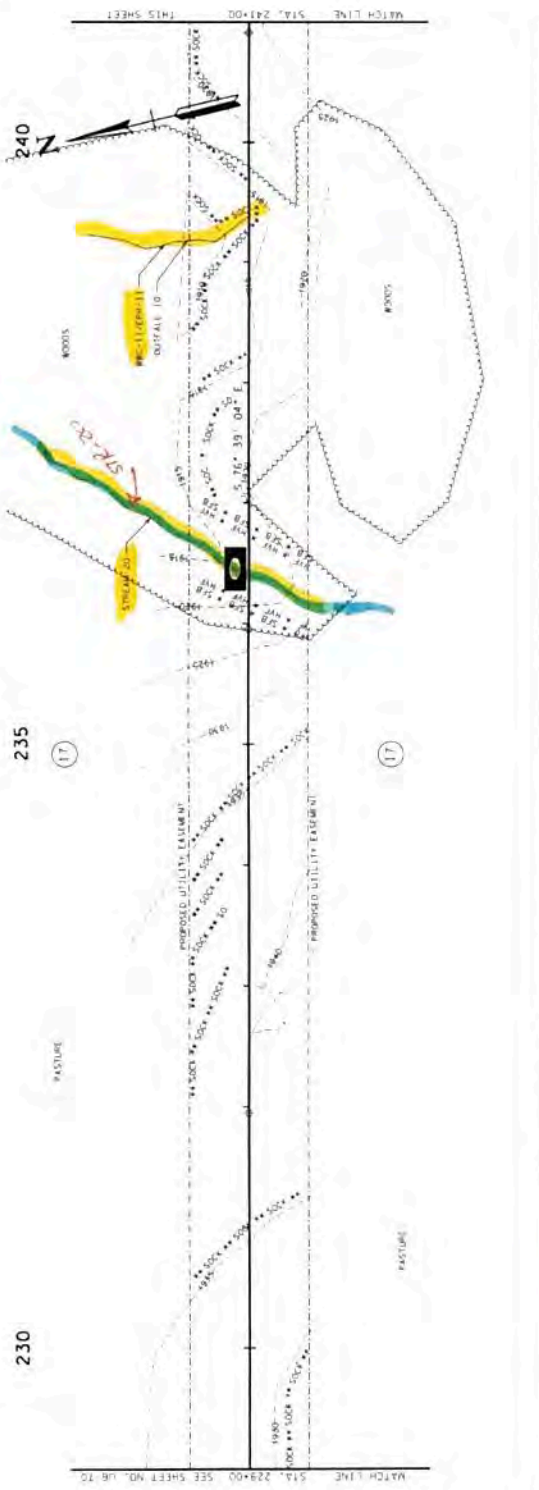
CHECKED BY:
L&L ENGINEERING, INC.
10000 W. 10TH AVE., SUITE 100
DENVER, CO 80202

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EROSION
PREVENTION
AND SEDIMENT
CONTROL PLAN

SCALE: 1" = 50'

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONV.	2015	ATD 52481	24.17



PHASE :

PRELIMINARY PLANS NOT FOR CONSTRUCTION

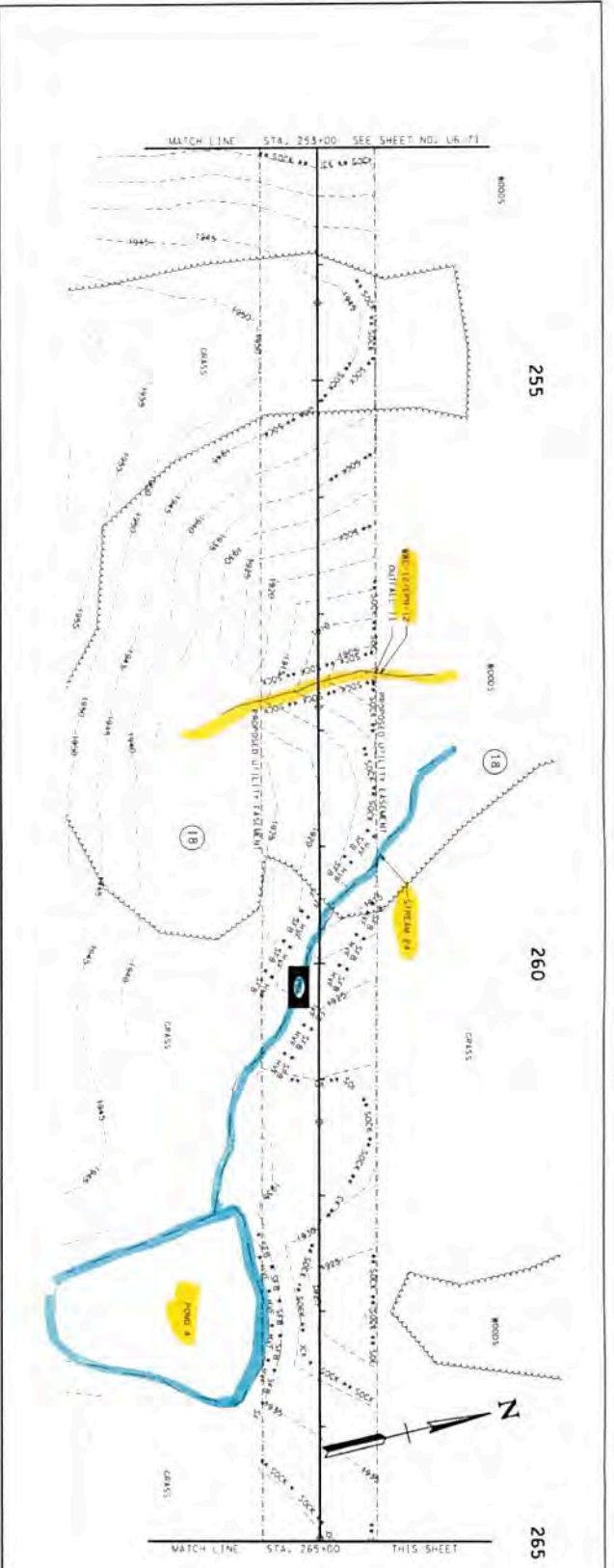
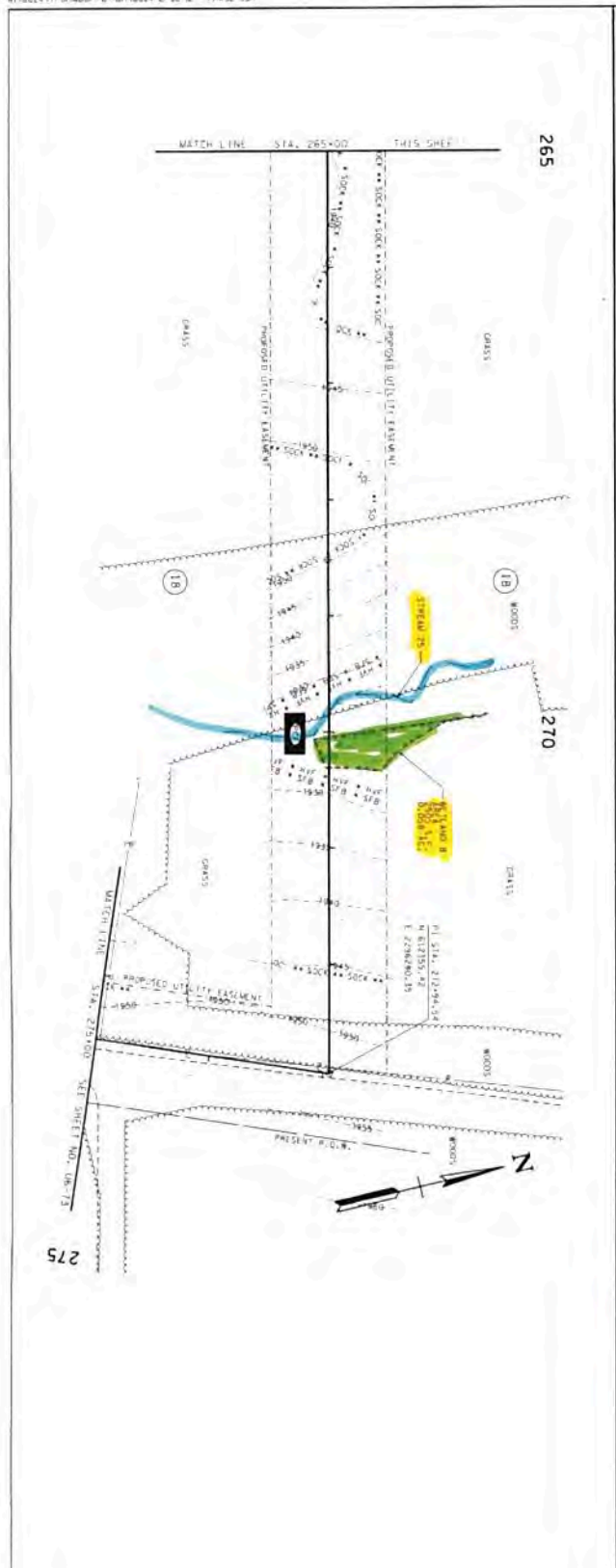
DESIGNED BY: [Redacted]

DATE: [Redacted]

SCALE: [Redacted]

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
EROSION PREVENTION AND SEDIMENT CONTROL PLAN

STA. 229+00 TO STA. 241+00
SCALE: 1" = 50'



TYPE	YEAR	PROJECT NO.	SHEET NO.
CONSTR.	2015	JRD-CR/BR	16 OF 17

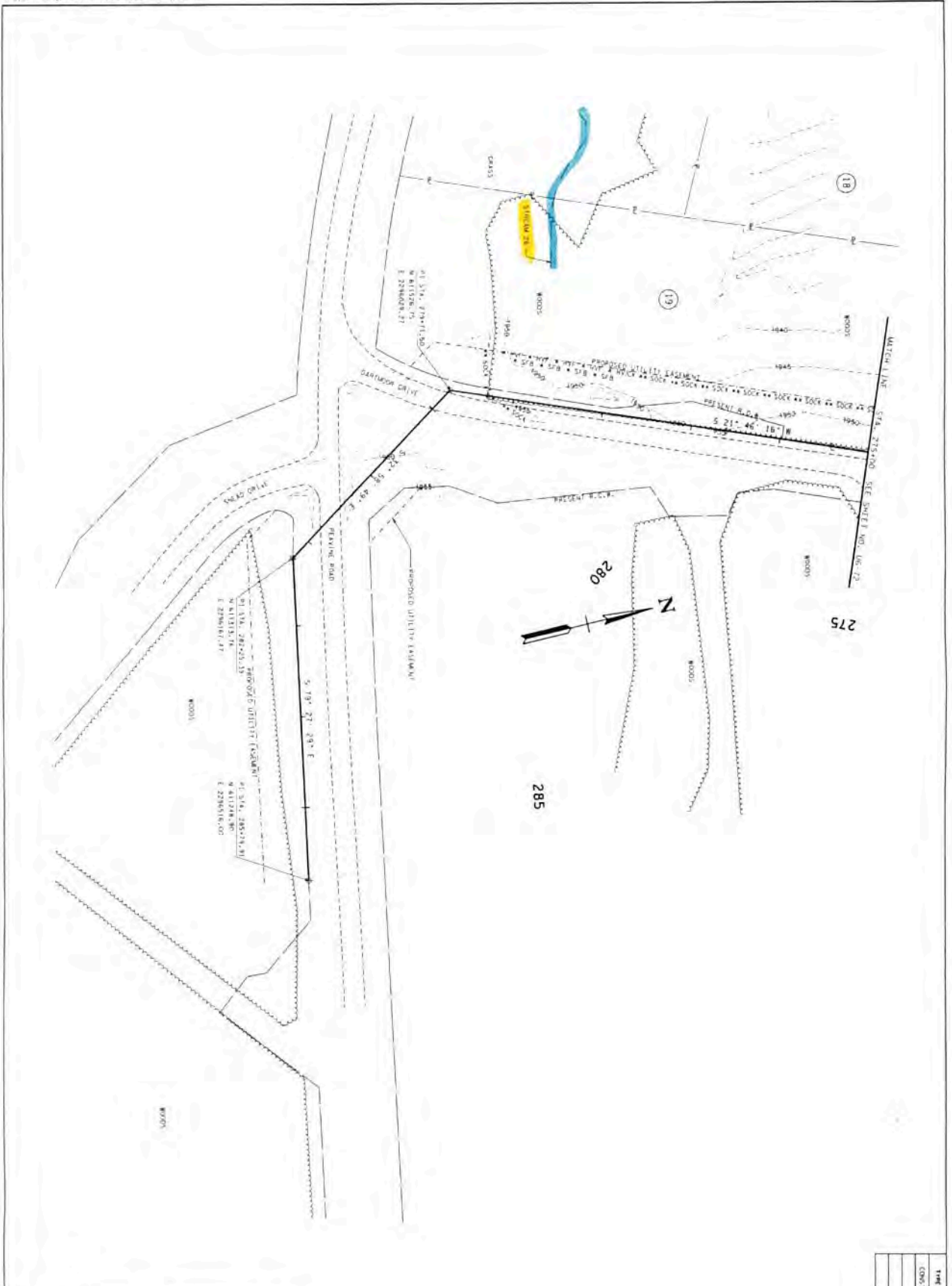
PHASE 1
 PRELIMINARY
 PLANS
 NOT FOR
 CONSTRUCTION

COMPARISONS ARE MADE BETWEEN THE PRELIMINARY PLANS AND THE FINAL PLANS. THE FINAL PLANS SHALL BE REFERENCED TO THE FINAL PLANS.

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION

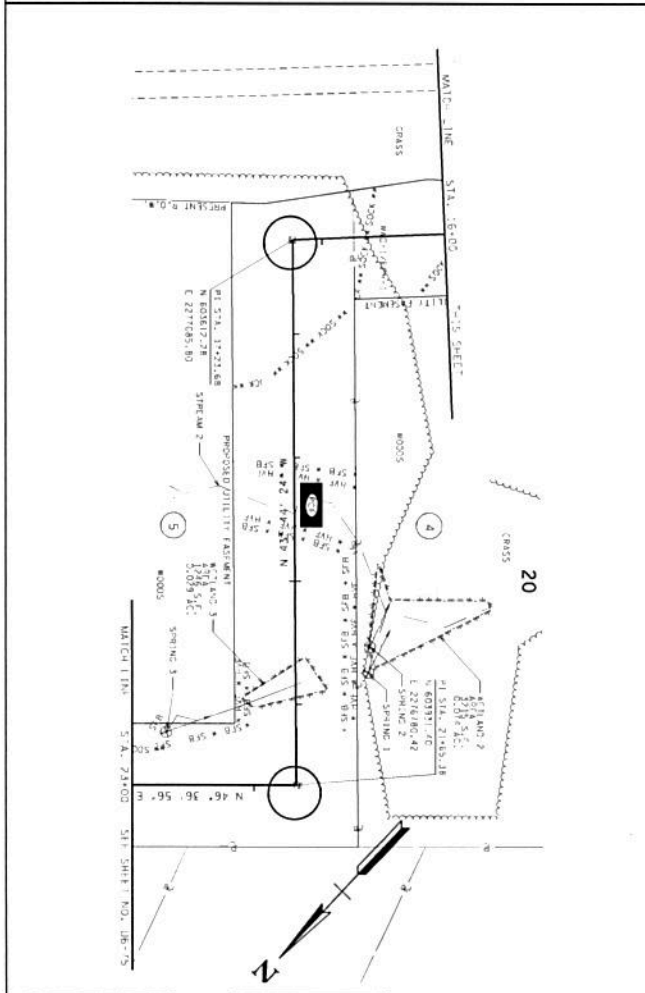
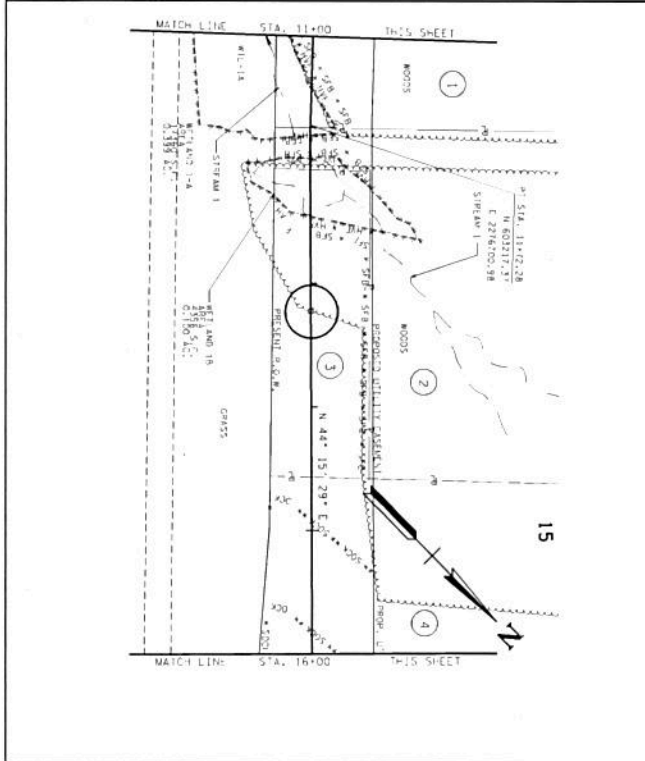
EROSION
 PREVENTION
 AND SEDIMENT
 CONTROL PLAN

STA. 265+00 TO STA. 265+00
 SCALE: 1"=50'

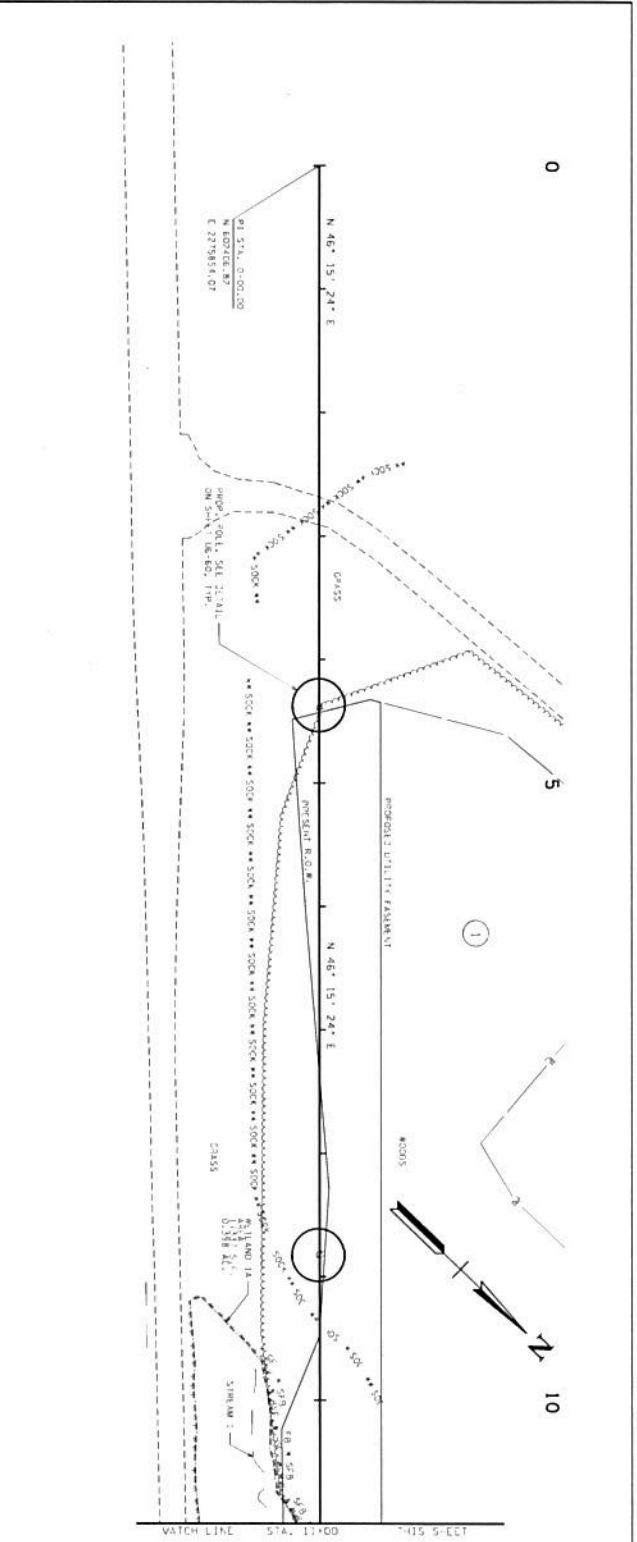


YEAR	PROJECT NO.
2015	19224-001

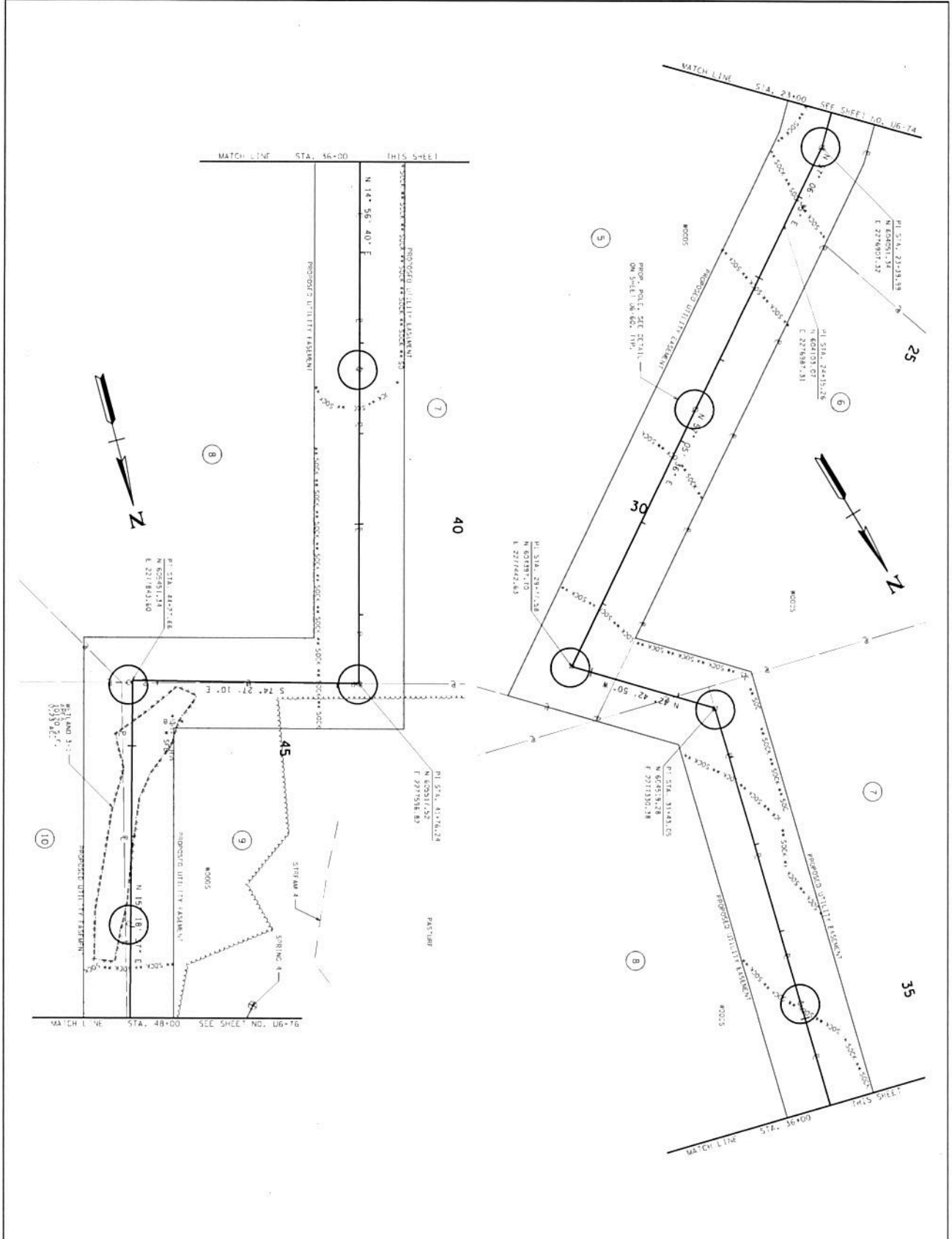
PHASE 1
 PRELIMINARY
 EROSION PREVENTION AND SEDIMENT CONTROL PLAN
 NOT FOR CONSTRUCTION
 STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 CONTRACT NO. 2015-001
 PROJECT NO. 19224-001
 SHEET NO. 06-12
 SCALE: 1" = 50'



PHASE 2
 PRELIMINARY
 NOT FOR CONSTRUCTION
 STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 EROSION PREVENTION AND SEDIMENT CONTROL PLAN
 STA. 0+00 TO STA. 2+00
 SCALE: 1"=30'



TYPE	YEAR	PROJECT NO.
CONC.	2015	AP-20180



TYPE	YEAR	PROJECT NO.
CONC.	2015	025-53489

PHASE 2

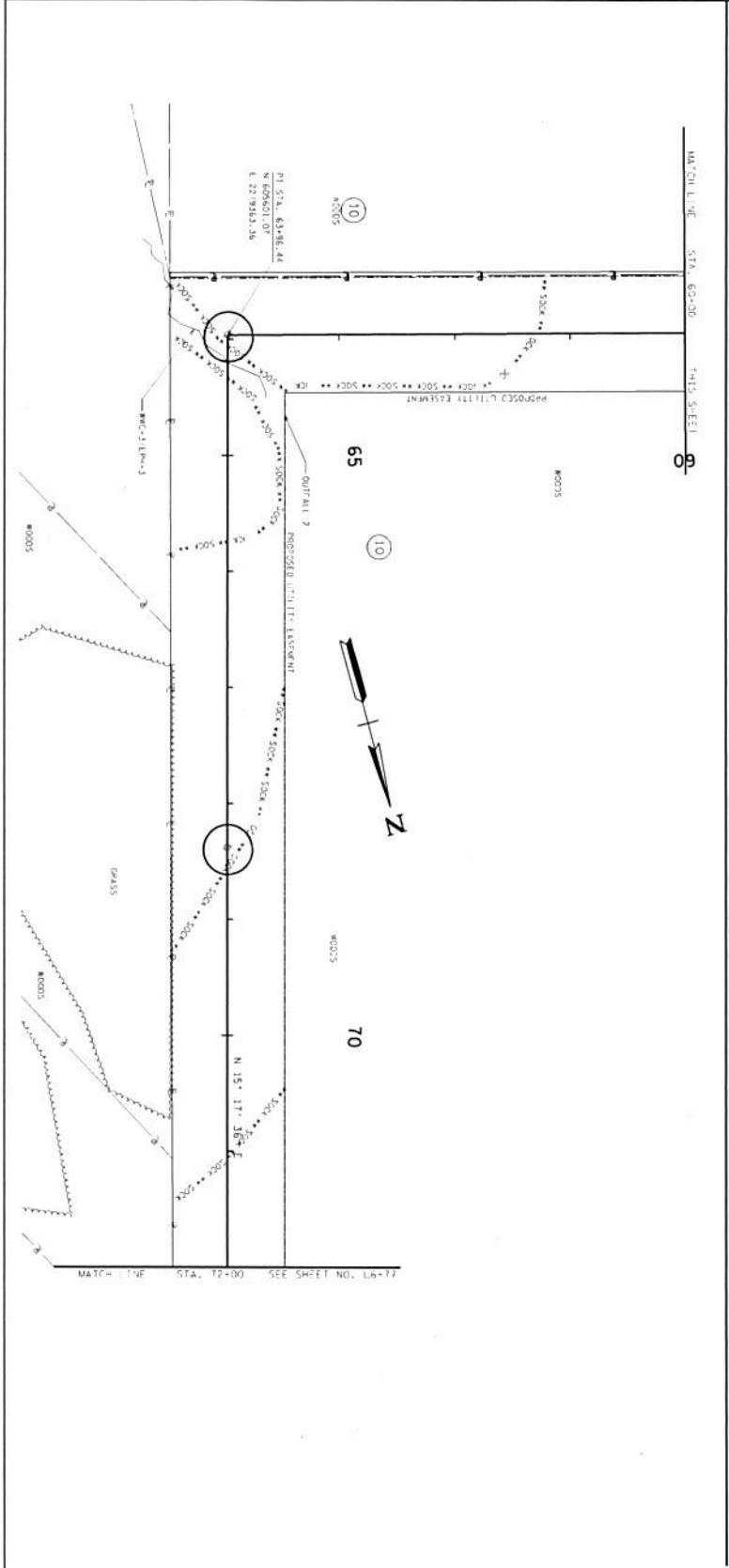
PRELIMINAL PLANS

NOT FOR CONSTRUCTION

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

STA. 23+00 TO STA. 48+00

SCALE: 1" = 50'



PHASE 2

SCALED BY

PRELIMINAL PLANS

NOT FOR CONSTRUCTION

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

STA. 48+00 TO STA. 70+00

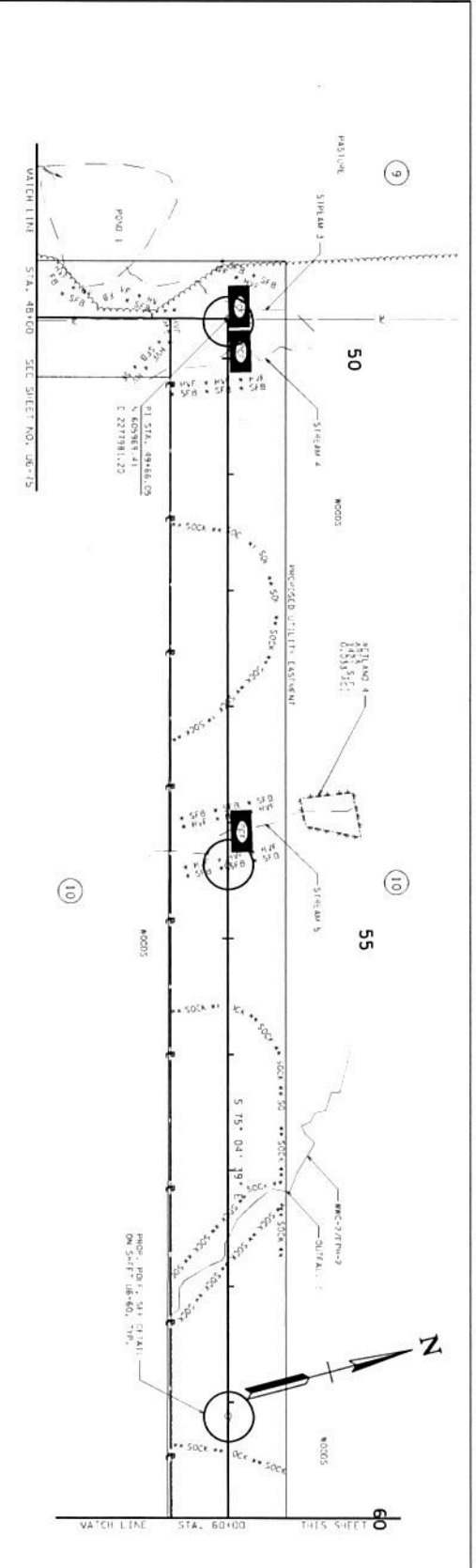
SCALE: 1"=50'

DATE: 3/7/2015

PROJECT NO. 18024

CONTRACT 2015

APP-5238B



PHASE 2

SCALED BY

PRELIMINAL PLANS

NOT FOR CONSTRUCTION

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

STA. 48+00 TO STA. 70+00

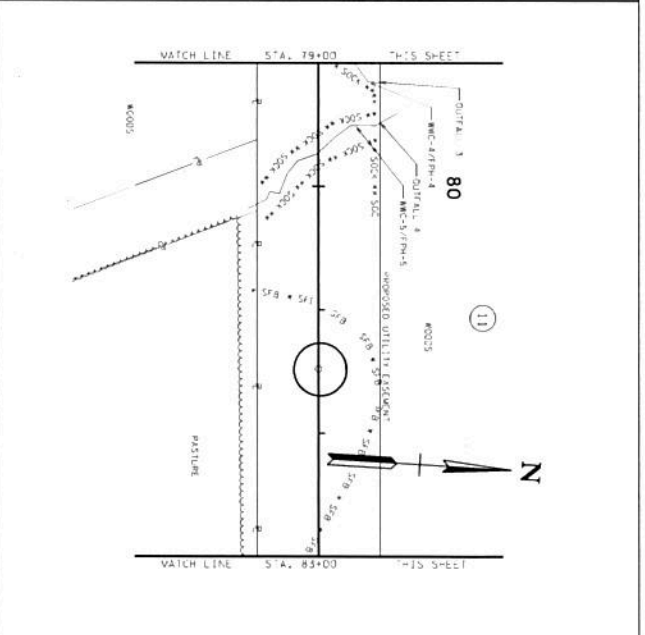
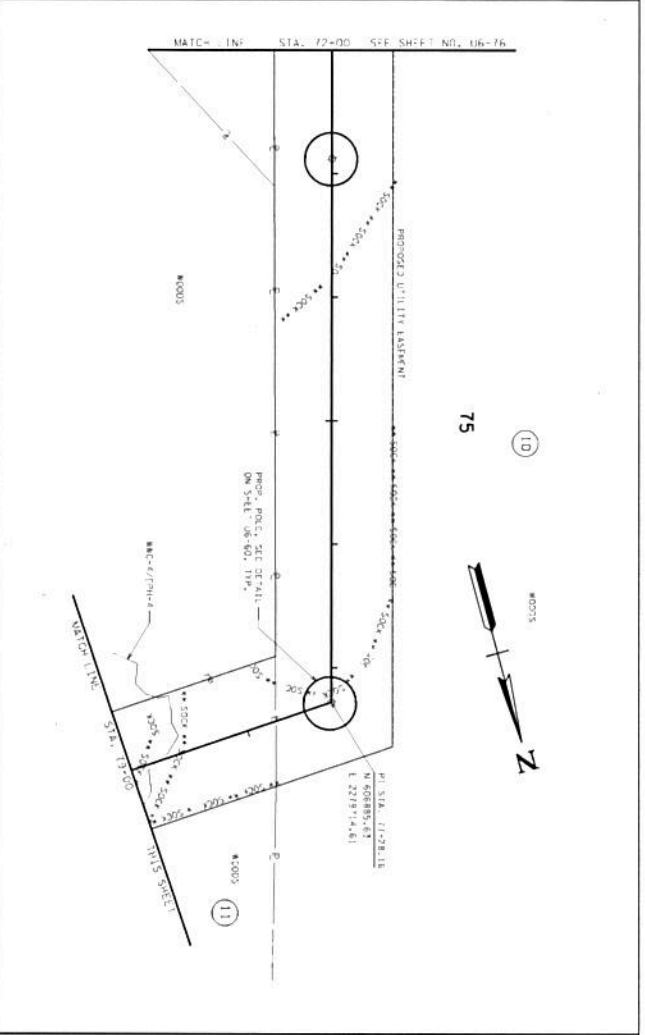
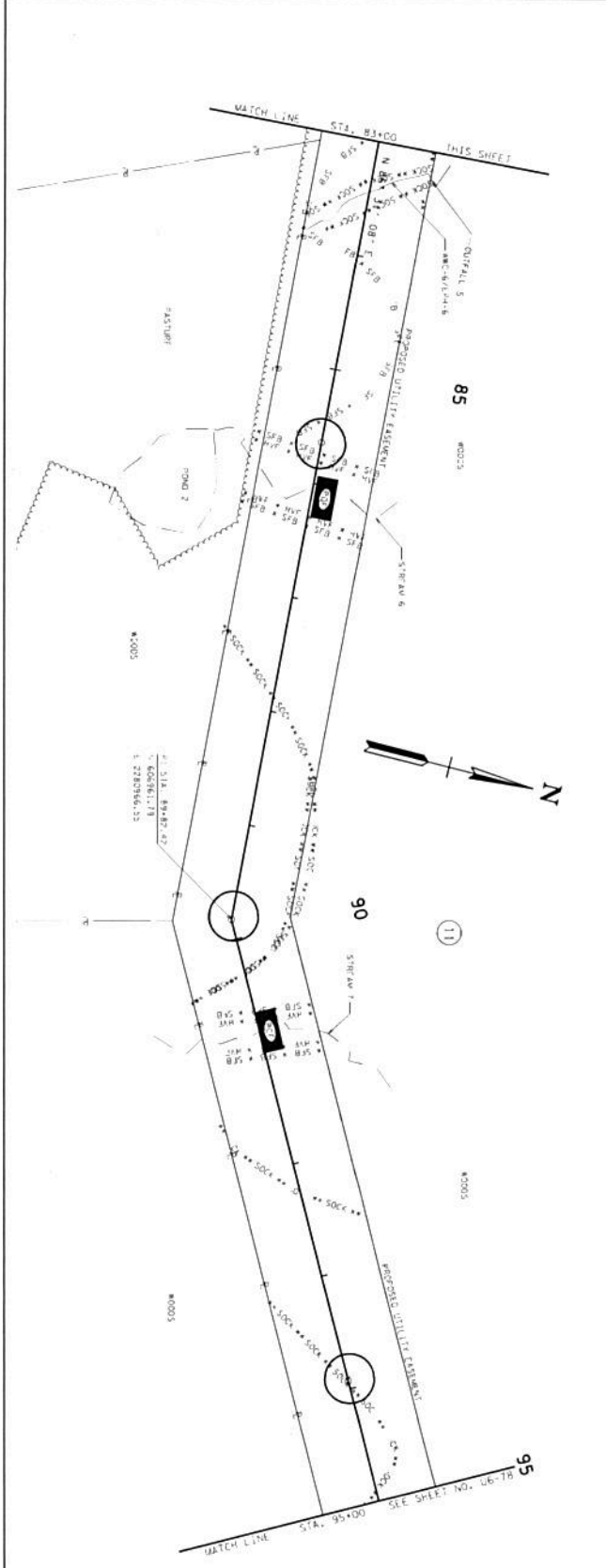
SCALE: 1"=50'

DATE: 3/7/2015

PROJECT NO. 18024

CONTRACT 2015

APP-5238B

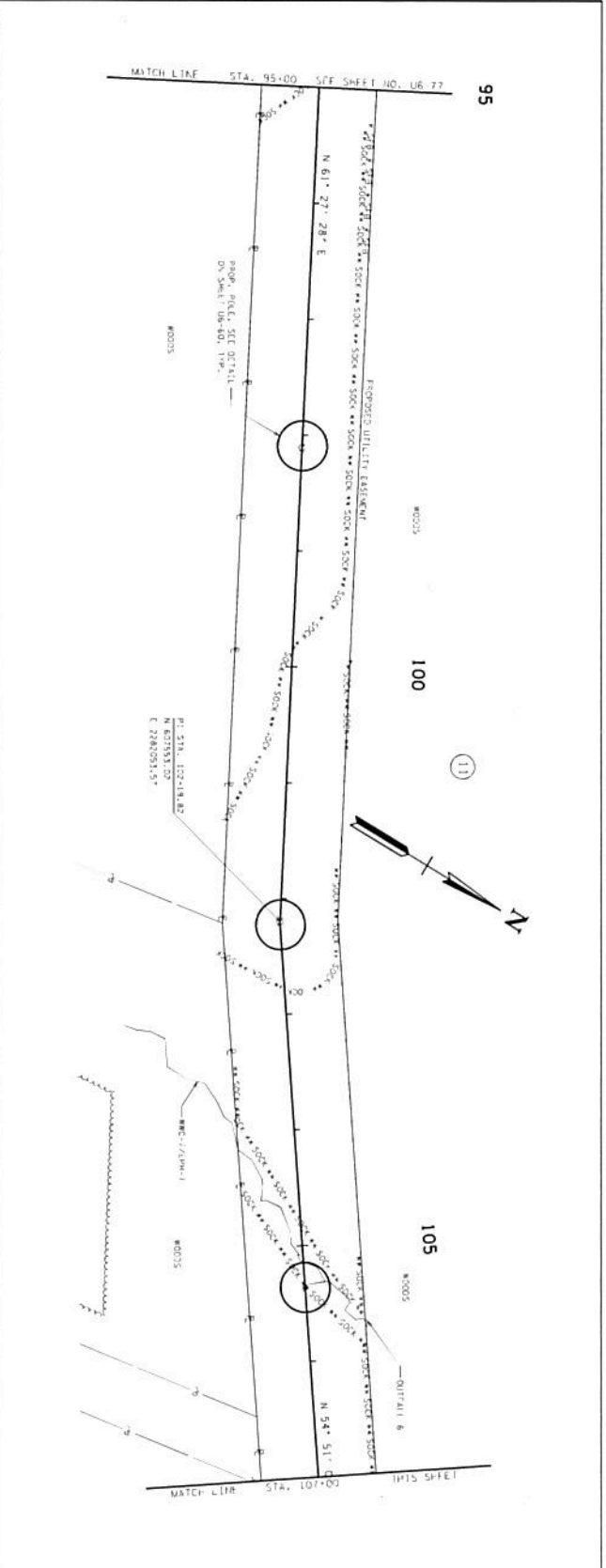
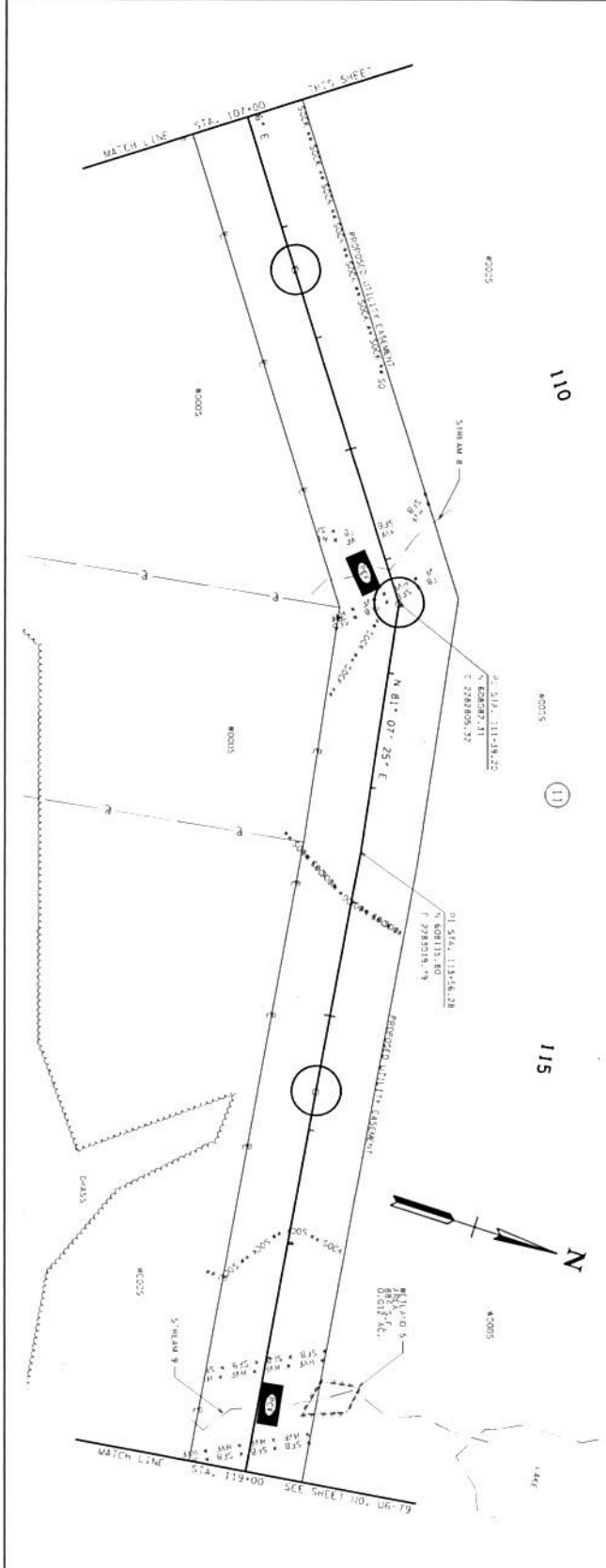


PHASE 2
 PRELIMINARY
 PLANS
 NOT FOR
 CONSTRUCTION

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 EROSION
 PREVENTION
 AND SEDIMENT
 CONTROL PLAN

STA. 72+00 TO STA. 95+00

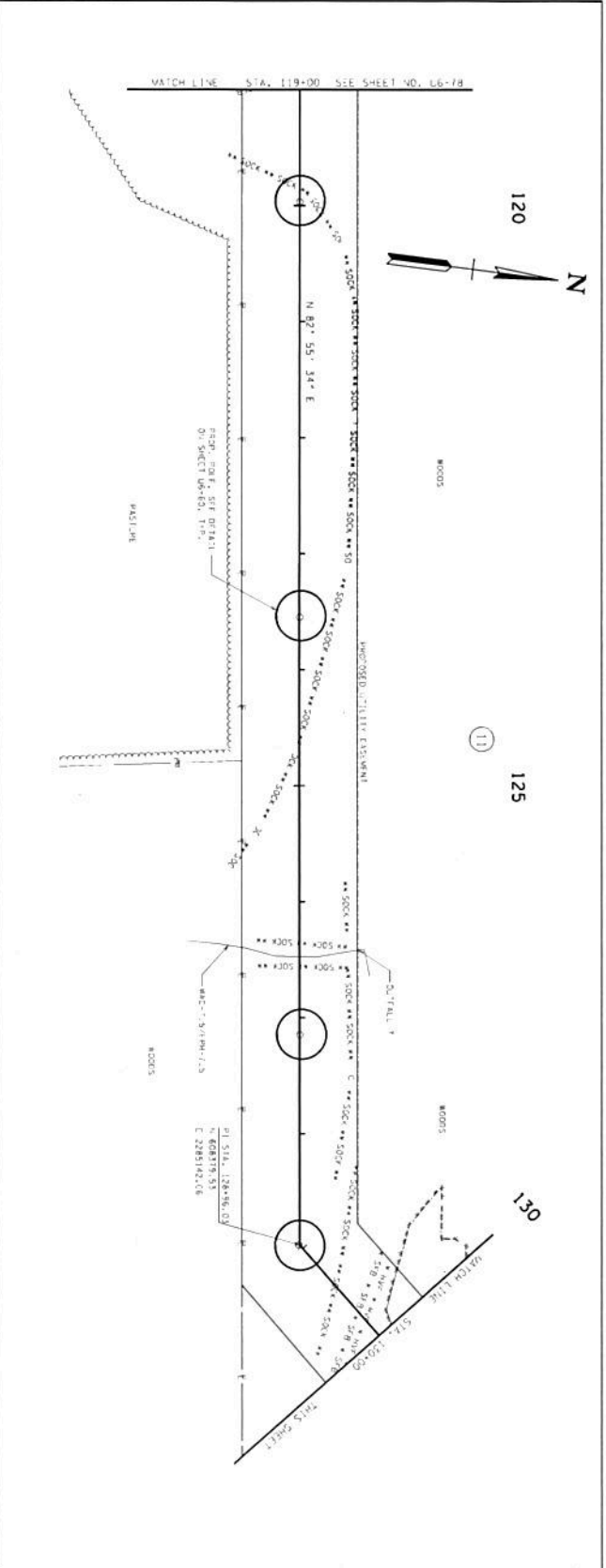
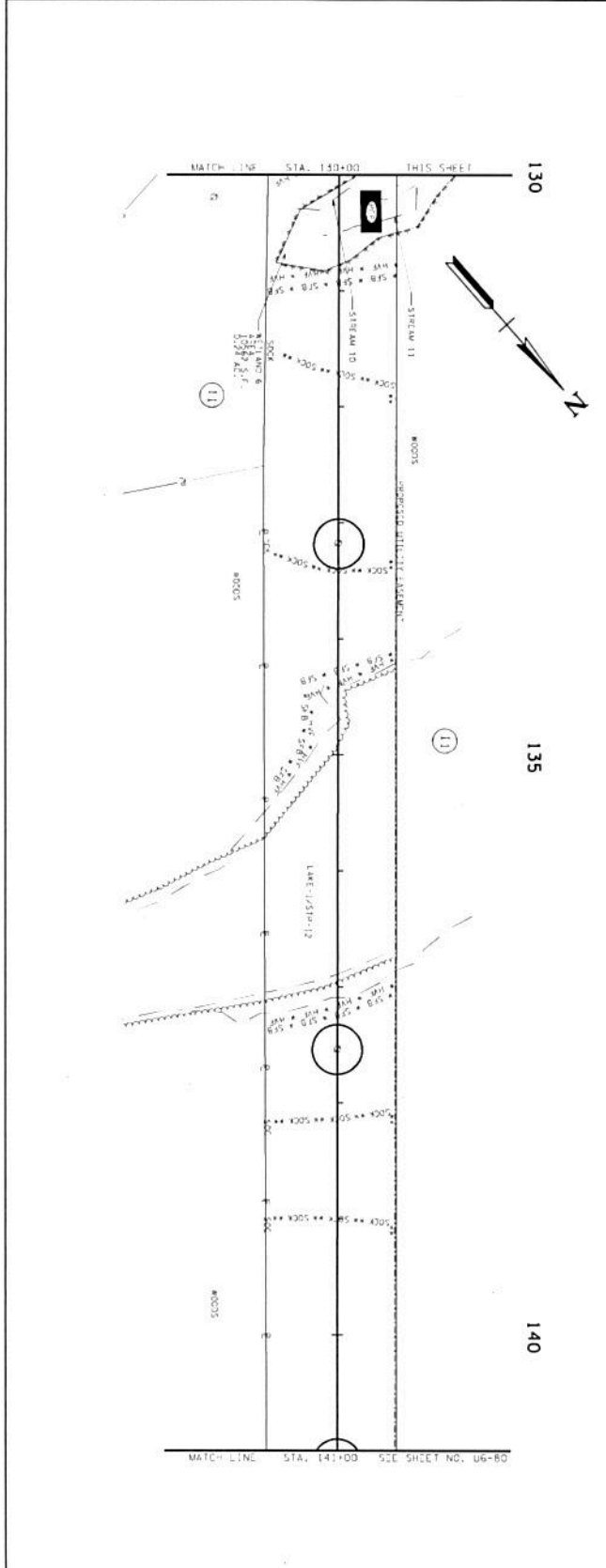
DATE	REVISION	BY	PROJECT NO.
03/02/15	ISSUE	JAC/SJH/ML	8024



SCALE: AS SHOWN
PRELIMINARY PLANS
 NOT FOR CONSTRUCTION
 STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
EROSION PREVENTION AND SEDIMENT CONTROL PLAN
 STA. 95+00 TO STA. 119+00
 SCALE: 1"=50'

PHASE 2

TYPE	YEAR	PROJECT NO.
CONSTR.	2015	APC-2015-01



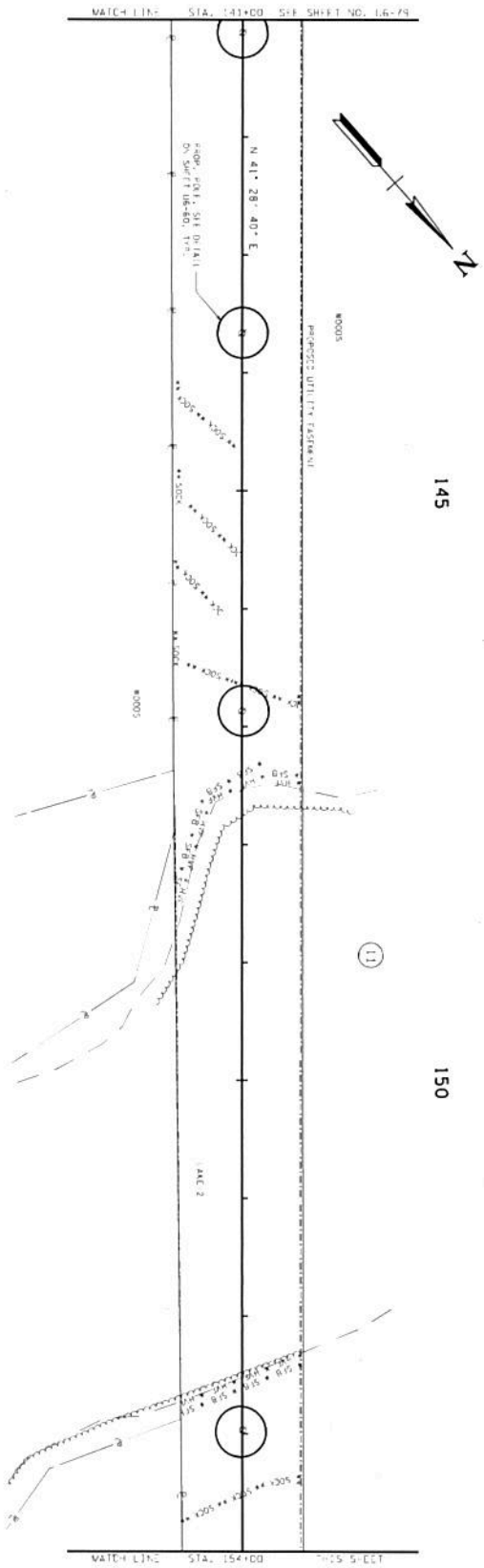
PHASE 2
 SYSTEM 20
PRELIMINAL PLANS
 NOT FOR CONSTRUCTION

CONTRACT NO. 2013
 PROJECT NO. 100-2(218)

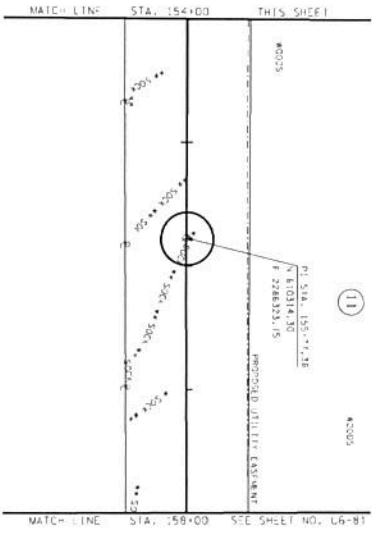
STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION

EROSION PREVENTION AND SEDIMENT CONTROL PLAN
 STA. 119+00 TO STA. 141+00

DATE	BY	PROJECT NO.
03/21/13	MS-2018	100-2(218)



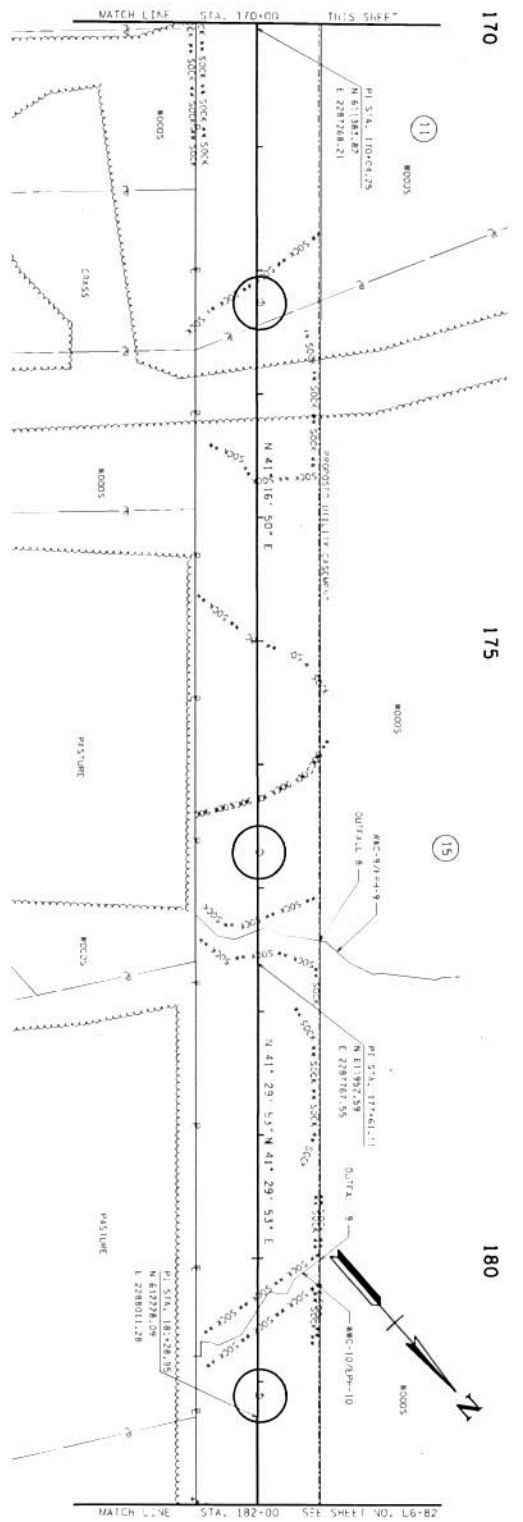
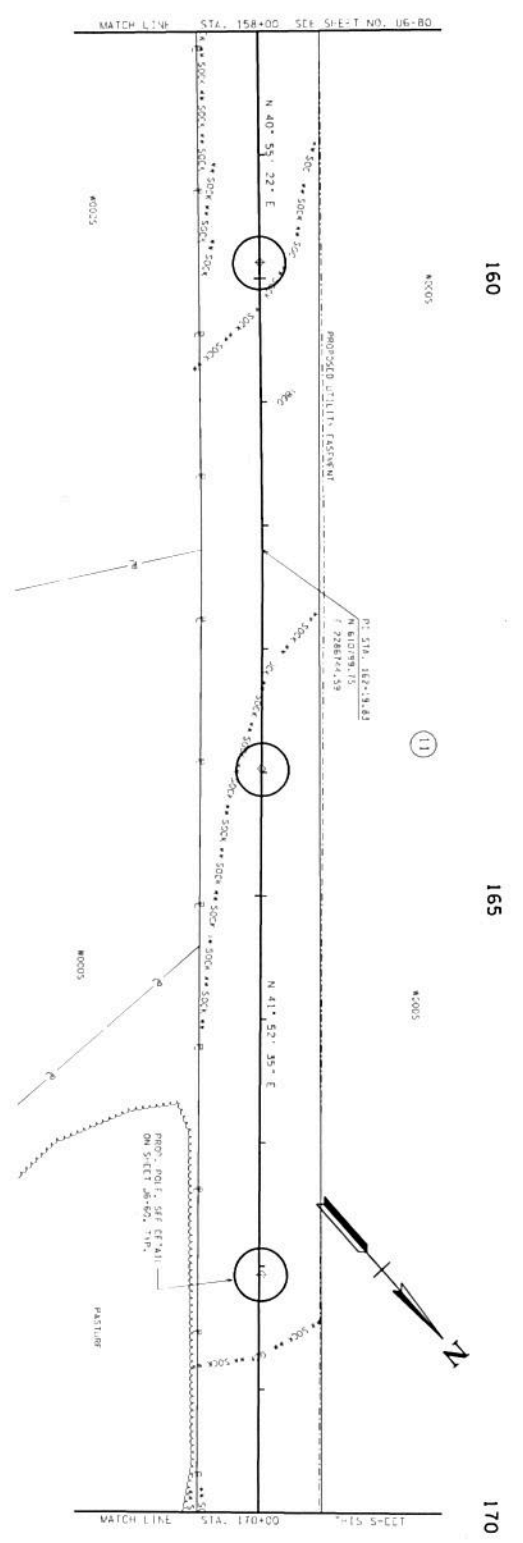
TYPE	YEAR	PROJECT NO.
CONTR.	2013	AP-2418B



STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
EROSION PREVENTION AND SEDIMENT CONTROL PLAN
 PRELIMINARY PLANS
 NOT FOR CONSTRUCTION

PHASE 2

STA. 141+00 TO STA. 154+00



TEAM	DATE	PROJECT NO.	SHEET NO.
COMP.	2015	18-60-71P	24

SCALE: 1" = 50'

PHASE 2

SECTION 1

PRELIMINARY PLANS

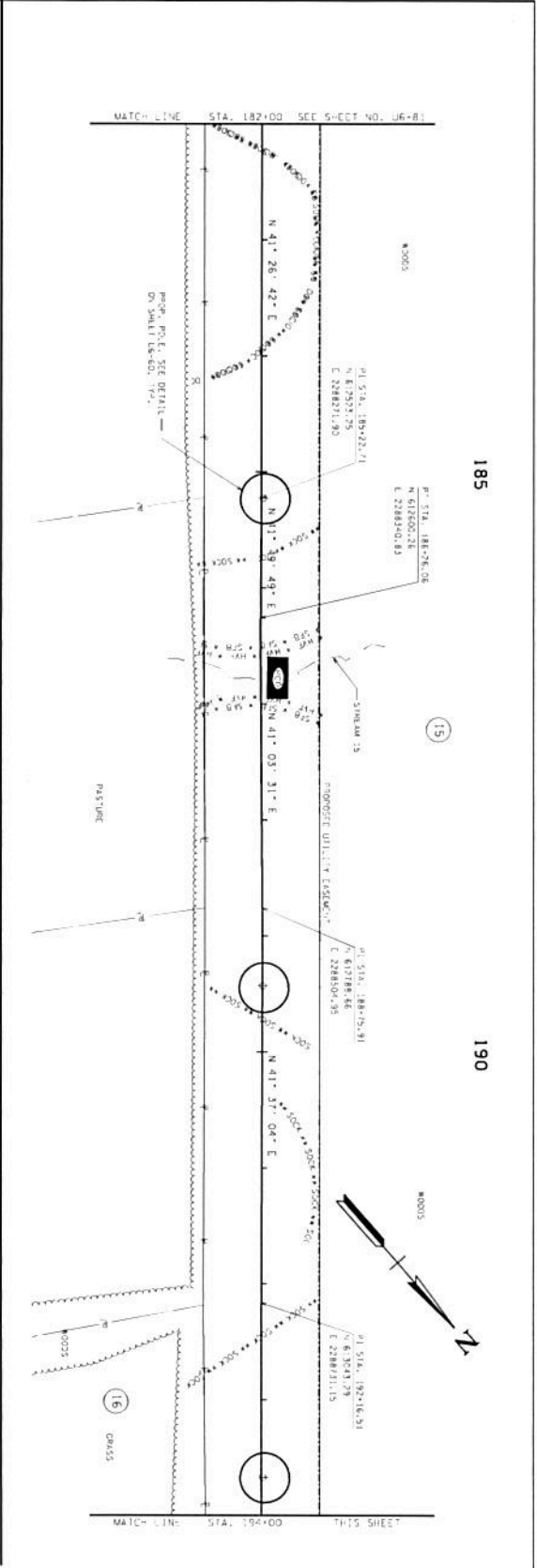
NOT FOR CONSTRUCTION

COORDINATE REF. MARKERS
 AEC DIST. ADJUSTED BY T.C.
 1/4" ON 2" = 1000' - ANG. 1/10" IC
 REFERENCE TO THE ADO 0888

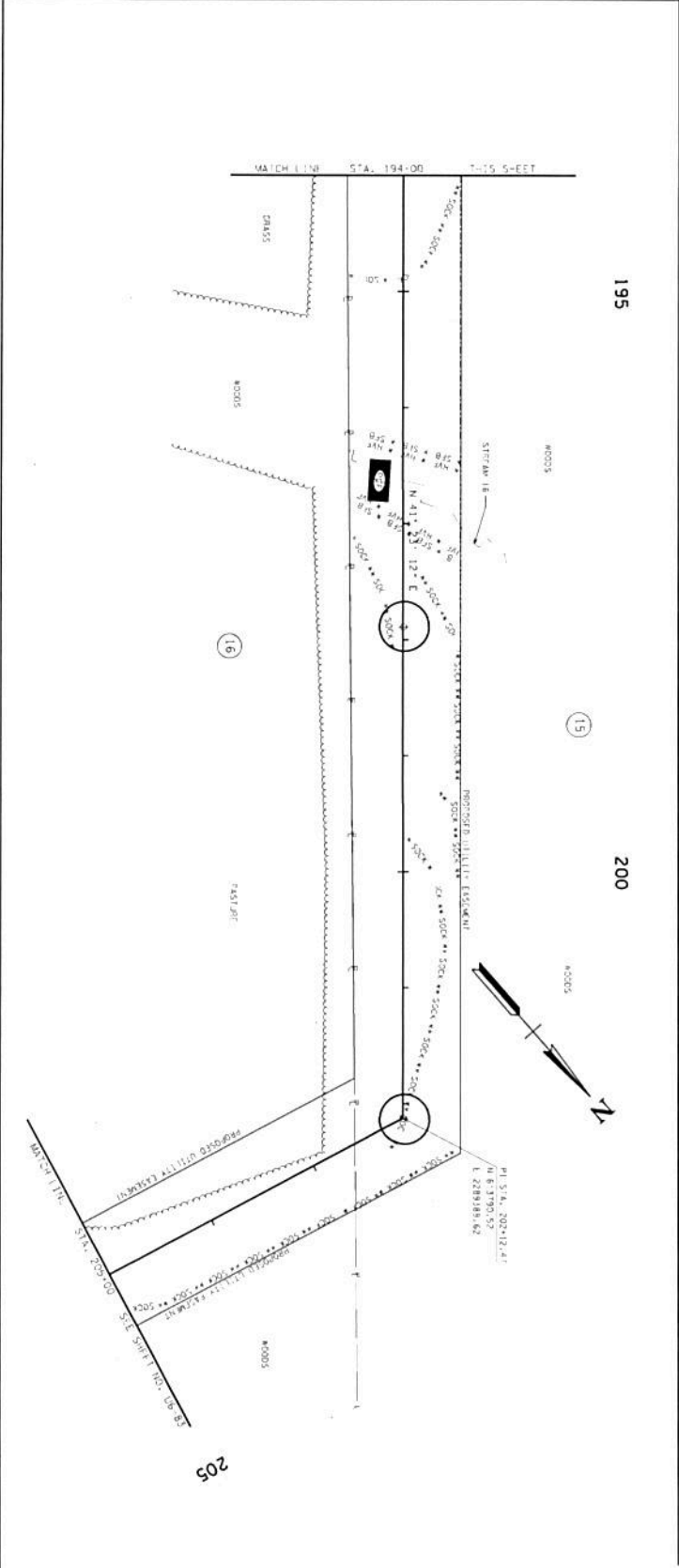
STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

STA. 168+00 TO STA. 192+00
 SCALE: 1" = 50'



TYPE	TEAM	PROJECT NO.
CONTRACT	2013	09-20181

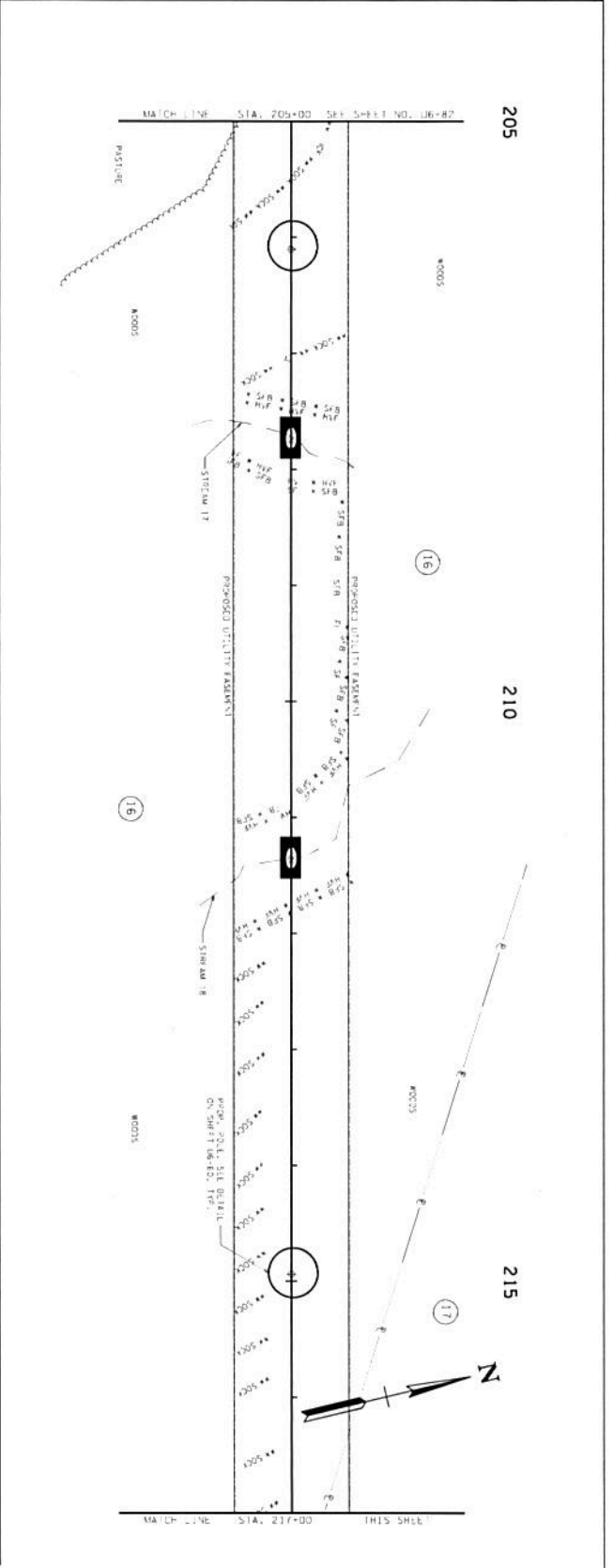
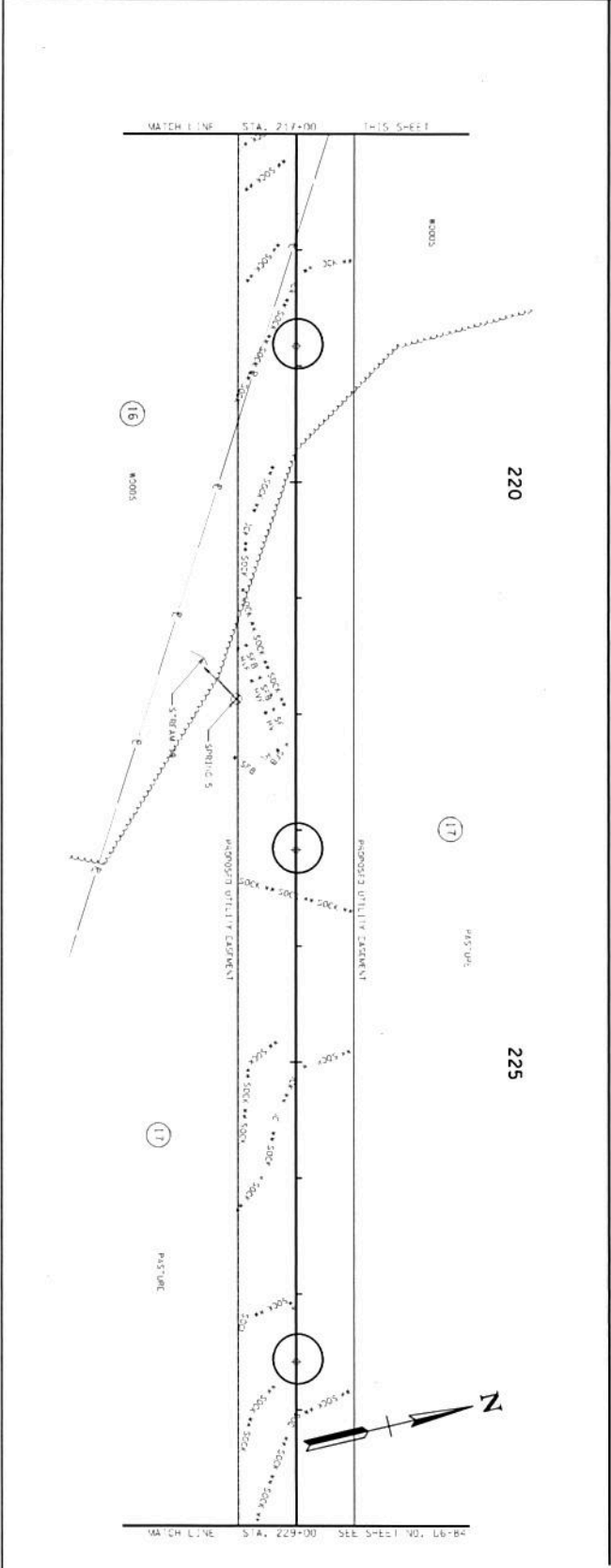


PHASE 2
 STAGED 2

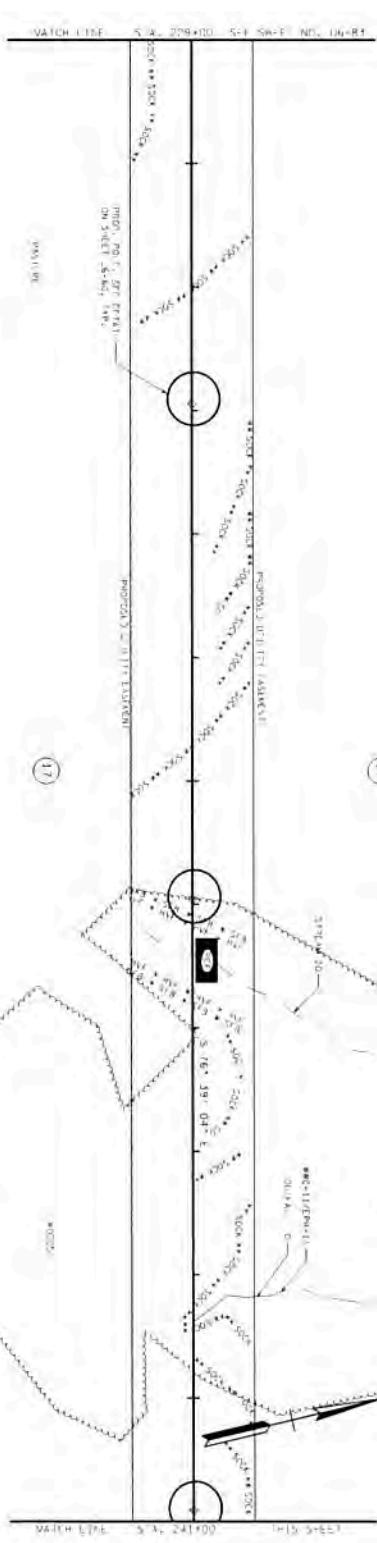
PRELIMINAL PLANS
 NOT FOR CONSTRUCTION

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 EROSION PREVENTION AND SEDIMENT CONTROL PLAN
 STA. 192+00 TO STA. 21+55

CONTRACT NO. 09-20181
 DATE: 03/02/15
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 DATE: 03/02/15



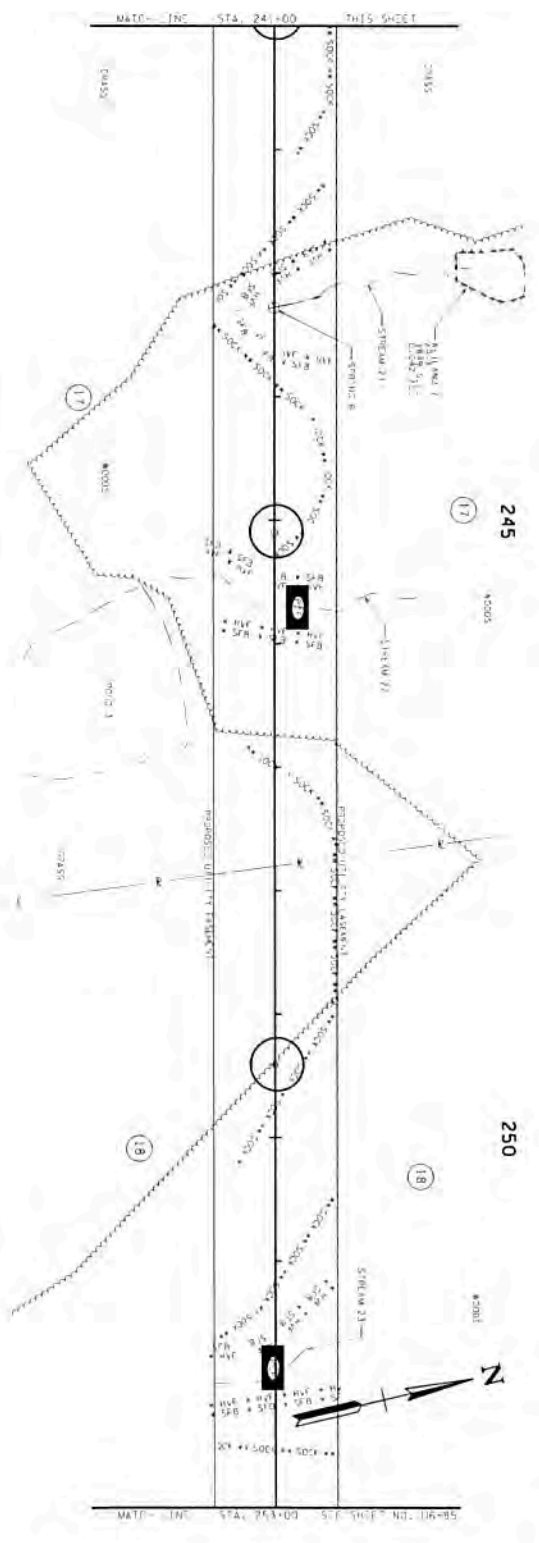
TYPE	YEAR	PROJECT NO.
CONTR.	2013	402-2(118)



230

235

240

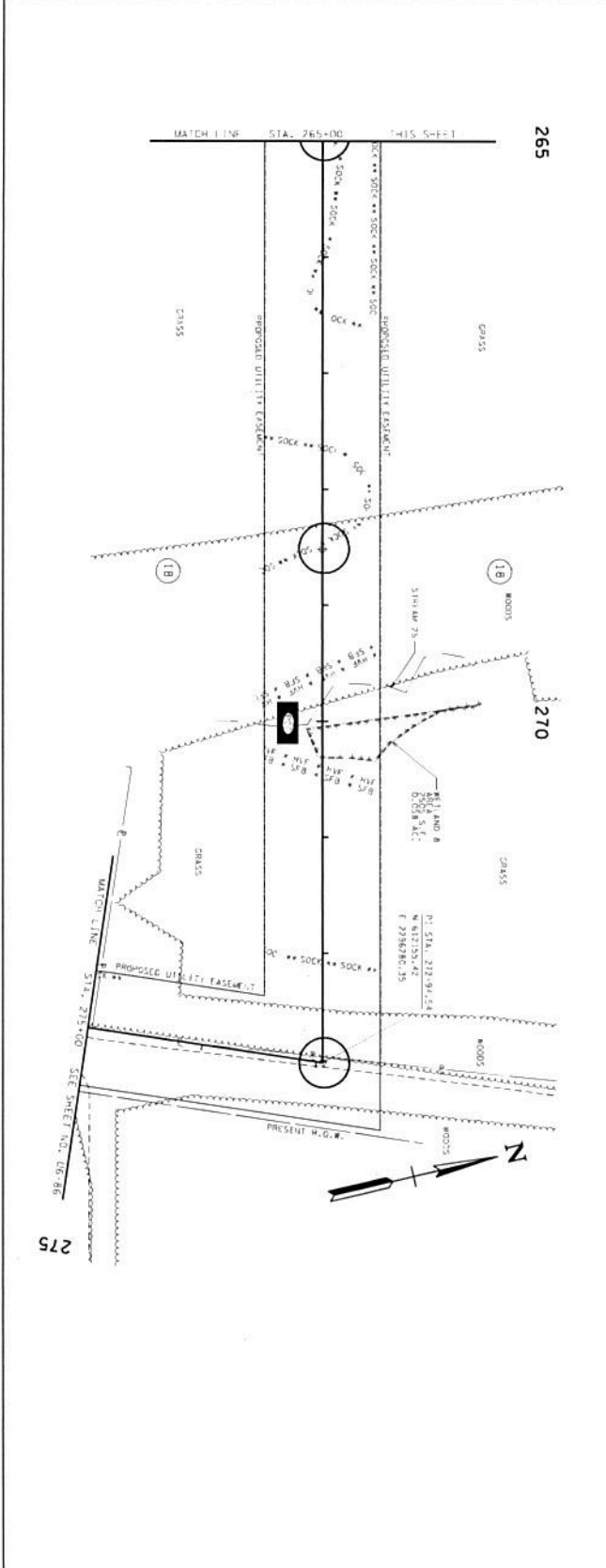


245

250

SCALE: 1" = 20'
 PRELIMINARY
 PLANS
 NOT FOR
 CONSTRUCTION
 COORDINATE SYSTEM: NAD 83
 DATUM: NAD 83
 PROJECTIONS: UTM
 ZONE: 18N
 STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 EROSION
 PREVENTION
 AND SEDIMENT
 CONTROL PLAN
 STA. 239+00 TO STA. 26
 25+00 1" = 50'

TYPE	YEAR	PROJECT NO.
CONTRACT	2005	UP-55181



PHASE 2

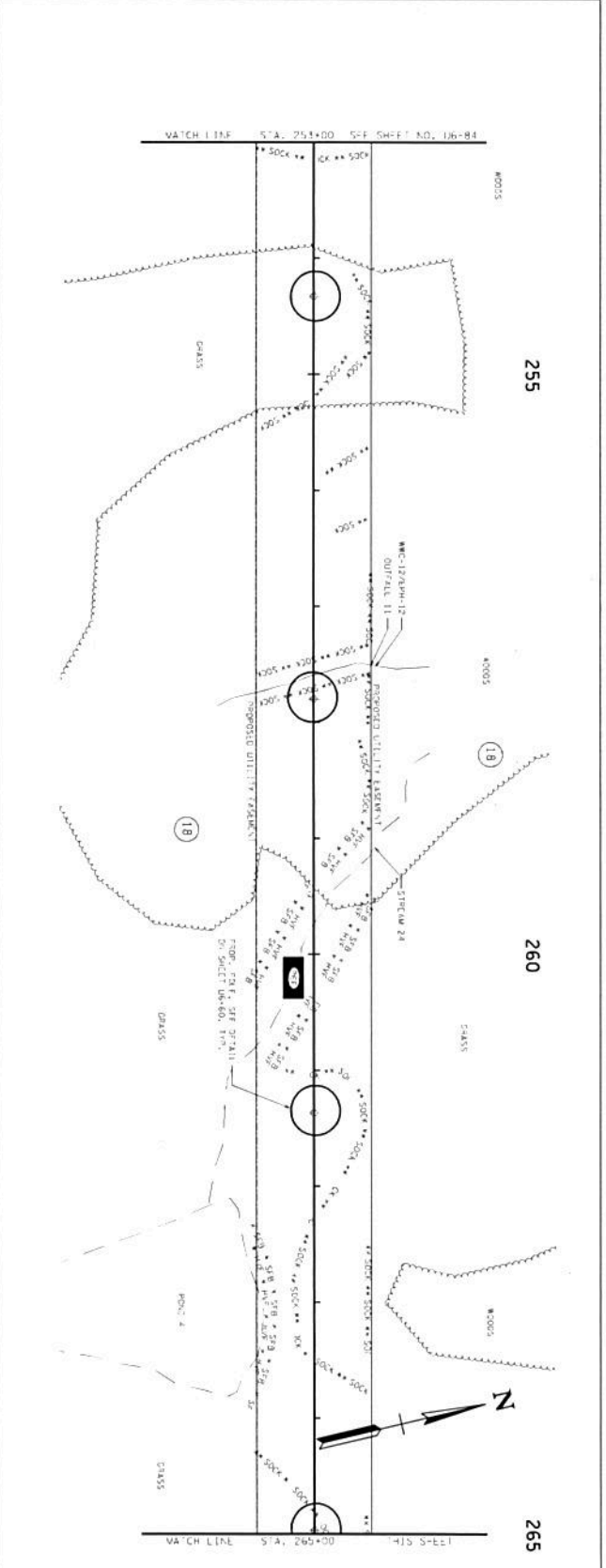
SECTION 265

PRELIMINARY PLANS

NOT FOR CONSTRUCTION

CONTRACTOR'S ATTENTION: THESE PLANS ARE PRELIMINARY AND SUBJECT TO CHANGE WITHOUT NOTICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND CONDITIONS IN THE FIELD.

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
EROSION PREVENTION AND SEDIMENT CONTROL PLAN
 STA. 265+00 TO STA. 275+00



PHASE 2

SECTION 255

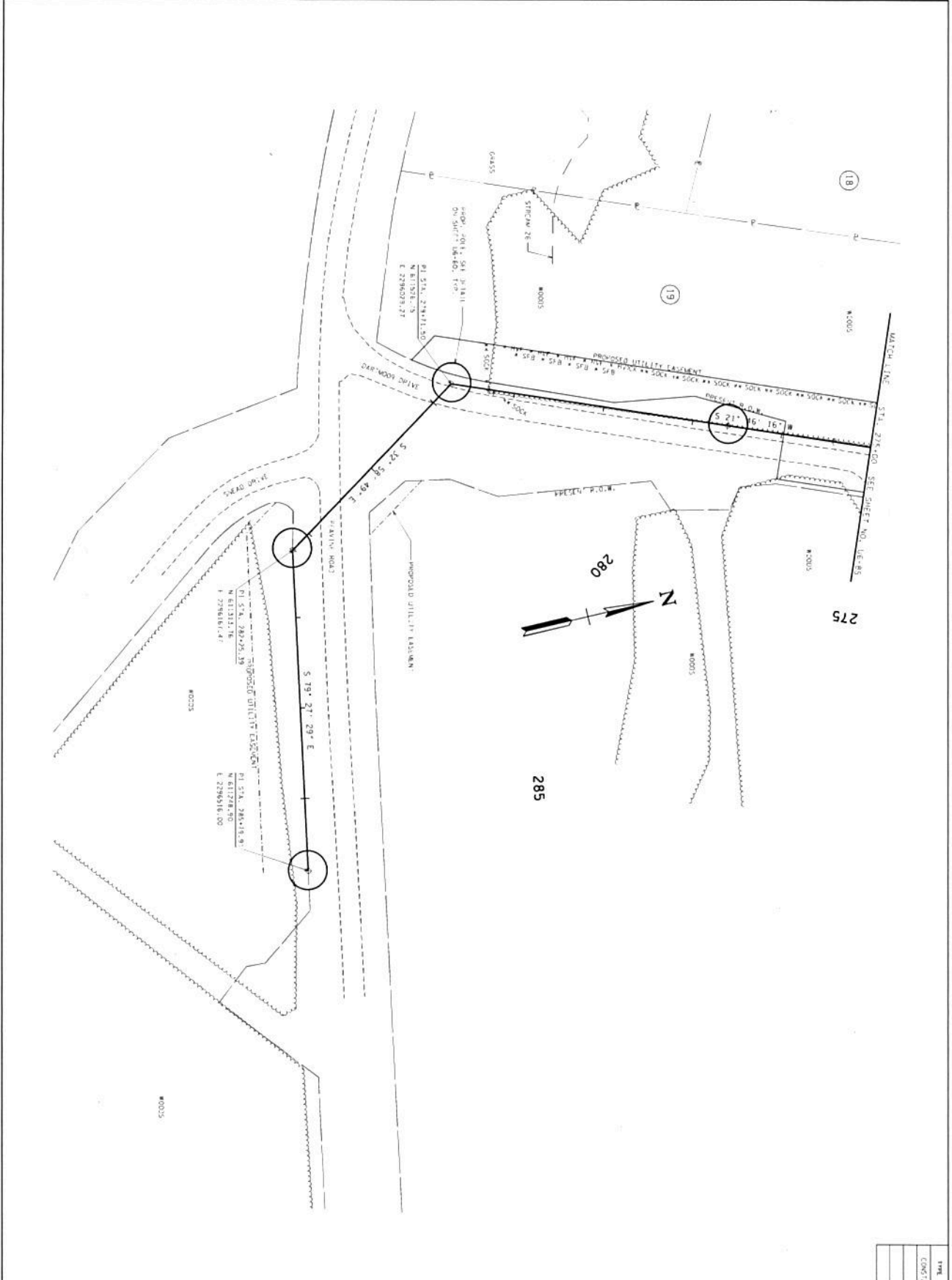
PRELIMINARY PLANS

NOT FOR CONSTRUCTION

CONTRACTOR'S ATTENTION: THESE PLANS ARE PRELIMINARY AND SUBJECT TO CHANGE WITHOUT NOTICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND CONDITIONS IN THE FIELD.

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
EROSION PREVENTION AND SEDIMENT CONTROL PLAN
 STA. 255+00 TO STA. 265+00

TYPE	DATE	PROJECT NO.
CONTRACT	2015	APC-25181



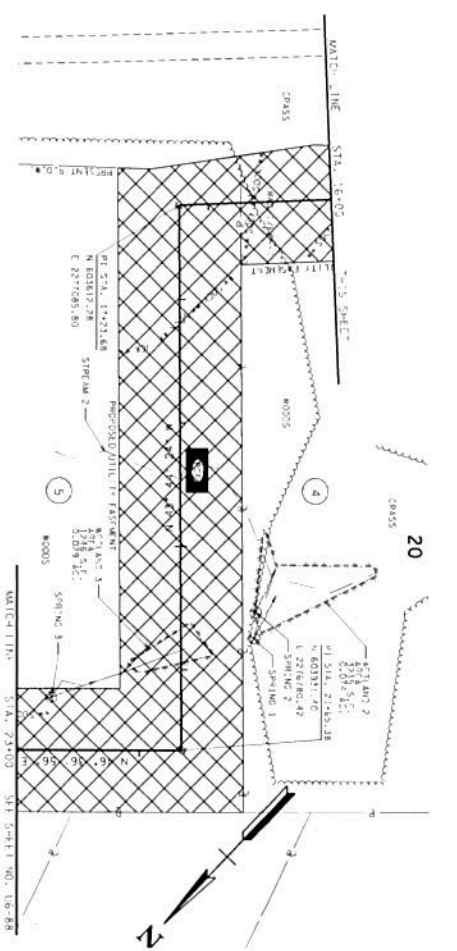
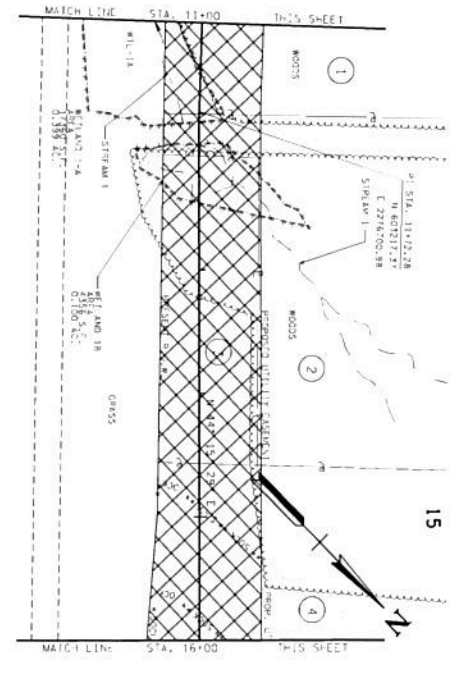
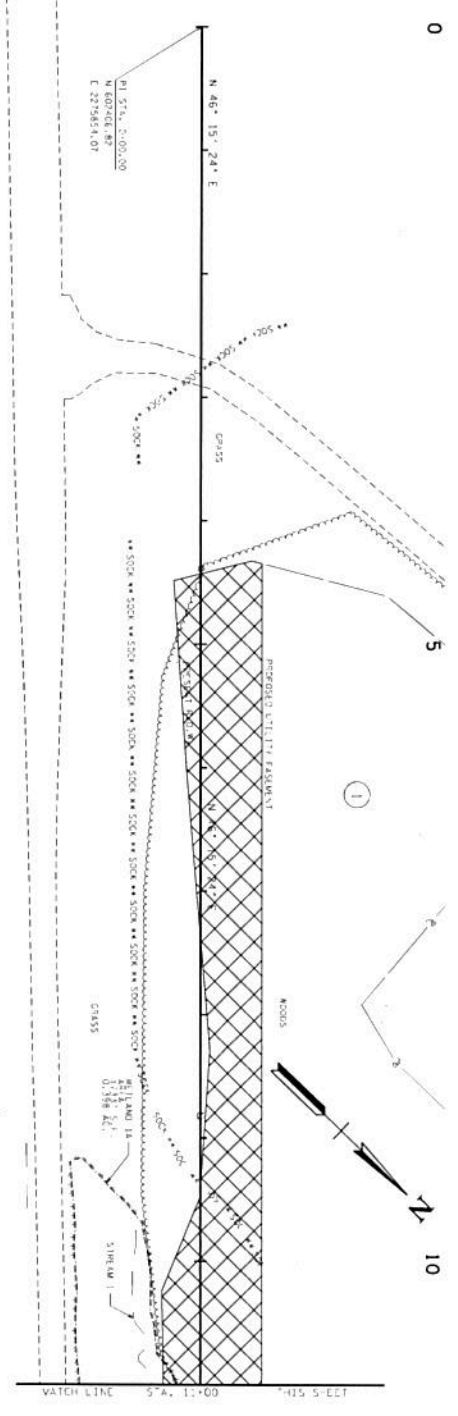
TYPE	TEAM	PROJECT NO.
CONTR.	2013	UP-25-181

PHASE 2
 STATE 2
PRELIMINAL PLANS
NOT FOR CONSTRUCTION

APPROVED FOR THE DESIGNER:
 A.C.E. DIVISION, REGISTERED PROFESSIONAL ENGINEER
 NO. 1204, ALL FLORIDA
 REGISTERED PROFESSIONAL ENGINEER

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
EROSION PREVENTION AND SEDIMENT CONTROL PLAN

STA. 285+00 TO STA. 29+00
 2/24/15 1:11:55

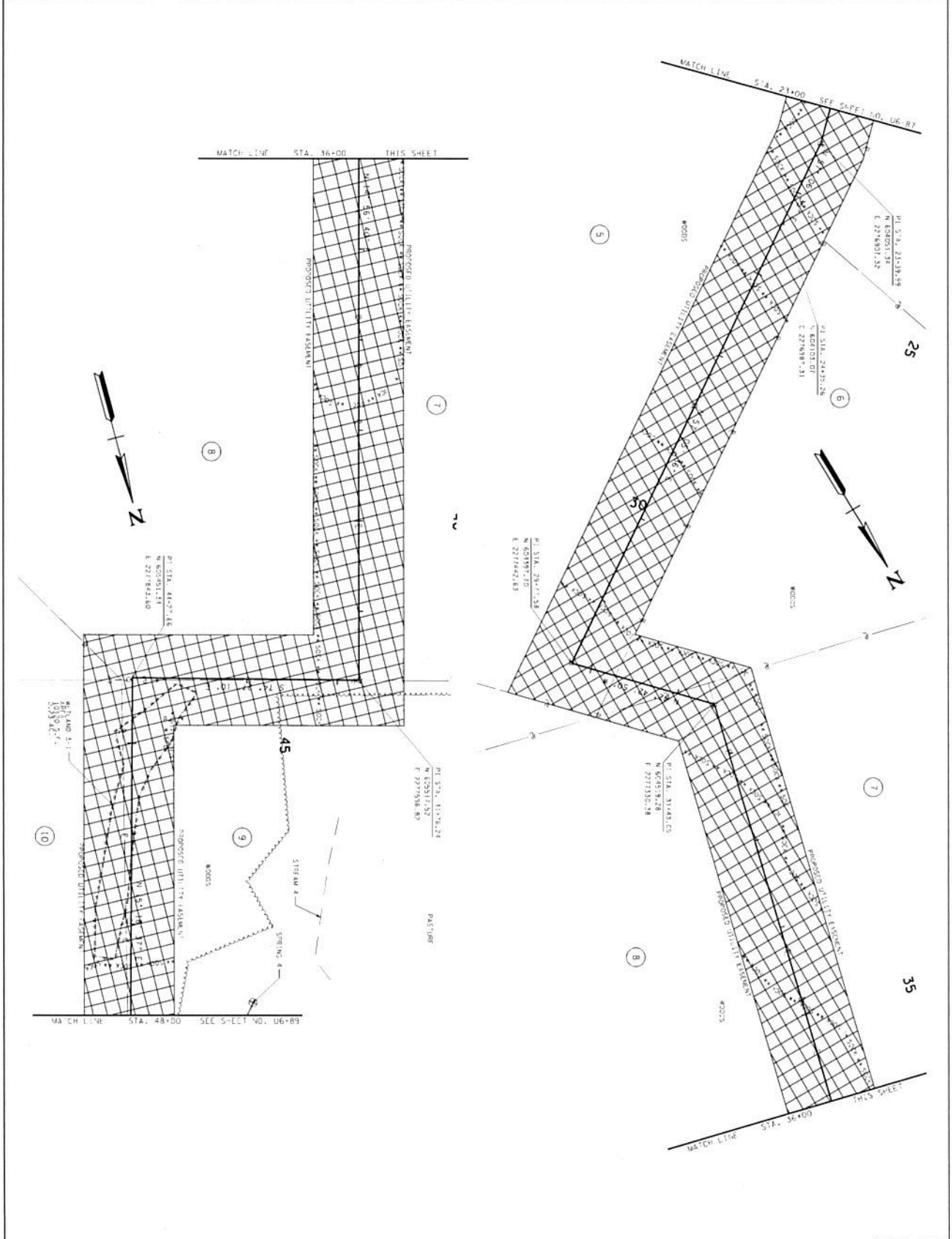


TYPE	TEAM	PROJECT NO.
CONTRACT	2213	AP-2213B1

PHASE 3
 EROSION PREVENTION AND SEDIMENT CONTROL PLAN
 STA. 0+00 TO STA. 2+50

PRELIMINAL PLANS
 NOT FOR CONSTRUCTION

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 EROSION PREVENTION AND SEDIMENT CONTROL PLAN
 STA. 0+00 TO STA. 2+50



TYPE	YEAR	PROJECT NO.
CONTRACT	2005	MP-25188

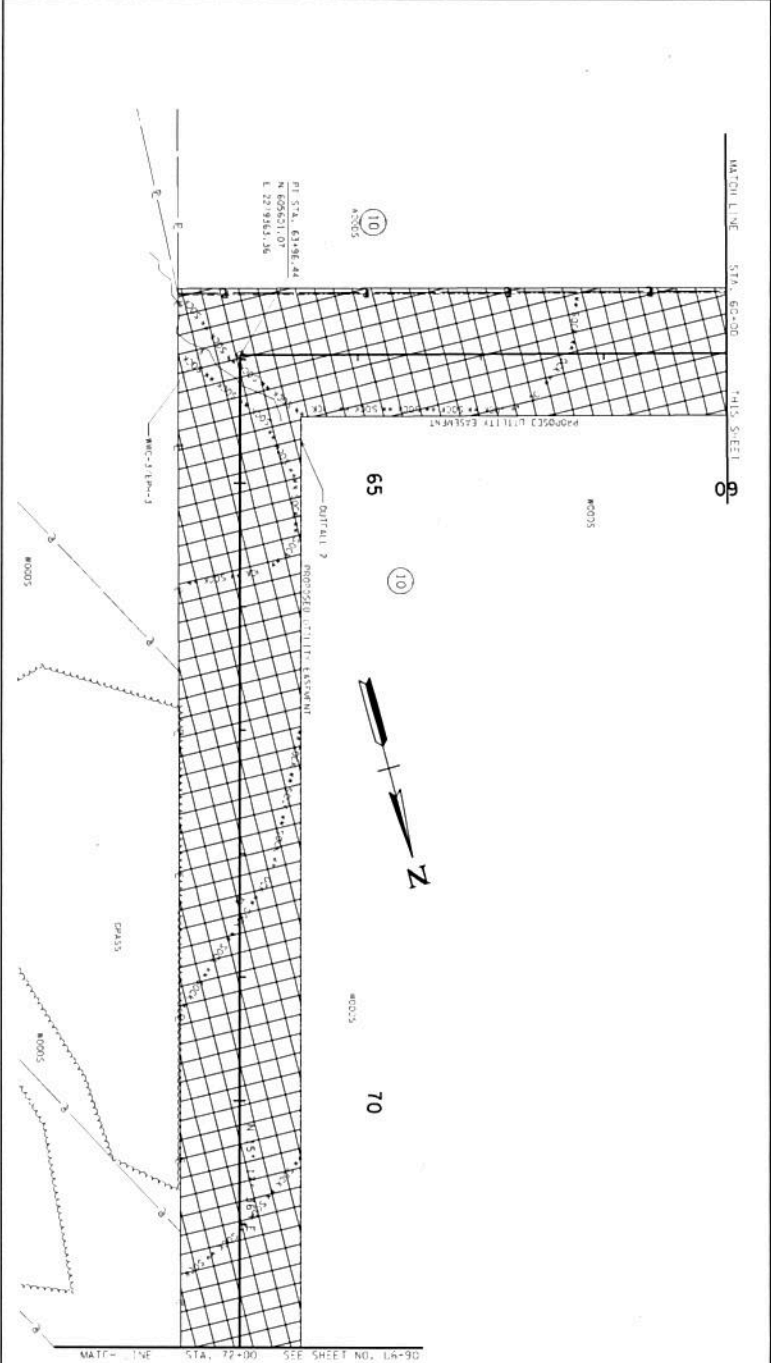
PHASE 3

STATE OF TENNESSEE
PRELIMINARY PLANS
 NOT FOR CONSTRUCTION

CONTRACT NO. 2005-188
 PROJECT NO. MP-25188
 DATE: 03/07/05
 SCALE: 1" = 50'

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
EROSION PREVENTION AND SEDIMENT CONTROL PLAN

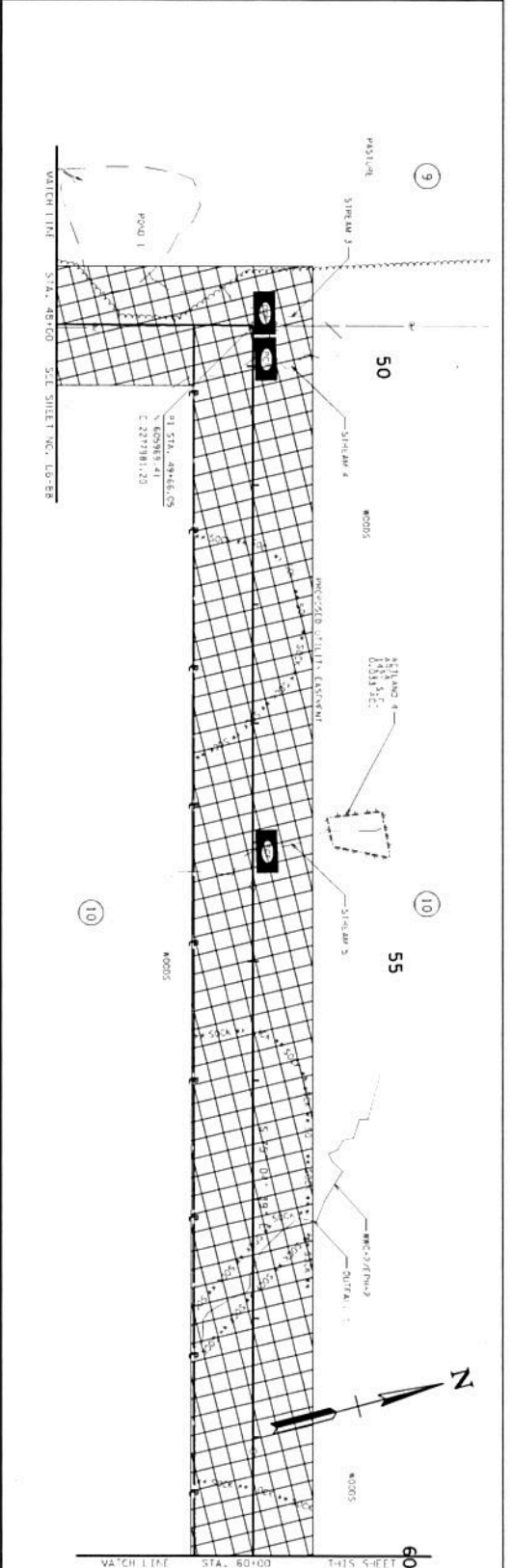
STA. 21+00 TO STA. 48+00
 SHEET 1 OF 5



PHASE 3
 PRELIMINARY
 PLANS
 NOT FOR
 CONSTRUCTION

COOPERATIVE AGREEMENT
 BETWEEN THE STATE OF TENNESSEE
 AND THE UNIVERSITY OF TENNESSEE
 SYSTEM
 PROJECT NO. 1000-2-1000
 DATE: 1/11/10
 REVISIONS TO THE PLAN

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 EROSION
 PREVENTION
 AND SEDIMENT
 CONTROL PLAN
 STA. 48+00 TO STA. 72+00

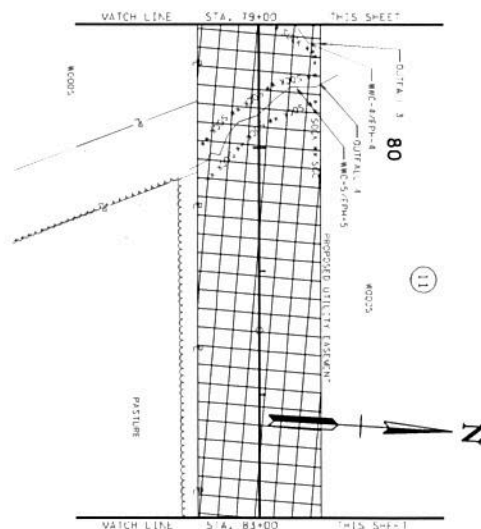
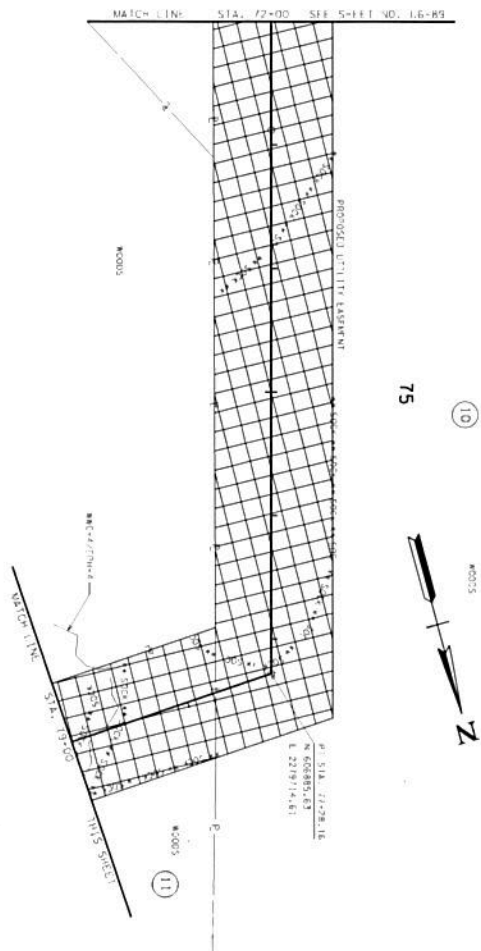
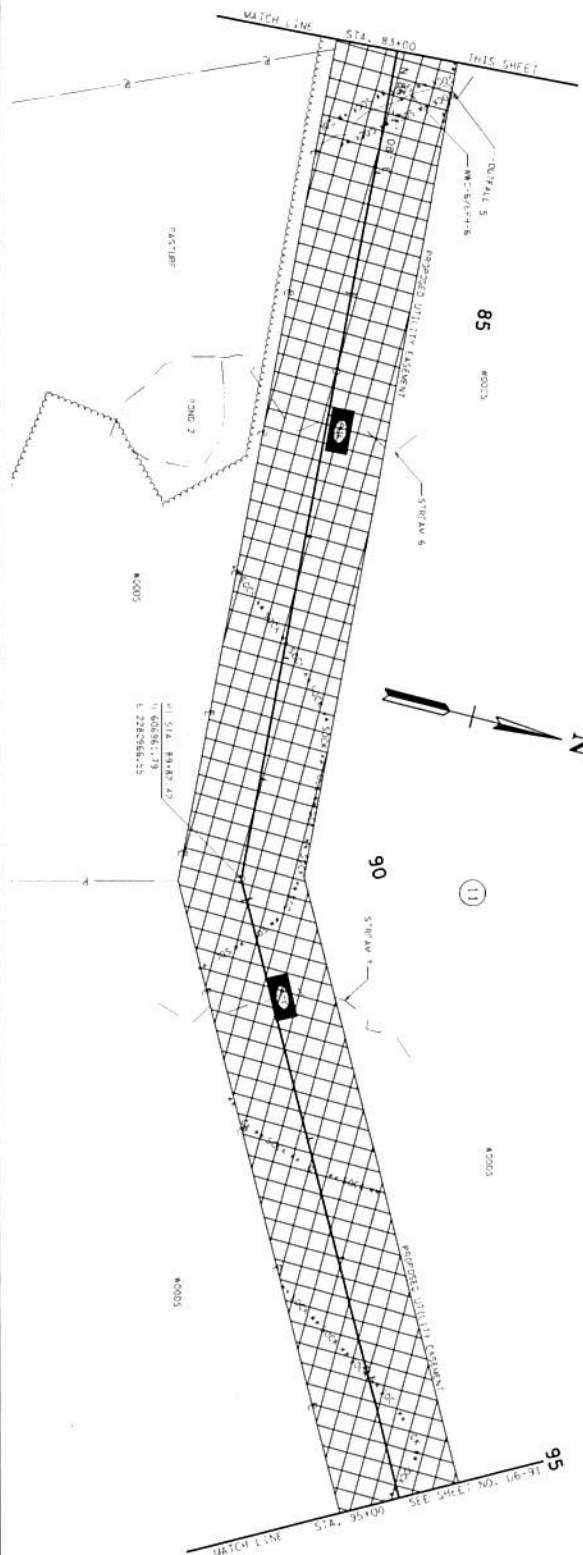


PHASE 3
 PRELIMINARY
 PLANS
 NOT FOR
 CONSTRUCTION

COOPERATIVE AGREEMENT
 BETWEEN THE STATE OF TENNESSEE
 AND THE UNIVERSITY OF TENNESSEE
 SYSTEM
 PROJECT NO. 1000-2-1000
 DATE: 1/11/10
 REVISIONS TO THE PLAN

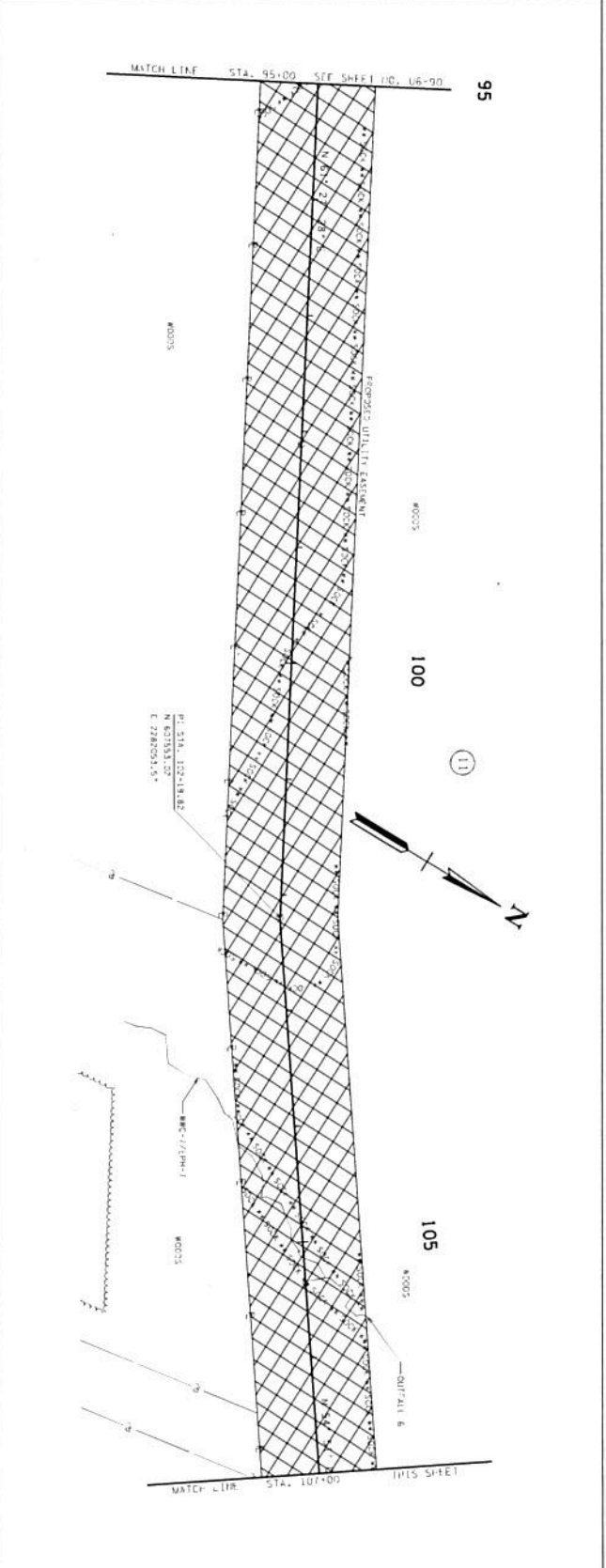
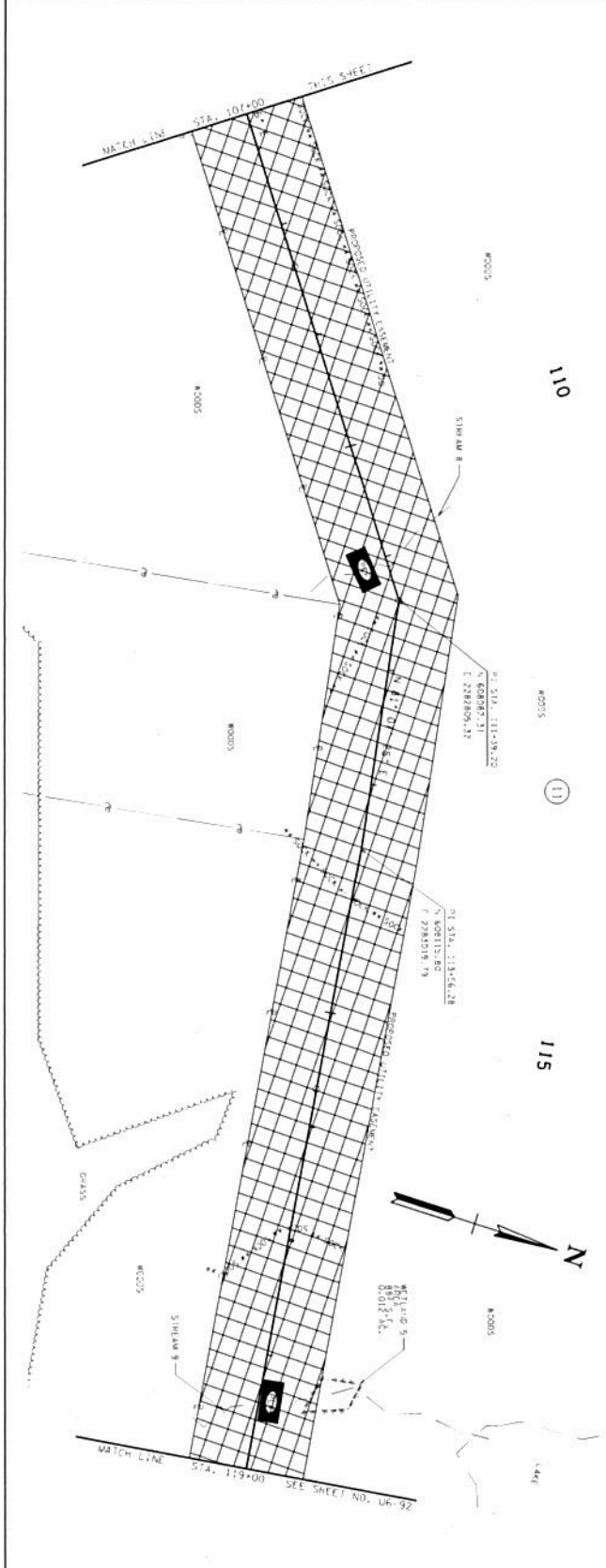
STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 EROSION
 PREVENTION
 AND SEDIMENT
 CONTROL PLAN
 STA. 48+00 TO STA. 72+00

TYPE	YEAR	PROJECT NO.
CONTRACT	2015	1000-2-1000



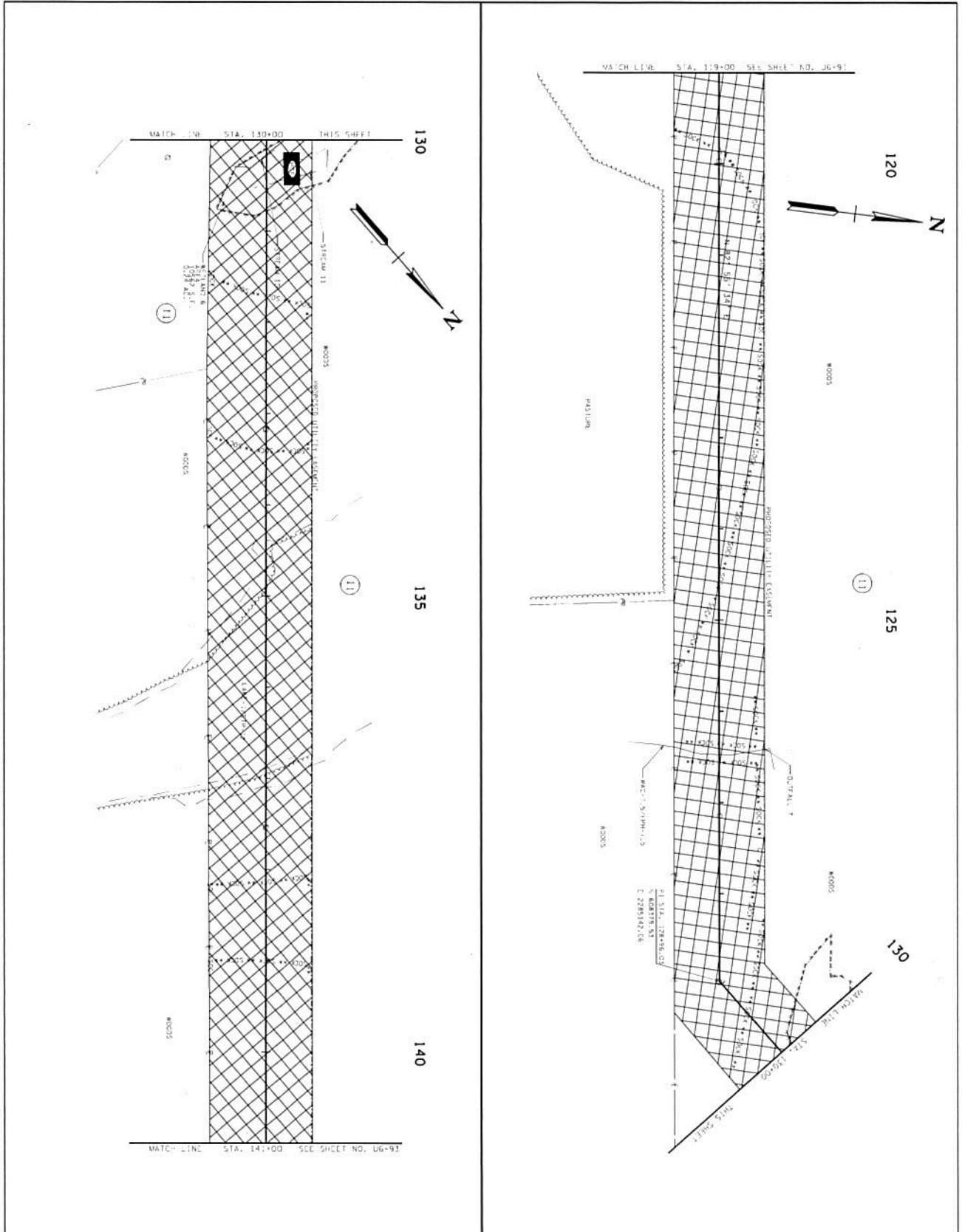
PHASE 3
 SCALE: 1" = 40'
PRELIMINARY PLANS
 NOT FOR CONSTRUCTION
 APPROPRIATE FOR UNDERSTANDING ONLY
 NOT TO BE USED FOR CONSTRUCTION
 DATE: 03/07/2015
 DRAWN BY: JAC
 CHECKED BY: JAC
 DESIGNED BY: JAC
 STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
EROSION PREVENTION AND SEDIMENT CONTROL PLAN
 STA. 72+00 TO STA. 95+00

YEAR	PROJECT NO.
2015	487-2(18)



PHASE 3
 STATE 33
PRELIMINARY PLANS
 NOT FOR CONSTRUCTION
 CONSULT THE UNDERWRITER FOR THE APPLICABLE POLICY AND RATES.
 THE POLICY AND RATES ARE SUBJECT TO THE UNDERWRITER'S REVIEW.
 DEPARTMENT OF TRANSPORTATION
EROSION PREVENTION AND SEDIMENT CONTROL PLAN
 STA. 95+00 TO STA. 119+00
 SCALE: 1"=50'

TYPE	YEAR	PROJECT NO.
CONTRACT	2005	AP-2518B



TYPE	YEAR	PROJECT NO.
CONDT.	2015	EP-231181

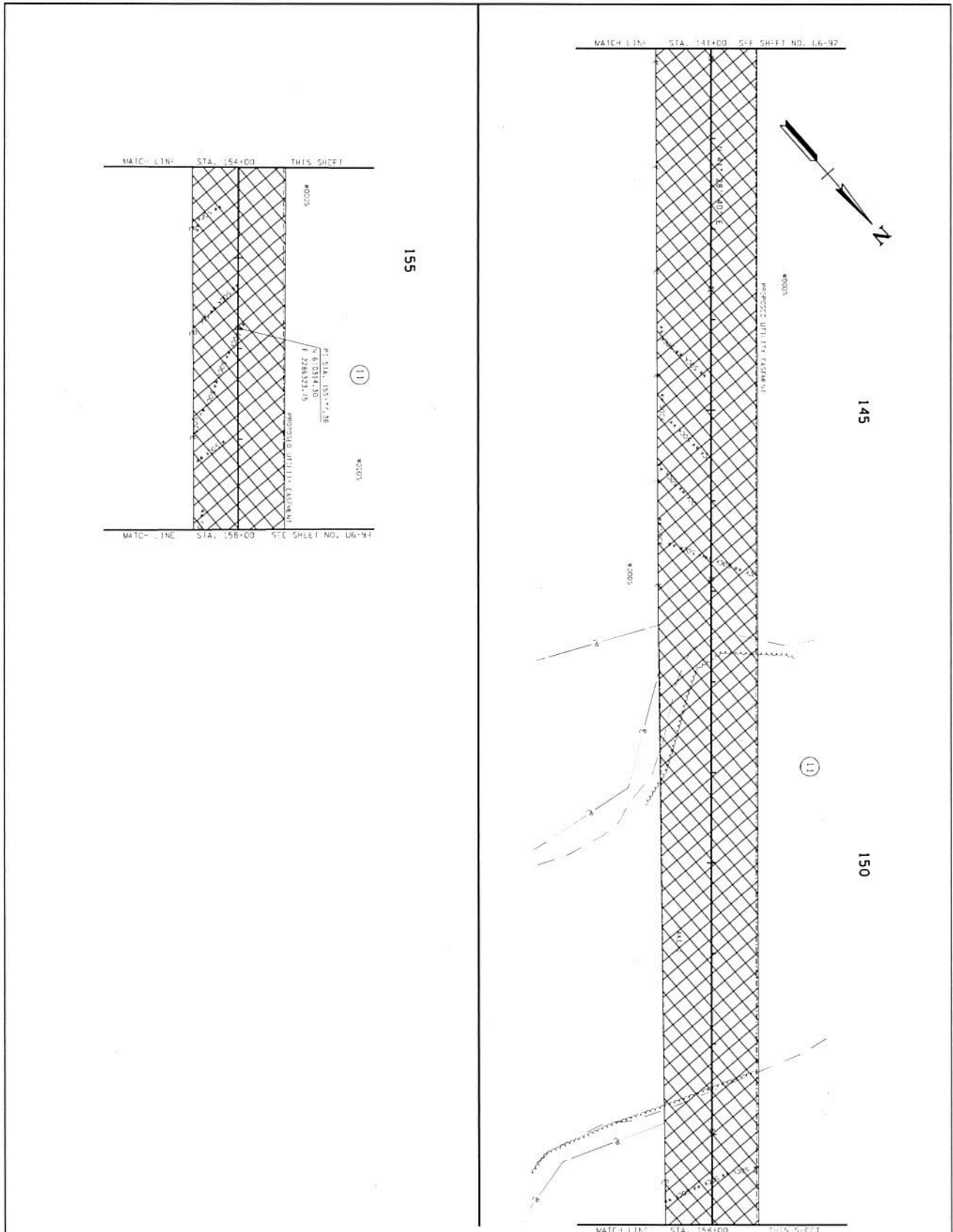
PHASE 3
 SCALED AT:
PRELIMINAL
PLANS
 NOT FOR
 CONSTRUCTION

COORDINATES ARE INDICATED
 BY THE PLAN AND THE FIELD
 RECORDS. THE PLAN AND FIELD
 REFERENCES TO THE H&M DB
 SHALL BE USED TO VERIFY THE
 LOCATION OF THE H&M DB
 REFERENCES TO THE H&M DB
 SHALL BE USED TO VERIFY THE
 LOCATION OF THE H&M DB

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION

**EROSION
 PREVENTION
 AND SEDIMENT
 CONTROL PLAN**

STA. 119+00 TO STA. 14
 SCALE: 1"=50'



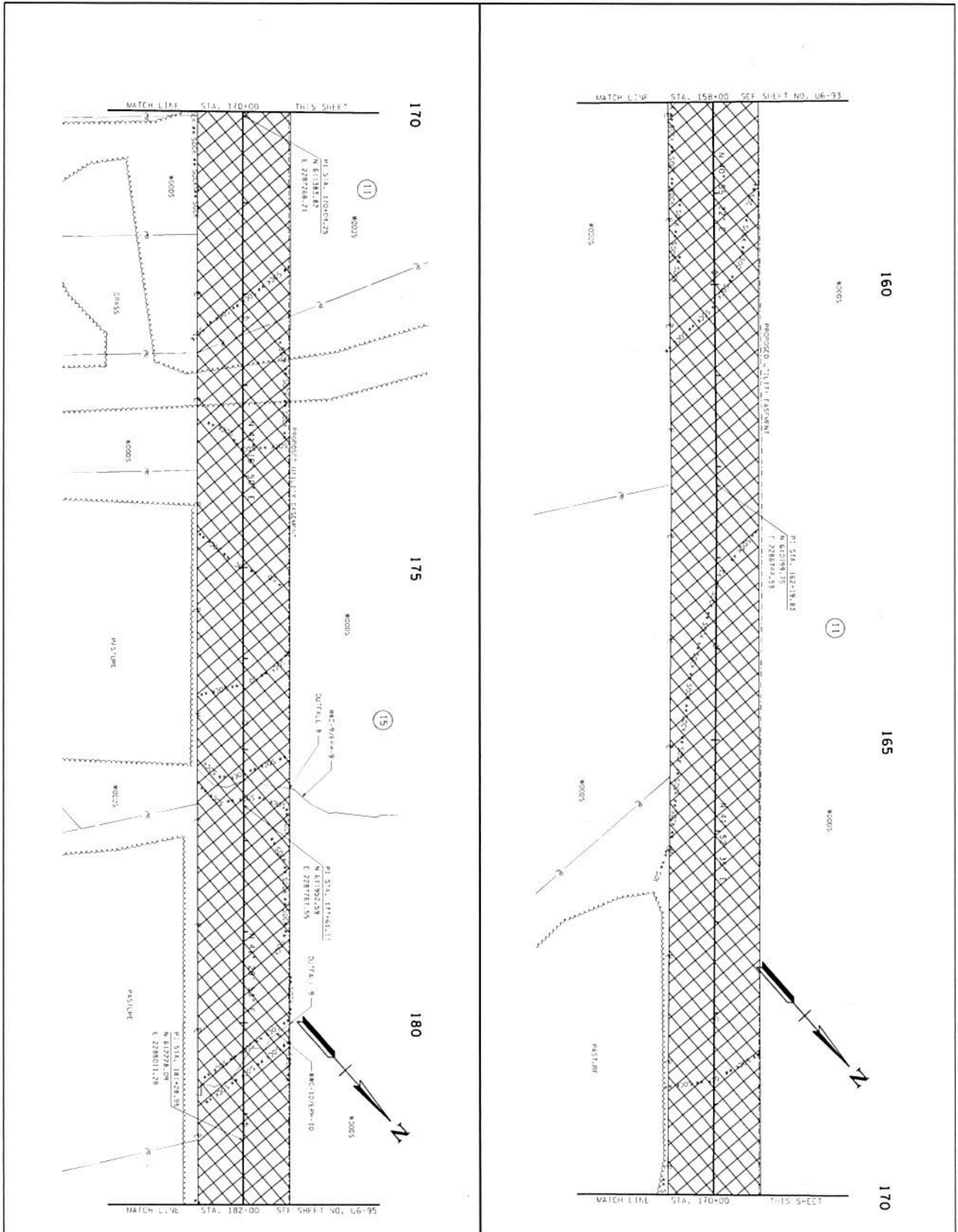
TYPE	YEAR	PROJECT NO.
CONTRACT	2015	482-527(B)

PHASE 3
 5/22/13
PRELIMINARY PLANS
 NOT FOR CONSTRUCTION

COMPUTED BY: [Name]
 DATE: 5/22/13
 SCALE: AS SHOWN
 REFERENCE TO: T.O.C. AND 200

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION

EROSION PREVENTION AND SEDIMENT CONTROL PLAN
 STA. 141+00 TO STA. 161+00



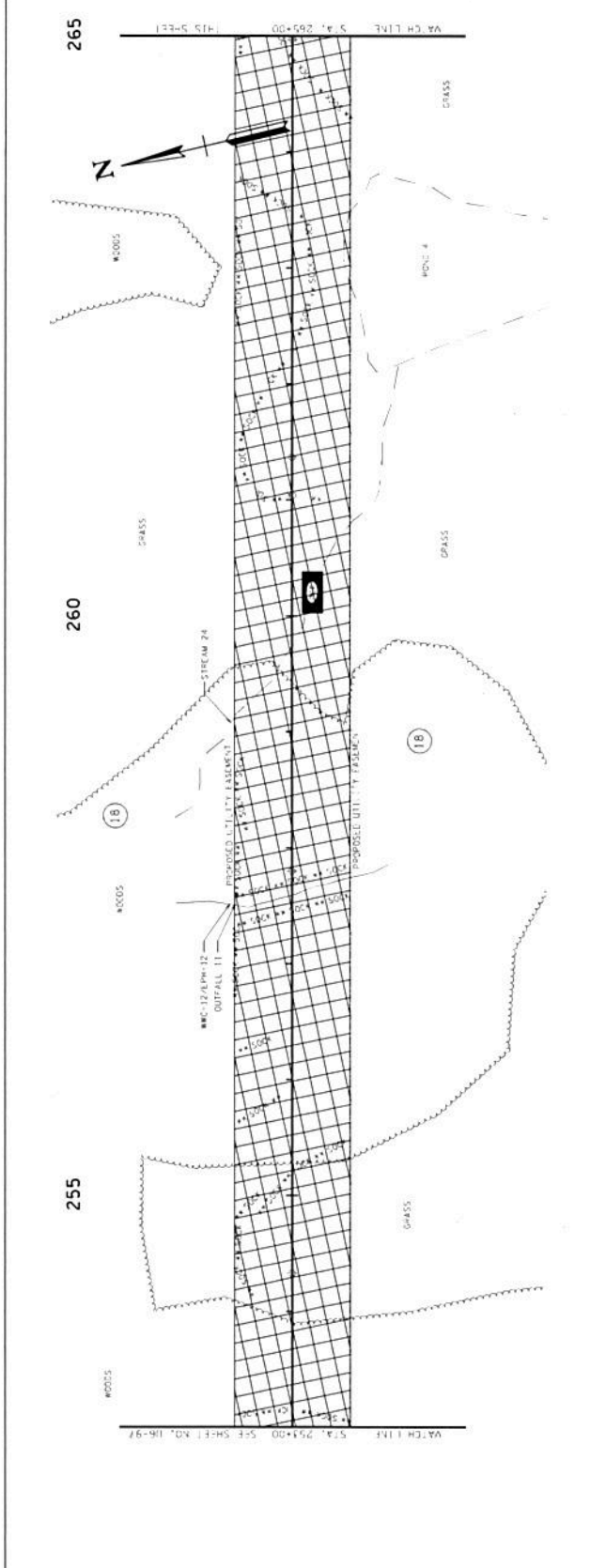
TYPE	YEAR	PROJECT NO.
CONTRACT	2015	185241-08

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
EROSION PREVENTION AND SEDIMENT CONTROL PLAN
 STA. 158+00 TO STA. 182+00
 SCALE: 1"=20'

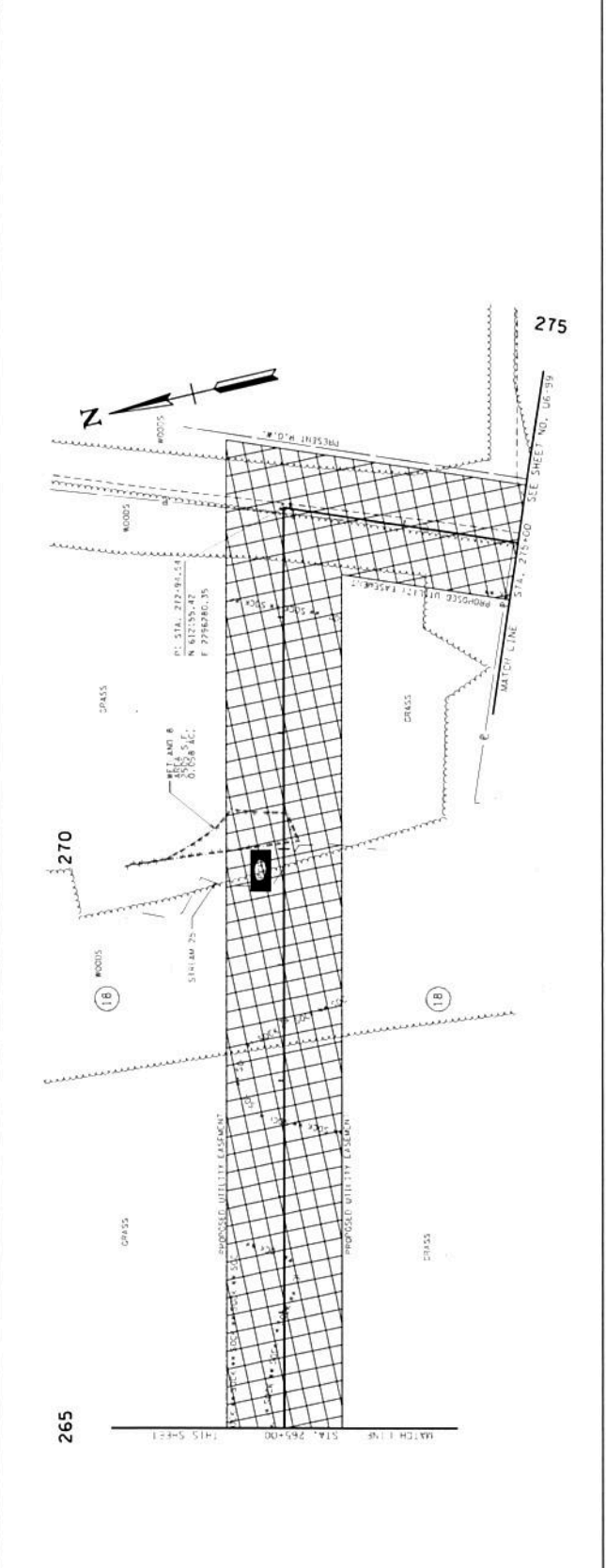
PHASE 3
 PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE: 3/7/2015
 DRAWN BY: J. L. BROWN
 CHECKED BY: J. L. BROWN
 APPROVED BY: J. L. BROWN
 TITLE: EROSION PREVENTION AND SEDIMENT CONTROL PLAN

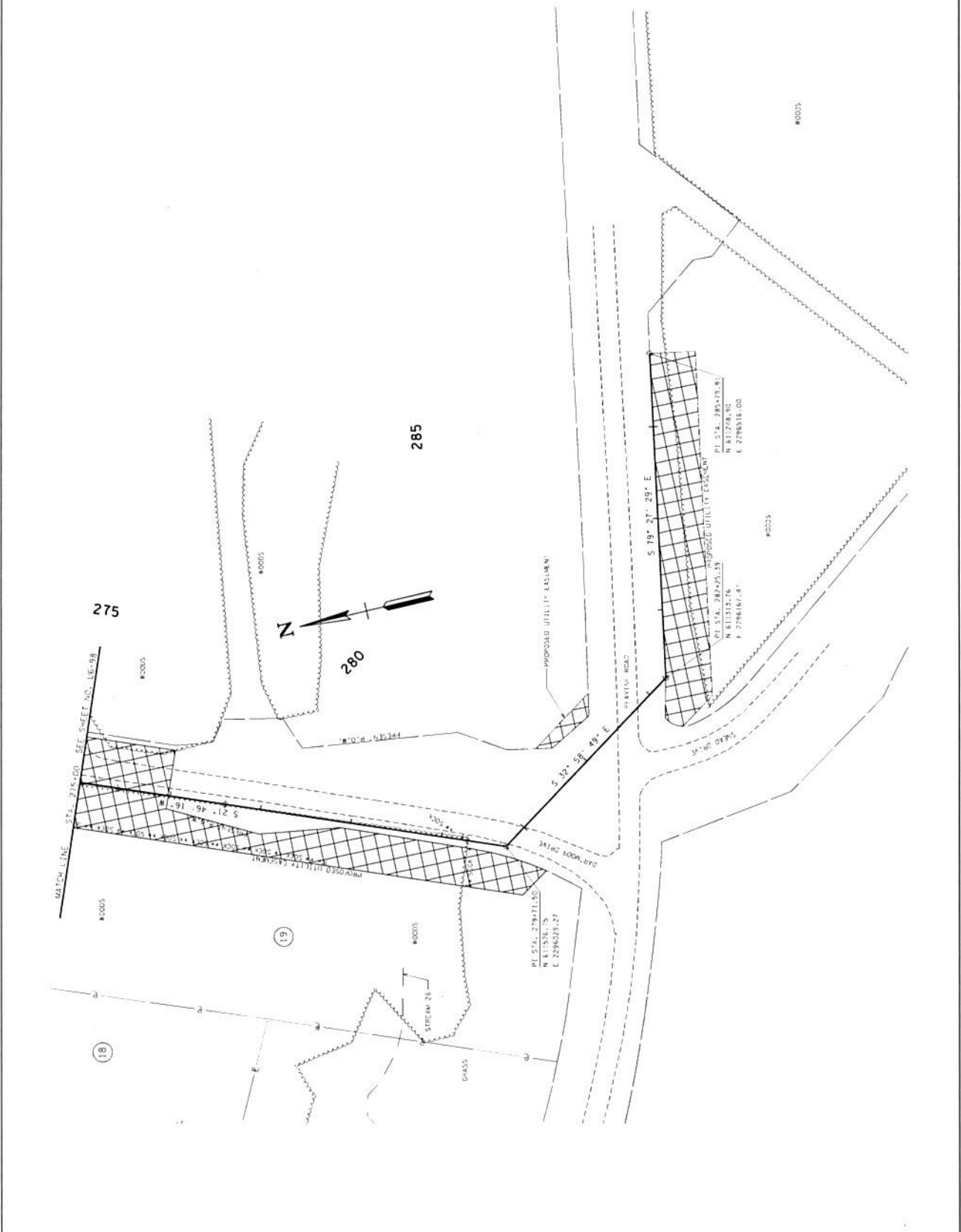
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONC.	2015	AP-257189	18-38

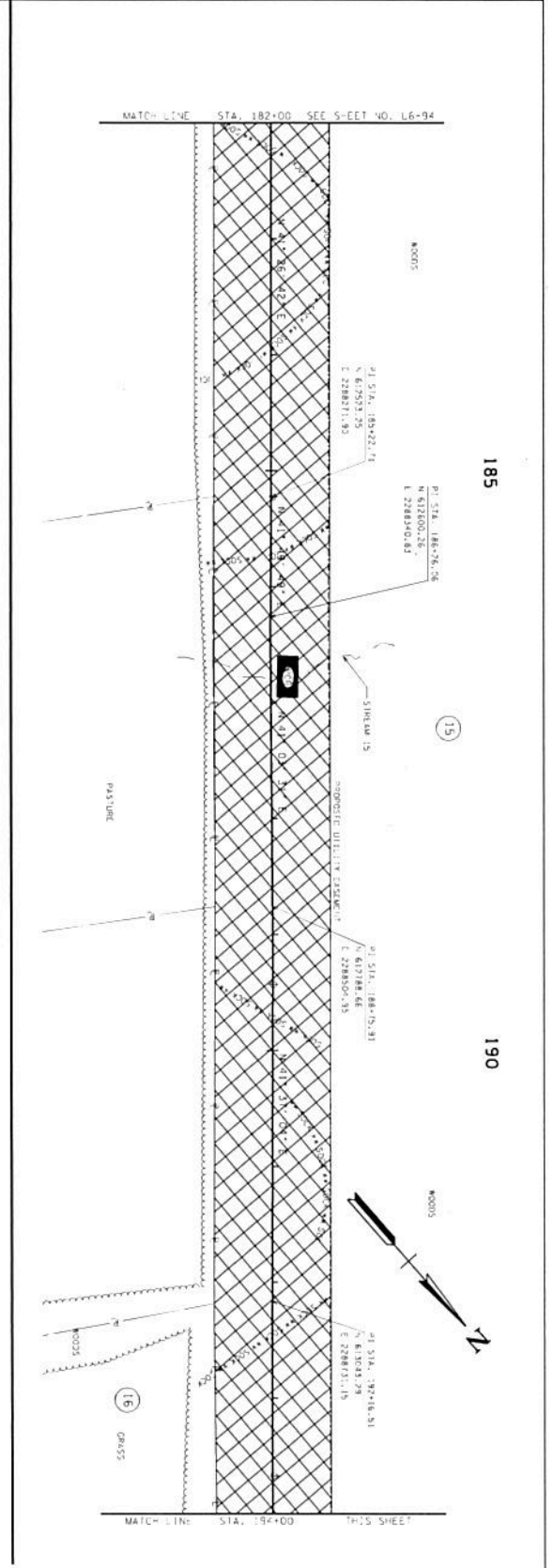
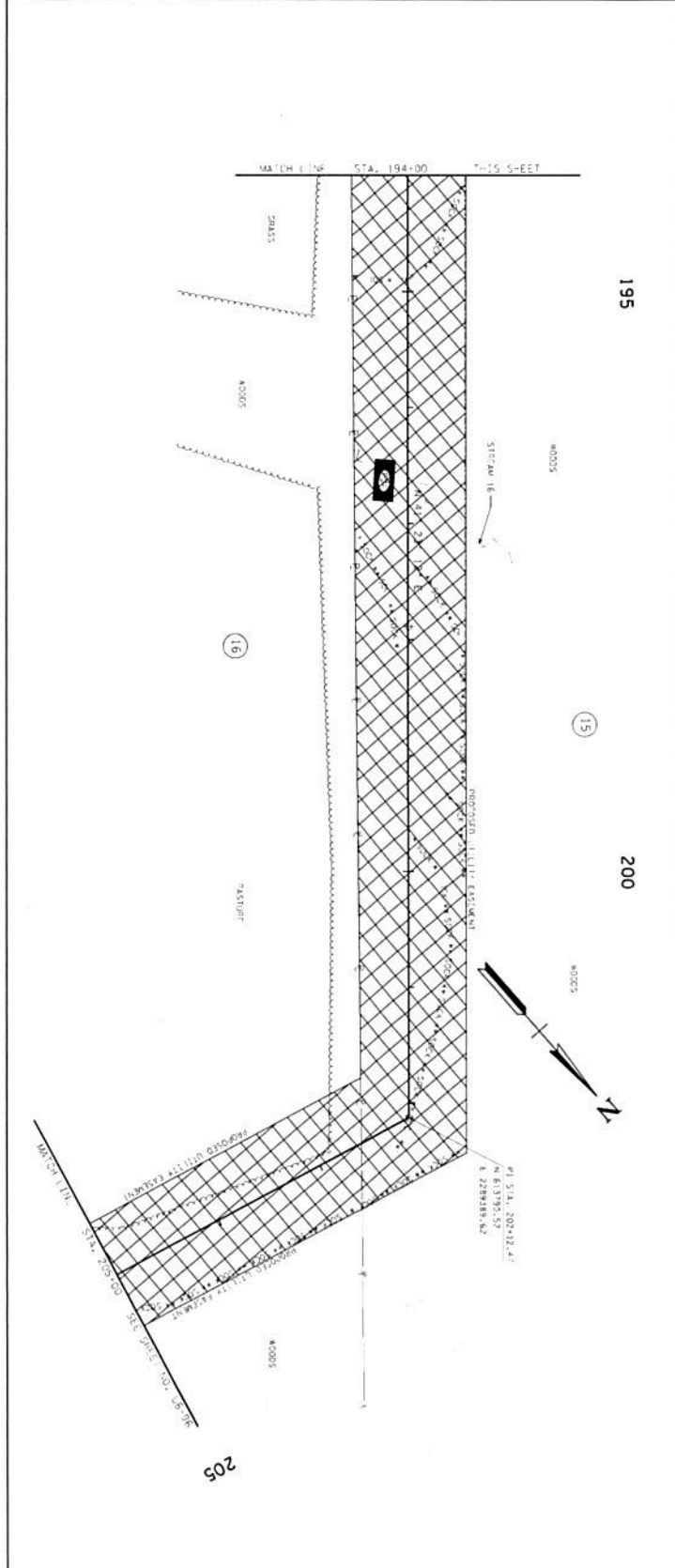


PHASE 3
 SCALED BY:
**PRELIMINARY
 PLANS
 NOT FOR
 CONSTRUCTION**
 COORDINATES ARE NAVD83/9500,
 ARE OPTIM ADAPTED B-T-C
 THE ORIGINAL PLANS ARE
 REFERENCED TO THE NAD 83.
 STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
**EROSION
 PREVENTION
 AND SEDIMENT
 CONTROL PLAN**
 STA. 263+00 TO STA. 285+00
 SCALE: 1" = 50'



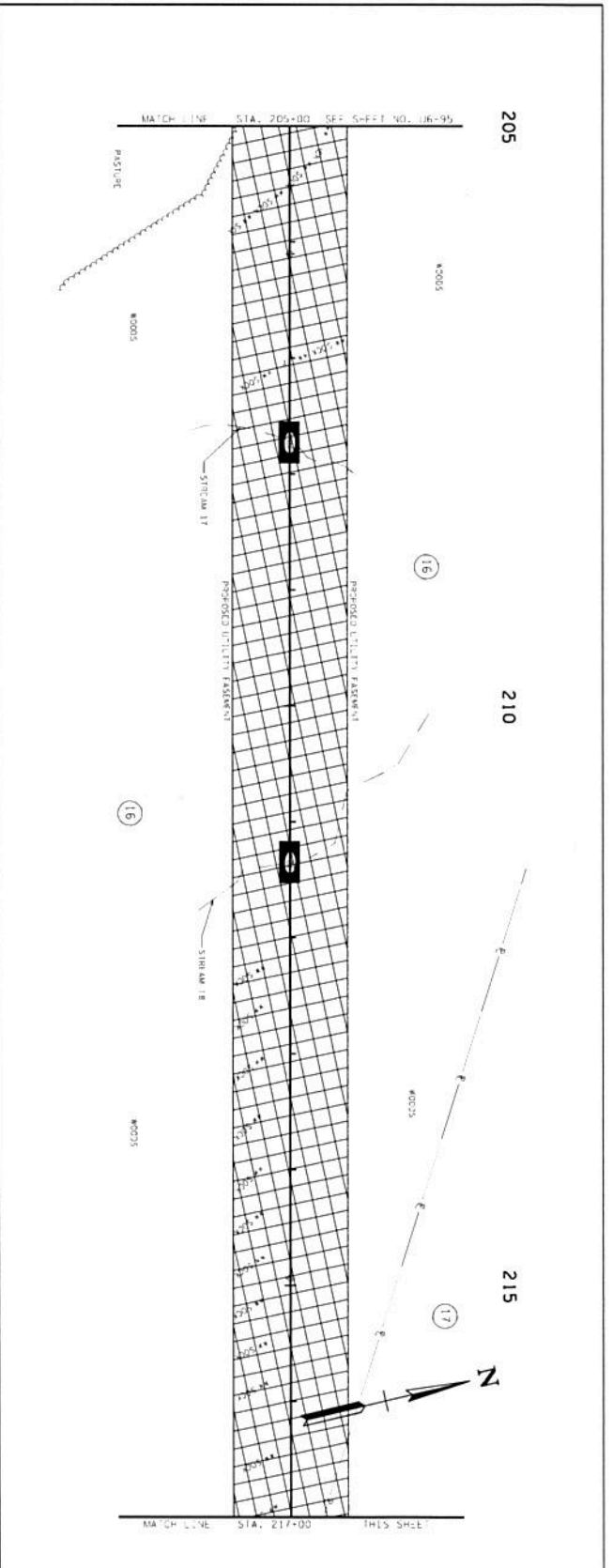
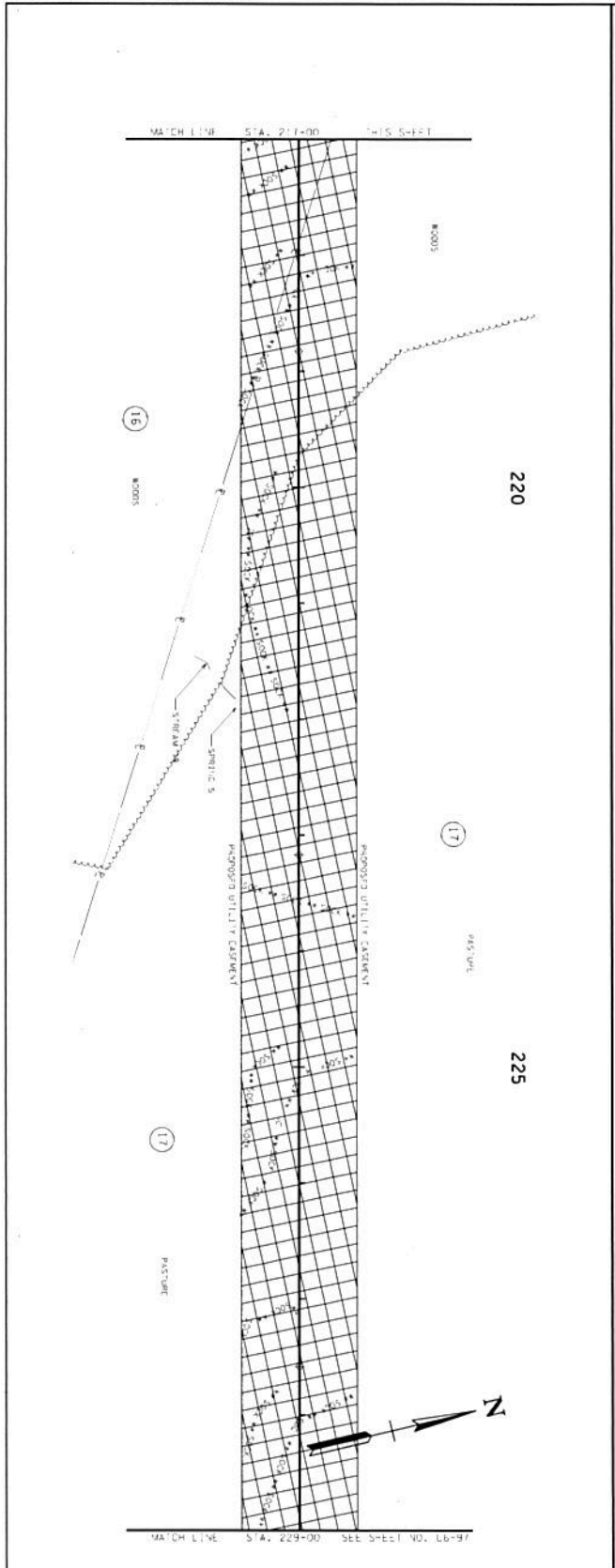
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONCT.	2015	MS-30183	16-84





TYPE	YEAR	PROJECT NO.
CONC.	2015	187-50180

PHASE 3
 SCALE 3/16
PRELIMINAR PLANS
NOT FOR CONSTRUCTION
 COORDINATE BY AND APPROVE:
 DATE: 02/11/15
 ACTION: 02/09/15
 DATE: 02/11/15
 REFERENCED TO THE SAID PERM
 DEPARTMENT OF TRANSPORTATION
EROSION PREVENTION AND SEDIMENT CONTROL PLAN
 STA. 187+00 TO STA. 215+00
 SCALE: 1"=50'

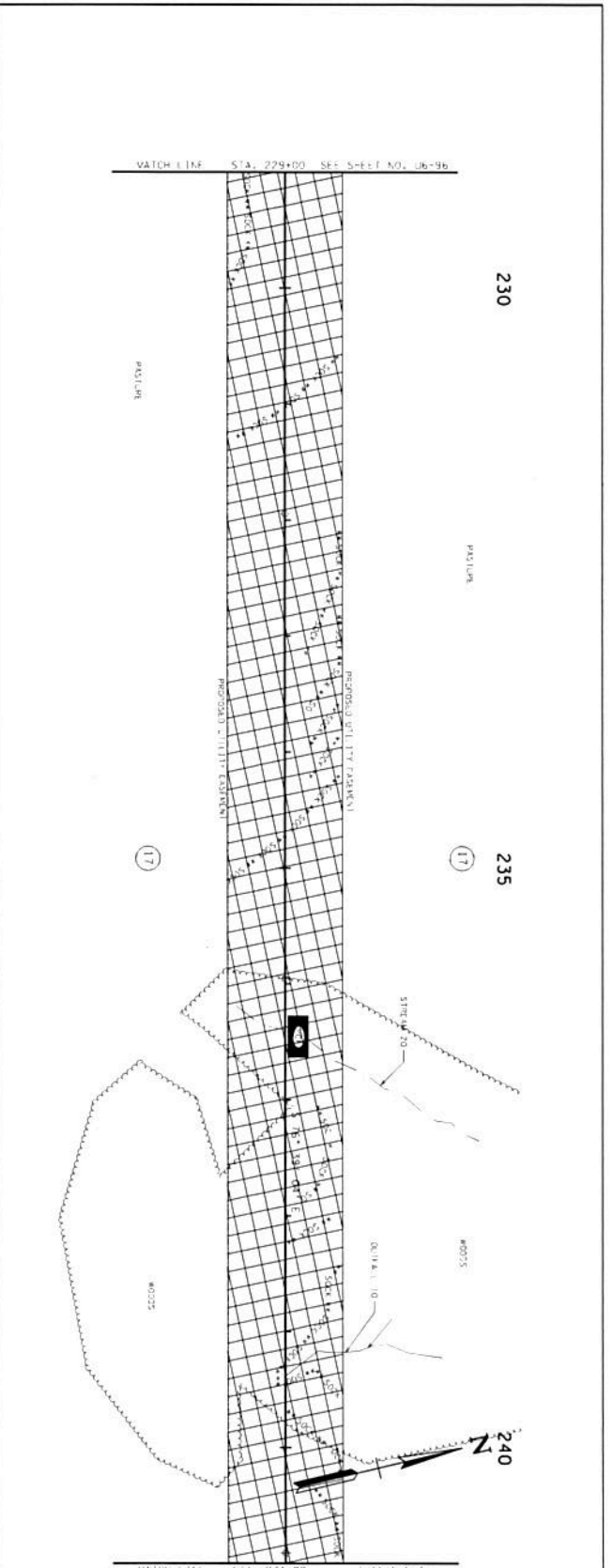
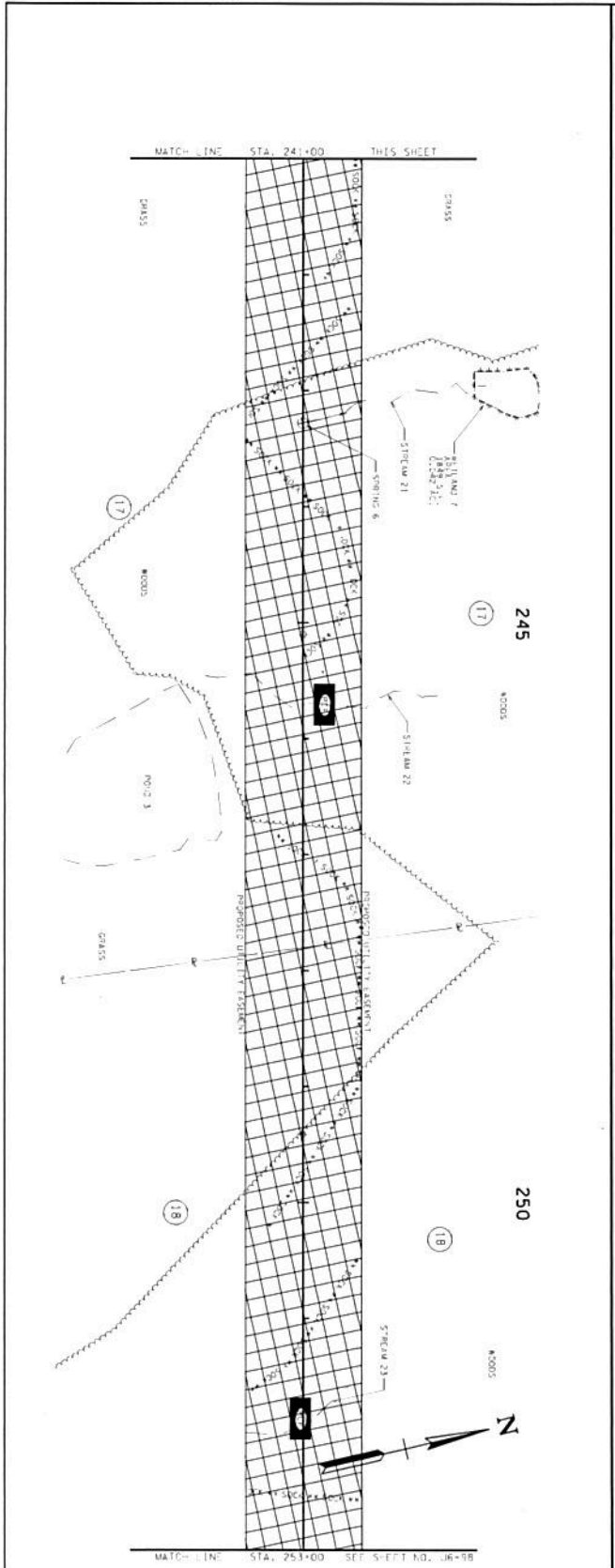


TYPE	YEAR	PROJECT NO.
CON'T.	2015	APC-1878(B)

PHASE 3
 STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
EROSION PREVENTION AND SEDIMENT CONTROL PLAN
 STA. 219+00 TO STA. 235+00
 15/05/15

PRELIMINARY PLANS NOT FOR CONSTRUCTION!

DESIGNED BY: [Name]
 CHECKED BY: [Name]
 DATE: 10/10/14
 SCALE: AS SHOWN
 REFERENCED TO THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF PUBLIC ROADS AND HIGHWAYS, TENTH EDITION, 2014

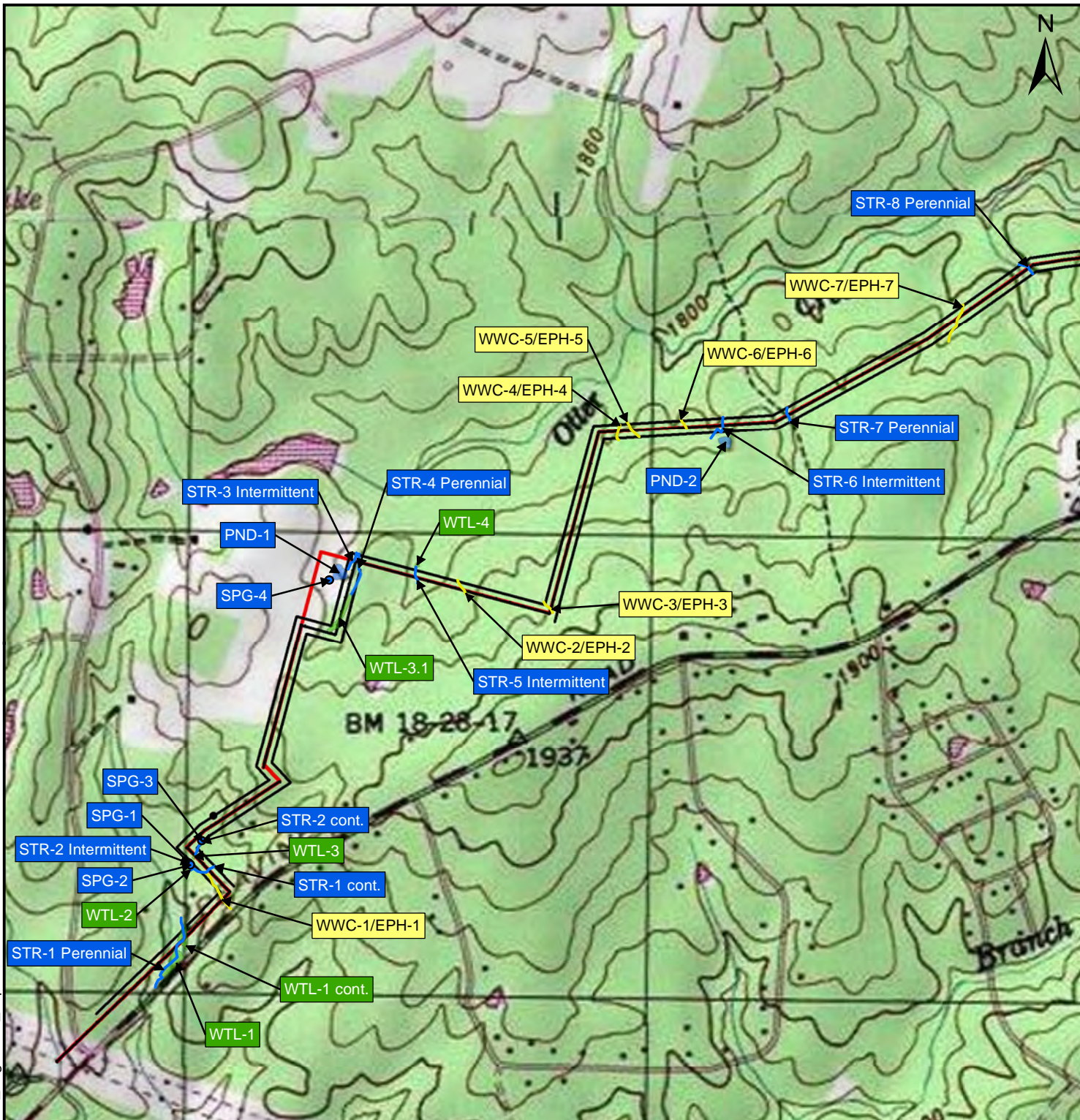


YEAR	PROJECT NO.
2013	AP-2548H

PHASE 3
 STATION 23
PRELIMINARY PLANS
 NOT FOR CONSTRUCTION
 EROSION PREVENTION AND SEDIMENT CONTROL PLAN
 STA. 239+00 TO STA. 261+00
 SCALE: 1"=50'

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 EROSION PREVENTION AND SEDIMENT CONTROL PLAN
 STA. 239+00 TO STA. 261+00
 SCALE: 1"=50'

Document Path: P:\2014\140-149-GIS\Maps\New_Alignment_Topo.mxd



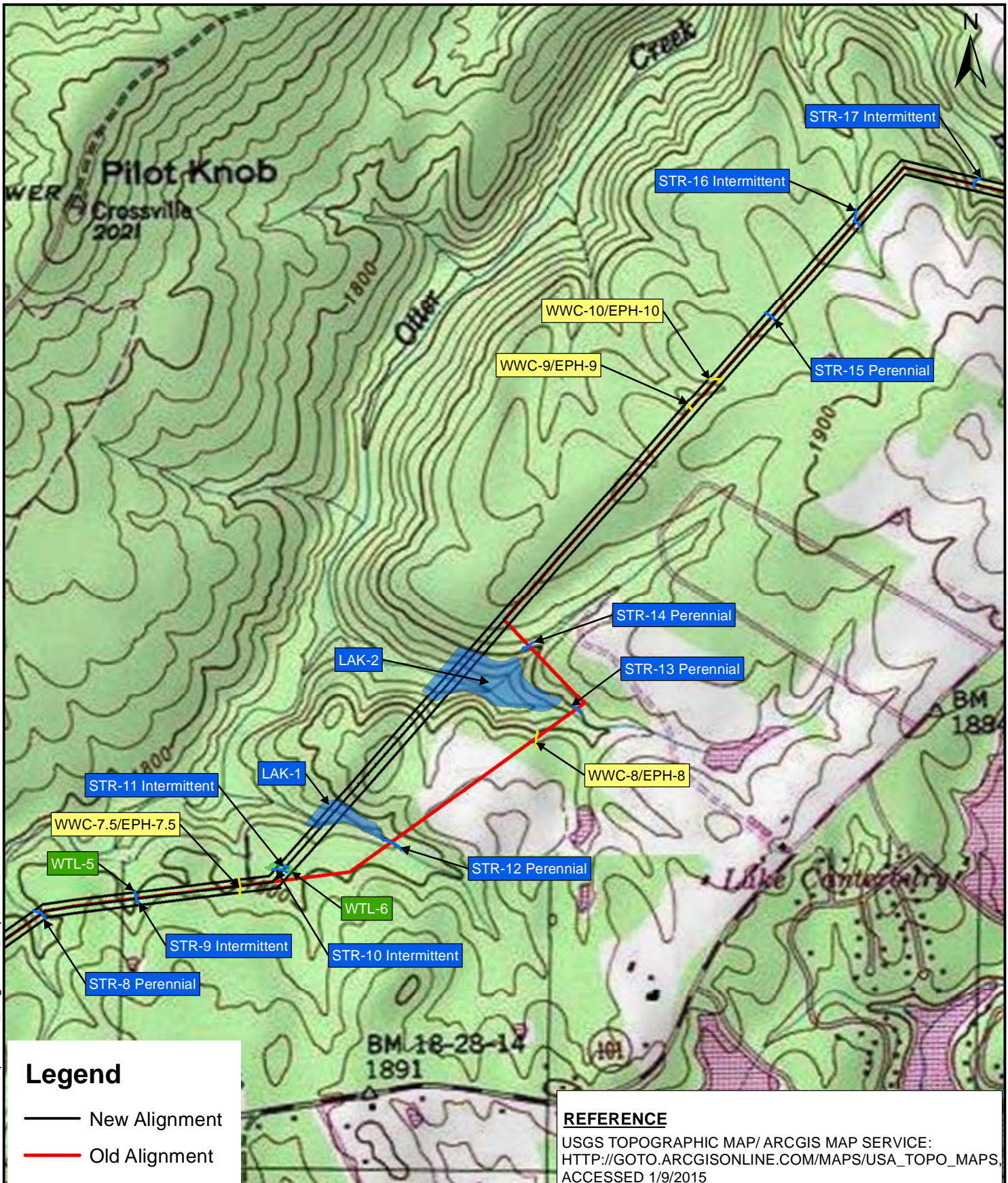
Legend

- New Alignment
- Old Alignment

REFERENCE
 USGS TOPOGRAPHIC MAP/ ARCGIS MAP SERVICE:
[HTTP://GOTO.ARCGISONLINE.COM/MAPS/USA_TOPO_MAPS](http://gto.arcgis.com/maps/usa_topo_maps),
 ACCESSED 1/9/2015

<p>0 250 500 1,000 Feet</p>	<p>ISSUED FOR: TDOT</p>	<p>Environmental Boundaries Map (Topo) SR-101 (Peavine Rd.) Volunteer Electric CO-OP (VEC) Powerline Location; Cumberland County P.E.: 18038-1230-04; PIN: 100268.03</p>		
	<p>ISSUED BY: CIVIL & ENVIRONMENTAL CONSULTANTS, INC. 325 Seaboard Lane, Ste 170, Franklin, TN 37067 Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL St. Louis, MO * Export, PA * Detroit, MI</p>			
<p>DWN. BY: CDH APPRVD BY: RH</p>	<p>SCALE: 1:12,000</p>	<p>DATE: 01-09-15</p>	<p>PROJECT NO.: 140-149</p>	<p>FIGURE: 1 SHEET 1 OF 3</p>



Document Path: P:\2014\140-149-GIS\Maps\New_Alignment_Topo.mxd



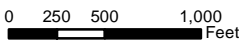
<p>0 250 500 1,000 Feet</p>	<p>ISSUED FOR: TDOT</p>	<p>Environmental Boundaries Map (Topo) SR-101 (Peavine Rd.) Volunteer Electric CO-OP (VEC) Powerline Location; Cumberland County P.E.: 18038-1230-04; PIN: 100268.03</p>	
	<p>ISSUED BY:  CIVIL & ENVIRONMENTAL CONSULTANTS, INC. 325 Seaboard Lane, Ste 170, Franklin, TN 37067 Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL St. Louis, MO * Export, PA * Detroit, MI</p>	<p>PROJECT NO.: 140-149</p>	<p>FIGURE: 1 SHEET 2 OF 3</p>
<p>DWN. BY: CDH APPRVD BY: RH</p>	<p>SCALE: 1:12,000</p>	<p>DATE: 01-09-15</p>	



Legend

-  New Alignment
-  Old Alignment

REFERENCE
 USGS TOPOGRAPHIC MAP/ ARCGIS MAP SERVICE:
[HTTP://GOTO.ARCGISONLINE.COM/MAPS/USA_TOPO_MAPS](http://gto.arcgis.com/maps/usa_topo_maps),
 ACCESSED 1/9/2015



ISSUED FOR: TDOT

Environmental Boundaries Map (Topo)
 SR-101 (Peavine Rd.)
 Volunteer Electric CO-OP (VEC)
 Powerline Location; Cumberland County
 P.E.: 18038-1230-04; PIN: 100268.03

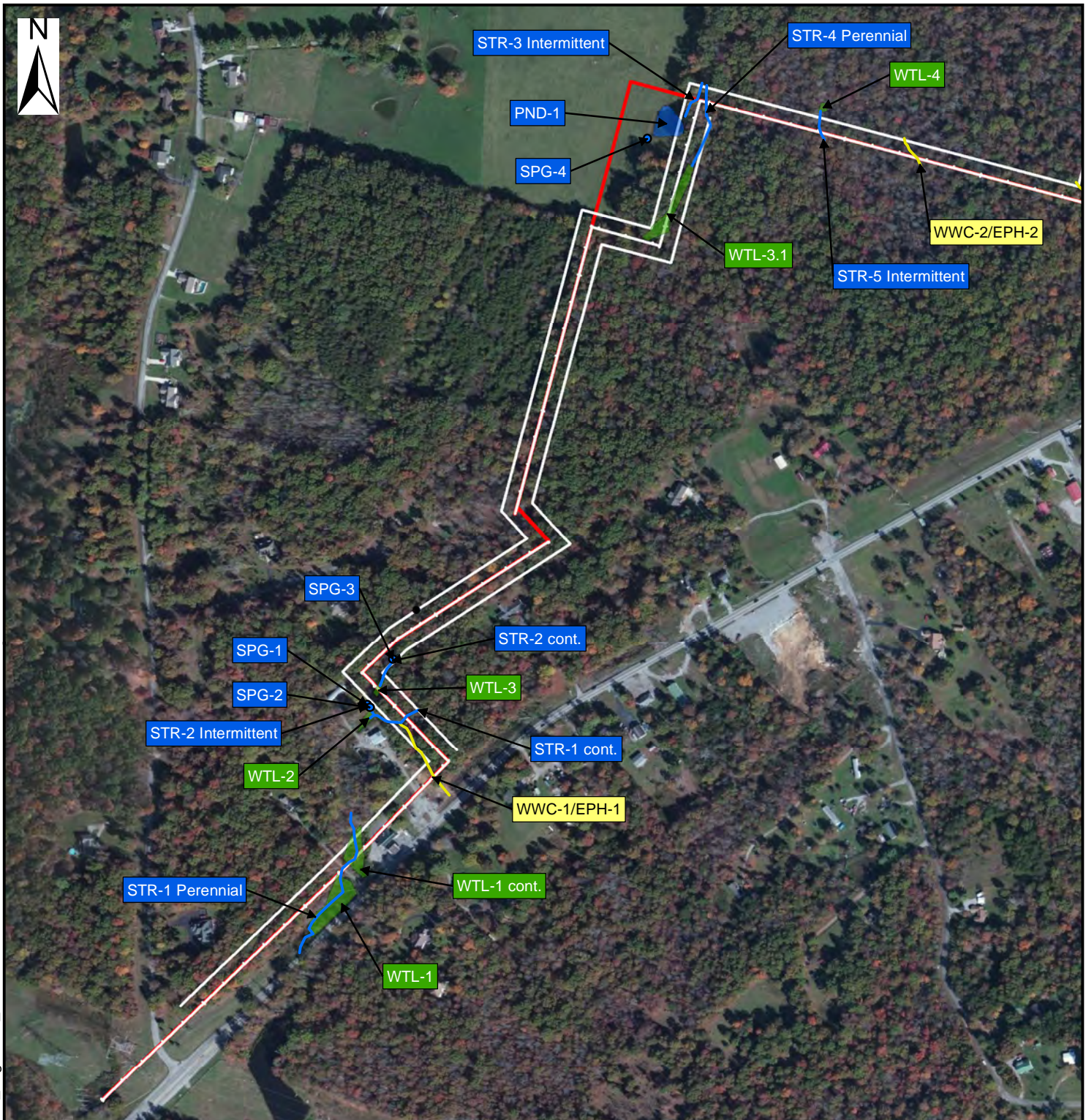


ISSUED BY: 
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
 325 Seaboard Lane, Ste 170, Franklin, TN 37067
 Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL
 St. Louis, MO * Export, PA * Detroit, MI

DWN. BY: CDH
 APPRVD BY: RH *Hand signature on file* SCALE: 1:12,000 DATE: 01-09-15

PROJECT NO.: 140-149 FIGURE: 1
 SHEET 3 OF 3

Document Path: P:\2014\140-149\GIS\Maps\New_Alignment_Topo.mxd



Legend

- New Alignment
- Old Alignment

REFERENCE

Source: ESRI WORLD IMAGERY / ARCGIS MAP SERVICE:
 CNESA HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY,
 swisstop ACCESSSED 1/12/2015, IMAGERY DATE: 2011.

0 125 250 500 Feet

ISSUED FOR: TDOT

ISSUED BY:



CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
 325 Seaboard Lane, Ste 170, Franklin, TN 37067
 Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL
 St. Louis, MO * Export, PA * Detroit, MI

Environmental Boundaries Map (Aerial)
 SR-101 (Peavine Rd.)
 Volunteer Electric CO-OP (VEC)
 Powerline Location; Cumberland County
 P.E.: 18038-1230-04; PIN: 100268.03



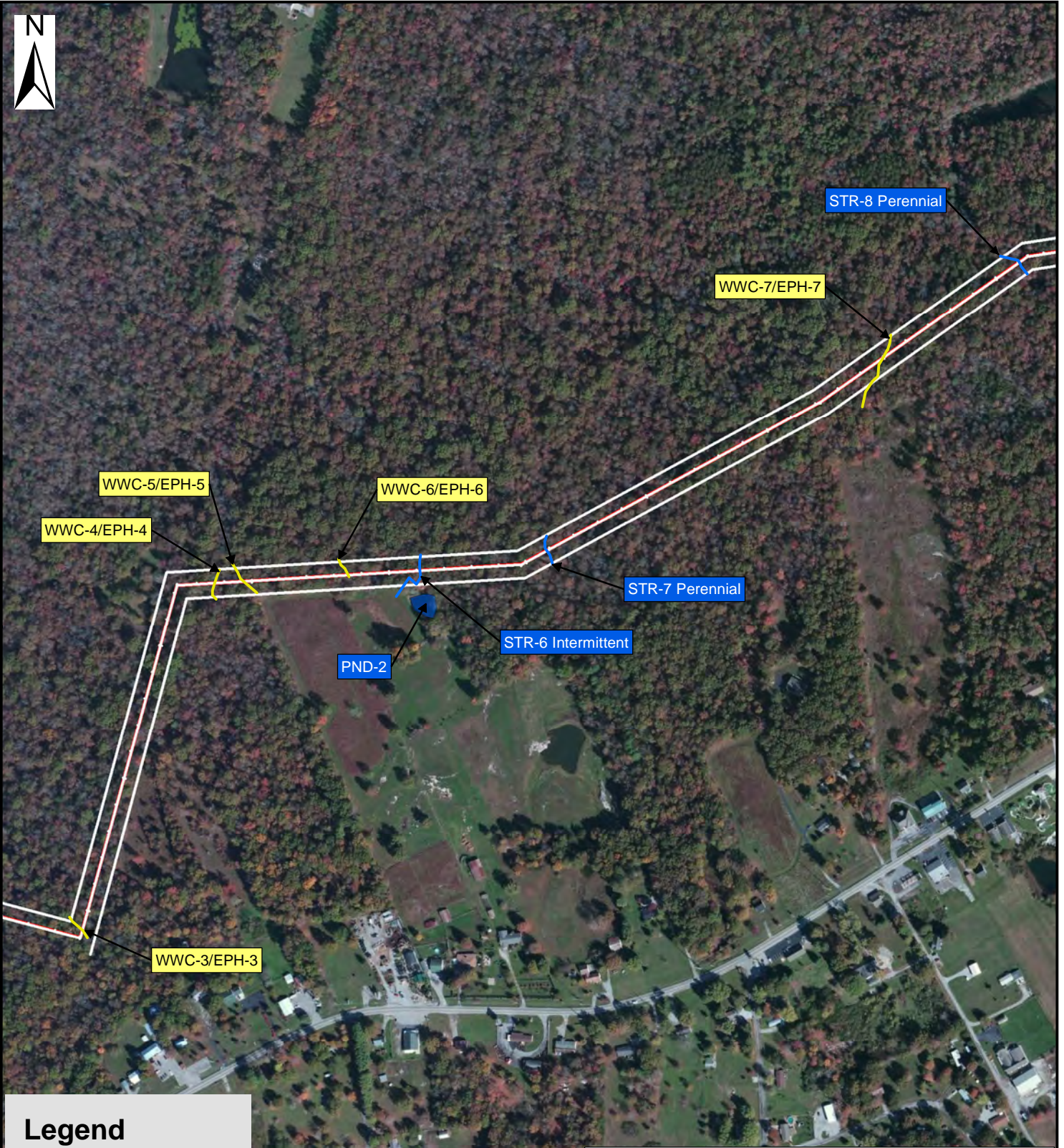
DWN. BY: CDH
 APPRVD BY: RH * Hand signature on file

SCALE: 1:6,000

DATE: 01-09-15

PROJECT NO.: 140-149

FIGURE: 2
 SHEET 1 OF 7



Legend

-  New Alignment
-  Old Alignment

REFERENCE

Source: ESRI WORLD IMAGERY / ARCGIS MAP SERVICE:
 CNESA HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY,
 swisstop ACCESSSED 1/12/2015, IMAGERY DATE: 2011.

0 125 250 500
 Feet



ISSUED FOR: TDOT

ISSUED BY:



CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
 325 Seaboard Lane, Ste 170, Franklin, TN 37067
 Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL
 St. Louis, MO * Export, PA * Detroit, MI

Environmental Boundaries Map (Aerial)
 SR-101 (Peavine Rd.)
 Volunteer Electric CO-OP (VEC)
 Powerline Location; Cumberland County
 P.E.: 18038-1230-04; PIN: 100268.03

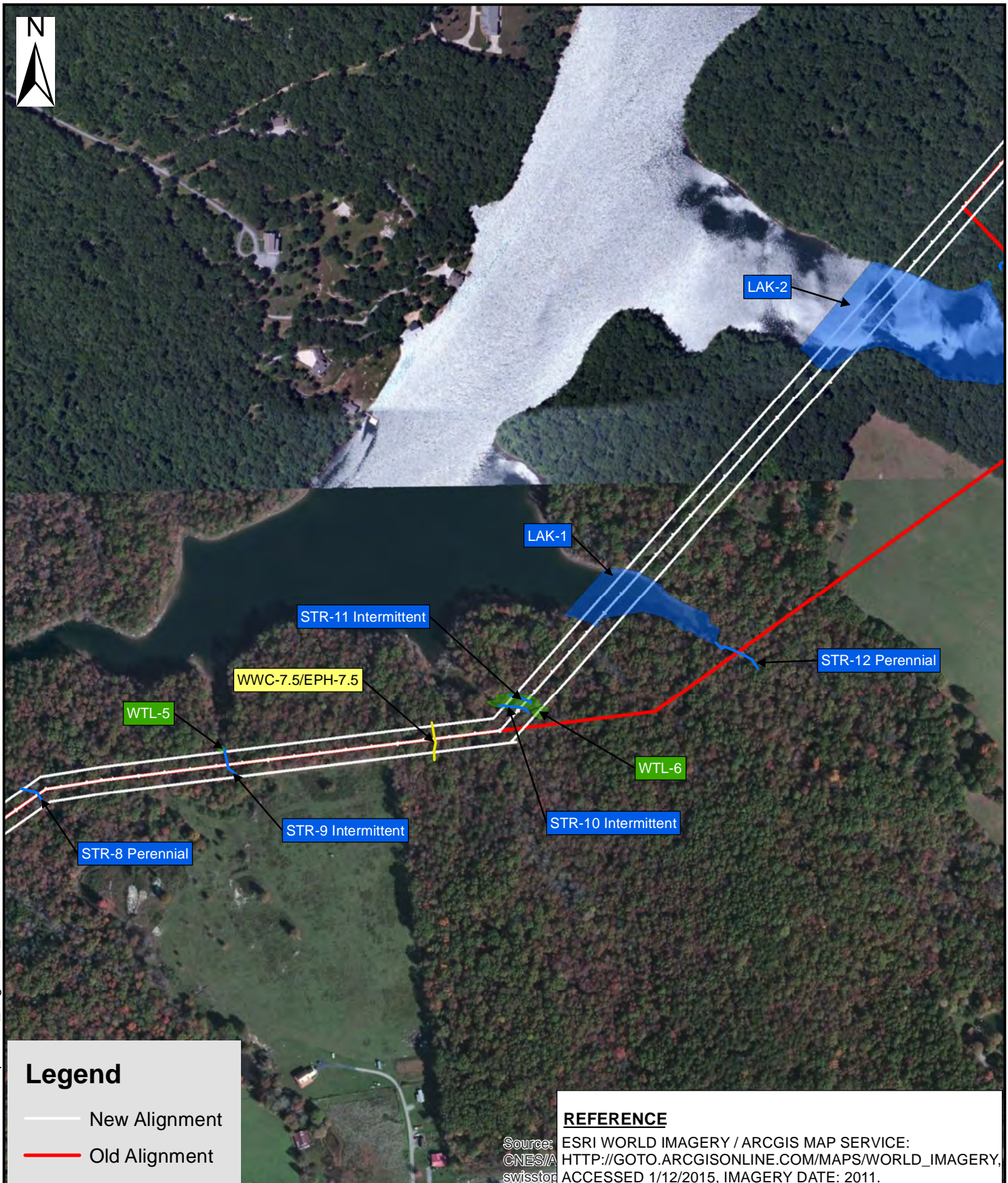
DWN. BY: CDH
 APPRVD BY: RH *Hand signature on file

SCALE: 1:6,000

DATE: 01-09-15

PROJECT NO.: 140-149

FIGURE: 2
 SHEET 2 OF 7



Legend

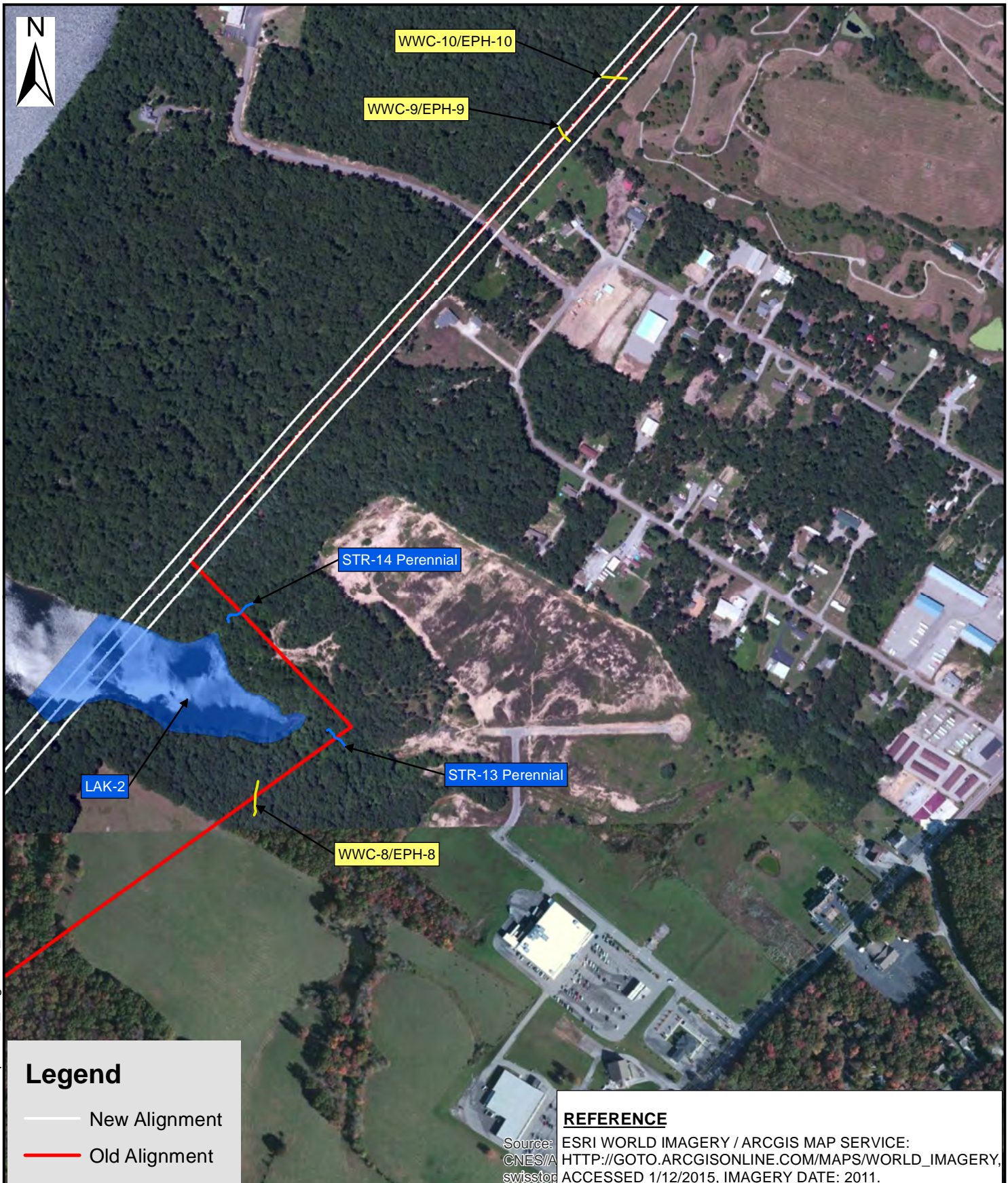
- New Alignment
- Old Alignment

REFERENCE

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 CNES/A HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY,
 swisstop ACCESSSED 1/12/2015, IMAGERY DATE: 2011.

<p>0 125 250 500 Feet</p>	<p>ISSUED FOR: TDOT</p>	<p>Environmental Boundaries Map (Aerial) SR-101 (Peavine Rd.) Volunteer Electric CO-OP (VEC) Powerline Location; Cumberland County P.E.: 18038-1230-04; PIN: 100268.03</p>	
	<p>ISSUED BY:  CIVIL & ENVIRONMENTAL CONSULTANTS, INC. 325 Seaboard Lane, Ste 170, Franklin, TN 37067 Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL St. Louis, MO * Export, PA * Detroit, MI</p>	<p>PROJECT NO.: 140-149</p>	<p>FIGURE: 2 SHEET 3 OF 7</p>
<p>DWN. BY: CDH APPRVD BY: RH *Hand signature on file</p>	<p>SCALE: 1:6,000</p>	<p>DATE: 01-09-15</p>	

Document Path: P:\2014\140-149\GIS\Maps\New_Alignment_Aerial.mxd

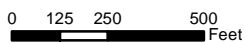


Legend

- New Alignment
- Old Alignment

REFERENCE

Source: ESRI WORLD IMAGERY / ARCGIS MAP SERVICE:
 CNES/A HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY,
 swisstop ACCESSSED 1/12/2015, IMAGERY DATE: 2011.



ISSUED FOR: TDOT

ISSUED BY: 
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
 325 Seaboard Lane, Ste 170, Franklin, TN 37067
 Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL
 St. Louis, MO * Export, PA * Detroit, MI

Environmental Boundaries Map (Aerial)
 SR-101 (Peavine Rd.)
 Volunteer Electric CO-OP (VEC)
 Powerline Location; Cumberland County
 P.E.: 18038-1230-04; PIN: 100268.03



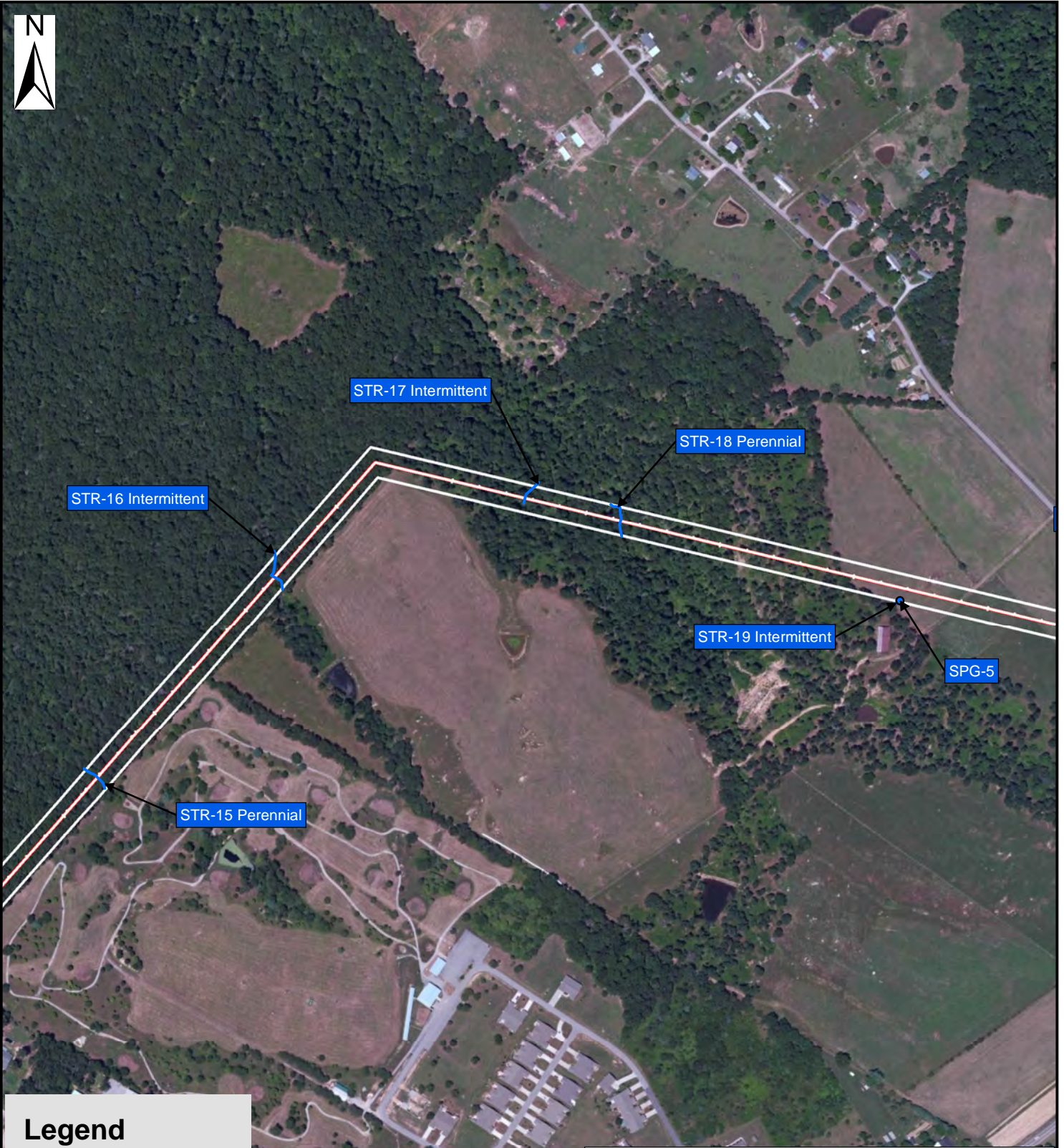
DWN. BY: CDH
 APPRVD BY: RH *Hand signature on file*

SCALE: 1:6,000

DATE: 01-09-15

PROJECT NO.: 140-149

FIGURE: 2
 SHEET 4 OF 7

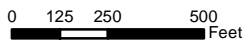


Legend

-  New Alignment
-  Old Alignment

REFERENCE

Source: ESRI WORLD IMAGERY / ARCGIS MAP SERVICE:
 CNES/A HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY,
 swisstop ACCESSSED 1/12/2015, IMAGERY DATE: 2011.



ISSUED FOR: TDOT

ISSUED BY:



CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

325 Seaboard Lane, Ste 170, Franklin, TN 37067
 Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL
 St. Louis, MO * Export, PA * Detroit, MI

Environmental Boundaries Map (Aerial)
 SR-101 (Peavine Rd.)
 Volunteer Electric CO-OP (VEC)
 Powerline Location; Cumberland County
 P.E.: 18038-1230-04; PIN: 100268.03



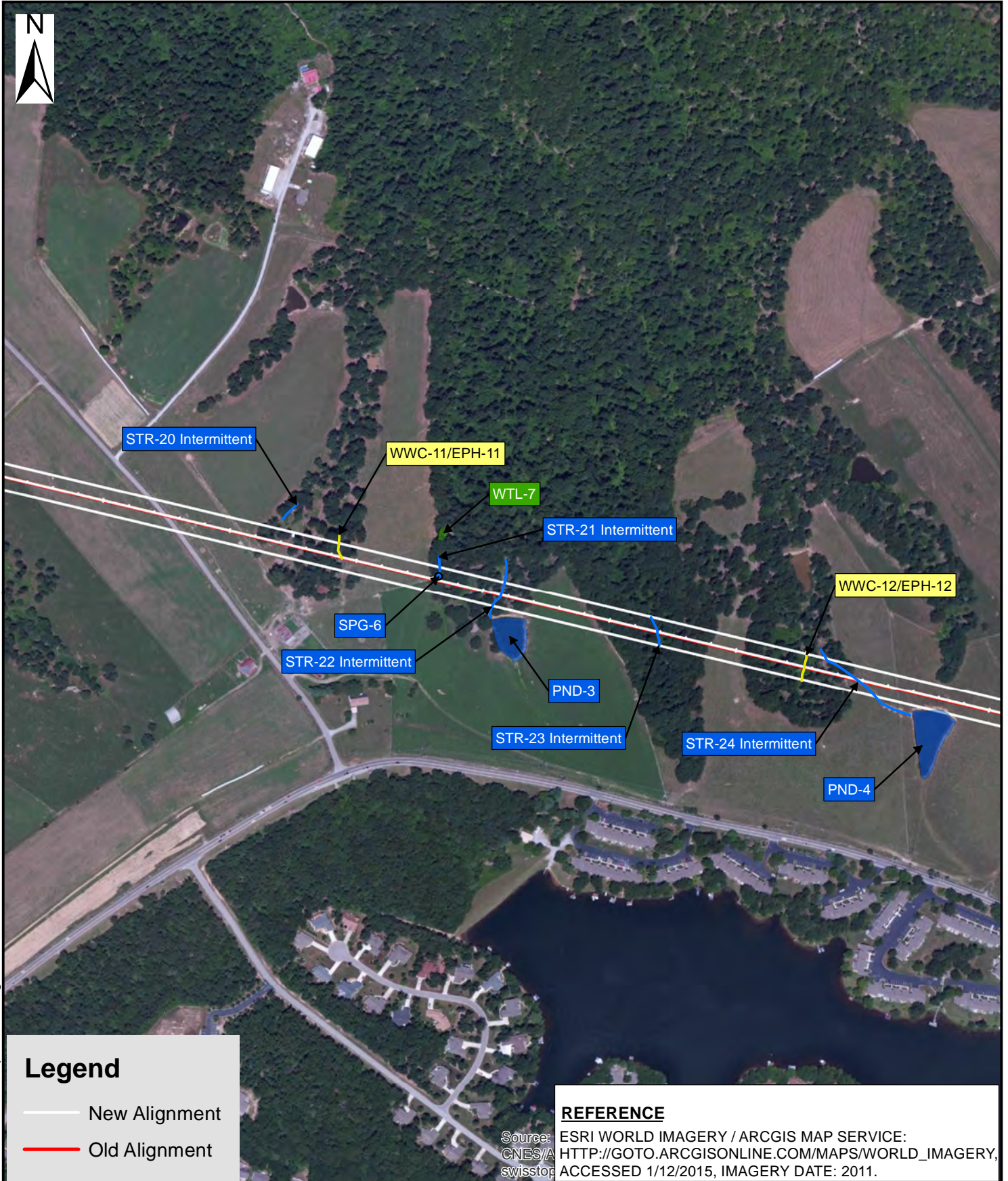
DWN. BY: CDH
 APPRVD BY: RH *Hand signature on file*

SCALE: 1:6,000

DATE: 01-09-15

PROJECT NO.: 140-149

FIGURE: 2
SHEET 5 OF 7



Legend

-  New Alignment
-  Old Alignment

REFERENCE

Source: ESRI WORLD IMAGERY / ARCGIS MAP SERVICE:
 CNES/A HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY,
 swisstop ACCESSSED 1/12/2015, IMAGERY DATE: 2011.

0 125 250 500
 Feet

ISSUED FOR: TDOT

ISSUED BY:



CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
 325 Seaboard Lane, Ste 170, Franklin, TN 37067
 Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL
 St. Louis, MO * Export, PA * Detroit, MI

Environmental Boundaries Map (Aerial)
 SR-101 (Peavine Rd.)
 Volunteer Electric CO-OP (VEC)
 Powerline Location; Cumberland County
 P.E.: 18038-1230-04; PIN: 100268.03



DWN. BY: CDH
 APPRVD BY: RH *Hand signature on file

SCALE: 1:6,000

DATE: 01-09-15

PROJECT NO.: 140-149

FIGURE: 2
 SHEET 6 OF 7



Legend

-  New Alignment
-  Old Alignment

REFERENCE

Source: ESRI WORLD IMAGERY / ARCGIS MAP SERVICE:
 CNES/A HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY,
 swisstop ACCESSSED 1/12/2015, IMAGERY DATE: 2011.

0 125 250 500
 Feet



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Environmental Boundaries Map (Aerial)
 SR-101 (Peavine Rd.)
 Volunteer Electric CO-OP (VEC)
 Powerline Location; Cumberland County
 P.E.: 18038-1230-04; PIN: 100268.03

DWN. BY: CDH
 APPRVD BY: RH *Hand signature on file

SCALE: 1:6,000

DATE: 01-09-15

PROJECT NO.: 140-149

FIGURE: 2
SHEET 7 OF 7

JOINT APPLICATION FORM

Department of the Army/TVA

The Department of the Army (DA) permit program is authorized by Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act (P.L. 95-217). These laws require permits authorizing structures and work in or affecting navigable waters of the United States and the discharge of dredged or fill material into waters of the United States. Section 26a of the Tennessee Valley Authority Act, as amended, prohibits the construction, operation, or maintenance of any structure affecting navigation, flood control, or public lands or reservations across, along, or in the Tennessee River or any of its tributaries until plans for such construction, operation, and maintenance have been submitted to and approved by the Tennessee Valley Authority (TVA).

Name and Address of Applicant: Tennessee Department of Transportation 505 Deaderick Street, Suite 900 Nashville, TN 37243	Name, Address, and Title of Authorized Agent:
Telephone Number: Home _____ Office (615) 253-0021	Telephone Number: Home _____ Office _____

Location where activity exists or will occur (include Stream Name and Mile, if known):

161 KV transmission line relocation, SR101 (Peavine Road), from Firetower Road to Lakeview Drive, Cumberland County

Application submitted to <input checked="" type="checkbox"/> DA <input checked="" type="checkbox"/> TVA	
Date activity is proposed to commence: <u>August 10, 2015</u>	Date activity is proposed to be completed: <u>August 10, 2020</u>

Describe in detail the proposed activity, its purpose and intended use (private, public, commercial, or other). Describe structures to be erected including those placed on fills, piles, or floating platforms. Also describe the type, composition, and quantity of materials to be discharged or placed in the water, the means of conveyance, and the source of discharge or fill material. Please attach additional sheets if needed.

PIN 100268.03

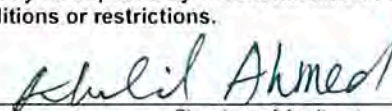
The applicant proposes to relocate high voltage utility transmission line to a new right-of-way north of the existing roadway. This new right-of-way will be 100 feet in width and will be approximately 6.5 miles in length.

This project will not cause any loss of flood storage or power storage volumes.

Application is hereby made for approval of the activities described herein. I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities. I agree that, if this application is approved by TVA, I will comply with the attached terms and conditions and any special conditions that may be imposed by TVA at the time of approval. Please note the U.S. Army Corps of Engineers may impose additional conditions or restrictions.

March 19, 2015

Date



Signature of Applicant

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of The United States knowingly and willfully falsifies, conceals or covers up by any trick, scheme, or device a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statement or entry, shall be fined not more than \$10,000 or imprisoned not more than five years, or both. The appropriate DA fee will be assessed when a permit is issued.

Names, addresses, and telephone numbers of adjoining property owners, lessees, etc., whose properties also join the waterway:
See attached

List of previous DA/TVA permits/approvals DA _____ TVA _____
Permit Number Date

Is any portion of the activity for which authorization is sought now complete? Yes No (If "Yes" attach explanation)
 Month and year the activity was completed: _____ . Indicate the existing work on the drawings.

List all approvals or certifications required by other federal, interstate, state, or local agencies for any structures, construction, discharges, deposits, or other activities described in this application.

Issuing Agency	Type Approval	Identification No.	Date of Application	Date of Approval
TDEC	GARAP			
TDEC	NPDES			

Has any agency denied approval for the activity described herein or for any activity directly related to the activity described herein?
 Yes No (If "Yes" attach explanation)

Project plans or drawings should accompany the application. These should be on paper suitable for reproduction no larger than 11 x 17 inches or contained on a 3-1/2 inch floppy computer disc in "dxf" format, and should be submitted to the appropriate TVA and U.S. Army Corps of Engineers offices. An application that is not complete will be returned for additional information.

U.S.A.C.E. Offices		TVA Office Location
U.S. Army Corps of Engineers Eastern Regulatory Field Office Spring Cress Business Park 501 Adessa Blvd., Suite 250 Lenoir City, Tennessee 37771 (865) 986-7296	U.S. Army Corps of Engineers Savannah District The Plaza, Suite 130 1590 Adamson Parkway Morrow, Georgia 30260-1763 (678) 422-2729	Tennessee Valley Authority
U.S. Army Corps of Engineers Regulatory Branch 3701 Bell Road Nashville, Tennessee 37214 (615) 369-7500	U.S. Army Corps of Engineers Western Regulatory Field Office 2042 Beltline Road, SW, Bldg C, Suite 415 Decatur, Alabama 35602 (256) 350-5620	
U.S. Army Corps of Engineers Norfolk District P.O. Box 338 Abingdon, Virginia 24212 (276) 623-5259	U.S. Army Corps of Engineers Asheville Regulatory Field Office 151 Patton Avenue, Room 208 Asheville, North Carolina 28801-5006 (828) 271-4856	

Privacy Act Statement

This information is being requested in accordance with Section 26a of the TVA Act as cited on the front page of this form. Disclosure of the information requested is voluntary; however, failure to provide any required information or documents may result in a delay in processing your application or in your being denied a Section 26a permit. An application that is not complete will be returned for additional information. TVA uses this information to assess the impact of the proposed project on TVA programs and the environment and to determine if the project can be approved. Information in the application is made a matter of public record through issuance of a public notice if warranted. Routine uses of this information include providing to federal, state, or local agencies, and to consultants, contractors, etc., for use in program evaluations, studies, or other matters involving support services to the program; to respond to a congressional inquiry concerning the application or Section 26a program; and for oversight or similar purposes, corrective action, litigation or law enforcement.

Burden Estimate Statement

Public reporting burden for this collection of information is estimated to average 1.5 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Agency Clearance Officer, Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402, and to the Office of Management and Budget, Paperwork Reduction Project (3315-0060), Washington, D.C. 20503.



Section 26a Permit and Land Use Application
Applicant Disclosure Form

By signing the Joint Application Form (Department of Army/TVA) or TVA's Land Use Application and again below, you agree to disclose any business, political, or financial interest that may present an actual or potential conflict of interest with TVA. If a new significant business, political, or financial interest is obtained during the period of the time that the application is under review, you agree to file an additional disclosure.

Disclose if any of the following apply to you (check all that apply). I am:

- An elected government official
- A policy making level employee of an entity that regulates TVA or its activities
- A management level employee of a power customer of TVA
- A TVA Director
- A TVA employee
- An immediate family member of one of the above
- A representative of a corporation or entity submitting an application and one of the above applies to me. Print entity or corporation name, and identify which of the above applies to you.

Project #18038-1230-04
PIN 100268.03
161 KV transmission line relocation
State Route 101 (Peavine Road)
From: Firetower Road
To: Lakeview Drive

- A representative of a corporation or entity submitting an application and the corporation or entity has partners, investors, or senior management that are one of the above. Print entity or corporation name, and identify the partner(s), investor(s), or senior manager(s) and which of the above applies.

None of the above

Do you have any other business or personal relationships not covered in your answers above that could appear to be a conflict of interest? (check one) Yes No If yes, provide more detail here.

By signing this form, you consent to this Applicant Disclosure Form being made available to the public in response to an appropriate request, including, without limitation, a request made under the Freedom of Information Act.

Please sign and return this form with your application package. Your application cannot be processed without receipt of this signed form.

Name of applicant (Printed) Khalid Ahmed

Signature of Applicant *Khalid Ahmed*

Date March 19, 2015

All applications and communications that occur as part of the application process may be made public to the extent permitted by applicable law, including the Freedom of Information Act and the Privacy Act, and could be reviewed formally by the Office of Inspector General (OIG). All written correspondence regarding your request may be forwarded to the TVA Chief Ethics and Compliance Officer (CECO) and the OIG, and all oral communication between TVA and the applicant regarding this request may be documented and maintained by TVA. Inquiries concerning your application from any person who falls into one of the categories described above will be disclosed to the CECO and OIG.

Privacy Act Statement

This information is being requested in accordance with Sections 4(k), 15d, 26a, and/or 31 of the TVA Act; 40 U.S.C. § 1314; 30 U.S.C. § 185; 16 U.S.C. § 667b; and/or 40 U.S.C. § 483. Disclosure of the information requested is voluntary; however, failure to provide any required information or documents may result in a delay in processing your application or in your application being denied. An application that is not complete will be returned for additional information. TVA uses this information to assess the impact of the proposed project on TVA programs and the environment and to determine if the project can be approved. Information in the application is made a matter of public record through issuance of a public notice if warranted. Routine uses of this information include providing to federal, state, or local agencies, and to consultants, contractors, etc., for use in program evaluations, studies, or other matters involving support services to the program; to respond to a congressional inquiry concerning the application or the applicable program; and for oversight or similar purposes, corrective action, litigation, or law enforcement.



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION**

ENVIRONMENTAL DIVISION
SUITE 900, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-1402
(615) 741-3655

JOHN C. SCHROER
COMMISSIONER

BILL HASLAM
GOVERNOR

March 19, 2015

Mr. Robert Wayne
Natural Resource Section
Tennessee Department of Environment and Conservation
11th Floor William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue
Nashville, Tennessee 37243

Subject: Project #18038-1230-04
PIN 100268.03
161 KV transmission line relocation along
State Route 101 (Peavine Road)
From: Firetower Road
To: Lakeview Drive
Cumberland County

Dear Mr. Wayne:

We previously obtained the following water quality permits for widening State Route (SR) 101 (Peavine Road) from Firetower Road to Lakeview Drive (TDOT PIN # 100268.01) in Cumberland County:

- TDEC Water Quality Permit Certification, NRS 13.03
- USACOE permit, LRN 2013-00510
- TVA Section 26a permit, 230876

With this letter, we are applying for water quality permits for the construction of a new 161 KV transmission line associated with the above mentioned project. The current utility transmission line is located within the right-of-way needed to construct SR-101 project. When determining the location of the high voltage (161KV) utility line, which needs a minimum of 100 feet cleared right-of-way, TDOT examined several routes. Commercial and residential developments along the existing SR 101, made the installation of utility transmission lines not feasible for the route. Routes to the south were eliminated because they were almost double the cost and would severely impact Tennessee Department of Environment and Conservation (TDEC) properties. The northern option was selected as the most feasible location because it avoids considerable

March 19, 2015

Page 2

cost of commercial property acquisition, transmission voltage line impacts to existing residential areas and the practical decimation of the business district located in the vicinity of the existing power line and the proposed roadway improvements.

This high voltage utility transmission line will be relocated to new right-of-way north of the roadway. This new right-of-way will be 100 feet in width and will be approximately 6.5 miles in length. Also included within the project scope is the crossing/impact of 24 streams and 7 wetlands. In accordance with T.C.A. 69-3-108(b), this office is submitting form CN-1091 identifying where permits may be needed.

In addition, and in accordance with the notification requirements of the U.S. Army Corps of Engineers, we are submitting this pre-construction notification and requesting concurrence at the locations described within the enclosed feature impact tables, meet the criteria of the nationwide permit identified.

By copy of this letter, we are also applying for a Section 26a permit or a letter of no objection from the Tennessee Valley Authority. Appropriate information is enclosed. This project will not cause any loss of flood storage or power storage volumes.

Please refer to the enclosed feature impact and summary tables for detailed information regarding environmental feature locations, proposed environmental feature impacts, required environmental permits, FEMA floodplain designations, etc.

It is the opinion of our office that no impacts are proposed to the wetlands (WTL-2, WTL-4, WTL-7) and the streams (STR-14, STR-19, and STR-26).

This project includes 0.59 acre permanent vegetation removal of wetlands. We propose to mitigate the permanent wetland impacts by purchasing, at a 1:1 ratio, 0.59 acre from available wetland credits from Tennessee Mitigation Fund (TMF). The pre-approved credit availability is attached.

Efforts were made during the planning and design phases of this project to avoid impacts to waters of the U.S. and waters of the State to the extent practicable, and to minimize impacts that were not avoidable. Erosion Prevention and Sediment Control measures will be installed around the environmental features to avoid soil erosion and sediment release.

In a letter dated October 10, 2013, the TN-SHPO state that the area of potential effect for the subject project contains no cultural resources eligible for listing in the National Register of Historic Places. In a letter dated August 20, 2013, the TN-SHPO stated that the area of potential effect for the subject project contains no archaeological resources eligible for listing in the National Register of Historic Places.

In a coordination letter dated November 24, 2014, the United States Fish and Wildlife Service (USFWS) concurred with the TDOT determination that the project is "not likely to adversely affect" the federally endangered Indiana bat (*Myotis sodalis*) and "not likely to jeopardize" the proposed northern long-eared bat (NLEB) (*Myotis septentrionalis*). The letter is included with the attached ecology report.

A search of the TDEC Division of Natural Areas, endangered species database, was conducted on February 6, 2014 determined that there is one (1) protected species within a one (1) mile radius of the project limits and fifteen (15) protected species within the four (4) mile radius of the project limits. TWRA reports an occurrence of the Black Mountain Dusky Salamander,

March 19, 2015
Page 3

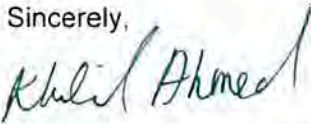
Desmognathus welteri, within 1.2 miles of the project area. TWRA notes potential suitable habitat for this salamander within the riparian zone in some of the streams within the project boundaries. In their response to TDOT Ecology Section email on March 27, 2014, TWRA requests TDOT perform surveys in areas that will have physical disturbance of the stream and/or adjacent banks. If the Dusky Salamander is observed during surveys, TWRA may require additional coordination. Additionally, TWRA requests that standard TDOT BMPs are in place and erosion control measures are installed and maintained during construction. TDOT added special note in the plans to perform the survey of Dusky Salamander prior to the construction. Please refer to the Species Review Form included in the Environmental Boundaries Report for a complete list of protected species.

It is the opinion of this office that all other aspects of the project not specifically mentioned in this letter meet the criteria for the General Permit for Wet Weather Conveyances. Please refer to the enclosed Form G for more information.

This project is currently scheduled for the April 29, 2015 turn-in. We would greatly appreciate your initial review and request for additional information needed, or issuance of the public notice, within 15 days of receipt of our application; and issuance of the permits as soon as possible.

If you have any questions or we can be of further assistance please contact me at (615) 253-0021 or Andrew Wisniewski at (615) 253-2545.

Sincerely,



Khalid Ahmed
Senior Transportation Project Specialist,
Environmental Permits Section

Enclosures

JLH: KMA: APW

cc: Mr. Jimmy Smith, TDEC
Ms. Tammy Turley, USACE, Nashville District
Ms. Kelly Baxter, TVA

ec:

Ms. Jeanene Woodruff, TDEC
Mr. Gary King, Project Management Office
Mr. Steve Langford, Reg-2 Utility Office
Mr. Ken Flynn, Region 2 Construction Office
Mr. Wesley Hughen, Region 2 Project Development
Mr. Jamie Fitzpatrick, HQ Construction Division
Mr. Tommy Paul, Region 2 Environmental Coordinator
Mr. Rob Howard, Region 2 Ecology Section
Mr. Brandon Chance, Region 2 Ecology Section
Mr. Ben Brown, Ecology Section, Mitigation
Mr. Ronnie Porter, Program Operations Office

March 19, 2015
Page 4

Mr. Hugh (Chip) Hannah, TDOT Compliance
Ms. Jennifer Stover, TDOT Compliance
Mr. John Hewitt, Natural Resources Office
Permit File



Section 26a Permit and Land Use Application
Applicant Disclosure Form

By signing the Joint Application Form (Department of Army/TVA) or TVA's Land Use Application and again below, you agree to disclose any business, political, or financial interest that may present an actual or potential conflict of interest with TVA.

Disclose if any of the following apply to you (check all that apply [X]). I am:

- An elected government official
A policy making level employee of an entity that regulates TVA or its activities
A management level employee of a power customer of TVA
A TVA Director
A TVA employee
An immediate family member of one of the above
A representative of a corporation or entity submitting an application and one of the above applies to me. Print entity or corporation name, and identify which of the above applies to you.

Project #18038-1230-04
PIN 100268.03
161 KV transmission line relocation
State Route 101 (Peavine Road)
From: Firetower Road
To: Lakeview Drive

- A representative of a corporation or entity submitting an application and the corporation or entity has partners, investors, or senior management that are one of the above. Print entity or corporation name, and identify the partner(s), investor(s), or senior manager(s) and which of the above applies.

[X] None of the above

Do you have any other business or personal relationships not covered in your answers above that could appear to be a conflict of interest? (check one) Yes [] No [X] If yes, provide more detail here.

By signing this form, you consent to this Applicant Disclosure Form being made available to the public in response to an appropriate request, including, without limitation, a request made under the Freedom of Information Act.

Please sign and return this form with your application package. Your application cannot be processed without receipt of this signed form.

Name of applicant (Printed) Khalid Ahmed
Signature of Applicant [Handwritten Signature] Date March 19, 2015

All applications and communications that occur as part of the application process may be made public to the extent permitted by applicable law, including the Freedom of Information Act and the Privacy Act, and could be reviewed formally by the Office of Inspector General (OIG).

Privacy Act Statement
This information is being requested in accordance with Sections 4(k), 15d, 26a, and/or 31 of the TVA Act; 40 U.S.C. § 1314; 30 U.S.C. § 185; 16 U.S.C. § 667b; and/or 40 U.S.C. § 483. Disclosure of the information requested is voluntary; however, failure to provide any required information or documents may result in a delay in processing your application or in your application being denied.



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES

William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102

June 25, 2015

Mr. Khalid Ahmed
Roadway Specialist 3
Tennessee Department of Transportation
e-copy: Environmental.NPDES.TDOT@tn.gov

Re: **NPDES Permit Tracking No. TNR191482**
SR-101 modification and relocated 161-kV electric line
PIN 100268.01 & 100268.03; Project No. 18038-1230-04
Cumberland County, Tennessee

Dear Mr. Ahmed:

The Division of Water Resources (division) acknowledges receipt of the Notice of Intent (NOI) form we received on June 24, 2015. The NOI was submitted to obtain coverage under a General NPDES Permit for Storm Water Discharges Associated with Construction Activity. Enclosed is the Notice of Coverage (NOC) form, which shows the site name and location, receiving stream, effective date of coverage, etc.

Contractor Information

As of the date this NOI was processed, no contractor was identified on the NOI. A primary contractor, or contractor otherwise responsible for sediment and erosion controls on the construction site, must be identified and must submit an NOI to this office prior to his beginning earth clearing operations on site. When submitting the NOI, the contractor should indicate on the NOI form the above referenced permit tracking number.

Storm Water Pollution Prevention Plan (SWPPP)

You have submitted a Storm Water Pollution Prevention Plan (SWPPP) as required by Part 1.4.2 of the CGP. Please note that the division has not performed an engineering review of the SWPPP and does not certify whether the SWPPP adequately provides for the pollution prevention requirements at the site as described in the General Permit. The division acknowledges that you have submitted a SWPPP that appears to include the required components of a SWPPP. It is the responsibility of all site operators to design, implement, and maintain measures that are sufficient to prevent pollution at the referenced site, and to remain in compliance with the terms and conditions of the General Permit.

Annual Maintenance Fee and Termination of Permit Coverage

Effective July 1, 2014, permit fees for the CGP have been revised. In addition to new application fee amounts, annual maintenance fees are now required for projects that exceed one year of coverage. Permittees wishing to terminate coverage must submit a completed notice of termination (NOT) form, which is available on the division's construction stormwater webpage at <http://www.tn.gov/environment/permits/conststrm.shtml>.

The division will review the NOT for completeness and accuracy and, when necessary, investigate the site for which the NOT was submitted. The division will notify the applicant that either the NOT form was received and accepted, or that the permit coverage is not eligible for termination and has not been terminated. If applicable, the notification will include a summary of existing deficiencies.

We appreciate your attention to this permit and its requirements. If you have any questions, please contact Mr. Jim McAdoo at (615) 532-0684 or by E-mail at Jim.McAdoo@tn.gov.

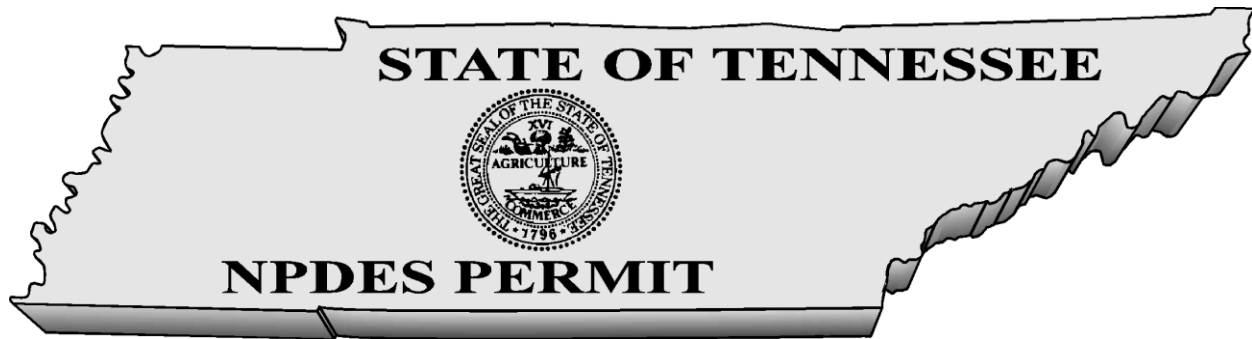
Sincerely,



Vojin Janjić
Manager, Water-Based Systems

Enclosure

cc: Kathy.Fowlkes@tn.gov, Columbia Environmental Field Office
Division of Water Resources, Permit File
Johnny.K.Walker@tn.gov, Division of Water Resources, Cookeville Field Office



Tracking Number TNR191482

NOTICE OF COVERAGE UNDER THE GENERAL NPDES PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY (CGP)

Tennessee Department of Environment and Conservation
Division of Water Resources
401 Church Street, 6th Floor, L&C Annex
Nashville, Tennessee 37243

Under authority of the Tennessee Water Quality Control Act of 1977 (T.C.A. 69-3-101 et seq.) and the delegation of authority from the United States Environmental Protection Agency under the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 (33 U.S.C. 1251, et seq.):

Name of the Construction Project: **SR-101 modification and relocated 161-kV electric line
Project No. 18038-1230-04 PIN 100268.01**

Master Tracking Number at the Site: **TNR191482**

Permittee Name: **TDOT**

Contractor(s): **no contractor**

are authorized to discharge: storm water associated with construction activity

from facility location: **SR-101 (Peavine Road) from Firetower Road to Lakeview
Drive, Cumberland County**

to receiving waters named: **unnamed tributaries to Bagwell Creek and Otter Creek**

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

Likely presence of threatened or endangered species in one mile radius: **NO**

Likely presence of threatened or endangered species downstream: **NO**

Additional pollution prevention requirements apply for discharges into waters which TDEC identifies as:

- Exceptional Tennessee Waters: NO

Your coverage under the CGP shall become effective on **June 25, 2015**, and shall be terminated upon receipt of [Notice of Termination](#), or the date of expiration of the CGP, **May 23, 2016**.

S T A T E

O F

T E N N E S S E E

January 1, 2015
Contract No.: CNQ076
County: Morgan

SPECIAL PROVISION

REGARDING

“SPECIALTY ITEMS”

In accordance with the provisions of Subsection 108.01, *Standard Specifications for Road and Bridge Construction, 2015*, all construction items included in the following described work are hereby designated as “Specialty Items”:

Item 105-01 - Construction Stakes, Lines and Grades

Item 209 - EPSC Items

Item 707 - Fencing Items

Item 712 - Traffic Control Items

Item 801 - Seeding

Item 802 - Landscaping Items

S T A T E**O F****T E N N E S S E E**

March 11, 2016
Project No. STP-101(21)
18038-3241-14
County: Cumberland
Contract No. CNQ922

SPECIAL PROVISION**REGARDING****PROJECT COMPLETION AND LIQUIDATED DAMAGES**

This project shall be completed in its entirety on or before June 1, 2017.

Within the acquired Volunteer Energy Cooperative (VEC) Utility Easements, tree cutting has been completed by Regional Operations. All trees three (3) inches in diameter and larger within the easement limits are subject to seasonal cutting limitations for the reproductive activities of the Northern Long-Eared Bat. No waiver of seasonal limitations (October 15 through March 31) or requests for time extensions due to seasonal limitations will be granted. The bidder shall assume the responsibility of examining the site of the work as outlined in Section 102.04 of the Standard Specifications. Additionally, mulching all remaining vegetation and stumps to ground level shall be completed by the Contractor and follow permit requirements.

An access easement will be provided to complete work within the VEC Utility Easement Station 137+00 +/- to Station 148+00 +/- . The Contractor will be responsible for construction and maintenance of the access road while utilizing the easement. Upon completion of the construction, the Contractor shall grade the entire access road with stone as directed by the Engineer. Special Provision 107C provides an anticipated availability date for the access easement (Stone and Cottrell tract). All necessary environmental screenings, including but not limited to, studies, NEPA, and permits must be cleared prior to work beginning within the access easement as directed by the Engineer.

Utility Specifications, Section 00400, includes Contractor Qualifications regarding the criteria necessary for construction of the 161kV line.

Liquidated damages for failure to complete the entire project on time will be as outlined in Section 108.09 of the Standard Specifications for each calendar day over and above the completion date on which any portion of the work remains incomplete.

No partial payment, including payment for stockpile materials, shall be made before work begins.

Specifications and Drawings For Power Line Relocation

TDOT Project No. 18038-3241-14

STP - 101(21)

Crossville, Tennessee



Prepared for:



Volunteer Energy Cooperative
18359 Highway 58 North
Decatur, Tennessee 37322

April 20, 2015



FISHER ARNOLD
ENGINEERING INTEGRATION

9180 Crestwyn Hills Drive, Memphis, TN 38125
901.748.1811 www.fisherarnold.com

SECTION 00010

TABLE OF CONTENTS

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0	COVER SHEET
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2	ELECTRIC RELOCATION ESTIMATED QUANTITIES
3	ELECTRIC RELOCATION POLE LOCATION TABULATION
4	PRESENT LAYOUT STA. 70+00 TO STA. 76+00
5	PRESENT LAYOUT STA. 76+00 TO STA. 89+00
6	PRESENT LAYOUT STA. 89+00 TO STA. 102+00
7	PRESENT LAYOUT STA. 102+00 TO STA. 115+00
8	PRESENT LAYOUT STA. 115+00 TO STA. 128+00
9	PRESENT LAYOUT STA. 128+00 TO STA. 141+00
10	PRESENT LAYOUT STA. 141+00 TO STA. 154+00
11	PRESENT LAYOUT STA. 154+00 TO STA. 167+00
12	PRESENT LAYOUT STA. 167+00 TO STA. 180+00
13	PRESENT LAYOUT STA. 180+00 TO STA. 193+00
14	PRESENT LAYOUT STA. 193+00 TO STA. 206+00
15	PRESENT LAYOUT STA. 206+00 TO STA. 219+00
16	PRESENT LAYOUT STA. 219+00 TO STA. 232+00
17	PRESENT LAYOUT STA. 232+00 TO STA. 245+00
18	PRESENT LAYOUT STA. 245+00 TO STA. 258+00
19	PRESENT LAYOUT STA. 258+00 TO STA. 271+00
20	PRESENT LAYOUT STA. 271+00 TO STA. 284+00
21	PRESENT LAYOUT STA. 284+00 TO STA. 297+00
22	PRESENT LAYOUT STA. 297+00 TO STA. 310+00
23	PRESENT LAYOUT STA. 310+00 TO STA. 323+00
24	PRESENT LAYOUT STA. 323+00 TO STA. 336+00
25	PRESENT LAYOUT STA. 336+00 TO STA. 349+00
26	PRESENT LAYOUT STA. 349+00 TO STA. 355+10

27 PROPOSED LAYOUT STA. 0+00 TO STA. 10+00
28 PROPOSED LAYOUT STA. 10+00 TO STA. 26+50
29 PROPOSED LAYOUT STA. 26+50 TO STA. 40+00
30 PROPOSED LAYOUT STA. 40+00 TO STA. 57+00
31 PROPOSED LAYOUT STA. 57+00 TO STA. 73+00
32 PROPOSED LAYOUT STA. 73+00 TO STA. 88+00
33 PROPOSED LAYOUT STA. 88+00 TO STA. 101+00
34 PROPOSED LAYOUT STA. 101+00 TO STA. 114+00
35 PROPOSED LAYOUT STA. 114+00 TO STA. 127+00
36 PROPOSED LAYOUT STA. 127+00 TO STA. 137+00
37 PROPOSED LAYOUT STA. 137+00 TO STA. 148+50
38 PROPOSED LAYOUT STA. 148+50 TO STA. 159+00
39 PROPOSED LAYOUT STA. 159+00 TO STA. 172+50
40 PROPOSED LAYOUT STA. 172+50 TO STA. 185+50
41 PROPOSED LAYOUT STA. 185+50 TO STA. 198+50
42 PROPOSED LAYOUT STA. 198+50 TO STA. 211+50
43 PROPOSED LAYOUT STA. 211+50 TO STA. 224+50
44 PROPOSED LAYOUT STA. 224+50 TO STA. 237+50
45 PROPOSED LAYOUT STA. 237+50 TO STA. 250+50
46 PROPOSED LAYOUT STA. 250+50 TO STA. 263+50
47 PROPOSED LAYOUT STA. 263+50 TO STA. 277+50
48 PROPOSED LAYOUT STA. 277+50 TO STA. 282+39.136

49 ELECTRIC RELOCATION POLE DETAILS TP-11
50 ELECTRIC RELOCATION POLE DETAILS TP-12
51 ELECTRIC RELOCATION POLE DETAILS TS-3V
52 ELECTRIC RELOCATION POLE DETAILS TS-4V
53 ELECTRIC RELOCATION POLE DETAILS TS-5V
54 ELECTRIC RELOCATION POLE DETAILS TU-1
55 ELECTRIC RELOCATION POLE DETAILS TG-3L
56 ELECTRIC RELOCATION POLE DETAILS TM9-R
57 NOT USED
58 NOT USED

- 59 PHASE 1 EROSION PREVENTION AND SEDIMENT CONTROL NOTES,
LEGEND & DETAILS
- 60 PHASE 1 EROSION PREVENTION AND SEDIMENT CONTROL NOTES,
LEGEND & DETAILS
- 61 PHASE 1 EROSION PREVENTION AND SEDIMENT CONTROL NOTES,
LEGEND & DETAILS
- 62 PHASE 1 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
0+00 TO STA. 23+00
- 63 PHASE 1 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
23+00 TO STA. 48+00
- 64 PHASE 1 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
48+00 TO STA. 72+00
- 65 PHASE 1 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
72+00 TO STA. 95+00
- 66 PHASE 1 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
95+00 TO STA. 119+00
- 67 PHASE 1 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
119+00 TO STA. 143+00
- 68 PHASE 1 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
143+00 TO STA. 168+00
- 69 PHASE 1 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
168+00 TO STA. 192+00
- 70 PHASE 1 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
192+00 TO STA. 215+00
- 71 PHASE 1 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
215+00 TO STA. 239+00
- 72 PHASE 1 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
239+00 TO STA. 263+00
- 73 PHASE 1 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
263+00 TO STA. 285+00
- 74 PHASE 1 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
285+00 TO STA. 296+05

- 75 PHASE 2 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA. 0+00 TO STA. 23+00
- 76 PHASE 2 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA. 23+00 TO STA. 48+00
- 77 PHASE 2 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA. 48+00 TO STA. 72+00
- 78 PHASE 2 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA. 72+00 TO STA. 95+00
- 79 PHASE 2 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA. 95+00 TO STA. 119+00
- 80 PHASE 2 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA. 119+00 TO STA. 143+00
- 81 PHASE 2 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA. 143+00 TO STA. 168+00
- 82 PHASE 2 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA. 168+00 TO STA. 192+00
- 83 PHASE 2 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA. 192+00 TO STA. 215+00
- 84 PHASE 2 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA. 215+00 TO STA. 239+00
- 85 PHASE 2 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA. 239+00 TO STA. 263+00
- 86 PHASE 2 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA. 263+00 TO STA. 285+00
- 87 PHASE 2 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA. 285+00 TO STA. 296+05

- 88 PHASE 3 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
0+00 TO STA. 23+00
- 89 PHASE 3 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
23+00 TO STA. 48+00
- 90 PHASE 3 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
48+00 TO STA. 72+00
- 91 PHASE 3 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
72+00 TO STA. 95+00
- 92 PHASE 3 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
95+00 TO STA. 119+00
- 93 PHASE 3 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
119+00 TO STA. 143+00
- 94 PHASE 3 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
143+00 TO STA. 168+00
- 95 PHASE 3 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
168+00 TO STA. 192+00
- 96 PHASE 3 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
192+00 TO STA. 215+00
- 97 PHASE 3 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
215+00 TO STA. 239+00
- 98 PHASE 3 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
239+00 TO STA. 263+00
- 99 PHASE 3 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
263+00 TO STA. 285+00
- 100 PHASE 3 EROSION PREVENTION AND SEDIMENT CONTROL PLAN STA.
285+00 TO STA. 296+05

SECTION 00300

**CERTIFICATE OF CONTRACTOR'S LICENSE
EACH CONTRACTOR BIDDING SHALL FILL IN AND SIGN THE FOLLOWING**

This is to certify that _____

HAS FULLY COMPLIED WITH ALL LICENSING REQUIREMENTS OF CONTRACTORS OF THE STATE OF TENNESSEE.

Was issued Certificate No. _____ on _____

Expiration Date: _____

Bid Limit: _____

by the State Licensing Board. Bidder's license number and expiration date thereof, and that part of classification applying to the bid shall appear on the outside of the envelope containing the bid; otherwise, the bid will be returned to the Bidder unopened.

Signed

SECTION 00400

CONTRACTOR PREQUALIFICATIONS

PART 1 - GENERAL

Volunteer Energy Cooperative requests the services of a licensed Transmission Line Contractor for use in the Construction of a 161kV Transmission Line in the Fairfield Glade Community North of Crossville, TN for the Tennessee Department of Transportation.

1.01 PURPOSE

- A. The purpose of the prequalification is to select those contractors the owner deems to be qualified and capable of completing the Project on schedule and in conformance with the Contract Documents.

1.02 CONTRACTOR QUALIFICATIONS

The minimum criteria necessary are:

- Have significant experience (at least ten years) in the construction of 115kV or greater Electric Transmission Lines.
- Have a project manager with at least five (5) years of experience on at least three High Voltage Electric Transmission Line Projects.
- Have an experienced construction superintendent with at least ten (10) years of experience serving as superintendent of construction of at least three High Voltage Electric Transmission Line Projects.
- Installation of the Transmission Structures, Pulling and Sagging of the Wire shall be performed by the Contractor's own forces.
- Any contractor utilized equipment (i.e. dynamometers) shall have certification of calibration within six months of use.
- Compliant with state safety regulations.
- Must have familiarity with and adhere to Rural Utility Services Bulletin 1728F-811.

SECTION 00570

SCOPE OF WORK

The Project depicted in the following contract documents may be the whole or only a part and is generally described as the construction of approximately seven miles of 161kV Transmission Line with an overhead static wire. The Transmission Line to be constructed will be located from near the intersection of Peavine Road & Firetower Road to near the intersection of Peavine Road & Dartmoor Drive across a terrain that is approximately 90% wooded with sporadic water features and wetlands.

The Contractor shall coordinate his construction work with Volunteer Energy Cooperative (Owner) and Fisher Arnold, Inc. (Engineer). During the construction of the line, the Contractor shall be available for meetings with the Owner and the Engineer to facilitate the success of the project.

The Contractor shall provide work in accordance with the Project Drawings and Specifications. The Contractor is responsible for acquiring all necessary permits for the construction work and the security of the job site. The Contractor is responsible for storing all material at one central location.

The new Easement will be secured by the Owner. The Contractor shall repair or replace any miscellaneous fences and gates altered for Easement access. Also, the Contractor is expected to provide clearing as needed of the Easement across the designated route for the transmission lines; the construction and removal if required of any access road and area necessary for the construction of the circuit; structure installation; wire installation consisting of pulling, sagging and clipping. Clearing shall adhere to the Erosion Prevention and Sediment Control Plan. Trees are to be shredded to the ground line with the stump and root ball left in place. The resulting mulch shall be spread evenly across the project easement. No easements (for ingress or egress) are secured except along the transmission line route.

The Contractor shall furnish all labor and material to construct the Transmission Line except for the steel poles listed in Table 1. The Owner will provide these poles which will be stored at a predetermined VEC storage yard. Any additional poles required are the responsibility of the Contractor. The Contractor will be responsible for loading poles and transporting them for installation. Major Contractor furnished materials include, but are not limited to the following: insulators; fittings; cables; ground rods; gravel; signs; guys; anchors; conductor and suspension and dead-end hardware. Materials shall be of the type and manufacturer shown on the drawings and/or detailed in the specifications. All materials not explicitly listed in the specifications shall be approved by the Engineer and Owner prior to installation. Submittals for **ALL MATERIAL** shall be sent to the Engineer for approval before delivery to the site or incorporation into the project.

Pole Class & Height	Quantity
H1-85	2
H1-95	3
H2-75	1
H2-80	7
H2-85	6
H2-90	3
H2-100	3
H2-105	2
H2-110	1
H3-80	3
H3-85	10
H3-90	12
H3-95	3
H3-100	2
H3-110	1
H4-75	1
H4-85	1
H4-95	2
H4-100	1
H4-105	1
H4-110	1
H4-115	1
H5-110	5
TOTAL	72

Table 1: Owner Furnished Steel Poles

The Contractor is responsible for the steel poles once he has taken possession of them at the VEC storage yard. Any prior damage to the poles will be reported to VEC. The Contractor will be responsible for any damage to the poles after they have been relocated from their storage position in the VEC yard, including, but not limited to, loading, transporting, off-loading and storage at the job site. Any such damage will be reported to VEC and a determination of the allowable fixes will be provided to the Contractor.

The Contractor shall warranty all phases of his work including designs, materials and labor for a period of five years.

SECTION 02210

SITE ACCESS AND GRADING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Design Drawings

1.02 QUALITY ASSURANCE

- A. The Owner's Representative shall have the right to reject any and all materials, any and all work, which in his opinion does not meet the requirements of the Specifications or Drawings at any stage of the operations. All rejected materials shall be removed from the site and shall not be discarded on adjacent sites. The Contractor is responsible for all costs associated with discarding defective materials and supplying materials that meets the Specifications and Drawings.

1.03 PROTECTION

- A. Contractor shall protect excavations and grounds from water ponding and water damage. Construct and maintain temporary drainage. Pump, if required to keep excavations free of water. Maintain site in well-drained condition at all times.
- B. Contractor shall protect, maintain and restore benchmarks, monuments, and other reference points affected by this work. If bench marks, monuments or other permanent reference points are displaced or destroyed, points shall be re-established and markers reset under supervision of a licensed surveyor, paid for by the Contractor, who shall furnish Engineer with certification of his work. All fees and costs associated with re-establishing benchmarks, monuments or other permanent reference points are the sole responsibility of the Contractor.
- B. Contractor shall protect utilities and other construction designated to remain to place.

1.04 LINES AND GRADES

- A. It is imperative that lines and grades established on drawings, except for allowance for installation of fill aggregate, concrete, and topsoil established below, be met when this work is completed. The Contractor shall make every effort to maintain existing ground contours and elevations.

1.05 SUBMITTALS TO ENGINEER

- A. Submit one copy of permits and notices obtained from appropriate jurisdiction before

commencing work.

- B. Obtain and submit certification of adequacy of site grading and filling from Testing Laboratory, signed and sealed by a qualified Soils Engineer, stating that work is in accordance with Contract Documents, and that soils are capable of supporting the structure to be constructed under the Contract.
- C. Submit one copy of all Proctor analysis as well as the results of all compaction density testing.

PART 2 - PRODUCTS

2.01 MINERAL AGGREGATE

- A. Driveway Stabilization: Limerock Base Course to be installed as fill material for the driveway.
- B. Contractor shall obtain material as specified above and furnish and install the material at the bid price. It will be the responsibility of the Contractor to obtain, excavate, load, haul, place and compact the material as specified.

2.02 TEMPORARY ROADWAYS

- A. Temporary Roadways to allow access for the construction of the line is left for the Contractor to determine. The Contractor is responsible for the materials used in the construction of these Temporary Roadways and must submit approval documents for any temporary roadways prior to commencing construction.

2.03 FILTER FABRIC

The filter cloth material may be used as a lining for any roadway, driveway or stabilization of surface material.

PART 3 - EXECUTION

3.01 REMOVAL OF OBSTRUCTIONS

- A. Clean out and drain fields, cesspools, catch basins, manholes, and similar items to solid subgrade and break up masonry and/or concrete bottoms so that no pieces remain which are over 12 inches in their largest dimension. Break out masonry and concrete sides of such construction to a depth of at least 2'-0" below bottoms of footings to be installed as part of this project or subgrade, as applicable.
- B. Fill items enumerated above with specified granular fill and compact to 95 percent Standard Proctor Density.

- C. Remove existing pavement in fill areas.

3.02 DISPOSITION OF ABANDONED UTILITIES

- A. If abandoned underground utility lines or electric conduit are uncovered in the course of grading, the Contractor shall immediately notify the Engineer. That part uncovered shall be removed and capped off.

3.03 SITE PREPARATION

- A. The area to be occupied by any driveway shall be cleared of all large rocks, trees, roots, vegetation, and similar material. The slopes or ground surface shall be trimmed in conformity to the lines and grades indicated on the Plans or as directed by the Engineer and shall be compacted by the use of hand or mechanical tamps.
- B. Surplus excavated material shall be removed from the site and disposed of or located as directed by the Owner's Representative. Spoil material shall not be disposed of in a watercourse or on the banks of a watercourse, but only on an approved upland site.

3.04 GENERAL SITEWORK

- A. General filling of the Easement Area will commence upon completion of clearing and compaction of the in situ soils. Filling is only required where necessary to return to original grade after tree removal.
- B. Embankment fill as specified herein shall be placed in lifts no greater than 12 inches prior to compaction. Compaction shall be in accordance with Section 3.09A of these Specifications and verified by testing in accordance with Section 3.10A.

3.05 GRADING

- A. All excess waste material resulting from the foundation work shall be removed from the jobsite by the Contractor.
- B. Grade to uniform levels and slopes, without abrupt changes. Make transitions from levels to slopes with roundings of large radius.
- C. Finish areas to a reasonably true and even plane at required elevations, less allowances for items specified above.
- D. Along the lines indicating the limits of work, taper finish grade to the existing grade at a slope matching the natural contour. Perform all of this work within the limit lines.

3.06 INSTALLATION OF FILTER FABRIC

- A. The Contractor shall determine the requirements for filter fabric. If required the filter fabric shall be installed in accordance with manufacturer's recommendations.
- B. If the fabric is torn or damaged, a patch overlapping the edges of the damaged area by 2 feet shall be sewn securely to the fabric with a continuous, monofilament, rot-proof material.

3.07 TEMPORARY ROADWAY INSTALLATION

- A. Any Temporary Roadway shall be installed within the Right Of Way and constructed such that it is acceptable to property owners.
- B. The Contractor shall be responsible for any penalties or fines due to his failure to properly install roadways.

3.08 SODDING

- A. Sod shall be used to stabilize slopes and protect areas that might be prone to erosion. Sod shall consist of live, dense, well-rooted growth of 419 tifway Bermuda, free from Johnson grass, nut grass and other grasses and weeds. The health and quality of all sodding related materials shall be in accordance with Department of Transportation Specifications.
- B. Sod shall be cleanly cut in rolls having a reasonably uniform thickness of not less than 1-1/2 inches and a uniform width.
- C. Commercial Fertilizer: Commercial Fertilizer shall be 13-13-13. Fertilizer shall be a standard commercial fertilizer containing the specified percentages by weight of nitrogen, phosphoric acid, and potash.
- D. Agriculture Limestone: Agriculture limestone shall contain not less than 85% of calcium carbonate and magnesium carbonate combined and shall be crushed so that at least 85% will pass the No.10 mesh sieve.
- E. The area to be sodded shall be brought to the lines and grades shown on the Plans allowing for the sod thickness to be installed. The surface of the ground to be sodded shall be loosened to a depth of not less than 1 inch with a rake or other device. The ground shall be sprinkled until saturated for a minimum depth of 1 inch and kept moist until the sod is placed.

- F. Insofar as is practicable, sod shall be laid the day of delivery. In the event that this is not possible, the Contractor shall protect the sod not laid by placing it in a shaded area. Sod that cannot be laid immediately on delivery shall be kept well watered and shall not remain unplanted for longer than 48 hours after delivery to the site.
- G. The sod shall be carefully placed by hand on prepared ground surface with the edges in close contact and as far as possible in a position to break joints. Immediately after placing the sod, it shall be thoroughly wetted and rolled with an approved roller. On slopes of 3 to 1, or steeper, pinning or pegging is required to hold the sod in place.
- H. Three days after placing the sod, fertilizer and lime shall be applied uniformly to the prepared surface of the sod. Fertilizer shall be applied at the rate recommended by soil testing.
- I. Maintain, protect and care for newly sodded lawns and reconditioned areas until a healthy, uniform, close stand of grass is established free of weeds, bare spots or surface irregularities. Sodded areas will not be accepted prior to substantial completion of project.
- J. The Contractor shall regrade, refertilize, and resod any or all sodded areas as directed by the Engineer to correct any unsatisfactory and unacceptable conditions. Surface gullied, eroded areas, or damaged areas found following sodding shall be repaired by regrading and resodding. The Contractor shall be responsible for protecting his work at all time and shall erect temporary barricades to do so.
- K. Inspection of the planting work, to determine its completion for beginning the guarantee period, will be made by the Owner's Representative, and given approval in writing upon notice requesting such inspection by the Contractor. All planting must be alive, healthy, and a uniform stand of grass in order to be considered complete.
- L. One year after final completion of the project, seeded areas shall be solid color, well matted, and reasonably free from weeds. Inspection of the planting to determine its final acceptance will be made at the conclusion of the guarantee period by the Owner's Representative. No grassing shall be accepted unless the area shows a uniform, health stand of grass.

3.09 SEEDING

- A. Seeding may be used for erosion control as allowed by the Owners Representative in areas where Sod might otherwise be needed. All seed, and seed mixes shall meet Federal and Local seed laws and have a minimum germination of 75 percent and minimum purity of 97 percent.

- B. Commercial fertilizer shall be 5-20-20 for hydro-seeded areas with a minimum of 50 percent of elements derived from organic sources. Fertilizer shall be a standard slow-release commercial fertilizer containing the specified percentages by weight of nitrogen, phosphoric acid, and potash, and approved by the County Extension Service.
- C. Seed, fertilizer and hydraulic mulch shall be thoroughly mixed in a water slurry and be distributed uniformly over the surface area via an approved hydraulic mulcher the rates of application per acre shall be as indicated below:
- | | |
|--------------------|------------|
| Seed Mix | 75 lb. |
| 5-20-20 Fertilizer | 650 lb. |
| Hydraulic Mulch | 1,500 lb. |
| Water | 9,000 gal. |
- D. The Contractor shall take all reasonable care to prevent the contamination by operations of structures, fences, utilities and all such installations and where such contamination occurs, he shall remove it to the satisfaction of and by means approved by the Owner's Representative.
- E. The Contractor shall regrade, refertilize, and reseed any or all seeded areas as directed by the Owner's Representative to correct any unsatisfactory and unacceptable conditions as determined by the Owner's Representative regardless of who may have caused the unacceptable or unsatisfactory area. If in the opinion of the Owner's Representative that any seeded areas do not show a uniform or healthy stand of grass, the Contractor shall reseed and or refertilize those areas as directed by the Owner's Representative without any additional cost to the Owner.
- F. Inspection of the planting work, to determine its completion for beginning the guarantee period, will be made by the Design Professional, and given approval in writing upon notice requesting such inspection by the Contractor. All planting must be alive, healthy, and a uniform stand of grass in order to be considered complete.
- G. One year after final completion of the project, seeded areas shall be solid color, well matted, and reasonably free from weeds. Inspection of the planting to determine its final acceptance will be made at the conclusion of the guarantee period by the Owner's Representative. No grassing shall be accepted unless the area shows a uniform, health stand of grass.

3.10 CLEANUP

- A. After all of the work in section is completed, leave area clean and free of any debris

END OF SECTION

SECTION 01800
CLEARING WORK

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. In accordance with the requirements as hereinafter stated, the Contractor shall (1) clear the designated areas, (2) remove all structures and obstructions interfering with the work or designated to be removed, (3) dispose of all unsuitable and excess materials, debris and vegetation, and (4) slope, grade and restore all areas disturbed during the performance of the work, and (5) coordinate with all proper utility owners the adjustment of any existing above ground or below ground utility.
- B. The Contractor shall also remove and restore all permanent type pavements, sidewalks, driveways, curbs, gutters, landscape vegetation, fences, poles and other property and surface structures conflicting with the installation of scheduled improvements.

1.02 RELATED WORK

- A. Section 02210: Site Access and Grading
- B. Erosion Prevention and Sediment Control Plan

1.03 LIMITS OF WORK

- A. Easement areas are established by the Engineer. The Easement is defined as the area fifty feet on either side of the centerline of the structure.
- B. Designated stockpiles of construction material: Location must be approved prior to use and all removal debris must be stored together until it is removed from site for proper disposal.

1.03 PRECAUTIONS

- A. Protection of Property: The Contractor shall be responsible for the preservation from injury and damage and protection of all public and private property within the limits of or adjacent to the Work.
- B. Use every precaution to prevent the damage or destruction of buildings, poles, trees, shrubbery and lawns, also all overhead lines, wires, cables and all other structures which are to remain in place.

- C. Protect and carefully preserve all official survey monuments, property corners and elevation bench marks, especially those that are intended for use in the horizontal and vertical control for this work. If any of these monuments, property corners or bench marks are disbursed during construction, the Contractor shall be responsible for their replacement at no additional cost to the Owner or Owner's Representative.

PART 2 - PRODUCTS

Products for protection of land as shown on the Erosion Prevention and Sediment Control Plan include but are not limited to:

- A. 18 inch filter sock
- B. Temporary silt fence with backing
- C. Sandbags
- D. 6 mil minimum polyethylene sheeting
- E. High visibility construction fence

PART 3 - EXECUTION

3.01 CLEARING

3.01.1 SCOPE

Clearing shall consist of removing trees to the ground line and shredding them (except those designated to remain in place outside of the construction limits). Stumps and root ball are to be left in place. The resulting mulch shall be spread evenly across the project easement. When not covered by specific Bid Items in the Proposal, this item shall also include the complete removal and disposal of all structures and obstructions and old installations (above or below the surface of the ground) which interfere with the proposed construction, obstruct clear vision or is otherwise considered objectionable. All clearing operations shall be in accordance with these Specifications and shall be for the areas indicated on the Plans or as required by the Owner's Representative.

The methods of clearing may include cutting, shearing, and dozing. Hazard trees are defined as trees that, dead or alive, that are structurally unsound from leaning, disease or weak that will come in contact with the lines when they fall. These hazard trees shall be identified and removed as part of the clearing effort.

The Work shall also include the preservation from injury or defacement of all vegetation, objects or material(s) designated to be salvaged or to remain and shall include removal and proper disposal of obstructions and salvageable material encountered, when such removal and disposal is not otherwise provided in the Contract. The requirements for such removal and disposal shall be in accordance with the provisions and requirements of this Section.

A detailed plan for Easement clearing and proper debris disposal, including methods, shall be provided with the proposal for approval.

3.01.2 CLEARING REQUIREMENTS

- A. Clearing: The term "clearing" shall mean the felling, mulching and mulch placement within the construction limits of the Contract.

The trees to be cleared shall be cut off as close as practicable to ground elevation on the high side. Trees located in creek channels or sloughs may be cut off at a higher elevation if, in the Engineer's opinion, the remaining stumps would not be objectionable.

- B. Any use of chemicals shall be prohibited.

3.02 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

3.02.1 CONSTRUCTION REQUIREMENTS

- A. No pipe is expected on this project. If encountered, pipe lines shall be carefully removed and every reasonable precaution taken to avoid breaking or damaging any pipes. Pipes designated to be relaid shall be removed, handled and stored when necessary so that there will be no loss or damage before relaying; the Contractor shall replace, without extra compensation, such sections lost from storage or damaged by negligence or improper methods to the extent its reuse is deemed by the Owner's Representative to be unsatisfactory.
- B. No structures or obstructions are expected on this project. If encountered, removal of structures and obstructions shall consist of the removal and satisfactory disposal of all buildings, fences, structures, old pavements, abandoned pipe lines and any other obstructions which are not designated or permitted to remain, except for the obstructions to be removed and disposed of under other items in the Contract as directed. It shall also include the salvaging of designated materials and backfilling the resulting trenches, holes and pits. When the Proposal does not include Pay Items for removal of structures and obstructions as set forth in this Section, the cost of such work shall be included in prices bid on other construction items.

END OF SECTION

SECTION 16300

OVERHEAD TRANSMISSION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. In accordance with the requirements as hereinafter stated, the Contractor shall (1) construct a 161kV transmission line from near the intersection of Peavine Rd. & Firetower Rd. to near the intersection of Peavine Rd. & Dartmoor Dr., (2) install new 795 ACSR "Drake" transmission line with 7 no. 8 Alumaweld static wires, (3) remove existing poles and return to Owner except where communication cables are present, (4) Inspect easement for clearance and encroachment issues.
- B. The Contractor is responsible for clearing and maintaining the entire right-of-way per specification Section 01800 "Clearing Work" for the entire duration of this project.
- C. The Contractor is responsible for filing and maintaining all necessary construction permits for the duration of this project including any necessary erosion control plans. Owner will provide railroad permits, highway easements for the transmission line route. All other permits and construction easements are the responsibility of the contractor.

1.02 RELATED WORK

- A. Section 01800: Clearing Work
- B. Section 02210: Site Access and Grading
- C. Design Drawings

1.03 LIMITS OF WORK

- A. Easement areas established by the Engineer. The Easement is defined as the area fifty feet on either side of the centerline of the center line of poles.
- B. All material must be on site, in a secured area, in advance of construction for Owner / Engineer Inspection. No material may be incorporated into the project without approval of submittals and engineering inspection.

1.04 PRECAUTIONS

- A. Protection of Property: The Contractor shall be responsible for the preservation from injury and damage and protection of all public and private property within the limits of or adjacent to the Work.
- B. Use every precaution to prevent the damage or destruction of buildings, poles, trees, shrubbery and lawns, also all overhead lines, wires, cables and all other structures which are to remain in place.
- C. Protect and carefully preserve all official survey monuments, property corners and elevation bench marks, especially those that are intended for use in the horizontal and vertical control for this work. If any of these monuments, property corners or bench marks is disturbed during construction, the Contractor shall be responsible for their replacement at no additional cost to the Owner or Owner's Representative.
- D. All design and construction shall adhere to the National Electric Safety Code (NESC) Edition 2012. Clearances shall be maintained as shown in the 2012 NESC.

PART 2 - PRODUCTS

2.01 Poles:

- A. Poles as shown in the Scope will be provided by the owner.
- B. All steel poles will have a minimum height and wood class equivalency as shown in Table 1 in the Scope.

2.02 Framing:

- A. All 161kV Framing and Construction shall adhere to Rural Utility Services Bulletin 1728F-811 "Electric Transmission Specifications and Drawings, 115kV Through 230kV," and to Section 3 of the "TVPPA GUIDE TO TRANSMISSION STANDARDS AND SPECIFICATIONS," and to the Construction Plans.
- B. The 161kV Standards shall be utilized in the design of this line. Alternative construction based on RUS Design Standards must be approved in writing by the Owner / Engineer prior to the award of the Construction Contract.

2.03 Insulators:

- A. All 161kV insulators are to be as shown on the pole detail drawings. Substitutions must be approved in writing by the Engineer prior to bidding.

- B. All Insulators shall be provided by Hubbell (Ohio Brass) or Lapp as shown on the Construction Plans. Substitutions must be approved in writing by the Engineer prior to bidding.

2.04 Conductors and Appurtenances:

- A. Conductor
 - 1. 795 ACSR "Drake"
 - 2. Alumoweld 7 No. 8 Shield Wire
- B. Miscellaneous sizes and types as required for jumpers, connections, etc., and handling, holding, tying, re-tying, sagging, etc.
- C. Appurtenances:
 - 1. Conductor Ties: Forms type ties, single or double support as required by assemblies, sized to conductors, for all pin type assemblies
 - 2. Splices: one piece compression type.
 - 3. Connectors: all main line connections of AAC or ACSR use compression connections as approved.
 - 4. Conductor Clamps: Anderson or as approved.
 - 5. Stirrup: Compression, sized for the conductor, and used with hot-line clamps.
 - 6. Connectors: Blackburn WR, or as approved.
 - 7. Type MF Locknuts.
 - 8. All hardware shall be hot dipped galvanized.

2.05 Guys and Anchors:

- A. Guys
 - 1. Guy stand: 1/2-inch Extra High Strength, 7 strand class A galvanized.
 - 2. Guy bonding clamps for anchor rod eyes, malleable iron with hot-dip galvanized steel bolt, sized to rod eye type and guy strand.
 - 3. Ground jumpers AWG No. 4 soft draw using suitable compression connectors.
 - 4. Guy Dead-ends: Maclean 5204 automatic or as approved.
 - 5. Guy Attachments: Maclean P135A, or as approved.
 - 6. Guy marker: Maclean J1491X or as approved.
 - 7. Guy insulator: Maclean GCTE30-78R or as approved.
- B. Anchors:
 - 1. Hubbell 12831 Bust Expanding Anchor – for use in dry and solid soil.
 - 2. Hubbell R172L Wedge Style Anchor – for use in solid walls of rock.
 - 3. Hubbell 012690AEJ Round Rock Anchors – for use in weak soil.

2.06 Grounds:

- A. Pole ground wires shall be No. 4 AWG solid drawn copper, unless otherwise noted.
- B. Solid soft drawn copper for grounding jumpers same size as pole grounds.
- C. All connections for pole grounds shall be compression type.
- D. Ground rods: Eritech 613400 Copper-bonded $\frac{3}{4}$ " by 10'.
- E. Ground rod clamps: Eritech HDC34 Heavy Duty or as approved.

PART 3 - EXECUTION

3.01 POLE INSTALLATION

- A. Handle poles carefully. Do not drop them from transportation vehicles. Use appropriate slings. Steel tongs or other grips that cause damage to pole surfaces are not acceptable.
- B. The diameter of each pole hole shall be as required for compaction of backfill around the pole, but not less than pole diameter at the butt plus 6 inches and more than the pole diameter at the butt plus eighteen inches unless approved by the Engineer.
- C. Hole excavation shall include removal of stumps, roots, and other obstructions as necessary to provide a clean hole to the required depth.
- D. Pole shall be immediately set and plumbed after hole excavation. Any exceptions require prior written consent of the Engineer and Owner along with a submitted plan for securing the hole excavation. All OSHA requirements shall be followed by the Contractor.

E. The minimum setting depth shall be as follows:

Length of Pole (ft.)	Setting Depth (ft)
70	9.0
75	9.5
80	10.0
85	10.5
90	11.0
95	11.5
100	12.0
105	12.5
110	13.0
115	13.5

1. On a sloping ground, measure the depth of the hole from the low side of the slope.
 2. The Owner shall be notified if conditions are encountered that warrant more than a three inch deviation from the above table.
- F. Pole excavation by hand digging, blasting or other means shall be at the option of the Contractor. Blasting will be coordinated and approved in advance by the owner.
- G. Tamp thoroughly by mechanical method with earth backfill around the poles for the full depth of the hole. Mechanical tamping shall be in no more than 6 inch layers. Mound excess dirt around the pole base. Refill and tamp thoroughly to the ground line any settlement until the completion of the contract.
- H. Poles shall be set in alignment and plumb with and across the line, except at angles where vertical suspension insulators or offset framing is used. Poles set on these type of angle, unless otherwise indicated, shall be offset on the bisector of the angle so the conductors hang directly over the point of intersection and in line with the poles in both directions either side of the angle.
- I. Swampy type soils and rocks and gravel larger than two inches shall not be used as backfill. Sod or grassy soil shall not be used as backfill.
- J. When raking is specified, poles shall be raked one inch for each ten feet of pole out of the ground. Poles shall be raked only upon prior approval from the Owner.

3.02 POLE-TOP ASSEMBLIES

- A. Crossarm and pole hardware shall be installed per the manufacturers installation instructions.
- B. Level all support Crossarm and conductor supports. Those on tangent construction shall be at right angles to the conductors they support. Conductor loading shall be balanced equally between the supports.
- C. Field drilled holes are not permissible without prior written permission of the Owner/Engineer. Assemblies mounted on uneven pole surfaces shall be adjusted with metal shims where practical.
- D. Install assemblies and equipment rigid and secure, plumb and level, and in alignment with related and adjoining work. Any deviation form the manufacturer's recommendation shall not be accepted.
- E. Material used for alteration, adjustment or reworking of existing assemblies shall match those of the original installation.
- F. Install new materials and equipment and connect to existing installations, with minimum interference to existing facilities.
- G. Align suspension units with the bisector of the line angle on vertical angle construction. Ensure all cotter keys are in place in suspension units.
- H. Extreme care shall be exercised at all times to prevent damage to any surface or assembly. Any damage occurring during construction will be replaced at the contractor's expense.

3.03 INSULATORS

- A. Exercise care in handling and installing insulators and in assembling suspension units.
- B. Each insulator unit shall be inspected and when installed shall be free of cracks, chips, bent pins, and other defects. Defective insulators shall be removed from the work site immediately.
- C. All insulators installed shall have surfaces cleaned of all foreign material and porcelain insulators shall be wiped to a bright finish.
- D. Install horizontal mounted insulators at right angles to the conductors they support.

- E. Dead-end insulator strings, when completely assembled, shall have all cotter pins fully seated.
- F. Dead-end insulator strings must be attached to the structure after setting the poles. The insulator strings shall be hoisted into position with slings or wires in a manner so as not to cause damage.
- G. When material items are mounted on each structure prior to setting the poles, the structures shall be supported off the ground before pole setting to maintain clean surfaces and to avoid damage to the assemblies.

3.04 CONDUCTORS AND APPURTENANCES

A. Stringing

1. All poles shall be plumb before stringing conductors.
2. Carefully handle conductors. Do not drag them over sharp objects or allow them to be stepped upon or run over by vehicles. Avoid kinking, twisting or abrading the conductors in any manner. Inspect the conductor as it is unreeled for cuts, abrasions, and other injuries. Cut out the faulty sections and splice the conductor as required.
3. Install the conductors and accessories in accordance with Manufacturer's recommendations. Pull the conductors over suitable rollers or stringing blocks. Properly mount on the pole or Crossarm to ensure proper sagging. Prevent binding while stringing.
4. Conductors shall be strung by controlled-tension method using proper stringing blocks. Conductors larger than 1.0 inches in diameter and ACSR conductors of multiple stranded steel cores shall be strung using neoprene lined or similar type blocks. The stringing equipment shall have groove sizes that will in no way damage the conductor, and capable of maintaining the preset tensions and pulling speed. Maintain sufficient continuous tension to keep conductors clear of the ground or obstructions that could cause damage to or by the conductor.
5. The tension on any conductor during stringing shall not exceed 50 percent of the ultimate strength of the conductor at the temperature existing at the time of stringing.

6. When, during the stringing operation, a conductor contacts another conductor, the ground, or some other object which might cause damage, the conductor shall be lowered, wiped clean, and closely inspected by the ENGINEER and the CONTRACTOR to determine the extent of damage. Depending on the severity of damage and the length of the damaged section, repairs shall be made by smoothing of the conductor with fine sandpaper or by cutting out the damaged section and splicing.
7. Locate the cable pullers, tensioners and pulling machines as near mid-span as possible. In no case shall the slope of the conductor between the machine and the stringing block at the first structure be steeper than three horizontal to one vertical.

B. Sag Operations and Tests

1. The length of conductor sagged in one operation shall be limited to the length that can be sagged satisfactorily, or as approved by the ENGINEER.
2. Sag in as level and as average a ground span as possible.
3. Sag all conductors in accordance with Sag Tables that will be furnished by the ENGINEER. Where new and existing conductors are strung together, sag both conductors with the sag tables, unless otherwise specified by the ENGINEER.
4. The CONTRACTOR may select one of three methods to sag conductor:
 - a. Transit Method- Use of a transit to accurately measure the sag by calculated angle of sight method, calculated target method, or horizontal line of sight method.
 - b. Dynamometer Method - Insertion of a dynamometer in line with the sagging equipment to verify the actual tension of the line.
 - c. Stopwatch or Time-Wave Method- Measurement of return waves after striking or jerking the conductor to produce an initial wave.

The three above listed methods are the only acceptable methods for sagging the conductor. The contractor shall submit his procedure for sagging to the Engineer for approval prior to commencement of sagging.

5. In sagging one reel length, the sag of two spans shall be checked. In sagging lengths of more than one reel, the sag of three or more spans near each end and the middle of the length being sagged shall be checked. The length of the spans used for checking shall be approximately equal to the ruling span. At the option of the ENGINEER, all spans that exceed the ruling span by 25 percent or more shall be checked for sag; and, at sharp vertical angles, the sag shall be checked on both sides of the angle. The following spans are unacceptable for sagging tests: inclined spans, tangent to vertical configurations, dead ends, tangent to angles, and spans with splices.
6. Sagging shall not be performed when wind or other adverse weather conditions prevent satisfactory sagging. Sagging shall not be performed at temperatures below 20 degrees Fahrenheit.
7. The air temperature at the time and place of sagging shall be determined by a certified etched-glass or a highly accurate bimetal thermometer. Record the temperature at which the conductor is sagged and the spans in which sags are measured and furnish this information to the ENGINEER.
8. The CONTRACTOR shall verify the electrical clearances to foreign wire crossings or other supports after sagging operation is complete. Record clearances and submit to ENGINEER. It is the responsibility of the Contractor to re-sag the wire at the direction of the Engineer if any clearance violations are discovered.

C. Clipping In

1. Clipping may begin as soon as the conductor has been sagged. Tape or ink mark a reference point on the conductor measured from the center of the stringing block location. After clipping-in verify the conductor has not moved from its sagging point. Clipping should progress so as to avoid trapping uneven sags between clipped sections.
2. Long spans, inclined spans, and dead-end spans shall be clipped in first, so as to minimize conductor movement. At the option of the ENGINEER, the CONTRACTOR may be directed to also clip in at the mid-point and one-quarter points of sagging operation.

3. Lifting of the conductors shall be done with a hoist and lifting hook that will not notch or severely bend the conductors. The conductor lifting hook should have an elastomer cover so as not to damage the surface of the conductors. The conductors shall not be lifted high enough such that the conductor will creep in adjacent spans. Bundled conductors may be lifted simultaneously by the use of a yoke arrangement supporting the hooks and a single method of lifting.
4. Conductors shall NOT remain in lifting blocks for more than 72 hours to avoid damage to conductors or sheaves.
5. If shown on the Contract Drawings, dampers shall be installed immediately after clipping to prevent possible wind vibration damage.
6. Conductors shall be cut out and spliced in any location where damage on the cable has occurred. Repair sleeves may be used to repair damaged conductor when the damage is concentrated in a small area or when the number of broken strands is less than 10% of the strands on the outer layer. Any damaged location shall be reported to and reviewed by the ENGINEER, prior to repair.

3.05 SPLICES AND TIES

- A. New conductors shall not have more than one splice per conductor in any span. Do not locate splices in new conductor within 10 feet of any conductor support. Cut out and re-splice improperly located splices, injured portions, crooked or imperfect splices. Do not leave bent or curved splices in the conductors.
- B. Where existing conductors are reworked, splices may be located less than 10 feet from a support or hardware, if sufficient distance is provided for future maintenance; but in no case shall a splice be located within 2 feet of conductor hardware or supports.
- C. Splices in new conductors shall not be located in NESC defined Grade B crossing spans. No extra pay will be made for any splices that may be required for any reason in existing conductors left in place.
- D. Clean the contact surfaces thoroughly before splicing and carefully follow the Manufacturer's recommendations. Use the proper die and crimping tool that is matched to the splice. Ensure the proper spacing is provided and number of crimps is made.

- E. Use the Manufacturer's recommended inhibitor when splicing and installing connectors to aluminum conductors. Use a pressure gun with tapered nozzle to inject the inhibitor into splicing sleeves.
- F. Splices and compression connectors on conductors larger than 0.60 inches diameter shall be hydraulically crimped. Automatic splices may be used, as approved, but only in full tension conductors.
- G. When a bow (non-hex) die is used, the crimping tool is to be rotated 90 degrees between crimps in order to avoid banana bowing of the splice. If a connector bows it shall be cut out and replaced. It shall not be repaired by hammering on it.
- H. Ties shall be of the type and configuration as required for the conductor and support used. Tie wire shall be tightly drawn around the conductor support and armor rod so that no slack space occurs. Tie wires around insulators shall not be crisscrossed.
- I. Pre-formed conductor ties may be used for re-working of energized conductors if approved. Hot line ties shall not be used.

3.06 CLAMPS, JUMPERS, AND CONNECTORS

- A. Use proper sized connections and only those which will not cause galvanic action where conductors are of dissimilar metals. The contact surfaces of clamps and conductors shall be clean and bright, using a steel brush as the principal cleaning medium. Where bolted connectors are approved the bolts shall be brought down hard, but the threads shall not be overstressed.
- B. Exercise utmost care when installing parallel groove clamps where specified. Clean the contact surface of the clamp and the wire. Bolts shall be brought down hard, but the threads shall not be over stressed. Bolted clamps shall not be used on grounding connections.
- C. Install hot-line clamps so they are permanently bonded to the load side of the line, allowing the jumper to be de-energized when the clamp is disconnected from the supply line.
- D. Allow sufficient, but not excessive slack in jumpers and other leads. Make them neat and uniform in appearance and in general run in horizontal and vertical planes with rounded turns. Support all jumpers to prevent excessive movement between supports and to clear all conflicts and maintain clearances as required by the NESC. Do not use broom-stick coils in any jumpers.

- E. At points of dead ends, taps and take-offs of the main supply line, conductor tails shall be left long enough to be used as jumpers and such that splices or connections shall be limited to one per phase.
- F. Existing conductors to be connected to transformers, line equipment, or other conductors shall be thoroughly cleaned and connections made as would be for new conductors.
- G. Size each jumper, whether existing or new, to be at least as large as the conductor on the load side.
- H. All line and service connections shall be made with compression connectors. Use of bolted connections shall have prior approval from the ENGINEER. Aluminum to copper connections shall be made with connector suitable for use with dissimilar metals.
- I. Service connections, with the exception of the neutral connection, shall be covered at the point of connections with black all-weather vinyl electrical tape, or if approved, a polyethylene plastic covers.

3.07 GROUNDS

- A. Where ground rods are specified, drive ground rods the full length in undisturbed earth a minimum of 2'-0" from the surface of the pole, with the top of the rod and the grounding jumper a minimum of 1'-0" below natural grade. Install ground rods at all transformer and equipment locations.
- B. Interconnect all equipment grounds, neutral wires, and protective equipment and attach to a common pole ground wire. Make at least two (2) continuous connections on all equipment from the equipment frame or case of equipment tank to the multi-grounded system.
- C. Leave each ground rod uncovered from the rod clamp to the pole until the ENGINEER authorizes backfilling. DO NOT LEAVE HOLES EXPOSED THAT WILL ENDANGER THE PUBLIC.
- D. Alternative ground rod installation locations and arrangements shall be approved by the ENGINEER on a case by case basis.

3.08 GUYS

- A. Provide guys at all points of unbalanced strain in conductor and structures at corners, junctions, and dead ends. Attach guys to poles at the load centers.

- B. Provide span guys at all locations where down guys cannot be used, at all unbalanced loads on Crossarm, and use stub poles where required to obtain proper guying clearance requirements. Do not install any guy in violation with NESC requirements.
- C. Install each guy centered on the pole without pulling to either side or causing an unequal strain on guy hooks, clamps, or sections of the guy and hardware. Neatly sever or cut all guy tails.
- D. Unless specified elsewhere, install down guys with a one-to-one (45 degree) lead-to-height-ratio.
- E. All guys shall be bonded to the pole grounding system unless otherwise directed by the ENGINEER. Grounding jumpers shall be of minimum conductivity equivalent to the pole ground wire. Grounding connectors to the guy and the system ground wire shall be compression type suitable for dissimilar metals.
- F. Guys shall be placed before the conductors are strung. Ensure proper adjustment of guys when stringing operations are being performed so that loading on structures will be balanced.
- G. Unless specified otherwise, guy attachment hooks or plates shall only have one guy attached.
- H. Guy primaries and secondary's (including static wire) separately.
- I. Install Guy Guard on all guy leads.

3.09 ANCHORS

- A. Anchors shall be installed according to Manufacturer's instructions.
- B. Locate anchors as far as practical from street crossing, driveways, crosswalks, and foot paths.
- C. Install all anchor rods in line with the strain and the guy slope. DO NOT INSTALL ANCHOR RODS VERTICALLY AND THEN BEND OR TRENCH THEM INTO POSITION. Leave no more than 6-inches of the rod exposed above ground. In cultivated fields, or disturbed soils where the rod might become covered, leave no more than 12-inches of the rod exposed above ground. In no case shall the eye of the rod be covered by soil.

- D. On expanding anchors or rock anchors use an auger that will excavate a hole just large enough to accommodate the unexpanded anchor, such that, upon installation and expansion of the anchors the maximum holding capacity can be obtained. DO NOT USE A LARGE AUGER SUCH AS THE POLE AUGER.

3.10 HARDWARE AND BOLTS

- A. Secure and tighten all hardware.
- B. Provide a washer at each point where a bolt head or nut bears on the surface of the pole or Crossarm.
- C. Provide a locknut with each nut, eye-nut, or other fastener on all bolts or threaded hardware.
- D. Carefully select bolts for proper lengths. Bolts shall extend at least ½ inch and not more than two (2) inches beyond nuts or locknuts. Eyebolts shall be in line with the strain at all dead ends, and shall bisect the line angle at all angles made that are not dead ends. All bolts shall be in a level plane to the hardware attached.
- E. DO NOT CUT OFF BOLTS THAT ARE TOO LONG. REPLACE THEM WITH PROPER LENGTH BOLTS.
- F. All connections shall be bearing type connections. Bolt length shall provide for nuts, locknuts, and washer.
- G. High strength bolts and their installation and bolting tools and equipment shall be in accordance with the manufacturer's recommendations and the "Specifications for Structural Joints Using ASTM A325 or A490 Bolts" including the commentary given therewith, as approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation and endorsed by AISC, except as otherwise modified or supplemented herein. The Research Council specification is dated August 14, 1980. All methods, tools, and equipment shall be subject to the acceptance of the ENGINEER.

3.11 PHASING OF CONDUCTOR

- A. Phasing placement and connection shall be as approved by the Owner.
- B. Verify phasing by site review of each source connection at the substations. Final phase rotation and placement is the responsibility of the CONTRACTOR.

S T A T E

O F

T E N N E S S E E

January 1, 2015 |

SPECIAL PROVISION

REGARDING

EQUAL EMPLOYMENT OPPORTUNITY

Reference:

Federal-Aid Highway Program Manual

Transmittal 147, June 26, 1975

Replaces FHWA Order Interim 7-2(1)

Specific Equal Employment Opportunity Responsibilities

GENERAL

- a) Equal employment opportunity requirements not to discriminate and to take affirmative action to assure equal employment opportunity as required by Executive Order 11246 and Executive Order 11375 are set forth in Required Contract Provisions (Form FHWA-1273 or PR-1316, as appropriate) and these Special Provisions which are imposed pursuant to Section 140 of Title 23, U.S.C., as established by Section 22 of the Federal-Aid Highway Act of 1968. The requirements set forth in these Special Provisions shall constitute the specific affirmative action requirements for project activities under this contract and supplement the equal employment opportunity requirements set forth in the Required Contract Provisions.
- b) The contractor will work with the Tennessee Department of Transportation and the Federal Government in carrying out equal employment opportunity obligations and in their review of his/her activities under the contract.
- c) The contractor and all his/her subcontractors holding subcontracts not including material suppliers, exceeding \$10,000, will comply with the following minimum specific requirement activities of equal employment opportunity: (The equal employment opportunity requirements of Executive Order 11246, as set forth in Volume 6, Chapter 4, Section 1, Subsection 1 of the Federal-Aid Highway Program Manual, are applicable to material suppliers as well as contractors and subcontractors). The contractor will include these requirements in every subcontract exceeding \$10,000 with such modification of language as is necessary to make them binding on the subcontractor.

Equal Employment Opportunity Policy

The contractor will accept as his operating policy the following statement which is designed to further the provision of equal employment opportunity to all persons without regard to their age, race, color, religion, sex, national origin or disability and to promote the full realization of equal employment opportunity through a positive continuing program:

It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment opportunity officer (hereinafter referred to as the EEO Officer) who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of equal employment opportunity and who must be assigned adequate authority and responsibility to do so.

Equal Employment Opportunity Officer

The contractor will designate and make known to the Tennessee Department of Transportation contracting officers an equal employment opportunity officer (hereinafter referred to as the EEO Officer) who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of equal employment opportunity and who must be assigned adequate authority and responsibility to do so.

Dissemination of Policy

- (a) All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's equal employment opportunity policy and contractual responsibilities to provide equal employment opportunity in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:
 - (1) Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's equal employment opportunity policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.
 - (2) All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer or other knowledgeable company official covering all major aspects of the contractor's equal employment opportunity obligations within thirty days following their reporting for duty with the contractor.

- (3) All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer or appropriate company official in the contractor's procedures for locating and hiring minority group employees.
- (b) In order to make the contractor's equal employment opportunity policy known to all employees, prospective employees and potential sources of employees, i.e., schools, employment agencies, labor unions (where appropriate), college placement officers, etc., the contractor will take the following actions:
 - (1) Notices and posters setting forth the contractor's equal employment opportunity policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
 - (2) The contractor's equal employment opportunity policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

Recruitment

- (a) When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be published in newspapers or other publications having a large circulation among minority groups in the area from which the project work force would normally be derived.
- (b) The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants, including, but not limited to, State employment agencies, schools, colleges and minority group organizations. To meet this requirement, the contractor will, through his EEO Officer, identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.
- (c) In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with equal employment opportunity contract provisions. (The U.S. Department of Labor has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended).
- (d) The contractor will encourage his present employees to refer minority group applicants for employment by posting appropriate notices or bulletins in areas accessible to all such employees. In addition, information and procedures with regard to referring minority group applicants will be discussed with employees.

Personnel Actions

Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to age, race, color, religion, sex, national origin or disability. The following procedures shall be followed:

- (a) The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
- (b) The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
- (c) The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
- (d) The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

Training and Promotion

- (a) The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.
- (b) Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event the Special Provision Regarding Training Program Requirements is provided under this contract, this subparagraph will be superseded as indicated therein.
- (c) The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

- (d) The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

Unions

If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

- (a) The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.
- (b) The contractor will use best efforts to incorporate an equal employment opportunity clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their age, race, color, religion, sex, national origin or disability .
- (c) The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the Tennessee Department of Transportation and shall set forth what efforts have been made to obtain such information.
- (d) In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to age, race, color, religion, sex, national origin or disability, making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The U.S. Department of Labor has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees). In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the Tennessee Department of Transportation.

Subcontracting

- (a) The contractor will use his best efforts to solicit bids from and to utilize minority group subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of minority-owned construction firms from the Tennessee Department of Transportation.

- (b) The contractor will use his best efforts to ensure subcontractor compliance with their equal employment opportunity obligations.

Records and Reports

- (a) The contractor will keep such records as are necessary to determine compliance with the contractor's equal employment opportunity obligations. The records kept by the contractor will be designed to indicate:
 - (1) The number of minority and non-minority group members and women employed in each work classification on the project.
 - (2) The progress and efforts being made in cooperation with unions to increase employment opportunities for minorities and women. (Applicable only to contractors who rely in whole or in part on unions as a source for their work force).
 - (3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees.
 - (4) The progress and efforts being made in securing the services of minority group subcontractors or subcontractors with meaningful minority and female representation among their employees.
- (b) All such records must be retained for a period of 3 years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the of the Tennessee Department of Transportation and the Federal Highway Administration.
- (c) Each contractor and subcontractor shall submit to the Tennessee Department of Transportation an annual report for every July during which work is performed indicating the number of minority, women and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form PR 1391 and is to be received by the Department not later than the 20th of the month following the reporting period.
- (d) The contractor and/or sub-contractor will be required to complete other reports as instructed by the Engineer.
- (e) Current estimates may be withheld by the Project Engineer when reports are not received within the above specified time limits.

STATE

OF

TENNESSEE

January 1, 2015 |

SPECIAL PROVISION

REGARDING

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY

CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)

- 1) As used in these specifications:
 - a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
 - b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
 - c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941
 - d. "Minority" includes:
 - I. Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - II. Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish or Portuguese Culture or origin, regardless of race);
 - III. Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - IV. American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining indentifiable tribal affiliations through membership and participation or community identification).
- 2) Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

- 3) If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals (including goals and time tables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
- 4) The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goal set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.
- 5) Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specification, Executive Order 11246, or the regulations promulgated pursuant thereto.
- 6) In order for the nonworking training hours of apprentices and the trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
- 7) The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
 - (a) Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the

Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

- (b) Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available and maintain a record of the organization's responses.
- (c) Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.
- (d) Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
- (e) Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The contractor shall provide notice of these programs to the sources complied under 7b above.
- (f) Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- (g) Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

- (h) Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.
- (i) Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screenings procedures, and tests to be used in the selection process.
- (j) Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.
- (k) Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
- (l) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriation training, etc., such opportunities.
- (m) Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
- (n) Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
- (o) Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
- (p) Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

- 8) Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
- 9) A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women, generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).
- 10) The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of age, race, color, religion, sex, national origin or disability.
- 11) The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
- 12) The Contractor shall carry out such sanctions and penalties for violations of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
- 13) The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

- 14) The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

- 15) Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

STATE

OF

TENNESSEE

Revised 10-19-2012

January 1, 2015

SPECIAL PROVISION

REGARDING

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION

TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

1. The Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work are as follows:

<u>County</u>	<u>Goals for Female Participation in each Trade</u>
All Counties	6.9
<u>County</u>	<u>Goals for Minority Participation for each Trade</u>
Lincoln	11.2
Hamilton, Marion, Sequatchie	12.5
Bledsoe, Bradley, Grundy, McMinn, Meigs, Monroe, Polk, Rhea	8.6
Carter, Hawkins, Sullivan, Unicoi, Washington	2.6
Greene, Hancock, Johnson	3.2
Anderson, Blount, Knox, Union	6.6
Campbell, Claiborne, Cocke, Cumberland, Fentress, Grainger, Hamblen, Jefferson, Loudon, Morgan, Roane, Scott, Sevier	4.5

<u>County</u>	<u>Goals for Minority Participation for each Trade</u>
Montgomery	18.2
Davidson, Cheatham, Dickson, Robertson, Sumner, Williamson, Wilson, Rutherford	15.8
Bedford, Cannon, Clay, Coffee, Dekalb, Franklin, Giles, Hickman, Houston, Humphreys, Jackson, Lawrence, Lewis, Macon, Marshall, Maury, Moore, Overton, Perry, Pickett, Putnam, Smith, Stewart, Trousdale, Van Buren, Warren, Wayne, White	12.0
Shelby, Tipton	32.3
Benton, Carroll, Chester, Crockett, Decatur, Dyer, Fayette, Gibson, Hardeman, Hardin, Haywood, Henderson, Henry, Lake, Lauderdale, McNairy, Madison, Obion, Weakley	26.5

These goals are applicable to all the Contractor's construction work whether or not it is Federal or federally assisted.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in CFR Part 60-4.3(a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform through- out the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from Project to Project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Office of Federal Contract Compliance Programs at the following address within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation:

U.S. Department of Labor – Regional Office
Office of Federal Contract Compliance Program
61 Forsyth Street, Room 7B75
Atlanta, GA 30303

The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

STATE

OF

Sheet 1 of 1
TENNESSEE

(Rev. 06-01-03)

(Rev. 06-23-08)

(Rev. 11-10-08)

January 1, 2015 |

SPECIAL PROVISION

REGARDING

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION

Disadvantaged Business Enterprises (DBE) as defined in 49 CFR Part 23/26 shall have the maximum opportunity to participate in the performance of contracts let by the Department. Consequently, the disadvantaged business enterprise requirements of 49 CFR Part 23/26 apply to this contract.

Disadvantaged Business Enterprises (DBE) as defined in 49 CFR Part 23/26 shall have the maximum opportunity to participate in the performance of this contract or in the performance of subcontracts to this contract. In this latter regard, the Contractor shall take all necessary and reasonable steps in accordance with 49 CFR Part 23/26 to ensure that disadvantaged enterprises, including enterprises owned and controlled by women, have the maximum opportunity to compete for and perform subcontracts. The Contractor shall not discriminate on the basis of age, race, color, religion, national origin, sex or disability in the award of subcontracts.

The Contractor shall submit to the Civil Rights Office Small Business Development Program copies of any agreements with DBE/WBEs upon execution.

The Contractor is advised that failure to carry out the requirements as set forth above shall constitute a breach of contract, and after notification by the Department, may result in termination of the contract or other remedy deemed appropriate by the Department.

STATE

OF

TENNESSEE

January 1, 2015

(Rev. 01-03-14)
(Rev. 09-08-14)
(Rev. 01-06-15)
(Rev. 01-11-16)

SPECIAL PROVISION

REGARDING

TENNESSEE DEPARTMENT OF TRANSPORTATION

2016 MINIMUM WAGE SCALES FOR FEDERAL-AID CONSTRUCTION |

& 2016 MINIMUM WAGE SCALES FOR STATE FUNDED CONSTRUCTION |

This Contract contains "Tennessee Department of Transportation 2016 Minimum Wage Scales for State Funded Construction", Tennessee Department of Labor Decision No. T-40189, dated January 1, 2016, and Tennessee Department of Transportation 2016 Minimum Wage Scales for Federal-Aid Highway Construction, U. S. Department of Labor Decision No. TN160002 (dated January 8, 2016).

The Contractor is required to pay the greater of the two (2) rates for each classification

Note: Minimum Wage Scales for Federal-Aid Heavy Construction are on file with the Department, and will be included in all applicable Contract Proposals

TENNESSEE DEPARTMENT OF TRANSPORTATION

MINIMUM WAGE SCALES FOR FEDERAL AID HIGHWAY CONSTRUCTION

General Decision Number: TN160002 01/08/2016 TN2

Superseded General Decision Number: TN20150002

State: Tennessee

Construction Type: Highway

Counties: Tennessee Statewide.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.15 for calendar year 2016 applies to all contracts subject to the Davis-Bacon Act for which the solicitation was issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.15 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2016. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/08/2016

* SUTN2010-002 03/24/2014

	Rates	Fringes
BRICKLAYER.....	\$ 21.99	
CARPENTER.....	\$ 16.85	
CEMENT MASON/CONCRETE FINISHER...	\$ 15.22	

ELECTRICIAN.....\$ 24.69

IRONWORKER

Reinforcing.....\$ 15.91

Structural.....\$ 17.97

LABORER

Common/Unskilled.....\$ 12.89

Skilled

Air Tool Operator,
Asphalt Raker, Chain Saw
Operator, Concrete Mixer
(less than 1 yd),
Concrete Rubber, Edger,
Fence Erector, Form
Setter (steel), Guard
Rail Erector, Mechanic's
Tender (tire changer or
oiler), Mortar Mixer,
Nozzleman or Gun Operator
(gunite), Pipelayer,
Sign Erector.....\$ 14.88

PAINTER (INCLUDES SANDBLASTER)...\$ 26.23

POWER EQUIPMENT OPERATOR:

GROUP 1

Backhoe/Hydraulic
Excavator (3/4 yd &
over), Crane (less than
20 Tons), End Loader (3
yd & over), Motor Patrol
(finish), Piledriver,
Dragline.....\$ 18.62

GROUP 1A

Drill Operator (Caisson)...\$ 25.04
Farm Tractor Operator
(Power Broom).....\$ 13.21

GROUP 2

Backhoe/Hydraulic
Excavator (less than 3/4
yd), Bulldozer or Push
Dozer, End Loader (less
than 3 yd), Motor Patrol
(rough), Tractor
(crawler/ utility), Truck
Driver (Heavy Duty, Off
Road) Scraper, Shovel, or
Trenching Machine.....\$ 16.51

GROUP 3

Asphalt Paver, Concrete

Finishing Machine,
 Concrete Paver, Scale,
 Spreader (self-
 propelled), Concrete
 Grinder, Asphalt Milling
 Machine, Boring Machine
 (horizontal).....\$ 17.10

GROUP 4

Bobcat, Central Mining
 Plant, Concrete Pump,
 Concrete Saw, Curb
 Machine (automatic or
 manual), Dozer or Loader
 (stockpile), Drill
 (piling), Mulcher or
 Seeder, Rock Drill (truck
 mounted), Roller
 (asphalt), Roller
 (compaction self-
 propelled), Soil
 Stabilization Machine,
 Tractor (boom and hoist),
 Bituminous Distributor
 Machine, pump, Track
 Drill, Striping Machine....\$ 16.02
 Heavy Duty Mechanic.....\$ 20.88
 Light Duty Mechanic.....\$ 17.04
 Sweeping Machine (Vacuum)
 Operator.....\$ 15.54

GROUP 5

Crane (over 20 Tons).....\$ 19.02

TRUCK DRIVER

2 axles.....\$ 14.17
 3-4 axles.....\$ 14.33
 5 or more axles.....\$ 16.93

 WELDERS - Receive rate prescribed for craft performing
 operation to which welding is incidental.

=====
 Unlisted classifications needed for work not included within
 the scope of the classifications listed may be added after
 award only as provided in the labor standards contract clauses
 (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an

interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION



STATEOFTENNESSEETENNESSEE DEPARTMENT OF TRANSPORTATION2016 MINIMUM WAGE SCALES FOR STATE FUNDED CONSTRUCTION

January 1, 2016

Tenn. DOL Decision No. T-40189

CLASSIFICATION (ENGLISH)	CLASSIFICATION (SPANISH)	Basic Hourly Rates	Craft No.
Bricklayer	Ladrillero	14.26	01
Carpenter / Leadsperson	Carpintero o Lider	17.52	02
Class "A" Operators	Operador Clase A	19.14	03
Class "B" Operators	Operador Clase B	17.08	04
Class "C" Operators	Operador Clase C	17.75	05
Class "D" Operators	Operador Clase D	16.48	06
Concrete Finisher	Terminador de Cemento	15.55	07
Drill Operator (Caisson)	Operador de Perfordora	25.26	08
Electrician	Electricista	24.08	09
Farm Tractor Operator (Power Broom)	Operador de Tractor de Rancho	13.50	10
Ironworkers (Reinforcing)	Herrero	16.29	11
Ironworkers (Structural)	Herrero de Estructura	16.89	12
Mechanic (Class I) Heavy Duty	Mecanico Clase 1	20.33	13
Mechanic (Class II) Light Duty	Mecanico Clase 2	19.53	14
Painter / Sandblaster	Pintor o Lajador	26.36	15
Powder Person / Blaster	Provedor de Explosivos	19.77	16
Skilled Laborer	Obrero Diestro	15.27	17
Survey Instrument Operator	Operador de Agrimensor	20.45	18
Sweeping Machine (Vacuum) Operator	Operador de Barredora	15.56	19
Truck Driver (2 axles)	Camionero (2 ejes)	15.36	20
Truck Driver (3/4 axles)	Camionero (3 o 4 ejes)	14.86	21
Truck Driver (5 or more axles)	Camionero (5 o más ejes)	16.27	22
Laborer /Unskilled , Flagger, Traffic Control, Pickup Driver	Obrero no Diestro	13.11	23
Worksite Traffic Coordinator	Coordinar de Trafico en el Lugar de Trabajo	19.05	24
Crane Operator	Operador de la Grua	20.44	25

CLASSIFICATION**CRAFT NO.****SKILLED LABORER:****17**

Air Tool Operator, Asphalt Raker, Chain Saw Operator, Concrete Mixer Operator (less than 1 yard), Concrete Rubber/Edger, Fence Erector, Form Setter (Steel Road), Guardrail Erector, Mechanic's Helper (Tire Changer or Oiler), Mortar Mixer, Nozzelman or Gun Operator (Gunitite), *Pipelayer, Sign Erector

CLASS "A" OPERATORS:**03**

Backhoe/Hydraulic Excavator (3/4 yard and over), Crane (less than 20 tons see Crane Operator below), End Loader (3 yards and over), Motor Patrol (Finish), Pile Driver, Dragline

CLASS "B" OPERATORS:**04**

Backhoe/Hydraulic Excavator (less than 3/4 yard), Bull Dozer or Push Dozer, End Loader (less than 3 yards), Motor Patrol (Rough), Tractor (Crawler/Utility), Scraper, Shovel, Trenching Machine

CLASS "C" OPERATORS:**05**

Asphalt Paver, Concrete Finishing Machine, Concrete Paver, Scale, Spreader (Self-Propelled), Concrete Grinder, Asphalt Milling Machine, Boring Machine Operator (Horizontal)

CLASS "D" OPERATORS:**06**

Bobcat, Central Mixing Plant, Concrete Pump, Concrete Saw, Curb Machine (Automatic or Manual), Dozer or Loader (Stockpile), Drill (Piling), Mulcher or Seeder, Rock Drill (Truck Mounted), Roller (Asphalt), Roller (Compaction Self-Propelled), Soil Stabilization Machine, Tractor (Boom & Hoist), Bituminous Distributor Machine, Pump, Track Drill, Striping Machine Operator, Ditch Paving Machine

CRANE OPERATOR:**25**

Means one who operates boom-type equipment equal to or greater than 20 tons to hoist and move materials, raise and lower heavy weights and perform other related operations; may oil, grease or otherwise service and make necessary adjustments to equipment as needed; and may perform other related duties. (Note: The equipment is used for such work as pouring concrete and setting steel. This work is subject to strict inspection and must conform closely to specifications. The equipment may also be used for other miscellaneous tasks for which crane or stick-type equipment is required which may include hoist operations and pile driving operations.)

***Skilled Laborer - Pipelayer Classification**

For any work where prevailing wage rates apply which is located five feet or more outside the actual building if building construction is involved:

AND

- (a) which consists of the building, rebuilding, locating, relocating or repairing any street, highway, bridges, water lines, sewer lines, gas lines, force mains or other related utilities

OR

- (b) which involves the construction or upgrading of industrial parks or sites and is located outside the five foot limitation.

The classification of pipelayer shall be applicable and the description of work under this classification shall be as follows:

Lays, connects, inspects and tests water lines, force mains, gas lines, sanitary or storm sewers and drains, underground telephone and electric ducts or other utilities manufactured from clay, concrete, steel, plastic, cast iron pipe or other similar materials.

May smooth bottom of trench to proper elevation by scooping with a shovel; receives pipe lowered from top of trench; inserts spigot end of pipe into bell end of last laid pipe; adjusts pipe to line and grades, caulks and seals joint with cement or other sealing compound; may connect threaded or flanged joint pipe; may assemble and place corrugated metal or plastic pipe and performs other related duties.

Additional Information :

Wage Rates : <http://www.tennessee.gov/labor-wfd/prevail.html>

Poster Page : <http://www.state.tn.us/labor-wfd/poster.htm>

Note: Adobe Acrobat Reader is required in order to download & print. If you do not have this software a link is provided at the bottom of the Poster Page for a free download.

Tenn.Dept. of Labor & Workforce Development (Labor Standards Division) : (615) 741-2858.

APPRENTICESHIP REGULATIONS:

Under T.C.A., §12-449, the Prevailing Wage Commission has promulgated Rule 0800-3-2-.04 which provides that: "Apprentices shall mean those persons registered individually under a bona fide apprenticeship program registered with the Bureau of Apprentiship and Training in the United States Department of Labor. The state agency contracting officer shall require the contractor or sub-contractor using the apprentice to submit evidence of his indenture and/or apprenticeship registration when the apprentice's name first appears on a submitting payroll."

AUTHORITY: T.C.A., §12-449. Administrative History: Original Rule filed June 4, 1976. Effective: July 14, 1976.

PROPOSAL
TO THE TENNESSEE DEPARTMENT OF TRANSPORTATION
NASHVILLE, TENNESSEE

By submitting this Proposal, the undersigned bidder represents that it has carefully examined the site of the work described herein, has become familiar with local conditions and the character and extent of the work; has carefully examined the Plans, the *Standard Specifications for Road and Bridge Construction* (January 1, 2015) adopted by the State of Tennessee, Department of Transportation, with subsequent revisions which are acknowledged to be a part of this Proposal, the Special Provisions, the Proposal Form, the Form of Contract, and the Form of Contract Payment and Performance Bond (or the Form of Contract Performance Irrevocable Letter of Credit, for mowing contracts); and thoroughly understands their stipulations, requirements, and provisions.

The undersigned bidder has determined the quality and quantity of materials required; has investigated the location and determined the sources of supply of the materials required; has investigated labor conditions; and, has arranged for the continuous prosecution of the work herein described.

By submitting this Proposal, the undersigned bidder agrees to provide all necessary equipment, tools, labor, incidentals, and other means of construction, to do all the work, and furnish all the materials of the specified requirements which are necessary to complete the work in accordance with the Plans, and the Specifications, and agrees to accept as payment in full therefor the unit prices for the various items described in the Specifications that are set forth in this Proposal. The bidder understands that the quantities of work specified are approximate only and are subject to increase or decrease and that any such increase or decrease will not affect the unit prices set forth in this Proposal. Compensation for "extra work" which may be required by the Department in connection with the construction and completion of the work but which was not reflected in the Plans and Specifications at the time of bidding, will be made in the following manner: work for which there is a unit price set forth in this Proposal will be compensated at that unit price; work for which there is no unit price set forth in this Proposal will be compensated in accordance with the applicable Standard Specifications.

By submitting this Proposal, the parties hereto, in the performance of this Contract, shall not act as employees, partners, joint ventures, or associates of one another. It is expressly acknowledged by the parties hereto that such parties are independent contracting entities and that nothing in this Contract shall be construed to create an employer/employee relationship or to allow either to exercise control or direction over the manner or method by which the other transacts its business affairs or provides its usual services. The employees or agents of one party shall not be deemed or construed to be the employees or agents of the other party for any purpose whatsoever.

By submitting this Proposal, the undersigned bidder, if awarded the contract, agrees that it will be responsible for compliance with the Patient Protection and Affordable Care Act (“PPACA”) with respect to itself and its employees, including any obligation to report health insurance coverage, provide health insurance coverage, or pay any financial assessment, tax, or penalty for not providing health insurance. The Contractor shall indemnify the State and hold it harmless for any costs to the State arising from Contractor’s failure to fulfill its PPACA responsibilities for itself or its employees.

By submitting this Proposal, the undersigned bidder, if awarded the contract, shall be registered with the Department of Revenue for the collection of Tennessee sales and use tax or provide confirmation from the Department of Revenue that the bidder is not required to register for the Tennessee sales and use tax. This registration requirement is a material requirement of this Contract.

By submitting this Proposal, the undersigned bidder hereby agrees to be bound by the award of the Contract and, if awarded the Contract on this Proposal, to execute the required Contract and the required Contract Payment and Performance Bond (or Contract Payment and Performance Irrevocable Letter of Credit, for mowing contracts only) within ten days after receipt of notice of the award. The undersigned bidder submits herewith the required Proposal guaranty (or Proposal Irrevocable Letter of Credit, for mowing contracts only) in an amount of not less than five per cent of the total amount of the Proposal offered and agrees and consents that the Proposal guaranty (or Proposal Irrevocable Letter of Credit) shall immediately be at the disposal of the Department, not as a penalty, but as an agreed liquidated damage if the required Contract and Contract Payment and Performance Bond (or Irrevocable Letter of Credit) are not executed within ten days from receipt of the notice of award.

THIS PROPOSAL SUBMITTED BY:

Bidder (1)

By: _____

Printed Name and Title

Address

City/State/Zip

Bidder (1) being a _____ composed of officers, partners, or owners as follows:
(Type of business entity)

Name/Title

Name/Title

Name/Title

Name/Title

Name/Title

Name/Title

Bidder (2)*

By: _____

Printed Name and Title

Address

City/State/Zip

Bidder (2) being a _____ composed of officers, partners, or owners as follows:
(Type of business entity)

Name/Title

Name/Title

Name/Title

Name/Title

Name/Title

Name/Title

***NOTE: The signature and information for Bidder (2) is to be provided when there is a joint venture.**

PROPOSAL CERTIFICATION

The undersigned, being first duly sworn, certifies on behalf of the bidder that it has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this Proposal or Contract. This is an official document that is required or authorized by law to be made under oath and is presented in an official proceeding. A person who makes a false statement in this certification is subject to the penalties of perjury.

The undersigned further certifies that said bidder is not under the control of any person, firm, partnership, or corporation, which has or exercises any control of any other person, firm, partnership, or corporation, which is submitting a bid on this Contract.

_____ Sworn to and subscribed before me
Bidder (1)
this _____ day of _____, _____.
By: _____

_____ Notary Public
Printed Name and Title
My commission expires_____.

(Seal)

_____ Sworn to and subscribed before me
Bidder (2)
this _____ day of _____, _____.
By: _____

_____ Notary Public
Printed Name and Title
My commission expires_____.

(Seal)

***NOTE: The signature and information for Bidder (2) is to be provided when there is a joint venture.**

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
PROPOSAL GUARANTY BOND
CONTRACT NO. _____

Principal: _____
Print Name of Principal

Surety: _____
Print Name of Surety

KNOW ALL MEN BY THESE PRESENTS, that we, the Principal and Surety above named, are held and firmly bound unto the Department of Transportation in the full and just sum of five (5) percent of the total amount bid by the Principal for the project stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

NOW, THEREFORE, the condition of this obligation is: the Principal shall not withdraw its bid within sixty (60) days after the opening of the bids, or within such other time period as may be provided in the Proposal, and if the Department of Transportation shall award a Contract to the Principal, the Principal shall, within ten (10) days after written notice of the award is received by him, fully execute a Contract on the basis of the terms, conditions and unit prices set forth in his Proposal or bid and provide bonds (or Irrevocable Letter of Credit, for mowing contracts) with good and sufficient surety, as required for the faithful performance of the Contract and for the protection of all persons supplying labor, material, and equipment for the prosecution of the work. In the event the Principal withdraws its bid after bids are opened, or after award of the Contract has been made fails to execute such the Contract and/or such additional documents as may be required and to provide the required bonds (or Irrevocable Letter of Credit, for mowing contracts) within the time period specified above, then the amount of the Proposal Bond shall be immediately paid to the Department of Transportation, not as a penalty, but as agreed upon liquidated damages.

IN WITNESS WHEREOF, the Principal has caused these presents to be signed by a duly authorized official and the Surety has caused these presents to be duly signed and sealed by an authorized agent or attorney-in-fact.

_____	_____
Principal (1)	Surety (1)
By: _____	By: _____
	General Agent or Attorney-in-Fact
_____	_____
Print Name and Title	Date

Date	(Seal)

_____	_____
Principal (2)	Surety (2)
By: _____	By: _____
	General Agent or Attorney-in-Fact
_____	_____
Print Name and Title	Date

Date	(Seal)

***NOTE: The signature and information for Principal(2) and Surety(2) is to be provided when there is a joint venture.**

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
PROPOSAL GUARANTEE

CONTRACT NO. _____

Bidder: _____
Print Name of Bidder

KNOW ALL MEN BY THESE PRESENTS, that the above-named Bidder has tendered the attached cashier's or certified check in an amount equal to five (5) percent of the total amount it bid for the project stated above, payable to the State of Tennessee, Department of Transportation, to be held pending the fulfillment of the following obligation conditions.

NOW, THEREFORE, the condition of this obligation is: the Bidder shall not withdraw its bid within sixty (60) days after the opening of the bids, or within such other time period as may be provided in the Proposal, and if the Department of Transportation shall award a Contract to the Bidder, the Bidder shall, within ten (10) days after it receives written notice of the award, fully execute a Contract on the basis of the terms, conditions and unit prices set forth in its Proposal or bid and provide bonds with good and sufficient surety (or Contract Performance Irrevocable Letter of Credit, for mowing contracts), as required for the faithful performance of the Contract and for the protection of all persons supplying labor, material, and equipment for the prosecution of the work. In the event the Bidder withdraws its bid after bids are opened, or after award of the Contract has been made fails to execute such the Contract and/or such additional documents as may be required and to provide the required bonds (or Irrevocable Letter of Credit) within the time period specified above, then the Department of Transportation shall cash the attached check and retain the funds, not as a penalty, but as agreed upon liquidated damages.

IN WITNESS WHEREOF, the Bidder has caused these presents to be signed by a duly authorized official.

_____ Bidder (1)	_____ Bidder (2)*
By:_____	By:_____
_____ Print Name and Title	_____ Print Name and Title
_____ Date	_____ Date

***NOTE: The signature and information for Bidder(2) is to be provided when there is a joint venture.**
(6)

TENNESSEE DEPARTMENT OF TRANSPORTATION

CONTRACT NO. _____

This agreement is made and executed in three (3) originals, between the State of Tennessee, Department of Transportation, hereinafter referred to as the “Department” and

hereinafter referred to as the “Contractor.”

WITNESSETH

The Department did advertise for, receive and accept a bid from the Contractor for work on the above identified contract.

In consideration of the agreements herein contained, to be performed by the parties hereto and of the payments hereafter agreed to be made, it is mutually agreed by both parties that:

1. The contract between the parties consists of the following “Contract Documents” all of which constitute one instrument:
 - (a) the Instructions to Bidders
 - (b) the Proposal
 - (c) all conditions and terms of this Contract form
 - (d) the Contract Payment & Performance Bond (or Irrevocable Letter of Credit, for mowing contracts)
 - (e) the *Tennessee Department of Transportation Standard Specifications for Road and Bridge Construction*, January 1, 2015 Edition (hereinafter referred to as the “2015 Standard Specifications”)
 - (f) Supplemental Specifications
 - (g) Revisions and Additions
 - (h) Special Provisions
 - (i) Addenda
 - (j) The Tennessee Department of Transportation Standard Drawings
 - (k) The Contract Plans,
 - (l) The Work Order
 - (m) Construction Changes
 - (n) Supplemental Agreements

All of the provisions contained in the listed Contract Documents are incorporated herein by reference with the same force and effect as though set out in full.

2. The Contract Documents are intended to be complementary and to describe and provide for a complete work. Requirements in one of these are as binding as if occurring in all of them. In case of discrepancy, Supplemental Specifications will govern over the 2015 Standard Specifications; the Contract Plans will govern over both Supplemental and Standard Specifications, and Special Provisions will govern over both Plans and Specifications. In interpreting Plans, calculated dimensions will govern over scaled dimensions. Contract Plans, typical cross sections and approved working drawings will govern over Standard Drawings.

3. The Contractor agrees to furnish all materials, equipment, machinery, tools and labor and to perform the work required to complete the project in a thorough and workmanlike manner, to the satisfaction of the appropriate official of the Department.
4. The Department agrees to pay to the Contractor such unit prices for the work actually done as are set out in the accompanying proposal, in the manner provided for in the 2015 Standard Specifications, Supplemental Specifications and applicable Special Provisions.
5. The Contractor shall, at all times, observe and comply with all applicable federal, state and local laws, ordinances and regulations and shall indemnify and hold harmless the State of Tennessee and all of its officers, agents and servants against any claim of liability or assessment of fines or penalties arising from or based upon the Contractor's and/or its employees' violations of any such law ordinance or regulation. The Contractor shall maintain documentation for all charges against the State under this Contract. The books, records and documents of the Contractor insofar as they relate to the work performed or money received under this contract shall be maintained for a period of three (3) full years from the date of the final payment and shall be subject to audit at any reasonable time and upon reasonable notice by the State, the Comptroller of the Treasury, or their duly appointed representatives.
6. The Contractor shall be responsible for any and all injury or damage to persons or to property arising from the prosecution of the work and due to any act, omission, neglect or misconduct in its manner or method of prosecuting the work or due to its non-execution of the work or due to defective work or materials. The Contractor shall provide proof of adequate and appropriate general liability insurance providing liability coverage in an amount not less than \$1 million dollars per occurrence and \$300,000 per claimant, naming the State of Tennessee as an additional insured.
7. The Contractor shall indemnify and hold harmless the State, the Department and all of its officers, agents and employees from all suits, actions or claims of any character arising from the Contractor's acts or omissions in the prosecution of the work, use of unacceptable materials in constructing the work, infringement of patent, trade mark or copyright, or claims for Workers' Compensation. If any such suit, action or claim is filed, the Department may retain from the monies due to the Contractor under this Contract a sum deemed sufficient by the Department to protect the Department from loss therefrom. Upon resolution of the suit, action or claim, any remaining retained funds will be released.
8. Upon execution of this Contract, the Contractor shall be prepared to begin the work to be performed under the Contract, but will not proceed until it has received official "Notice to Proceed". This official notice will stipulate the date upon which it is expected that the Contractor will begin his work, and from which date the working days tabulated against its time limit will begin. All other requirements in regard to the beginning of construction set forth in the Proposal and Special Provisions will date from the official notice.

IN WITNESS WHEREOF, the parties hereto have caused this Contract to be signed and executed |
by their respective authorized agents or officials.

Contractor 1

Contractor 2*

By: _____

By: _____

Printed Name and Title

Printed Name and Title

Date

Date

STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

This Contract is accepted this _____ day of _____, _____,
and is effective on the _____ day of _____, _____.

Commissioner

Approved:

Department Attorney

***NOTE: The signature and information for Contractor 2 is to be provided when there is a joint venture.**

CONTRACT PAYMENT AND PERFORMANCE BOND

CONTRACT NO. _____

Be it known that _____, as Principal, and _____, as Surety(ies), all authorized to do business in the State of Tennessee, hereby bind themselves to the State of Tennessee, Department of Transportation, and other potential claimants, for all obligations incurred by the Principal under its contract with the State of Tennessee, Department of Transportation, for the construction of the above identified contract; in the full contract amount of _____ (\$_____).

The obligations of the Principal and Surety(ies) under these payment and performance bonds shall continue in full force and effect until all materials, equipment and labor have been provided AND all requirements contained in the contract, plans and specifications have been completed in a timely, thorough and workmanlike manner. The parties agree that these bonds are statutory in nature and are governed by the provisions contained in Title 12, chapter 4 and Title 54, chapter 5 of the Tennessee Code Annotated relating to bonds required of contractors and that those provisions constitute a part of this bond.

By this instrument, the Principal and Surety(ies) specifically bind themselves, their heirs, successors, and assigns, *in solido*, under the following bonds:

Payment Bond. To the Tennessee Department of Transportation and all "Claimants," as contemplated by T.C.A. Title 54, chapter 5, in the full contract amount of

_____ (\$_____),
in order to secure the payment in full of all timely claims under the project.

Performance Bond. To the Tennessee Department of Transportation in the full contract amount of _____

_____ (\$_____),
in order to secure the full and faithful performance and timely completion of the project according to its plans and specifications, inclusive of overpayments to the contractor and liquidated damages as assessed.

Upon receipt of notice that the Principal is in default under the contract, the Surety(ies) shall undertake to complete performance, without regard to cost. If the Surety(ies) fail or refuse to complete performance of the contract, the Department may then proceed with the work in any lawful manner that it may elect until it is finally completed. When the work is thus finally completed, the total cost of the same will be computed. All costs and charges incurred by the Department in completing the Work will be deducted from any monies due or which may become due to the Principal. If the total costs of completion exceeds the sum which would

have been payable under the Contract, then the Principal and the Surety(ies), *in solido*, shall be liable for and shall pay to the Department the amount of such excess.

In witness whereof we have signed this instrument as dated.

Principal/Contractor 1 _____

By: _____

Date _____

Printed Name and Title

(For Joint Venture)

Principal/Contractor 2 _____

By: _____

Date _____

Printed Name and Title

Surety 1 _____

Surety 2 _____

By: _____

By: _____

Attorney-in-Fact

Attorney-in-Fact

Printed Name

Printed Name

Agency Name

Agency Name

Street Address

Street Address

City/State/Zip

City/State/Zip

(Seal)

(Seal)

Subsequent correspondence/communication from TDOT with respect to monthly progress reports and/or the contract bonds should be directed to:

For Surety 1:

Name

Address

City

State/Zip

Phone Number

Fax Number

For Surety 2:

Name

Address

City

State/Zip

Phone Number

Fax Number