

Part 501 – Authorizations

Subpart A – Review and Approval

TN501.1(B)(3)(e)

TN501.1 Scope

- B. Non-NRCS employees operating under the technical supervision of an NRCS employee and providing engineering services must be evaluated and assigned an appropriate engineering job approval as provided in Section 501:1(A) with the following additional criteria:
- (3) Non-NRCS employees who are not federal employees and are not licensed to practice engineering in Tennessee and who are specifically assigned to carry out NRCS work under the direct technical supervision and control of a NRCS employee(s) may be delegated engineering job approval authority (JAA). [See TN501.4(B)]
 - (a) Non-NRCS employees who are not federal employees and are not licensed to practice engineering in Tennessee must adhere to Tennessee Code Annotated, Title 62, Chapter 2, regulating the practice of engineering.
 - (b) Due to liability issues and Tennessee laws regarding the practice of engineering, the delegating engineer must confer with the State Conservation Engineer (SCE) prior to delegating engineering job approval authority to non-NRCS employees.
 - (c) Before engineering job approval authority can be delegated to non-NRCS employees, a [Memorandum of Understanding \(MOU\)](#) [Exhibit 1] or other written agreement between the employee's employer and NRCS will be required. The MOU or other written agreement must specifically state that the employee is assigned to NRCS to carry out NRCS work under the direct technical supervision and control of the employee(s) of NRCS. A copy of the MOU must be attached to the [Tennessee Engineering Job Approval Authority, TN-ENG-1](#) [Exhibit 2].
 - (d) The delegating authority must provide a copy of the signed MOU and the Tennessee Engineering Job Approval Authority, TN-ENG-1 for the non-NRCS employee to the SCE.
 - (e) Delegating engineering job approval authority to a District employee by NRCS does not provide any liability protection for the District nor does it provide any protection to the individual District employee. The Federal Government cannot provide legal protection for a District employee based solely on the fact that the employee was operating under a job approval authority established by NRCS.

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TN501.3(C)(3)

TN501.3 Compliance of Engineering Work With Laws and Regulations

C. Tennessee NRCS procedures for signing and sealing engineering plans:

- (1) Routine jobs designed by NRCS and non-NRCS employees working as partners with NRCS normally do not require the plans to be sealed by a registered engineer. However, when sealing is required, the approving engineer may seal the plans. If the approving engineer is not licensed in Tennessee and/or does not have the appropriate approval authority, arrangements must be made with the State Conservation Engineer (SCE) prior to beginning the design.

Tennessee Code Annotated laws regulating the practice of engineering require that drawings, plans, specifications, and estimates be prepared by and the construction executed under the direct supervision of a professional engineer for projects of public work that exceed \$25,000. Therefore, for projects with a county or city unit of government sponsor in which NRCS designs and provides construction supervision and that exceeds \$25,000, a professional engineer must seal the plans and supervise the construction activities.

- (a) Engineering plans sealed by the engineer must be personally prepared by the engineer or prepared under the engineer's responsible supervision, direction, or control and be within the engineer's job approval authority.
 - (b) All engineering drawings and specifications for WF-08, Flood Water Retarding Structures, will be approved by the SCE. Other project type drawings and specifications can be approved according to the delegated approval authority.
- (2) The SCE and NRCS engineers registered as a Professional Engineer in Tennessee are authorized to sign and seal engineering plans within their delegated engineering job approval authority for plans required to be sent to regulatory agencies for review, approval or the granting of permits. NRCS personnel must not act as agents for cooperators in securing permits.
- (3) If a cooperating local organization for which NRCS is providing technical assistance is required by law to have plans for public works prepared under direct supervision of a registered professional engineer, the SCE or other NRCS engineers registered as a Professional Engineer in Tennessee are authorized to seal engineering plans within their delegated engineering job approval authority.

TN501.3-14(2)

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TN501.4(B)(2)(h)

TN501.4 Engineering Job Approval Authority

B. State Engineering Job Approval Authority (Classes I through V)

- (2) The SCE develops procedure for approval of engineering work in Tennessee.
 - (a) This policy applies to all individuals having planning, design, or installation responsibility, including conservation district employees and other agencies that are under NRCS technical supervision except where construction inspection of project activities or similar contract jobs where letters of inspection instruction are issued.
 - (b) The engineering job class must be determined before engineering assistance is provided and documented in the assistance notes. As technical assistance is provided on the engineering work, the engineering job class must be constantly re-evaluated and documented to ensure the engineering work is within the person's engineering job approval authority.
 - (c) Inventory and evaluation (I&E), design, and construction of engineering practices must be approved by a person with appropriate engineering job approval authority before alternatives are presented, design is finalized, and construction (installation) is started. Prior to recording decisions in the conservation plan that involve engineering practices, documentation must show that the planned engineering practices were approved by an individual with the appropriate inventory and evaluation job approval authority. This must be documented by the planner, noting decisions made in the conservation assistance notes.
 - (d) Engineering designs and installation are to provide for all aspects of technical quality as stated in NEM 501.2.
 - (e) Engineering job review and approval should be provided by the person closest to the job with technical responsibility for that location. Where personnel with appropriate engineering job approval authority are not available in the field office, the engineer assigned to provide assistance to the field office must review and approve the job. If higher engineering job approval authority is needed, the job must be submitted to the Area Engineer for review and approval.
 - (f) Jobs above the Area Engineer's engineering job approval authority must have the SCE's concurrence during I&E (planning) stage prior to commitment of NRCS resources.
 - (g) Any NRCS employee or non-NRCS employee operating under the technical supervision of an NRCS employee may survey, design, and prepare the engineering plans for jobs requiring approval at any level of engineering job classification. However, final approval of the plans must be made in accordance with delegated engineering job approval authority. Before committing resources, employees must consult with the person who will review and approve the engineering plan.
 - (h) All design calculations and plans must be checked by someone different than the person performing the design. The person checking design calculations must

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TN501.4(B)(3)(b)

have appropriate engineering JAA. Design calculations must be checked prior to construction and initialed and dated by the person checking the plans. The person checking the plans is responsible for determining that all calculations, dimensions, lines, notes, drawing details, and specifications are correct. Each sheet of the engineering plans must be initialed and dated by the person checking the plans.

- (i) The employee approving the engineering design must review the designs, drawings, and specifications and be satisfied that (1) adequate field investigations have been performed; (2) the plans conform to NRCS standards and policy; (3) the layout is suitable; (4) all calculations have been checked and initialed, and (5) installations, if made in accordance with the plans and specifications, will function properly. Each sheet of the engineering plans must be signed and dated by the person approving the plans.
 - (j) Approval of engineering work within the limits of the engineering job approval authority places the full responsibility on the individual for planning, design, and construction of the practice. Any engineering practice may involve complexities, such as geology or hydrology, with which the employee may be unfamiliar. Employees must request assistance when complexities are encountered which exceed their expertise.
 - (k) All structural works of improvement prepared by NRCS for formal contracting must be reviewed and approved by the SCE.
- (3) Engineering job approval authority (JAA) will be delegated according to the job classes established in Tennessee Engineering Job Approval Authority, TN-ENG-1. Engineering JAA applies to engineering investigations and reports, designs, and construction certification for conservation practices.
- (a) The SCE will delegate the engineering JAA of all the area engineers and state office engineers in grades GS-12 and above. The area engineer will delegate engineering JAA to employees, volunteers, and others within their assigned counties with the concurrence of the employee's supervisor.
 - (b) Maximum engineering JAA for design will generally be limited to individuals by job class as follows:

Class I -	Routine Field Office applications (Most field office personnel, district or county employee, volunteer - state, county, or other agency employee)
Class II	Applications requiring alternative design approaches (Selective field personnel trained to handle such applications)
Class III	Complex applications requiring knowledge of engineering principles and concepts (Selective field personnel trained to handle such applications)
Class IV	Complex engineering applications (Non-Licensed Engineers)
Class V	Complex engineering applications (Licensed Professional Engineers)

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TN501.4(B)(3)(h)(ii)

- (c) Employees may only be given engineering JAA after adequate training and upon demonstrated proficiency. Their proficiency should be evaluated on the basis of knowledge of applicable investigation and design criteria and technical resources, judgment, ability to make sound decisions and follow policy, willingness to request assistance and guidance if needed, and performance on smaller jobs. Engineers delegating engineering JAA should review an adequate number of designs and/or installations, at the appropriate engineering job class level, of each practice prepared by the employee. Major factors to be considered include knowledge of policies, applicability, accuracy, completeness of note keeping and record keeping, technical adequacy, and construction applicability.
- (d) All planned and designed practices must be classified according to Job Class in accordance with Tennessee Engineering Job Approval Authority, TN-ENG-1. The Job Class will be noted on the engineering drawing cover sheet and/or in the field notes as appropriate. The classification for a given job will be based on the most restrictive element listed for the conservation practice.
- (e) All employees, volunteers, and others that are delegated approval authority must be appraised on their level of proficiency and issued a copy of Tennessee Engineering Job Approval Authority, TN-ENG-1 along with a [Cover Letter](#) [Exhibit 3]. The responsible engineer must review the employee's approval authority at the frequency of not less than every 3 years as stated in NEM 501.4 B(5). Approval authority must only be assigned to an individual for practices where the individual has demonstrated competence and proficiency in designing and installing.
- (f) If a review of an employee's engineering work reveals a need to revise (increase or decrease) an employee's engineering JAA, the reasons must be documented in writing to the employee and the employee's administrative supervisor. The responsible engineer must send a revised delegated approval authority to the employee's administrative supervisor. The employee's administrative supervisor must concur in and reissue in writing to the employee the revised approval authority.
- (g) Transfer of Engineering JAA: Employees transferred within the state to another area must be reissued engineering JAA in the receiving area within 6 months if the current engineering JAA is older than 3 years.
- (h) Restriction or Revocation of Engineering JAA:
 - (i) Individual engineering job approval authority may be revoked or restricted at any time by the delegating engineer, the Area Engineer, or the State Conservation Engineer.
 - (ii) If approval authority is revoked, the State Conservation Engineer and employee's supervisor will be notified as soon as practical for additional guidance. Some possible reasons for revocation or restriction of engineering JAA may include, but are not limited to, questionable planning to address a resource concern, errors or omissions on designs or construction, or failure to follow engineering policy, such as working outside of delegated authority.

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TN501.4(C)(3)(d)

- (iii) Documentation for revocation may include, but is not limited to, trip reports, peer reviews, spot checks, or Quality Assurance Reviews.

C. Approval of Class VI through VIII Jobs

- (1) Class VI and above jobs must be identified early in the planning stage. The Area Conservationist must provide leadership in developing planning, design, and construction schedules for projects in their administrative area. Approval from the State Conservationist must be obtained prior to the development of these schedules.
- (2) The schedule must indicate the job or project name, county, the type of project, area specialist(s) responsible, and projected date for completing items of work, such as surveys, preliminary design, and final design, including construction specifications, cost estimate, and date final construction drawings are needed. The job schedule should be prepared prior to obtaining design surveys. The schedule will be provided to the State Conservation Engineer (SCE) for review and concurrence and to assist in scheduling expertise needed and assignment of priorities.
- (3) Engineering design assistance, review, and processing for engineering Job Class VI through VIII will be coordinated by the SCE. The SCE is responsible for:
 - (a) Securing assistance and coordinating assistance with NRCS specialists from the National Design, Construction and Soil Mechanics Center (NDCSMC) or other states as appropriate.
 - (b) Providing and coordinating data needed by outside technical specialists assigned to provide technical assistance to Tennessee.
 - (c) Approving the final engineering plans and specifications.
 - (d) Installation.

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TN501.5(B)(4)

TN501.5 Engineering Job Review

A. Design Reviews

(3) Design reviews will be performed as follows:

- (a) Job Classes I through V: Design reviews will be performed for engineering job Classes I through V. Jobs, regardless of engineering job class, must receive a design review prior to final approval by the employee with delegated approval authority. The employee approving the job is responsible for obtaining the design review.
- (b) The State Conservation Engineer (SCE) or a designee by the SCE will be the reviewer for Class VI jobs. The Area Engineer or designer is responsible for obtaining the design review.

B. Post Reviews

- (1) The Area Engineer will be responsible for conducting post reviews (spot checks) in their administrative area in conformance with General Manual: 450 – Technology, Part 407 – Documentation, Certification, and Spot Checking. [Engineering and Non-Eng Spot Check & QAR, TN-MGT-9](#) [Exhibit 4]), will be used. The Area Conservationist will provide a summary and copies of engineering spot check reports to the SCE.
- (2) The SCE or his/her representative will conduct an annual post review or Quality Assurance Review of representative Classes I through V engineering jobs that were designed by the Area Engineer in each administrative area. Area engineers will submit to the SCE a list of all practices designed by the Area Engineer during the previous fiscal year by December 31. The list will include the practice name and code number, extent of practice (feet, acres, etc.), engineering job class, location (county), and landowner name.
- (3) The number and type of jobs reviewed will be determined by the SCE. Post reviews will include a variety of job types. All similar jobs will receive a post review or Quality Assurance Review a minimum of once every three years. The SCE will submit a copy of the post review report to the State Conservationist and the Area Conservationist.
- (4) Area Conservationists are administratively responsible for the technical adequacy of service assistance in the planning and application of engineering practices within their area. District Conservationists have similar responsibilities within their field office jurisdiction. The Area Conservationist will be responsible for following up on all recommendations and action items noted in the engineering post review report or Quality Assurance Review.

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TN501.9

TN501.9 Engineering Job Approval

Click here for a copy of the [Tennessee Engineering Job Approval Authority, TN-ENG-1](#) to be used in Tennessee.

TN501.9-14(8)

Memorandum of Understanding

between the

_____ **Soil Conservation District**

and the

United States Department of Agriculture

Natural Resources Conservation Service

This Memorandum of Understanding establishes the foundation for an enduring cooperative working relationship between the _____ Soil Conservation District and the USDA Natural Resources Conservation Service (NRCS).

Whereas the _____ Soil Conservation District and the NRCS have the common objective of helping bring about the wise conservation of land, water and related resources, they have determined it mutually beneficial to enter into this cooperative working relationship on this day of _____.

A. What the _____ Soil Conservation District will do.

1. Establish District policy that District Technical Staff, while performing conservation technical assistance activities according to NRCS standards, specifications, and policies, be under the direct technical supervision of the NRCS District Conservationist for the purpose of carrying out technical work on Federal, State or District programs or activities.
2. Work with and assist District Technical Staff to complete the required training and submit required work for review as necessary to obtain engineering job approval authority in accordance with NRCS' National Engineering Manual and applicable Tennessee supplements. In the absence of engineering job approval authority being granted to the District employee, require that any engineering design or other work, covered by such authority and completed by the District employee, be reviewed and approved in writing by the NRCS District Conservationist.

B. What the NRCS will do:

1. Authorize engineering job approval authority, as earned, to _____ for carrying out technical work while under the technical supervision of the NRCS District Conservationist.
2. Provide services of qualified personnel and logistical support necessary to carry out such work.
3. Provide technical guidance in accordance with Tennessee NRCS standards and specifications as defined in the Field Office Technical Guide and other related technical standards used by NRCS.
4. Provide direct technical supervision to _____ while carrying out technical work.

C. It is further understood:

1. Either party may provide such additional services, equipment, facilities, materials, and arrangements as may be required to achieve the common objectives.
2. The relationship described herein is that of cooperating agencies, except that while carrying out technical work, _____ may be considered a person acting on behalf of a federal agency for the purposes of the Federal Tort Claims Act, as amended, 28 U.S.C. 2671 et seq. Whether a person is considered a federal employee for this purpose is a question of fact to be determined in each case. However, at a minimum, the District employee must be specifically assigned to NRCS to carry out NRCS work under the direct technical supervision and control of employees of the Service. If he or she is determined to be a federal employee for the purposes of the Act, he or she will be protected by the Act and may be provided representation by the Federal Government.
3. Any working relationship between _____ Soil Conservation District and the NRCS will be that of cooperating agencies to achieve a common objective and not one of procurement of services.
4. This MOU must become effective when signed by both parties and must continue until terminated in accordance with item number 5 of this section.
5. This MOU may be terminated by either party giving five (5) days written notice to the other party.
6. All programs with support from this MOU must be in compliance with the non-discrimination provisions contained in the Titles VI and VII of the Civil Rights Act of 1964, as amended; the Civil Rights Restoration Act of 1989 (Public Law 100-259); and other non-discrimination statutes; namely, section 504 of the Rehabilitation Act of 1973, title IX of the Education Amendment of 1972, and the Age Discrimination Act of 1975. They will also be in accordance with the regulations of the Secretary of Agriculture (7 CFR-15, Subparts A and B), which provide that no person in the United States must on the grounds of race, color, national origin, age, sex, religion, marital status, or handicapped be excluded from participation in, be denied benefits of, or be otherwise subjected to discrimination under any program or activity receiving federal financial and/or technical assistance from the Department of Agriculture or any agency thereof.

_____ SOIL CONSERVATION DISTRICT	USDA-NATURAL RESOURCES CONSERVATION SERVICE
By: _____ (Signature)	By: _____ (Signature)
Title: _____	Title: State Conservationist
Date: _____	Date: _____

ENGINEERING JOB APPROVAL AUTHORITY ^{1/}

Employee Name:	<input type="text"/>	Title:	<input type="text"/>	Grade:	<input type="text"/>
Delegated by:	<input type="text"/> <i>Signature - Responsible Engineer</i>	Title:	<input type="text"/>	Date:	<input type="text"/>
Concurred by:	<input type="text"/> <i>Signature - Line Officer</i>	Title:	<input type="text"/>	Date:	<input type="text"/>
Received and reviewed by:	<input type="text"/> <i>Signature - Employee</i>	Title:	<input type="text"/>	Date:	<input type="text"/>

This form will be reviewed with the employee upon issue and annually to determine if changes are needed. If no significant changes are made, the following table will be used to document that the review has been performed by the appropriate engineering personnel and employee and initialed by the reviewer and employee.

Reviewed By	Name	Title	Comments	Initial	Date
Responsible Engineer	<input type="text"/>				
Employee	<input type="text"/>	<input type="text"/>		<input type="text"/>	
Responsible Engineer	<input type="text"/>				
Employee	<input type="text"/>	<input type="text"/>		<input type="text"/>	
Responsible Engineer	<input type="text"/>				
Employee	<input type="text"/>	<input type="text"/>		<input type="text"/>	
Responsible Engineer	<input type="text"/>				
Employee	<input type="text"/>	<input type="text"/>		<input type="text"/>	

DEFINITIONS OF MAXIMUM APPROVAL LIMITS COLUMN

Inventory and Evaluation (I&E) - Onsite review of an exploratory nature and preparation of sound engineering alternative solutions of sufficient intensity for the land owner to make treatment decisions. I&Es may require assistance from engineers with higher engineering job approval authority for large or complex jobs.

Design - Designing and checking all aspects of supporting data, drawings, and specifications to ensure that the planned practice will meet the purpose for which it is installed. Also includes determining and setting any specific requirements for the site conditions.

Construction - Includes survey construction layout, inspections of construction materials, and construction inspection including performing required tests to determine that the job meets the requirements of the plans and specifications.

Standard designs noted under practice name are those engineering drawings and design criteria that have been approved and distributed or otherwise approved by the State Conservation Engineer. Standard designs are developed to function satisfactorily based on a set of design parameters. The person responsible for design and approval shall verify that the standard design is adaptable to the site and the design limitations are not exceeded.

^{1/} Approval of engineering work within the limits of the engineering job approval authority places the full responsibility on the individual for planning, design, construction layout, and certification of the practice. Any engineering practice may involve complexities, such as geology or hydrology, with which the employee may be unfamiliar. Employees shall request assistance when complexities are encountered which exceed their expertise. The employee approving the engineering design shall check the designs, drawings, and specifications and be satisfied that (1) adequate field investigations have been performed (2) the plans conform to NRCS standards and policy; (3) the layout is suitable; and (4) installations, if constructed in accordance with the plans and specifications, will function properly. Each sheet of the engineering plans shall be signed and dated by the person approving the plans.

Name:				Title:					Grade:		
Prac. Code	Practice Name	Controlling Factors	Units	Engineering Job Class					Max. Approval Limits		
				I	II	III	IV	V	I&E	Design	Constr.
--	Any Practice	Hazard Potential as defined in 503 NEM	---	Low	Low	Low	Low	Low			
--	Any Practice	Alters the visual resources of beaches and shorelines on oceans	---	None	None	None	None	None			
560	Access Road	Surface Treatment	kind	Un-surfaced	Gravel	Gravel	Asphalt	All			
		Length of Road	feet	2,000	5,000	10,000	20,000	All			
		Grade of Road	%	3	5	8	10	All			
		Culverts	See Practice Code 587 Structure for Water Control								
309	Agrichemical Handling Facility	Tank Storage Volume for Chemicals	gal	None	500	1,000	2500	5,000	----	----	----
309	Agrichemical Mixing Station - Portable	Area of Facility	sq. ft.	None	100	900	1500	2500	----	----	----
591	Amendments for the Treatment of Agricultural Waste	Animal Unit (1000 lb)	au	None	None	None	1000	All			
366	Anaerobic Digester	No.	each	None	None	None	All	All			
316	Animal Mortality Facility										
	<u>Normal Mortality</u>										
	Composters	Capacity	cu. ft.	1,000	2,000	All	All	All			
	Freezers	Capacity	cu. ft.	None	None	All	All	All			
	Incinerator	Capacity	lbs.	None	None	All	All	All			
	<u>Catastrophic Mortality Events</u>										
	Burial Pit	Capacity	cu. ft.	None	None	All	All	All			
	Composting	Capacity	cu. ft.	None	None	All	All	All			
575	Animal Trails and Walkways	Area	acres	0.5	2	5	10	All			
450	Anionic Polyacrylamide (PAM) Erosion Control	Area	acres	1	20	40	80	All			
397	Aquaculture Ponds	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/
		Surface Area	acres	1	2	5	10	All			
310	Bedding	Area	acres	10	40	160	320	All			
584	Channel Bed Stabilization	Design Capacity	cfs	10	100	300	400	500			
		Design Velocity	fps	2	2.5	3	5	10			
326	Clearing & Snagging	Length of Reach	feet	500	1,500	2,500	All	All			
360	Closure of Waste Impoundments	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/
		Surface Area	acres	0.5	1	5	10	All			
317	Composting Facility (Std. Design)	Design Capacity	cu. ft.	1,000	2,000	3,000	5,000	All			
656	Constructed Wetlands	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/
		Area	acres	0.5	1	5	20	All			

Name:		Title:							Grade:			
Prac. Code	Practice Name	Controlling Factors	Units	Engineering Job Class					Max. Approval Limits			
				I	II	III	IV	V	I&E	Design	Constr.	
402	Dam	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/
		Storage	ac-ft	1	10	50	100	All				
348	Dam, Diversion	Stream Flow (25 yr. freq.)	cfs	100	500	1,000	1,500	2,000				
		Flow Diverted	cfs	10	50	100	150	200				
		Height of Drop	feet	2	3	5	7	8				
356	Dike	Water Height	feet	1	3	5	8	12				
		Class	no.	III	III	III	III	III				
362	Diversion	Drainage Area	acres	5	20	40	100	All				
554	Drainage, Water Management	Area	acres	40	80	160	640	All				
432	Dry Hydrant	Capacity	gpm	500	1,000	2,000	All	All				
781	Evaporative Cooling Pad	Area of Structure Served by Pad	sq. ft.	500	1,000	2,500	5,000	All				
375	Dust Control from Animal Activity on Open Lot Surfaces	Area Treated	acres	0.25	0.5	1.0	5.0	All				
373	Dust Control on Unpaved Road and Surfaces	Area and Type of Treatment										
		Water	sq. ft.	None	None	None	5.0	All	----	----	----	
		Water absorbing suppressant (hygroscopic palliative)	sq. ft.	None	None	None	5.0	All	----	----	----	
		Adhesive	sq. ft.	None	None	None	5.0	All	----	----	----	
		Petroleum emulsion	sq. ft.	None	None	None	5.0	All	----	----	----	
		Polymer emulsion	sq. ft.	None	None	None	5.0	All	----	----	----	
		Clay additive	sq. ft.	None	None	None	5.0	All	----	----	----	
		Bituminous (petroleum based road oil)	sq. ft.	None	None	None	5.0	All	----	----	----	
393	Filter Strip	Surface Area	acres	0.5	1	5	All	All				
655	Forest Trails and Landings	Area	ac	0.5	1	5	10	All				
		Grade	%	2	5	10	15	All				
410	Grade Stabilization Structure	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	
412	Grassed Waterway	Design Capacity	cfs	25	50	100	250	All				
561	Heavy Use Area Protection	Area Treated	acres	0.25	0.5	1	All	All				
		Surface Treatment	kind	Grass, mulch, etc.	Gravel	Concrete	All	All				
527	Karst Sinkhole Treatment	Area Treated	acres	0.25	0.5	1	5	All				
320	Irrigation Canal or Lateral	Design Capacity	cfs	10	25	100	300	500				

Name:			Title:					Grade:			
Prac. Code	Practice Name	Controlling Factors	Units	Engineering Job Class					Max. Approval Limits		
				I	II	III	IV	V	I&E	Design	Constr.
388	Irrigation Field Ditch	Design Capacity	cfs	1	5	10	25	All			
464	Irrigation Land Leveling	Design Area	acres	40	80	160	640	All			
436	Irrigation Reservoir	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/
		Storage Capacity	ac-ft	5	10	50	100	All			
441	Irrigation System, Microirrigation	System Area	acres	10	40	80	160	All			
		Slope	%	0.5	2	5	All	All			
442	Irrigation System, Sprinkler										
		Center Pivot	System Area	acres	40	80	160	All	All		
		Slope	%	2	5	10	All	All			
	Solid Set	System Area	acres	10	40	80	160	All			
		Slope	%	2	5	10	All	All			
	Traveling gun	System Area	acres	10	40	80	160	All			
		Slope	%	2	5	10	All	All			
	443	Irrigation System, Surface and Subsurface									
All surface systems			System Area	acres	20	40	80	160	All		
Subsurface systems											
Crown Flood		System Area	acres	20	80	160	320	All			
Flow Through		System Area	acres	20	80	160	320	All			
Fully Enclosed		System Area	acres	20	40	80	160	All			
Open Channels		System Area	acres	20	80	160	320	All			
Underground Conduits		System Area	acres	10	40	80	160	All			
		Diameter	inches	4	6	8	All	All			
Ebb and Flow/ Capillary Mats		System Area	acres	1	5	10	40	All			
447	Irrigation System, Tailwater Recovery	Pump-back Capacity	gpm	500	1,000	2,500	5,000	All			
		Area Served	acres	40	160	320	640	All			
428	Irrigation Ditch, Canal Lining	Design Capacity	cfs	2	5	50	100	200			
430	Irrigation Water Conveyance, Pipeline	Pipeline Capacity ≥ 50 psi	gpm	300	600	1,200	2,000	3,500			
		Pipeline Capacity ≤ 50 psi	gpm	300	600	1,200	2,000	5,000			
449	Irrigation Water Management	Area Served	acres	20	80	160	320	All			
460	Land Clearing	Area Cleared	acres	5	10	40	All	All			
466	Land Smoothing	Area Smoothed	acres	20	80	160	320	All			
543	Land Reconstruction, Abandoned Mined Land	Area	acres	0.5	10	40	160	All			
468	Lined Waterway or Outlet	Design Capacity	cfs	10	50	100	300	All			

Name:			Title:						Grade:			
Prac. Code	Practice Name	Controlling Factors	Units	Engineering Job Class					Max. Approval Limits			
				I	II	III	IV	V	I&E	Design	Constr.	
353	Monitoring Well	No.	each	None	1	3	All	All				
500	Obstruction Removal	Hazard to Public During Removal										
		None	acres	0.5	1	3	All	All				
		Moderate to High	acres	None	None	None	None	None				
374	On-Farm Equipment Efficiency Improvement	On-farm energy audit recommendations	no.	None	None	None	All	All				
582	Open Channel	Design Capacity (Subcritical Flow Only)	cfs	50	100	300	500	1,000				
		Design Velocity	fps	2	2	3	5	10				
516	Pipeline	Operating Pressure	psi.	60	80	125	200	300				
		Inside Diameter	in.	2	3	4	6	8				
378	Pond Embankment Excavated											
		2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	
	Water Surface Area		acres	0.25	1	5	10	All				
521	Pond Sealing or Lining											
		Bentonite Sealant	Area Lined	acres	0.25	0.5	1	5	All			
		Flexible Membrane	Area Lined	acres	0.25	0.5	1	5	All			
		Soil Dispersant	Area Lined	acres	0.25	0.5	1	5	All			
		Compacted Clay Treatment	Area Lined	acres	0.25	0.5	1	5	All			
462	Precision Land Forming	Design Area	acres	20	80	160	320	All				
533	Pumping Plant	<u>Axial Flow Pump</u>										
		Design Capacity	gpm	1,000	2,500	10,000	30,000	50,000				
		Static Head	feet	10	10	10	12	15				
		<u>Mixed Flow Pump</u>										
		Designed Capacity	gpm	1,000	5,000	10,000	30,000	50,000				
		Head	feet	10	10	15	30	40				
		<u>Centrifugal Pump</u>										
		Design Capacity	gpm	300	500	1,500	2,500	3,500				
		Static Head	feet	75	150	300	350	350				
		<u>Turbine Pump</u>										
		Design Capacity	gpm	300	500	1,500	2,500	3,500				
		Static Head	feet	75	150	300	350	500				

Name:				Title:					Grade:		
Prac. Code	Practice Name	Controlling Factors	Units	Engineering Job Class					Max. Approval Limits		
				I	II	III	IV	V	I&E	Design	Constr.
566	Recreation Land Grading & Shaping	Area Graded	acres	4	10	40	160	All			
367	Roofs and Covers	Area of Cover	acres	None	None	None	All	All			
558	Roof Runoff Structure	Roof Area	sq. ft.	2,000	5,000	10,000	All	All			
557	Row Arrangement	Area of Field	acres	40	160	320	640	All			
350	Sediment Basin	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/
632	Solid/Liquid Waste Separation Facility	Animal Unit (1000 lb)	au	None	500	1000	2000	All			
572	Spoil Spreading	Area Receiving Spoil	acres	0.25	0.5	3	All	All			
574	Spring Development	Spring Flow	gpm	10	50	300	450	All			
578	Stream Crossing	Bankfull Flow	cfs	25	50	100	300	500			
		Pipe Crossing	3/	3/	3/	3/	3/	3/	3/	3/	3/
570	Stormwater Runoff Control	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/
580	Streambank and Shoreline Protection	Shorelines, Revetments, Bulkheads, and Groins									
		Water Height Above Shoreline	feet	None	None	None	None	3			
		Bankfull Capacity	cfs	None	None	200	500	5,000			
		Bankfull Velocity	fps	None	None	3	5	10			
587	Structure for Water Control	Pipe, I.D.	feet	2	3	4	5	6			
		Design hydraulic head (design headwater - tailwater)	feet	0.5	1	2	3	All			
		Design Capacity	cfs	10	50	100	300	All			
606	Subsurface Drain	Design Area	acres	10	40	160	640	All			
		Diameter	in.	4	8	12	24	All			
607	Surface Drainage, Field Ditch	Drainage Area	acres	2	5	10	All	All			
608	Surface Drainage, Main or Lateral	Design Capacity	cfs	10	50	100	300	1,000			
		Design Velocity	fps	1.5	2	3	5	10			
600	Terrace	Drainage Area of System	acres	25	50	100	All	All			
568	Trails and Walkways	Length	feet	1,000	5,000	10,000	All	All			
		Surface treatment	type	No treatment	Wood chips	gravel	All	All			
620	Underground Outlet	Pipe Diameter	in.	8	12	18	24	All			
635	Vegetated Treatment Area	Acres	0.5	1	2	5	All	All			

Name:		Title:							Grade:		
Prac. Code	Practice Name	Controlling Factors	Units	Engineering Job Class					Max. Approval Limits		
				I	II	III	IV	V	I&E	Design	Constr.
636	Water Harvesting Catchment	Storage Capacity	gallons	1,000	3,000	10,000	50,000	All			
313	Waste Storage Facility (Std. Design)	<u>Structure Wall Height</u>									
		Above Ground	feet	None	3	6	10	16			
		Below Ground	feet	None	3	5	8	8			
		<u>Tank Span</u>									
		Above Ground	feet	None	None	None	All	All			
		Below Ground	feet	None	None	None	14	16			
		<u>Storage Capacity</u>	cu. ft. (thous)	None	None	None	1,000	2,000			
		<u>Impoundment</u>									
		Storage Volume	ac. ft.	5	10	40	100	All			
		3/Effective Height of Dam	feet	3	5	15	25	35			
634	Waste Transfer	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/
Refer to other appropriate conservation practices.											
629	Waste Treatment	Animal Unit (1000 lb)	au	None	None	200	1000	All			
359	Waste Treatment Lagoon	Aerobic-Surface Areas	acres	0.25	0.5	1	8	25			
		Anaerobic Volume	cu. ft. (thous)	50	100	500	1,000	2,000			
		3/Effective Height of Dam	feet	5	10	15	25	35			
633	Waste Utilization	Area applied	acres	20	40	160	All	All			
638	Water and Sediment Control Basin	Drainage Area	acres	5	10	40	160	All			
		Fill Height	feet	3	5	12	15	All			
642	Water Well	Diameter	in.	4	6	8	12	All			
351	Water Well Decommissioning	Diameter	in.	4	8	12	16	All			
642	Water Well	Diameter	in.	4	6	8	12	All			
614	Watering Facility	Capacity (total system storage capacity from water source)	gal.	250	500	2,500	All	All			
		No. of main pipelines leaving water source	no.	1	1	2	All	All			
		No. of troughs operating off each supply pipeline simultaneously	no.	1	2	2	All	All			
755	Well Plugging	Diameter	in.	4	8	12	16	All			
355	Well Water Testing	No.	ea.	None	None	All	All	All			
658	Wetland Creation	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/
		Acre	acres	1	5	40	80	All			
659	Wetland Enhancement	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/
		Acre	acres	10	40	80	160	All			
657	Wetland Restoration	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/

Name:		Title:					Grade:					
Prac. Code	Practice Name	Controlling Factors	Units	Engineering Job Class					Max. Approval Limits			
				I	II	III	IV	V	I&E	Design	Constr.	
-	2/ Dams and Structures	Hazard Class	---	low	low	low	low	low	low	low	low	low
		Drainage Area	acres	100	330	660	3300	13200				
		^{4/} Effective Height	feet	10	15	25	30	35				
		Embankment over active fault	---	None	None	None	None	None	----	----	----	----
		<u>Open Channel Spillways</u>										
		slope > 0.5%	acres	40	80	640	960	12,800				
		slope < 0.5%	sq. mi.	0.25	1	5	10	20				
		<u>Principal Spillway Prefabricated Conduit (Single)</u>										
		<u>Corrugated Metal</u>										
		Inside Diameter	in.	12	24	36	42	48				
		^{5/} Total Head	feet	10	15	25	30	All				
		<u>Concrete</u>										
		Inside Diameter	in.	None	12	24	36	48				
		^{5/} Total Head	feet	None	10	20	30	All				
		<u>HDPE</u>										
		Inside Diameter	in.	12	24	36	42	48				
		^{5/} Total Head	feet	3	5	10	15	All				
		<u>Plastic (PVC)</u>										
		Inside Diameter	in.	8	12	15	18	48				
		^{5/} Total Head	feet	5	10	15	20	All				
		Storage x Height	ac-ft ²	500	1,000	2,000	3,000	3,000				
		<u>Straight Drop Spillways (Std Design)</u>										
		Net Drop	feet	None	4	6	8	8				
		Weir Capacity	cfs	None	100	300	400	500				
		<u>Box Inlet Drop Spillways</u>										
		<u>Open or to Conduit</u>										
		Net Drop	feet	None	3	4	5	6				
	Weir Capacity	cfs	None	100	300	400	500					
	<u>Chutes (Std. Design)</u>											
	Net Drop	feet	None	4	8	10	12					
	Weir Capacity	cfs	None	50	200	250	300					

^{2/} Dams & Structures - All with relatively impervious cutoff, simple foundation needs, and standard or proven designs not exceeding the limits of effective height and total head set forth above in the above table.

^{3/} Stream Crossing utilizing pipes refer to controlling factors for Structure for Water Control, Code 587.

^{4/} Effective height of dam is the difference in elevation in feet between the lowest open channel auxiliary spillway crest and the lowest point in the original profile along the centerline of the dam. If there is no open channel auxiliary spillway, the top of the dam becomes the upper limit.

^{5/} Total head is measured from crest of auxiliary spillway to elevation at the top of pipe outlet.

SUBJECT: ENG – Engineering Job Approval Authority

DATE: _____

TO: _____

Engineering job approval authority is the quality assurance process that ensures conservation practices are properly planned and installed as specified. The practice of engineering is governed by state law and it is through the Natural Resources Conservation Service (NRCS) established engineering job approval authority process that many of our employees and partners can provide quality engineering assistance by installing quality conservation practices on the ground. Many conservation engineering practices have the potential, upon failure or malfunction to produce significant property damage. In some cases, public health and safety could be affected including loss of life. To minimize the potential for conservation practice failure, all conservation engineering practices must be approved by NRCS employees or personnel under their direct technical supervision in accordance with appropriate earned and assigned engineering job approval authority.

In accordance with the National Engineering Manual TN501.4 – Engineering Job Approval Authority, you are provided the authority to approve engineering jobs up to the limits shown on the attached pages. This authority places full responsibility on you for the adequacy of designs, plans, specifications, and installation for these practices that fall within your assigned limits or job class. Any designs or work exceeding the limitations must be reviewed and approved by an NRCS employee with the appropriate level of engineering job approval authority prior to layout or construction of the engineering practice.

Despite the level of engineering job approval authority issued, you are expected to request additional assistance or review if you encounter complexities with which you are unfamiliar. Such complexities may arise in any type of engineering job, regardless of size.

Please contact me at _____ or _____ if you have any questions.

Area Engineer Signature, Title, and City, TN

Attachment

cc: _____

County:		Review Date:	Program:
Customer Name/Other Case File ID:			
NRCS/SCD Employees Certifying Practices:		QAR <input type="checkbox"/>	5% Spot Check <input type="checkbox"/>
List of Practices Reported as Applied			
Practice	Engineering or Non Eng	Extent	Applied Date
1.	Eng NEng		
2.	Eng NEng		
3.	Eng NEng		
4.	Eng NEng		
5.	Eng NEng		

Planning Section:

1. All Plans must meet National Planning Procedure Handbook and must at a minimum contain the following to meet TNPDG.	
Checked = Yes Blank = No	
<input type="checkbox"/> Plan Map with Practices	<input type="checkbox"/> Cultural Resources Response
<input type="checkbox"/> Soils Map with Legend	<input type="checkbox"/> T&E Request
<input type="checkbox"/> Topo Map	<input type="checkbox"/> T&E Response
<input type="checkbox"/> Location Map	<input type="checkbox"/> CPA-52 Environmental Evaluation
<input type="checkbox"/> Cultural Resources Request	
2. Was the practice designed according to the standard and specifications; and were the planning and design features properly documented as contained in the TNPDG?	Practices: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
3. Is the practice part of a planned system to solve identified resource concerns on CPA-52?	Practices: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
4. Does the practice meet the intent and purpose of the standard?	Practices: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
5. Were the correct tool(s) used to plan and design the practice?	Practices: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
6. Were adequate signed plans and specifications or engineering notes included in the file folder for construction this practice?	Practices: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
7. Did the employee signing and certifying the design have adequate Engineering job Approval Authority?	Practices: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
8. Was the practice signed and approved as meeting standards or specs by a certified conservation planner? Planners Certification Level L1 L2 L3	Practices: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
9. Does the folder contain documentation the participant was provided adequate information (narrative, job sheet, lifespan, etc) as part of the plan to apply and maintain this practice?	Practices: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5

Certification of Practices:

1. Does the installed practice meet standards? Is it documented in the case file?	Practices: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
2. Does the field check of this practice match the planned location and units of the planned practice map?	Practices: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
3. Does the practice as installed adequately solve the resource concern(s) identified in the planning stages?	Practices: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
4. Was the practice installed according to the plans and specifications?	Practices: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
5. Is the practice adequately operated and maintained? Is vegetation adequate, if applicable?	Practices: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
6. Was the practice properly checked out in accordance with the certification documentation contained in the construction documentation section of the TNPDG?	Practices: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
7. Did the employee certifying the practices have adequate Engineering Job Approval Authority?	Practices: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5

Explain any question that was not checked as meeting the requirements in the space below:

Practice 1:

Practice 2:

Practice 3:

Practice 4:

Practice 5:

Commendable Items:

Needs Improvement:

Action Items:

Training Needs: Are there any training needs identified as a result of this review? YES NO
If yes, list who and the training needed in the Action Items section.

Additional Comments:

Reviewer:	Date:
District Conservationist:	Date:
Area Conservationist:	Date: