

Part 501 - Authorizations

Subpart A – Review and Approval

MN501.3 Compliance of Engineering Work with Laws and Regulations

B. NRCS registered professional engineers may seal engineering plans when required by a permitting or funding agency. The need for sealing must be identified during the planning phase to ensure that all work is done under the direction of the responsible professional engineer.

C. The State Conservation Engineer (SCE) will be notified when any engineering plans prepared by the NRCS will need to be sealed by a licensed Professional Engineer rather than using the agency approval process.

(4) Plans prepared by the NRCS for dams, which require a dam safety permit, must be approved by an NRCS engineer but sealing is not required.

D. MN NRCS Assistance on Agricultural Waste Management Systems.

(1) Assistance for Agricultural Waste Management “Partial” Systems. In accordance with the following stipulations, NRCS may provide technical assistance on partial systems for feedlot pollution abatement.

(i) NRCS must plan a full solution for pollution abatement. A detailed engineering plan is not required; however, enough investigation must be done to determine the feasibility of the pollution abatement plan. The plan for the full solution must be presented to the producer and documented in the file. The following items must be included in the plan:

1. Pollution problem evaluation.
2. Solutions or alternatives considered to solve problem.
3. A statement that the practices installed under the partial systems are not considered adequate to solve the pollution problem.

(ii) Technical assistance for partial systems is limited to clean water runoff management practices. Technical assistance for other practices such as vegetative filters, or waste storage facilities may only be provided as part of a complete pollution abatement system that meets NRCS standards. Components installed for partial systems must meet the individual practice standards for those components.

(2) NRCS may provide technical assistance for non-permitted waste storage facilities under the following circumstances:

1. For facilities originally designed and construction certified by the NRCS but a permit was not obtained at the time of construction.
2. For preliminary investigations to determine if the storage facility is a pollution hazard that would qualify for financial or technical assistance from NRCS. Preliminary investigations do not provide borings of adequate depth or spacing to be used for final design purposes.
3. As part of a pollution abatement plan where work is needed to rehabilitate liners or abandon an existing storage facility to correct a pollution problem that currently exists.
4. Assistance for soil investigations should only be provided on sites where NRCS will be preparing a final design.

MN501.4 Engineering technical approval authority (TAA)

B. Engineering technical approval authority (Classes I thru V)

Title 210 – National Engineering Manual

(2) The practice of engineering is regulated in Minnesota by the Board of Architecture, Engineering, Land Surveying, Landscape Architecture, Geoscience and Interior Design (referred to herein as the Registration Board). The Registration Board has determined that "the responsible professional engineer" (for NRCS the SCE) must determine if "the design of a non-hazardous project constitutes the practice of engineering." If it does, the design of that project may only be approved by a professional engineer or a qualified federal employee working within the scope of their employment. All practices marked with an asterisk on the technical approval authority chart have been determined by the SCE to constitute professional engineering practice. In certain circumstances, complicating factors may cause other work to be considered professional engineering practice also.

NRCS Employees

- TAA for Class I to V practices may be delegated to qualified NRCS employees.
- TAA will be recommended by the Area Engineer familiar with that person's abilities. Worksheet MN-ENG-013 will be used to record the recommendation.
- TAA recommendations for work which is considered professional engineering practice must have the concurrence the SCE.
- TAA will be issued by the employee's administrative supervisor.
- TAA for Area Engineers will be recommended by the SCE.
- Employees must sign the TAA ethics statement on worksheet MN-ENG-013 before the approval authority is valid.

Soil and Water Conservation District (SWCD) or Joint Powers Area (JPA) Employees

- TAA will be recommended by the NRCS Area Engineer on worksheet MN-ENG-013 upon request by the SWCD Board. The Area Engineer will obtain input from others as appropriate.
- TAA for SWCD employees who are not registered professional engineers may only include Class I thru V practices which are not considered professional engineering practice.
- TAA for SWCD employees will be assigned by the SWCD Board.
- If the SWCD Board does not agree with the recommended TAA, they can forward it to the Minnesota Board of Water and Soil Resources Chief Engineer and NRCS SCE for review.
- Employees must sign the TAA ethics statement on worksheet MN-ENG-013 before the approval authority is valid.
- Other public agency or non-profit employees operating under agreement with the NRCS may receive TAA under this same process.

Licensed Professional Engineers (PEs) Operating under Contribution Agreements

- Licensed PEs operating under Contribution Agreements with the NRCS are considered to have TAA for all work within the scope of their license.
- PEs operating under contribution agreements will be required to certify plans in accordance with NEM 505.3B, Site Specific Plans and Specifications.
- The NRCS review of work submitted by PEs under contribution agreements will be limited to that described in NEM 505.3B.

Filing

Copies of TAA worksheets and charts will be maintained by the employee and the recommending engineer. TAA should be reviewed annually and revised as necessary.

Project Design

Employees are encouraged to work on certain phases of projects that exceed their approval level under the guidance and technical supervision of more experienced employees with the proper TAA.

It is not necessary or practical for the person with TAA to perform all the steps leading to a complete job. It is expected that employees without TAA will carry out functions (survey, design drafting, etc.) as far as their knowledge and abilities will permit.

All engineering designs will be checked for accuracy. This should be done by someone other than the one preparing them if possible. Staff in one-person field offices can check their own work on Class I and II projects.

Technical approval for engineering projects must be indicated with the signature, title, and date of signature being placed upon the engineering plans, investigation report, construction records or other supporting data.

Construction Changes

Significant changes to engineering plans must be approved by the person who approved the original design. If this approval is done verbally, this conversation must be documented in the file.

Significant changes may also require approval from permitting authorities such as the Minnesota Pollution Control Agency for feedlot plans.

Designs for Class VI to Class VIII jobs will be coordinated with the SCE individually. A design review and approval process specific to the job that is in accordance with policy and sound engineering practice will be used.

At the time that engineering plans are delivered to the cooperator, an approval statement must be signed and dated by the cooperator. Required wording for this cooperator approval statement is:

I have reviewed and understand the plans and specifications and agree to complete the work accordingly. Failure to meet these plans and specifications may jeopardize any NRCS financial and technical assistance. I understand that it is my responsibility to secure all necessary permits and licenses, and to complete the work in accordance with all local, state, and federal laws. Modification of these plans or specifications must be approved by the Natural Resources Conservation Service before installation. I assume responsibility for negotiations and agreements with the contractors.

Except as described below, this statement must be on the first page of engineering drawings. For simple plans that use job sheets, this statement may be included on a separate sheet instead of having it on the drawings. If separated, the cooperator's approval must include a reference to the plan it is being signed for, and must be kept in the cooperator's file.

MN501.5 Engineering Job Review

B. Post Reviews.

(i) Engineers on the area staff will review at least 5 percent of Class I, II and III jobs approved by area and field office personnel each year. The SCE will review at least 5 percent of the Class IV and V jobs approved by area/field office personnel each year. The Area Engineer is to send the SCE a summary list of jobs in this category by October 1 for the jobs that were constructed during the past year. The SCE will select jobs to be reviewed. Supporting design folders, drawings and specifications for those jobs selected for review are to be submitted to the SCE. The material submitted will be checked for conformance to state standards and sound engineering practices. On-site reviews to evaluate construction quality and other features may be scheduled. The SCE will make a written report to the State Conservationist when the review is complete.

(ii) Area staff will conduct a post review of the first plan submitted by each engineering Technical Service Provider (TSP) and a minimum of 5 percent of all plans submitted thereafter.

**CONSERVATION PRACTICE
TECHNICAL APPROVAL AUTHORITY
For Engineering Practices
Assignment and Acceptance For:**

Employee Title

Employer Date

Recommended by:

Area Engineer Date

Concurred by: (Concurrence is only required for NRCS employees who are being delegated technical approval for work considered professional engineering practice.)

State Conservation Engineer Date

Technical approval authority assigned by:

Name Title

Signature Date

ETHICS STATEMENT

By signing this form, I agree to utilize my assigned technical approval authority only for work that I am competent and qualified to perform. I will seek assistance from others when complicating factors warrant.

I also understand that recommended conservation practices can have negative effects on some natural resources. I agree to consider the potential impacts of practices on all resources before recommending their use.

Employee's Signature Date

NOTE:

Practices marked with an asterisk are considered to be professional engineering practice. This was determined based upon complexity and potential hazards associated with the practice. Approval authority for these may be issued to qualified federal employees who are exempt from state registration requirements. Site specific conditions may cause a practice of any size to be considered professional engineering practice. Any practice with significant hazard potential will require Class VI approval.

Practices not included on the Engineering TAA chart will require Project-specific assignment of TAA by the state office.

Definitions of approval columns:

Inventory and Evaluation - Preliminary on-site investigation and preparation of sound alternative solutions of sufficient detail for the cooperator to make treatment decisions. May require assistance from higher levels for large or complex jobs.

Design - Designing and checking all aspects of the supporting data, drawings and specifications to insure that the planned practice will meet the purpose for which it is intended. Also setting any specific construction inspection requirements.

Construction - Surveys, layout, staking, inspection of materials and work, and making tests to determine that the job meets the plans and specifications. Specific duties authorized in inspection plans can be performed regardless of construction approval level.

NAME: _____

DATE: _____

Practice Code	Practice Name	Limiting factors	Job Class					Maximum Approval Authority			
			Units	I	II	III	IV	V	I & E	Design	Construction
560	Access Road	Use	Type	Private	Private	Private	Private	Public*			
366	Anaerobic Digester (10)	Size	au	150*	300*	500*	1000*	All*			
316	Animal Mortality Facility	Capacity, dead animals	cu ft	1250*	2500*	5000*	All*	All*			
584	Channel Bed Stabilization	Design capacity	cfs	50	100*	200*	300*	500*			
		Design velocity	fps	2	4*	6*	8*	10*			
326	Clearing & Snagging	Drainage area	sq mi	0	0	1	4	All			
360	Closure of Waste Impoundments	Storage Volume	cu ft	25	50	100*	200*	All*			
			1000								
317	Composting Facility	Litter/Manure	cu ft	10000*	20,000*	50,000*	All*	All*			
		Capacity, dead animals	cu ft	1250*	2500*	5000*	All*	All*			
656	Constructed Wetland	Effective height	ft	4	5*	7*	8*	10*			
		offsite Impact (8)	Y/N	No	No	No	No*	Yes*			
		Watershed area	ac	10	50	100*	250*	2000*			
		Storage volume	ac ft	10	15	30*	50*	500*			
402	Dam	See Pond (378)									
356	Dike (9)	Water Height	ft.	0	0	4*	6*	10*			
362	Diversion	Capacity	cfs	25	50	100	200	500*			
554	Drainage Water Mgmt	Watershed area	ac	20	40	80	160	All			
432	Dry Hydrant	Static head	ft	4*	8*	12*	15*	All*			
752C	Environmental Assessment-CNMP		1000								
		Animal Units	lbs.	25	50	100	500	All		N/A	N/A
410	Grade Stabilization Structure (1)	Drainage area	ac	100	300*	640*	1200*	12800*			
		Prin. spillway dia.	in	12	18*	24*	36*	48*			
	Embankment	Effective height	ft	6	15*	20*	25*	35*			
		On public road	Y/N	No	No	No	No	Yes*			
	Drop Spillway	Net drop	ft	3	4	5*	6*	8*			
		Weir capacity	cfs	100	200	300*	400*	500*			
	Box Inlet	Net drop	ft	3	4	4	5*	6*			
		Weir capacity	cfs	100	200	300*	400*	500*			
		On public road	Y/N	No	No	No	No	Yes*			
	Chute Spillway - All Concrete Block (2)	Net drop	ft	3	4	5*	6*	6*			
		Capacity	cfs	50	100	150*	200*	250*			
	Geotextile Reinforced Vegetated Chute	Net drop	ft	3	4	5*	6*	6*			
		Capacity	cfs	50	100	150*	200*	250*			
	Chute Spillway (Rock riprap)	Net drop	ft	3	4*	5*	6*	8*			
		Capacity	cfs	10	25	50*	100*	500*			

	Side Inlets (to drainage ditch)	Net drop	ft	6	8	10	12*	16*			
		Diameter (pipe)	in	12	18	24	36*	48*			
412	Grassed Waterway	Capacity	cfs	25	50	100	200	500*			
561	Heavy Use Area Protection (3)	Site surface area	ac	0.1	0.5	1.5	5	>5*			
		Surface Protection	type	vegetation	gravel	concrete	roof	All*			
			sq ft				<2500*				
449	Irrigation Water Mgmt	All	None	All	-	-	-	-			
442	Irrigation System, Sprinkler	Size of Irrigated area	ac	40	80	160	320	All			
468	Lined Waterway/Outlet	Drainage area	ac	10	20	100*	1000*	All*			
500	Obstruction Removal	Obstruction location (11)	each	Land*	Stream*	All*					
516	Pipeline	Length	ft	1000	2000	4000	5000*	10000*			
		Diameter	inches	1	1.25	1.5	2	All*			
		Pressure	psi	40	50	70*	90*	300*			
		Installation (4)	location	surface	surface	buried	buried	buried			
378	Pond (1)(9) Excavated	Use	type	wildlife	livestock						
						-	-	-			
	Embankment	Drainage area	ac	100	300*	640*	1200*	12800*			
		Effective height	ft	6	15*	20*	25*	35*			
		Prin. spillway dia	in	12	18*	24*	36*	48*			
	Storage volume	ac ft	5	15*	50*	100*	500*				
521A	Pond Sealing or Lining, flexible membrane lining membrane	Surface area	ac	0.1	1	5*	10*	All*			
533	Pumping Plant	Pump capacity	gpm	20	50*	100*	200*	3500*			
558	Roof Runoff Mgmt	Area of roof	sq ft	500	1000	2000	5000	All*			
367	Roofs and Covers	Size	sq ft	500*	2500*	10000*	25000*	>25000*			
350	Sediment Basin Embankment (1)	Watershed area	ac	5	10*	50*	100*	500*			
		Effective height	ft	6	10*	15*	25*	35*			
		Prin. spillway dia	in	12	18*	24*	36*	48*			
		Storage	ac ft	2	5*	15*	50*	100*			
527	Sinkhole Area Treatment	Treatment Complexity	type	divert	minor seal	moderate	moderate	high*			
		Failure Consequence	level	none	low	low	moderate*	high*			
574	Spring Development	Discharge	gpm	1	5*	10*	All*	All*			
570	Stormwater Runoff Control	Basin Size	sq ft	500	1000	2500	5000	All*			
		Potential for ground- water contamination and/or offsite impacts		No	No	No	No	Yes*			
	Runoff Mgmt	Site size	ac	1	2*	5*	10*	All*			
580	Shoreline Protection	WPH(5)	ft	1	1.5	2*	2.5*	3*			
		Raw bank height(6)	ft	1	3	5*	8*	20*			
	Streambank Protection	Capacity (bankfull)	cfs	100	250*	500*	1000*	5000*			
		Velocity (bankfull)	fps	2	4	6*	8*	10*			

578	Stream Crossing	Design capacity (culvert crossing)	cfs	25	50	250	500*	>500*			
		Design Velocity (ford crossing)	fps	2	3	4	5	>5*			
587	Structure for Water Control	Structure capacity	cfs	10	25	50*	100*	500*			
		Drainage area	ac	10	50	100*	250*	10,000*			
606	Subsurface Drain	Diameter	in	6	12	18	24	All*			
		Area drained	ac	60	160	240	320	All*			
607	Surface Drain, Field Ditch	Capacity (bankfull)	cfs	10	25	50*	100*	All*			
608	Surface Drain, Main or Lateral	Capacity (bankfull)	cfs	10	25	50*	100*	500*			
600	Terrace	Area Controlled (total system)	acres	10	20	50	100*	All*			
		Fill height	ft	4	8	10	12*	All*			
620	Underground Outlet	Ac drained per intake	ac	5	10	15	40	All*			
		Diameter	in	6	8	12	18	All*			
635	Vegetated Treatment Area	Animal Units per feedlot	no	50*	100*	300*	700*	1000*			
		Treatment level	Level	1,4,5*	1,4,5*	1-5*	1-5*	1-5*			
313	Waste Storage Facility (1)	Storage capacity	1000 cu ft	25*	50*	100*	500*	2000*			
		Depth to water table from pond bottom(7)	ft	5*	2-5*	<2*	All*	All*			
		Depth to bedrock from pond bottom	ft	>20*	10-20*	5-10*	3-5*	<3*			
634	Waste Transfer	Gravity Flow - length	feet	50	100	150*	200*	All*			
		Pressurized - rate	GPM	None	100	300*	500*	All*			
629	Waste Treatment	Design Capacity	gal/day	1000	5000	10000	20000	72000			
638	Water & Sediment Control Basin	Fill height	ft	6	8	10	12	35*			
636	Water Harvesting Catchment	See Pond (378)									
642	Water Well (10)	I & E only	gpm	2	20	50*	100*	All*		N/A	N/A
614	Watering Facility	Animal Units per site	no.	50	100	300*	500*	All*			
351	Well Decommissioning(10)	I & E only	in dia	2	3	4	6	All		N/A	N/A
658	Wetland Creation	see standard 657									
659	Wetland Enhancement	see standard 657									
657	Wetland Restoration	Effective height	ft	4	5*	7*	8*	10*			
		offsite Impact (8)	Y/N	No	No	No	No*	Yes*			
		Watershed area	ac	10	50	100*	250*	2000*			
		Storage volume	ac ft	10	15	30*	50*	500*			

** All levels marked with an asterisk are considered professional engineering practice. Special factors may cause other jobs to be considered professional engineering practice also.*

- (1) All with relatively impervious cutoff, simple foundation needs and standard or proven designs. Hazard class "a" only. Product of Storage x Height not to exceed 3,000. For standard 313, tank designs utilize pre-qualified standard drawings without structural modifications.
 - (2) Includes all precast concrete block, articulated and non-articulated.
 - (3) Requires joint approval by engineering and ecological sciences staff.
 - (4) Pipeline will be installed a)above ground (surface) or b) the pipeline will be buried.
 - (5) WPH = Wave Protection Height = Height above mean highwater, see MN-TR2.
 - (6) Raw Bank Height = Difference in feet from top of raw bank to water surface. See MN-TR2.
 - (7) Depth to water table from pond bottom prior to installation of drain.
 - (8) Project impacts public road(s), utilities, adjacent property, and/or public drainage systems.
 - (9) Limited to low hazard situations or Class III (see NEM 501.4(B)(1).)
 - (10) I & E only.
 - (11) Classes 1-5 must all be low hazard sites. If any hazard, job is class 6.
- All jobs not listed or more complex than those listed, which will be approved under the NRCS system, must be sent with supporting data to the state office for design.