

**ENGINEERING JOB APPROVAL AUTHORITY <sup>1/</sup>**

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.

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<sup>1/</sup> 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.

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Name:		Title:							Grade: GS		
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			

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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/
		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 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/	
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			

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				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				

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				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/	
521	Pond Sealing or Lining	Water Surface Area	acres	0.25	1	5	10	All				
		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				

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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	Trials 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			

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				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/

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				I	II	III	IV	V	I&E	Design	Constr.
-	<sup>2/</sup> Dams and Structures	Hazard Class	---	low	low	low	low	low			
		Drainage Area	acres	100	330	660	3300	13200			
		<sup>4/</sup> 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			
		<sup>5/</sup> Total Head	feet	10	15	25	30	All			
		<u>Concrete</u>									
		Inside Diameter	in.	None	12	24	36	48			
		<sup>5/</sup> Total Head	feet	None	10	20	30	All			
		<u>HDPE</u>									
		Inside Diameter	in.	12	24	36	42	48			
		<sup>5/</sup> Total Head	feet	3	5	10	15	All			
		<u>Plastic (PVC)</u>									
		Inside Diameter	in.	8	12	15	18	48			
		<sup>5/</sup> Total Head	feet	5	10	15	20	All			
		Storage x Height	ac-ft <sup>2</sup>	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			

<sup>2/</sup> 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.

<sup>3/</sup> Stream Crossing utilizing pipes refer to controlling factors for Structure for Water Control, Code 587.

<sup>4/</sup> 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.

<sup>5/</sup> Total head is measured from crest of auxiliary spillway to elevation at the top of pipe outlet.