

INDIANA ENGINEERING JOB APPROVAL AUTHORITY

Name: _____ Title: _____ Grade: _____ Location: _____
 Tech. Determ. By: _____ Title: _____ Grade: _____ Date: _____
 Issued By: _____ Title: _____ Date: _____

Code	Practice or System	Notes	Controlling Factors	Job Class					Maximum Approval					
				Units	I	II	III	IV	V	I & E	Design	Constr.		
560	Access Road		Roadway Surface Roadway Length	Type Miles	Gravel 0.3	Gravel 0.5	Asphalt 1	Concrete 2	All All					
326	Clearing and Snagging	1	Drainage Area Length of Channel	Sq. Mi. Feet	-- 100	0.5 500	1 1000	4 2000	All All					
317	Composting Facility	3	On-Farm 1000 lb. Animal Liveweight	AU	--	--	500	1000	All					
356	Dike	1	Water Height Hazard Class	Feet --	-- --	2 --	3 --	6 III	12 III					
362	Diversion	1	Drainage Area	Acres	10	50	150	300	All					
998	Drafting Basin		Capacity Lift (Static Head)	GPM Feet	250 5	500 10	750 14	1500 18	All All					
997	Dry Hydrant		Capacity Lift (Static Head)	GPM Feet	250 5	500 10	750 14	1500 18	All All					
393	Filter Strip (Ag. Waste & Settling Basin)		Drainage Area	Acre	0.1	0.25	0.5	1	All					
410	Grade Stabilization Structure	1,2,6	<i>Pipe Structures</i>											
			- Drainage Area	Acres	20	100	250	640	12,000					
			- Effective Height of Dam	Feet	6	10	15	20	35					
					- Pipe Diameter	Inches	12	18	24	36	48			
		3,4	<i>Toewall Spillway</i>											
			- Controlled Drop	Feet	2	3	4	4	4					
			- Capacity	CFS	50	100	200	300	All					
3,4	<i>Box Inlet Drop Spillway (Double Wingwall)</i>													
	- Controlled Drop	Feet	--	--	5	6	All							
	- Capacity	CFS	75	150	250	400	All							
	<i>Rock Chute</i>													
	- Controlled Drop	Feet	2	4	6	8	All							
	- Capacity	CFS	50	75	100	150	200							
	<i>Grouted Rock Chute</i>													
	- Controlled Drop	Feet	2	4	6	8	All							
	- Capacity	CFS	100	200	250	300	All							
	<i>Block Chute</i>													
	- Controlled Drop	Feet	4	6	8	10	12							
	- Capacity	CFS	50	75	100	150	All							

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				Units	I	II	III	IV	V	I & E	Design	Constr.
			<i>Reinforced Vegetative Chute</i> - Capacity	CFS	10	20	30	40	50			
		1	<i>Road Culverts</i> - Pipe Diameter	Inches	18	36	48	60	All			
		3,4	<i>Box Inlet to Existing Culvert</i> - Controlled Drop - Capacity	Feet CFS	2 50	3 100	4 200	5 400	6 500			
412	Grassed Waterway	1	Drainage Area	Acres	40	160	320	640	All			
561	Heavy Use Area Protection		Surface Protection Method	Type	--	Veg.	Gravel	Asphalt	All			
456	Highwall Treatment		<i>No Public Safety Hazard</i> Height of Unsupported Cut Face - No Seepage Visible - Seepage Present <i>Hazard to Public Safety - Moderate to High</i>	Feet Feet Each	10 10 --	20 15 --	30 25 --	40 30 --	50 35 --			
543	Land Reconstruction Abandoned Mine Land		Surface Area Treated	Acres	5	10	25	50	All			
468	Lined Waterway	1,5	Capacity	CFS	--	50	100	150	All			
582	Open Channel	1,5	Design Capacity	CFS	100	200	300	500	1000			
516	Pipeline		Length Diameter	Feet Inches	500 1.5	1500 2	2500 4	5000 6	15,000 8			
378	Pond	1,2,6	<i>Excavated</i> -Surface Area <i>Embankment</i> - Drainage Area - Effective Height of Dam - Pipe Diameter - Storage (Perm. & Temp.)	Acres Acres Feet Inches Ac-Ft	0.5 20 6 12 15	1 100 10 18 30	2 250 15 24 50	All 640 20 36 100	All 12,000 35 48 All			
521	Pond Sealing or Lining		Surface Area Treated	Acres	1	2	3	5	All			
533	Pumping Plant for Water Control	1	Propeller - Design Capacity - Static Head Mixed Flow Pump - Design Capacity - Static Head Centrifugal Pump - Design Capacity - Static Head Turbine Pump - Design Capacity - Static Head	GPM Feet GPM Feet GPM Feet GPM Feet	500 8 500 10 200 25 200 50	1000 10 1000 15 500 50 500 100	2000 12 2000 25 1000 200 1000 300	5000 15 5000 50 2000 350 2000 3500				

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				Units	I	II	III	IV	V	I & E	Design	Constr.	
568	Recreation Trail and Walkway		Length of Trail and Walkway	Miles	0.25	0.5	1	2	All				
554	Regulating Water in Drainage System	1	Area Controlled	Acres	40	160	320	640	All				
558	Roof Runoff Management		Controlled Roof Area	Sq. Ft.	1000	3000	5000	10,000	All				
570	Runoff Management System	1	Area Controlled	Acres	20	40	80	160	All				
350	Sediment Basin	1,2 1,2,6	Class I	--	All	All	All	All	All				
			Class II										
			- Drainage Area	Acres	20	100	250	640	12,000				
			- Effective Height of Dam	Feet	6	10	15	20	35				
			- Pipe Diameter	Inches	12	18	24	36	48				
			- Storage (Perm. & Temp.)	Ac-Ft	15	30	50	100	All				
452	Shaft and Adit		<i>Shaft (Vertical)</i>										
			Complete Filling - Max. Depth	Feet	10	20	30	50	50				
			<i>Adit (Horizontal)</i>										
			Barriers - Permeable	Each	--	--	--	--	All				
574	Spring Development		Discharge	GPM	2	4	6	10	All				
584	Stream Channel Stabilization	1,5	Design Capacity	CFS	50	100	200	500	1000				
			Velocity	FPS	2	4	6	8	10				
580	Streambank and Shoreline Protection	1	Vegetative Protection										
			- Bankfull Capacity	CFS	100	200	300	400	5000				
			Mechanical Protection										
			- Bankfull Capacity	CFS	100	200	300	400	5000				
			- Drainage Area	Sq. Mi.	0.1	0.25	0.5	1	100				
			- Channel Depth Low Bank	Feet	2	4	6	8	10				
			Revetments, bulk heads and groins										
			- Height above mean high water	Feet	--	--	1	2	3				
587	Structure for Water Control	1,2,6	Drainage Area	Acres	20	100	250	640	12,000				
			Effective Height of Dam	Feet	6	10	15	20	35				
			Pipe Diameter	Inches	12	18	24	36	48				
			Storage (Perm. & Temp.)	Ac-Ft	15	30	50	100	All				
454	Subsidence		Rural Land - Surface Reconstr.										
			- Area Treated	Acres	1	2	5	10	All				
			- Maximum Fill	Feet	--	5	10	15	20				
			Non-Rural Areas	Each	--	--	--	--	--				

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				Units	I	II	III	IV	V	I & E	Design	Constr.	
606	Subsurface Drain		Inside Diameter	Inches	8	12	18	30	All				
607	Surface Drain, Field Ditch		Area Drained	Acres	40	160	320	640	All				
608	Surface Drain, Main or Lateral	1,5	Area Drained	Acres	80	160	320	640	640				
600	Terrace		System Area Controlled	Acres	10	30	80	100	All				
455	Toxic Discharge Control		Relocation/Protection (Daylighting)										
			- Depth of Excavation	Feet	10	20	30	40	50				
			- Area of Excavation	Acres	2	5	10	15	20				
			Drainage Control										
			- Infiltration Control	Acres	2	5	10	15	20				
- Waste Material Mod.	Acres	2	5	10	15	20							
Water Treatment - One Time	Acres	0.2	0.5	2	3	All							
614	Trough or Tank	3	Capacity	GAL	500	1000	2000	5000	All				
620	Underground Outlet		Inside Diameter	Inches	8	12	18	30	All				
312	Waste Management System	1	Design Capacity - 1000 lb. Animal Live Weight	No.	50	100	250	400	All				
313	Waste Storage Structure	1,3	Wall Height	Feet	--	4	6	8	All				
			Tank Span	Feet	6	8	12	60	All				
			<i>Earthen</i> - Effective Height of Dam	Feet	6	10	15	20	35				
			Volume	1000 cf	35	75	150	200	2000				
359	Waste Treatment Lagoon	1	Effective Height of Dam	Feet	--	10	15	20	35				
			<i>Anaerobic</i> - Volume	1000 cf	--	500	1000	1500	2000				
			<i>Aerobic</i> - Surface Area	Acres	--	3	5	10	25				
638	Water and Sediment Control Basin		Effective Height of Dam	Feet	6	8	12	15	All				
			Drainage Area per WASCOD	Acres	2	10	20	30	All				
639	Water Table Control System	1	Area Controlled	Acres	40	160	320	640	All				
642	Well		Depth	Feet	150	300	500	1000	All				

DEFINITION OF MAXIMUM APPROVAL LIMITS

** The controlling factor that results in the highest classification determines the job class.*

Inventory and Evaluation (I & E) - Onsite observations of an exploratory nature and preparation of sound alternative solutions of sufficient intensity for the cooperators 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 installed. Also includes setting any specific inspection requirements.

Construction - Responsible for certifying that completed practices meet standards and specifications and were installed according to construction plans.

DEFINITIONS

1. Controlled drop is the difference in elevation between the controlled gradeline upstream and the stable gradeline downstream of a structure.
2. Effective height of dam is the difference in elevation in feet between the lowest open channel emergency spillway crest and the lowest point in the original cross section on the centerline of the dam. If there is no open channel emergency spillway, the top of the dam becomes the upper limit.
3. Hazard Class (A) is applied to a dam located in rural or agricultural areas where failure may damage only farm buildings, agricultural land, or local roads.
4. Pipe Diameter is the nominal internal diameter of the conduit.
5. Storage is the capacity of the reservoir in acre-feet below the elevation of the crest of the emergency spillway.
6. Tank Span is the clear span of a beam without support.

NOTES

1. All work-requiring permit for construction from the Indiana Department of Natural Resources requires approval of the State Conservation Engineer.
2. Single conduit installation only.
3. Design incorporates the use of standard detailed drawing without structural modification of the drawings.
4. Includes aluminum, treated timber, concrete block or reinforced concrete toewalls, box inlet drop spillways, and chute spillways.
5. Subcritical flow only.
6. All with relatively impervious cutoff, simple foundation needs, and standard or proven designs. Dam classification is Hazard Class "a" and the product of storage times effective height equals 3,000 or less.

ETHICS STATEMENT

By signing this form, I agree to utilize my assigned engineering 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 conservation practices can have negative effects on some resources. I agree to consider the impacts of practices on all resources before recommending their use.

 (Employee Signature)

TECHNICALLY REVIEWED			
Date	Engineer's Initials	Employee Initials	Comments

Distribution:

Original to: Employee

Copies to: Recommending Engineer
 Employee's Supervisor
 SCE for Engineers and CETs