

Connecticut Guidelines for Soil Erosion and Sediment Control Measures



Functional Group: Measure	Key	Description	Applicability
5-1 Protect Vegetation			
Tree Protection	TP	The protection of desirable trees from mechanical and other injury during construction.	Where individual trees and forested areas are subject to land disturbing activities and where the protection and preservation of trees will aid in erosion and sediment control or provide other environmental benefits.
5-2 Preserve and Conserve Soil			
Topsoiling	TO	The application of topsoil to promote the growth of vegetation following the establishment of final grades.	Where the texture, pH or nutrient balance of the available soil (sands, gravels or other unconsolidated materials) cannot be modified by reasonable means to provide an adequate growth medium. ■ Where the existing soil material is too shallow to provide an adequate root zone and to supply necessary moisture and nutrients for plant growth. ■ Where high quality turf is desirable to prevent erosion and withstand intensive use and/or meet aesthetic requirements. ■ Where landscape plantings are planned. ■ Where extensive filling and cutting of slopes has occurred. Only on slopes no steeper than 2:1.
Land Grading	LG	Reshaping of the ground surface by excavation or filling or both to obtain planned grades.	Where grading to planned elevations is practical for the purposes set forth above. ■ On slopes no steeper than 2:1. For slopes steeper than 2:1, see the slope stabilization measures in the Stabilization Structures Functional Group. ■ Does not apply to bedrock cuts or faces.
Surface Roughening	SR	A rough soil surface with horizontal depressions created by operating a tillage or other suitable implement on the contour, or by leaving slopes in a roughened condition by not fine-grading them.	On disturbed slopes whose gradients are between 2:1 and 4:1, inclusive.
Dust Control	DC	The control of dust on construction sites, construction roads and other areas where dust is generated.	On unstable soils subject to construction traffic. Where unstable soils are located on hill tops or long reaches of open ground and can be exposed to high winds.

5-3 Vegetative Soil Cover			
Temporary Seeding	TS	Establishment of temporary stand of grass and/or legumes by seeding and mulching soils that will be exposed for a period greater than 1 month but less than 12 months.	Within the first 7 days of suspending work on a grading operation that exposes erodible soils where such suspension is expected to last for 1 to 12 months. Such areas include soil stockpiles, borrow pits, road banks and other disturbed or unstable areas. ■ Not for use on areas that are to be left dormant for more than 1 year. Use permanent vegetative measures in those situations.
Permanent Seeding	PS	Establishment of permanent stand of grass and/or legumes by seeding and mulching exposed soils with a seed mixture appropriate for long term stabilization.	On disturbed or erodible soils have been brought to final grade or where the suspension of work is expected to exceed 1 year and. ■ Where slopes gradients are no steeper than 2:1. For slopes steeper than 2:1, use slope stabilization measures from the Stabilization Structures Functional Group.
Sodding	SO	Stabilizing fine-graded disturbed areas with the use of cut pieces of turf.	On slopes 2:1 or flatter, except on very short slopes where the slope length is no longer than the width of the cut sod. In channels where the design velocity does not exceed 5 feet per second (fps) with a duration of 1 hour or less when the velocity is at or near 5 fps. For design velocities that exceed 5 fps, refer to the Riprap and Permanent Turf Reinforcement Mat measures. ■ On sediment producing areas such as drainageways carrying intermittent flows, around drop inlets, in grassed drainageways, cut and fill slopes and other areas where conventional methods of turf establishment may be difficult or risky. In watersheds where maintenance of high water quality is particularly important. ■ Where establishing turf grass and lawn is needed in the shortest time possible.
Landscape Planting	LP	Planting trees, shrubs, or ground covers for stabilization of disturbed areas.	On steep or irregular terrain, where moving to maintain an herbaceous plant cover is not feasible. ■ Where ornamental plantings are desired to improve site aesthetics. ■ In shady areas where turf establishment is difficult. ■ Where woody plants are desirable for soil conservation, plant diversity or to create or enhance wildlife habitat. ■ Where permanent plantings will reduce the extent of lawn and lawn maintenance requirements. ■ Where riparian or other functional buffers need to be extended, re-established or created. ■ Where wind breaks are needed.

5-4 Non-Living Soil Protection			
Temporary Soil Protection	TSP	Application of a degradable material that will protect the soil surface during grading through the use of mulch or other materials appropriate for use as a temporary soil protector. ■ For surfaces that are not to be reworked within 5 months but will be reworked within 1 year, use Temporary Seeding and Mulch for Seed. ■ For surfaces that are to be reworked after 1 year, use Permanent Seeding and Mulch for Seed.	When grading of the disturbed area will be suspended for a period of 30 or more consecutive days, but less than 5 months, stabilize the site within 7 days of the suspension of work. ■ For surfaces that are not to be reworked within 5 months but will be reworked within 1 year, use Temporary Seeding and Mulch for Seed. ■ For surfaces that are to be reworked after 1 year, use Permanent Seeding and Mulch for Seed.
Mulch for Seed	MS	Application of a mulch that will protect the soil surface on a temporary basis and promote the establishment of temporary or permanent seedlings.	To aid in the growth of herbaceous vegetation by reducing evaporation of water, enhancing absorption of water, helping to anchor seed in place, providing protection against extreme heat and cold and improving soil texture as it decomposes.
Landscape Mulch	LM	Application of a mulch that protects the soil surface on a long term basis and promotes the growth of landscape plantings.	Used only with landscape plantings (see Landscape Planting measure) and existing woody vegetation.
Temporary Erosion Control Blanket	ECB	A manufactured blanket composed of biodegradable / photodegradable natural or polymer fibers and/or filaments that have been mechanically, structurally or chemically bound together to form a continuous matrix.	On disturbed soils where slopes are 2:1 or flatter. ■ Where wind and traffic generated air flow may dislodge standard, unarmored mulches. ■ May be used as a substitute for Mulch for Seed (see Page MS-3). ■ May be used as a substitute for Temporary Soil Protection (see Page TSP-4).
Permanent Turf Reinforcement Mat	TRM	A manufactured mat composed of non-biodegradable polymer or synthetic fibers mechanically, structurally or chemically bound together to form a continuous matrix.	In channels where design velocities exceed the stability limits of the soil and/or vegetation, and a soft-armored approach is desired. ■ On unstable soils where intermittent flow exists. ■ On disturbed soils with slopes 2:1 or flatter. On shorelines above a protected or stable toe to reduce soil erosion.
Stone Slope Protection	SSP	Applying stone aggregates for permanent protection on slopes where vegetative soil cover measures are either impractical or difficult to establish.	Where highly erodible soils provide for unfavorable conditions for plant establishment and growth. ■ Where herbaceous plant growth is to be discouraged or controlled.

5-5 Stabilization Structures			
Retaining Walls	RW	A wall that provides stability to a slope, constructed of mortared block or stone, cast-in-place concrete, timber, reinforced earth, gabions, precast concrete modular units or similar structures.	Where erosion or slope failure may occur due to excessive loadings, steepness, seepage or other unstable soil conditions. ■ Where site constraints won't allow slope stabilization by flattening and seeding.
Riprap	RR	A permanent, erosion-resistant ground cover of large, loose, angular stone.	On soil-water interfaces where soil conditions, expected flow conditions (including water turbulence, velocity and waves), and expected vegetative cover, etc., are such or will be such that the soil will erode under the design flow conditions. ■ At storm drain outlets, on channel banks and/or bottoms, roadside ditches, permanent slope drains, at the toe of slopes, or to stabilize streams.
Gabions	G	Flexible wire mesh baskets composed of rectangular cells filled with riprap or other selected (hard, durable) rock.	For use in channels, stream deflectors, grade control structures, revetments, retaining walls, abutments, stonecheck dams, and similar installations.
Permanent Slope Drain	PSD	A permanent open or enclosed structure or series of structures consisting of pipe(s), culvert(s) and/or manhole(s) used to convey water from a higher elevation to a lower elevation.	Within and upon cut and fill slopes where the soil and existing or planned vegetative cover will not handle concentrated runoff flows without erosion.
Channel Grade Stabilization Structure	CSS	A permanent open structure used to control the grade and head cutting in natural or artificial channels.	In areas where the concentration and flow velocity of water requires a structure or series of structures to stabilize the grade in channels or to control gully erosion. ■ For channel side-inlet structures needed to lower the water from a higher elevation, a surface drain, or a waterway to a lower outlet channel. ■ Does not apply to structures designed to control the rate of flow or to regulate the water level in channels.
Temporary Lined Chute	TC	A temporary channel constructed with a non-erosive material, such as concrete, bituminous concrete, riprap, sacked concrete, gabions, half round pipes, revetment erosion control mats with cement grout or similar materials used to carry concentrated runoff down a slope.	For drainage areas less than or equal to 36 acres. ■ Where the intended use is less than one year. ■ For protection of disturbed cut or fill slopes where planned vegetative cover is not established and/or permanent drainage controls have not been completed. ■ On slopes no steeper than 1.5:1 and no flatter than 5:1. For slopes flatter than 5:1 use Temporary Lined Channel, Vegetated Waterway or Permanent Lined Waterway where appropriate.
Temporary Pipe Slope Drain	TSD	A flexible or rigid pipe used to conduct water from the top of a slope to the toe of the slope.	On cut or fill slopes where the soil or existing vegetative cover will not withstand concentrated runoff flows. ■ For use less than 6 months. ■ Where the contributing drainage area is 5 acres or less.

5-6 Drainageways & Watercourses			
Vegetated Waterway	VW	A natural or constructed channel or swale shaped or graded in earth materials and stabilized with non-woody vegetation for the non-erosive conveyance of water.	Where the contributing drainage area does not exceed 50 acres. ■ Where the design discharge does not exceed 100 cfs. ■ For man-made channels such as roadside ditches and drainageways. ■ Not for use in perennial streams.
Temporary Lined Channel	TLC	A channel designed to convey flows on a short term basis and lined with a flexible impermeable geomembrane or other erosion resistant covering.	For drainage areas less than 100 acres where the gradient of the flow line of the channel is greater than 2%. ■ For drainage areas less than 1 square mile where the gradient of the flow line of the channel is less than 2%. ■ Where the temporary relocation of a drainage way is needed to complete other construction work or to allow for the establishment of vegetation in a permanent channel. ■ Use limited to 60 days when lined with flexible impermeable geomembrane. ■ Use limited to 2 years when lined with a permanent channel lining as referenced in Permanent Lined Waterway measure.
Permanent Lined Waterway	PW	A permanent waterway including chutes and flumes, with an erosion resistant lining composed of concrete, stone, or other appropriate durable material.	Where the contributing drainage area does not exceed 200 acres. ■ Where the design discharge does not exceed 200 cfs. ■ Where the velocity of concentrated runoff is of such magnitude that a lining is needed to prevent erosion of the channel. ■ Where excessive grades, channel wetness, prolonged base flow, seepage, or soil piping would cause erosion. ■ Where vegetative slopes will not prevent erosion caused by people, animals, or vehicles. ■ Where property values or adjacent facilities warrant the extra cost to contain design runoff in a limited space. ■ In natural channels, waterways, drainageways, roadside ditches and other man-made channels that are modified or constructed and where vegetation alone will not prevent erosion. ■ Major streams need full design considerations and calculations.
Temporary Stream Crossing	TSC	A temporary bridge, or culvert(s), across a watercourse for use by construction traffic.	For streams with drainage areas less than 1 square mile. For drainage areas exceeding 1 square mile use generally accepted engineering standards (e.g. NRCS Field Office Technical Guide, the SCS National Engineering Handbook, DOT Drainage Manual) which more accurately define the actual hydrologic and hydraulic parameters which will affect the functioning of the structure. ■ Where the intended use does not exceed 3 years.

Functional Group: Measure	Key	Description	Applicability
5-7 Diversions			
Temporary Fill Berm	TFB	A very temporary berm of soil placed at the top of an unprotected fill slope.	On active earth fill slopes where the drainage area at the top of fill drains toward the exposed slope and where ongoing fill operations make the use of a Permanent Diversion infeasible. ■ Where the intended use is 5 days or less. For use longer than 5 days use Temporary Diversion or other measure. ■ Where the drainage area at the point of discharge is less than 3 acres.
Water Bar	WB	A channel with a supporting berm on the down slope side constructed across a construction access road, driveway, log road or other access way.	On construction access road, driveway, log road or other access way. ■ Where the drainage area to each separate water bar is less than 1 acre. For drainage areas greater than 1 acre, use Permanent Diversion measure or Permanent Lined Waterway measure modified to remain stable during vehicular traffic or Temporary Stream Crossing measure.
Temporary Diversion	TD	A temporary channel with a berm of tamped or compacted soil placed in such a manner so as to divert flows.	Where the drainage area at the point of discharge is 5 acres or less. For drainage areas greater than 5 acres use Permanent Diversion measure. ■ Where the intended use is 1 year or less. For uses greater than 1 year use Permanent Diversion measure.
Permanent Diversion	PD	A channel constructed across a slope with a supporting earthen ridge on the lower side.	Where the contributing watershed is 25 acres or less. For watersheds with a drainage area greater than 25 acres, either use Permanent Lined Waterway or Vegetated Waterway . ■ Where the diversion is to be included as an integral part of a permanent water management system. ■ Where runoff from areas of higher elevation may damage property, cause erosion, or interfere with the establishment of vegetation on lower areas. ■ Where surface and/or shallow subsurface flow is damaging sloping uplands. ■ Where the slope length needs to be reduced to control excessive overland flow velocities and minimize soil loss.

5-8 Subsurface Drains			
Subsurface Drains	SD	An underground water conveyance system consisting of a perforated conduit, such as pipe, tubing, tile or a stone filled trench installed beneath the ground to intercept and convey ground water.	Used in areas having a high water table where benefits of lowering or controlling groundwater or surface runoff are desired. ■ Where soil permeability is sufficient to permit installation of an effective and economically feasible system. ■ Not intended for use within septic system setbacks, in areas of ground water pollution, or to drain inland wetlands or tidal wetlands without prior authorization.

5-9 Detention Structures			
Detention Basin	DB	An impoundment made by constructing a dam or an embankment (embankment detention basin), or by excavating a pit or dugout (excavated detention basin). Basins resulting from both excavation and embankment construction are classified as embankment detention basins where the depth of water impounded against the embankment at emergency spillway elevation is three feet or more.	Where there is a need to control or prevent downstream erosion and flooding due to site development or from other land use changes.

5-10 Energy Dissipators			
Level Spreader	LS	An outlet for diversions and other water conveyances consisting of an excavated depression with a broad stable point of discharge constructed at zero grade across a slope.	Where there is a need to carry storm water away from disturbed areas and to avoid stressing erosion control measures. ■ Where sediment reduced runoff can be released in sheet flow over a stabilized slope without causing erosion. ■ Where the spreader can be constructed on undisturbed soil. ■ Where the area below the level spreader lip has a slope of 5% or flatter and is stabilized by vegetation.
Outlet Protection	OP	Structurally lined aprons or other acceptable energy dissipating devices placed between the outlets of pipes or paved channel sections and a stable downstream channel.	At the outfall of all storm drain outlets, road culverts, paved channel outlets, new channels constructed as outlets for culverts and conduits, etc. discharging into natural or constructed channels, which in turn discharge into existing streams or drainage systems.
Stone Check Dam	SCD	A temporary stone dam placed across a drainageway.	Where concentrated flows are expected to cause erosion. ■ For temporary drainageways which, because of their short length of service, will not receive a non-erodible lining but still need protection to reduce erosion. ■ For permanent drainageways which, for some reason, will not receive a permanent non-erodible lining for an extended period of time. ■ For temporary or permanent drainageways which need protection during the establishment of vegetative lining. ■ This measure is not a substitute for a Temporary Sediment Trap or a Temporary Sediment Basin, however, stone check dams may be used in conjunction with those measures.

5-11 Sediment Impoundments, Barriers & Filters			
Temporary Sediment Basin	SB	A temporary dam, excavated pit or dugout pond constructed across a waterway or at other suitable locations with a controlled outlet(s) such that a combination of wet and dry storage areas are created. A basin that is created by the construction of a dam is classified as an embankment sediment basin and a basin that is constructed by excavation is an excavated sediment basin. A basin that is created by a combination of dam construction and excavation is classified as an embankment sediment basin when the depth of water impounded against the embankment at emergency spillway elevation is three feet or more.	Below disturbed areas with a contributing drainage area less than 100 acres. For drainage areas less than five acres, a Temporary Sediment Trap may be used. ■ Only for locations where failure of the temporary sediment basin will not, within reasonable expectations, result in loss of life or damage to buildings, roads, railroads or utilities. ■ Not for use as a post-construction stormwater renovation system.
Temporary Sediment Trap	TST	A temporary ponding area with a stone outlet formed by excavation and/or constructing an earthen embankment.	Below disturbed areas where the contributing drainage area is 5 acres or less. For drainage areas greater than 5 acres use Temporary Sediment Basin measure. ■ Where the intended use is 2 years or less. For uses greater than 2 years use Temporary Sediment Basin measure. ■ When diverting sediment-laden water with diversions that meet the above limitations for use.
Hay Bale Barrier	HB	A temporary sediment barrier consisting of a row of entrenched and anchored bales of hay or straw.	Below small disturbed areas where the drainage area (disturbed and undisturbed) is less than 1 acre in size. ■ Above disturbed slopes to direct surface water away from erodible areas where the drainage area (disturbed and undisturbed) is less than 1 acre in size. ■ Where protection and effectiveness is required for less than 3 months. ■ Where sedimentation will reduce the capacity of storm drainage systems or adversely affect adjacent areas, watercourses and other sensitive areas. ■ Not for use in drainageways, except in special cases where it is applied with other measures (see Geotextile Silt Fences and Stone Check Dams special cases). ■ Not intended for use in streams.
Geotextile Silt Fence	GSF	A temporary sediment barrier consisting of a geotextile fabric pulled taut and attached to supporting posts and entrenched.	Below small disturbed areas where the contributing drainage area (disturbed and undisturbed) is less than 1 acre in size. ■ At storm water drainage inlets and catch basins where sedimentation will reduce the capacity of storm drainage systems or adversely affect adjacent areas, watercourses and other sensitive areas. ■ Not for use in areas where rock, frozen ground or other hard surface prevents proper installation of the barrier (see Special Case Combinations in Stone Check Dam measure). ■ Prohibited from use in drainageways whose flow is supported by ground water discharge.
Turbidity Curtain	TC	A temporary impervious barrier installed in a stream, river, lake or tidal area which will retain silt, sediment, and turbidity within the construction area.	Where construction activities will take place immediately adjacent to or within tidal and non-tidal watercourses and sediment movement into the water is unavoidable. ■ Where other sediment barriers will not be effective in preventing the movement of sediment in the water. ■ Where water velocity in the area needing control will not exceed 5 feet per second (or a current of approximately 3 knots). For situations where there are greater flow velocities or currents, a qualified engineer and product manufacturer must be consulted.
Vegetative Filter	VF	A maintained area of well established herbaceous or woody vegetation through which small volumes of sediment-laden water pass and are filtered.	For contributing drainage areas of 1 acre or less in size. ■ For contributing slopes are no steeper than 10%. ■ Where slopes in the vegetated filter area are no steeper than 10%. ■ For use only when existing vegetation is in an adequate condition to provide filtering of runoff water. If vegetated filters are to be established from permanent seedings, use is prohibited until after the grass has reached 6 inches in height has been mowed twice and survived one full growing season. ■ Not for use where flows concentrate at or the outlet of diversions, drainageways, and waterways except in special cases where other measures are applied in conjunction with a vegetated filter, such as a Level Spreader, Geotextile Silt Fence or Hay Bale Barrier.

5-12 Tire Tracked Soils			
Construction Entrance	CE	A stone stabilized pad sometimes associated with a mud rack, automotive spray or other measures located at points of vehicular ingress and egress on a construction site.	At points of construction vehicle ingress and egress where sediment may be tracked onto adjoining paved surfaces by vehicles.

5-13 Dewatering			
Pump Intake and Outlet Protection	PuP	Structures or other protective devices into which or on which intake and discharge hoses are placed during pumping operations.	Whenever dewatering is required by means of pumping such as cofferdams, building foundations, utility line installation (or repair) and pond construction or rehabilitation.
Pumping Settling Basin	PSB	An enclosed sediment barrier or excavated pit constructed with a stable inlet and outlet such that sediment laden water from pumping operations is de-energized and temporarily stored, allowing sediments to be settled and/or filtered out before being released from the construction site.	When a pump discharge from a construction area is sediment laden. ■ Not for use with hydraulic dredging operations in open waters. (See Dewatering of Earth Materials measure).
Portable Sediment Tank	PST	A tank or container into which sediment laden water is pumped in order to trap and retain the sediment before discharging the water or to transport the sediment laden water to an approved location for further treatment.	When a pump discharge from a construction area is sediment laden and space limitations prevent the use of a pumping settling basin. ■ For sites with severe space limitations, a portable sediment tank may be used to transport the sediment laden water to an approved location (DW). When excavating saturated soils that are too wet to transport or to be contained with geotextile silt fence or hay bales. ■ Not for dewatering contaminated soils. Handling of contaminated soils shall comply with the directives of the regulating agency (e.g. DEP and EPA).
Dewatering of Earth Materials	DWM	A procedure that uses a perimeter earthen berm and excavation to create a containment area where excessively wet soil is placed to allow for the draining of water or evaporation of excessive moisture.	When excavating saturated soils that are too wet to transport or to be contained with geotextile silt fence or hay bales. ■ Not for dewatering contaminated soils. Handling of contaminated soils shall comply with the directives of the regulating agency (e.g. DEP and EPA).

Appendix M

Index – Concurrences

Abbreviation / Term	Page Number on which they appear
	<i>(Please note: Page numbers refer to text occurrences only; references to figures are not included.)</i>
abutment	5-6-30, 5-6-32, 5-9-12, 5-11-12, C-1
access road	4-1, 4-2, 4-3, 4-4, 4-9, 4-10, 5-7-6, 5-9-3, 5-11-14, 5-12-1, 5-12-2, 5-12-3, C-1, C-11, L-1
aggregate	4-3, 4-10, 5-4-14, 5-5-10, 5-6-23, 5-10-11, 5-10-16, 5-11-26, 5-11-36, 5-11-40, C-1, C-2, C-3, C-4, F-2, H-1
ANSI	5-3-17, 5-3-20, C-1
anti-seep collars	5-9-9, 5-9-10, 5-9-12, 5-11-8, 5-11-9, 5-11-10, C-1
aquifer	3-5, 3-7, 3-13, C-1, C-5, F-3
apron	5-5-25, 5-9-3, 5-10-3, 5-10-6, 5-10-7, 5-10-8, 5-10-9, 5-11-28, C-1
artesian	5-8-2, C-1
ASTM	5-9-10, 5-11-9, 5-11-36, 5-12-2, C-1, D-1, H-1
auxiliary spillway	55-9-11, -11-10, C-1
balled & burlapped	5-3-16, 5-3-17, 5-3-19, 5-3-20, 5-3-22, C-1
bare-root	C-1, 5-3-16, 5-3-17
barrel	5-9-4, 5-9-5, 5-9-9, 5-9-10, 5-9-11, 5-11-7, 5-11-8, 5-11-9, 5-11-10, C-1
base flow	5-6-18, C-1, L-1
bed load	2-6, C-1
bedding	4-7, 4-10, 4-11, 5-5-9, 5-5-10, 5-5-12, 5-5-13, 5-6-3, 5-6-20, 5-6-21, 5-6-23, 5-6-31, 5-8-6, 5-8-7, 5-9-10, 5-10-16, 5-11-9, 5-13-3, C-1
berm	3-11, 4-6, 4-8, 5-1-3, 5-2-5, 5-2-8, 5-5-23, 5-7-1, 5-7-2, 5-7-3, 5-7-4, 5-7-5, 5-7-6, 5-7-7, 5-7-9, 5-7-10, 5-9-2, 5-11-5, 5-13-2, 5-13-14, 5-13-15, C-1, C-3, C-10, C-11, L-1
borrow area	C-1, 5-3-8, 5-11-12
CGS	3-3, 3-6, 5-1-5, 5-2-8, 5-9-4, 5-11-6, C-2, C-10, F-2, F-3, F-4, F-5, F-6
channel	1-1, 2-1, 2-2, 2-3, 2-6, 2-7, 3-3, 3-4, 3-5, 3-6, 3-7, 3-8, 3-11, 3-13, 4-1, 4-9, 4-10, 4-11, 4-12, 4-13, 4-14, 4-15, 5-1-25-3-8, 5-3-12, 5-3-14, 5-4-13, 5-5-1, 5-5-2, 5-5-3, 5-5-4, 5-5-8, 5-5-9, 5-5-11, 5-5-18, 5-5-19, 5-5-20, 5-6-1, 5-6-2, 5-6-3, 5-6-16, 5-6-17, 5-6-18, 5-6-19, 5-6-20, 5-6-21, 5-6-22, 5-6-23, 5-6-27, 5-6-29, 5-6-30, 5-6-31, 5-7-2, 5-7-6, 5-7-8, 5-7-9, 5-7-10, 5-7-12, 5-7-13, 5-8-7, 5-9-3, 5-9-11, , 5-10-1, 5-10-2, 5-10-3, 5-10-6, 5-10-7, 5-10-12, 5-10-16, 5-11-2, 5-11-10, 5-11-11, 5-11-26, 5-11-41, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-11, F-3, F-6, I-1, J-1, L-1
channel capacity	2-7, 5-6-16, C-2
channel grade stabilization structure	3-11, 5-1-2, 5-5-1, 5-5-2, 5-5-18, 5-5-19, L-1
channel stabilization	5-5-9, 5-5-11, C-2, C-3
chute	3-11, 4-4, 5-1-2, 5-5-1, 5-5-2, 5-5-16, 5-5-20, 5-5-21, 5-5-22, 5-6-18, 5-6-19, 5-6-20, 5-6-28, 5-7-3, C-2, C-4, C-10, L-1
clay	2-4, 2-5, 2-7, 4-5, 5-2-3, 5-2-11, 5-3-2, 5-3-5, 5-3-6, 5-6-3, 5-8-5, 5-8-6, 5-8-9, 5-9-12, 5-10-6, 5-11-7, 5-11-12, 5-11-46, 5-12-2, 5-13-14, C-2, C-9, H-1, H-3, I-2

cofferdam	4-10, 4-11, 4-15, 5-13-11, C-2
concrete	3-7, 4-3, 4-45-3-6, 5-5-3, 5-5-4, 5-5-5, 5-5-9, 5-5-18, 5-5-20, 5-6-17, 5-6-18, 5-6-19, 5-6-20, 5-6-21, 5-6-22, 5-6-23, 5-6-25, 5-6-29, 5-6-30, 5-8-6, 5-8-9, 5-9-4, 5-9-10, 5-9-11, , 5-10-3, 5-10-7, 5-11-7, 5-11-8, 5-11-9, 5-11-10, 5-11-42, C-2, C-6, C-7, C-10, L-1
construction entrance	3-11, 4-2, 4-3, 4-9, 5-1-3, 5-6-30, 5-12-1, 5-12-2, 5-12-3, 5-12-4, C-2, L-1
Continuity Equation	5-6-2, 5-6-19, 5-6-22, 5-6-23, C-2
contour	3-4, 3-5, 3-75-2-10, 5-2-11, 5-3-7, 5-3-13, , 5-11-4, 5-11-30, 5-11-32, 5-11-34, 5-11-35, 5-11-36, 5-11-40, A-5, C-2, C-4, C-9, C-10, F-3, L-1
control section	5-9-11, 5-11-10, 5-11-11, A-3, C-2
core trench	C-2
cover	2-1, 2-4, 2-5, 2-7, 3-7, 3-11, 4-8, 4-16, 5-1-1, 5-1-2, 5-1-3, 5-2-4, 5-2-5, 5-2-8, 5-2-10, 5-2-11, 5-3-1, 5-3-2, 5-3-3, 5-3-4, 5-3-5, 5-3-12, 5-3-16, 5-3-20, 5-3-25, 5-3-27, 5-4-1, 5-4-2, 5-4-4, 5-4-6, 5-4-8, 5-4-9, 5-4-10, 5-4-12, 5-4-13, 5-4-14, 5-5-1, 5-5-8, 5-5-12, 5-5-16, 5-5-20, 5-5-21, 5-5-23, 5-6-2, 5-6-3, 5-6-30, 5-6-31, 5-7-9, 5-8-6, 5-9-4, 5-11-7, 5-11-24, 5-11-31, 5-13-1, A-2, B-1, C-1, C-2, C-7, C-9, I-3, J-1, L-1
creep	1-1, 2-1, C-2, C-4
crest	5-2-7, 5-7-6, 5-9-3, 5-9-4, 5-9-5, 5-9-9, 5-9-10, 5-9-11, 5-9-12, 5-11-6, 5-11-7, 5-11-8, 5-11-10, 5-11-11, 5-11-14, 5-11-15, 5-11-23, 5-11-24, 5-11-26, 5-11-27, 5-11-29, 5-13-7, C-2, C-4
critical depth	5-6-19, C-2
cross section	5-6-3, 5-6-18, 5-6-19, 5-9-4, 5-11-6, 5-11-11, 5-13-16, C-2
cross-sectional area	5-6-22, 5-8-5, 5-9-5, C-2
cut	3-7, 3-10, 4-1, 4-2, 4-3, 4-4, 5-1-3, 5-1-5, 5-1-95-2-7, 5-2-8, 5-2-10, 5-3-7, 5-3-12, 5-3-13, 5-3-20, 5-3-22, 5-4-3, 5-4-5, 5-5-16, 5-5-18, 5-5-20, 5-5-23, 5-7-12, , 5-10-3, 5-11-26, 5-11-42, C-2, C-3, C-8, C-10, L-1
dam	1-1, 1-3, 3-11, 4-9, 4-12, 4-13, 5-1-35-9-2, 5-9-4, 5-9-9, 5-9-10, 5-9-11, 5-9-12, , 5-10-1, 5-10-11, 5-10-12, 5-10-13, 5-10-14, 5-10-15, 5-10-16, 5-11-2, 5-11-3, 5-11-5, 5-11-6, 5-11-8, 5-11-11, 5-11-12, 5-11-14, 5-11-25, 5-11-30, 5-11-31, 5-11-35, 5-11-46, C-1, C-2, C-3, C-4, C-9, C-10, C-11, F-4, L-1
DEP	1-2, 3-3, 3-4, 3-5, 3-6, 3-7, 3-9, 5-6-16, 5-6-30, 5-9-2, C-3, E-1, E-2, F-1, F-3, F-4, J-1, L-1
deposition	2-1, 2-6, 2-7, 3-7, 3-9, 3-10, 3-11, 5-2-13, 5-6-3, 5-6-20, 5-7-13, 5-11-5, 5-11-12, 5-11-45, 5-11-46, B-1, C-3, C-4, C-8, I-1, I-2, I-3
detention basin	2-7, 3-6, 3-11, 4-2, 5-1-3, 5-9-1, 5-9-2, 5-9-3, 5-9-4, 5-9-5, 5-9-6, 5-9-7, 5-9-8, 5-9-9, 5-9-10, 5-9-11, 5-9-12, 5-9-13, 5-9-14, 5-9-15, 5-9-16, 5-9-17, 5-9-18, 5-10-2, 5-11-5, 5-11-6, 5-11-10, 5-11-11, 5-11-12, 5-11-23, 5-11-24, C-3, C-6, L-1
detention facility	C-3, 3-5
dewatering	1-3, 2-4, 3-9, 3-10, 3-11, 4-4, 4-11, 4-13, 4-14, 4-15, 5-1-1, 5-1-3, 5-5-16, 5-9-4, 5-9-9, 5-9-11, 5-11-3, 5-11-7, 5-11-12, 5-11-13, 5-11-31, 5-11-36, 5-11-44, 5-13-1, 5-13-2, 5-13-3, 5-13-4, 5-13-7, 5-13-8, 5-13-9, 5-13-11, 5-13-14, 5-13-15, 5-13-16, C-3, C-7, F-2, L-1
dewatering of earth materials	1-3, 3-11, 5-1-3, 5-11-44, 5-13-1, 5-13-7, 5-13-14, 5-13-15, 5-13-16, C-3, L-1
dike	5-5-25, 5-9-11, 5-10-2, 5-11-11, 5-11-25, 5-11-26, 5-13-1, C-2, C-3, F-4
discharge	1-3, 2-4, 3-7, 3-8, 3-9, 4-2, 4-3, 5-2-5, 5-5-21, 5-6-1, 5-6-2, 5-6-3, 5-6-18, 5-6-19, 5-6-20, 5-6-22, 5-7-1, 5-7-2, 5-7-3, 5-7-4, 5-7-7, 5-7-9, 5-7-13, 5-8-2, 5-8-5, 5-8-6, 5-8-8, 5-9-2, 5-9-4, 5-9-10, 5-9-11, 5-10-1, 5-10-2, 5-10-3, 5-10-6, 5-10-7, 5-11-6, 5-11-7, 5-11-10, 5-11-11, 5-11-23, 5-11-24, 5-11-35, 5-13-1, 5-13-2, 5-13-3, 5-13-4, 5-13-7, 5-13-11, 5-13-12, 5-13-14, C-1, C-2, C-3, C-5, C-6, C-7, C-8, E-2, F-1, F-2, J-1, L-1

disturbed area	3-3, 3-8, 4-10, 5-3-6, 5-3-22, 5-4-3, 5-7-9, 5-10-3, 5-11-31, 5-13-14, A-2, B-1, B-2, C-3, F-6, L-1
diversion	1-1, 1-3, 3-3, 3-11, 4-1, 4-5, 4-9, 4-10, 4-11, 4-12, 4-13, 4-14, 5-1-3, 5-2-6, 5-2-7, 5-4-12, 5-5-23, 5-6-2, 5-7-1, 5-7-2, 5-7-3, 5-7-6, 5-7-9, 5-7-10, 5-7-11, 5-7-12, 5-7-13, 5-7-14, 5-8-8, 5-9-2, 5-10-2, 5-10-3, 5-11-5, 5-13-2, 5-13-7, 5-13-14, C-3, C-6, C-10, C-11, F-3, I-1, L-1
DOT Drainage Manual	4-11, 5-5-16, 5-6-2, 5-6-16, 5-6-17, 5-6-20, 5-6-23, 5-6-29, 5-7-12, 5-10-11, A-1, C-3, J-1, J-2, J-3, L-1
DOT Standard Specifications	4-10, 5-4-14, 5-5-8, 5-5-9, 5-5-13, 5-6-19, 5-6-20, 5-6-23, 5-6-25, 5-10-11, 5-11-26, 5-12-2, C-3
downstream	2-7, 3-6, 3-7, 3-8, 3-9, 4-9, 4-12, 4-13, 5-5-9, 5-5-16, 5-5-18, 5-6-16, 5-6-17, 5-6-18, 5-6-19, 5-6-30, 5-6-31, 5-7-9, 5-7-13, 5-9-2, 5-9-3, 5-9-4, 5-9-5, 5-9-9, 5-9-11, 5-9-12, 5-10-6, 5-10-7, 5-10-12, 5-11-7, 5-11-8, 5-11-10, 5-11-11, 5-11-12, A-4, C-1, C-2, C-3, C-6, C-9, C-11, J-1, L-1
drainage area	3-9, 4-10, 5-3-1, 5-5-2, 5-5-20, 5-5-21, 5-5-23, 5-6-2, 5-6-18, 5-6-20, 5-6-21, 5-7-1, 5-7-2, 5-7-3, 5-7-6, 5-7-9, 5-7-12, 5-9-2, 5-9-4, 5-9-11, 5-10-11, 5-10-12, 5-11-2, 5-11-4, 5-11-5, 5-11-6, 5-11-7, 5-11-20, 5-11-22, 5-11-24, 5-11-25, 5-11-27, 5-11-30, 5-11-31, 5-11-35, 5-11-36, 5-11-40, 5-11-45, C-3, C-8, C-11, J-1, J-2, L-1
drainage coefficient	C-3
drainageway	5-10-1, 5-10-6, 5-10-11, 5-10-12, 5-10-14, 5-11-4, 5-11-13, C-2, C-3, C-9, C-11, L-1
drop inlet	5-9-5, 5-9-10, 5-11-10, 5-11-33, C-3
drop inlet spillway	C-3
drop spillway	5-5-18, C-3
dust control	3-11, 4-9, 5-1-2, 5-2-1, 5-2-12, 5-2-13, C-3, L-1
E&S	1-3, 1-4, 3-1, 3-2, 3-3, 3-4, 3-5, 3-9, 3-10, 3-12, 3-13, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-8, 4-9, 4-10, 4-12, 5-2-7, 5-2-8, 5-2-12, 5-3-24, 5-4-4, 5-4-13, 5-5-16, 5-5-20, 5-5-21, 5-6-2, 5-6-4, 5-6-17, 5-6-29, 5-8-2, 5-1-4, 5-1-5, 5-10-6, 5-10-11, 5-11-3, 5-11-5, 5-11-25, 5-11-41, 5-13-2, A-6, C-4, C-6, C-7, D-2, H-1, L-1
E&S measure	3-2, 3-9, 3-13, 4-3, 4-4, 4-10, C-4
embankment	3-7, 4-4, 5-2-8, 5-9-2, 5-9-3, 5-9-4, 5-9-5, 5-9-9, 5-9-10, 5-9-11, 5-9-12, 5-11-5, 5-11-6, 5-11-7, 5-11-8, 5-11-9, 5-11-10, 5-11-11, 5-11-12, 5-11-14, 5-11-25, 5-11-26, 5-11-27, 5-11-28, C-1, C-2, C-3, C-4, C-10, J-1, L-1
emergency spillway	5-9-2, 5-9-3, 5-9-4, 5-9-5, 5-9-9, 5-9-10, 5-9-11, 5-9-12, 5-11-2, 5-11-5, 5-11-6, 5-11-7, 5-11-8, 5-11-10, 5-11-11, 5-11-12, 5-11-14, 5-11-19, 5-11-23, 5-11-24, 5-13-16, C-1, C-3, C-4, L-1
erosion	1-1, 1-2, 1-3, 1-4, 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 3-1, 3-2, 3-3, 3-4, 3-5, 3-6, 3-7, 3-8, 3-9, 3-10, 3-11, 3-12, 3-13, 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-8, 4-9, 4-10, 4-11, 4-12, 4-13, 4-14, 4-15, 4-16, 5-1-1, 5-1-2, 5-1-3, 5-1-4, 5-1-5, 5-1-6, 5-1-7, 5-1-8, 5-1-9, 5-1-10, 5-1-11, 5-2-1, 5-2-2, 5-2-3, 5-2-4, 5-2-5, 5-2-6, 5-2-7, 5-2-8, 5-2-9, 5-2-10, 5-2-11, 5-2-12, 5-2-13, 5-3-1, 5-3-2, 5-3-3, 5-3-4, 5-3-5, 5-3-6, 5-3-7, 5-3-8, 5-3-9, 5-3-10, 5-3-11, 5-3-12, 5-3-13, 5-3-14, 5-3-15, 5-3-16, 5-3-17, 5-3-18, 5-3-19, 5-3-20, 5-3-21, 5-3-22, 5-3-23, 5-3-24, 5-3-25, 5-3-26, 5-3-27, 5-3-28, 5-4-1, 5-4-2, 5-4-3, 5-4-4, 5-4-5, 5-4-6, 5-4-7, 5-4-8, 5-4-9, 5-4-10, 5-4-11, 5-4-12, 5-4-13, 5-4-14, 5-5-1, 5-5-2, 5-5-3, 5-5-4, 5-5-5, 5-5-6, 5-5-7, 5-5-8, 5-5-9, 5-5-10, 5-5-11, 5-5-12, 5-5-13, 5-5-14, 5-5-15, 5-5-16, 5-5-17, 5-5-18, 5-5-19, 5-5-20, 5-5-21, 5-5-22, 5-5-23, 5-5-24, 5-5-25, 5-6-1, 5-6-2, 5-6-3, 5-6-4, 5-6-5, 5-6-6, 5-6-7, 5-6-8, 5-6-9, 5-6-10, 5-6-11, 5-6-12, 5-6-13, 5-6-14, 5-6-15, 5-6-16, 5-6-17, 5-6-18, 5-6-19, 5-6-20, 5-6-21, 5-6-22, 5-6-23, 5-6-24, 5-6-25, 5-6-26, 5-6-27, 5-6-28, 5-6-29, 5-6-30, 5-6-31, 5-6-32, 5-6-33, 5-7-2, 5-7-3, 5-7-4, 5-7-5, 5-7-6, 5-7-7, 5-7-8, 5-7-9, 5-7-10, 5-7-11, 5-7-12, 5-7-13, 5-7-14, 5-8-2, 5-8-3, 5-8-4, 5-8-5, 5-8-6, 5-8-7, 5-8-8, 5-8-9, 5-8-10, 5-8-11, 5-8-12, 5-8-13, 5-8-14, 5-9-2, 5-9-3, 5-9-4, 5-9-5, 5-9-6, 5-9-7, 5-9-8, 5-9-9, 5-9-10, 5-9-11, 5-9-12, 5-9-13, 5-9-14, 5-9-15, 5-9-16, 5-9-17, 5-9-18, 5-10-1, 5-10-2, 5-10-3, 5-10-4, 5-10-5, 5-10-6, 5-10-7, 5-10-8, 5-10-9, 5-10-10, 5-10-11, 5-10-12, 5-10-13, 5-10-14, 5-10-15, 5-10-16, 5-11-2, 5-11-3, 5-11-4, 5-11-5, 5-11-6, 5-11-7, 5-11-8,

	5-11-9, 5-11-10, 5-11-11, 5-11-12, 5-11-13, 5-11-14, 5-11-15, 5-11-16, 5-11-17, 5-11-18, 5-11-19, 5-11-20, 5-11-21, 5-11-22, 5-11-23, 5-11-24, 5-11-25, 5-11-26, 5-11-27, 5-11-28, 5-11-29, 5-11-30, 5-11-31, 5-11-32, 5-11-33, 5-11-34, 5-11-35, 5-11-36, 5-11-37, 5-11-38, 5-11-39, 5-11-40, 5-11-41, 5-11-42, 5-11-43, 5-11-44, 5-11-45, 5-11-46, 5-12-2, 5-12-3, 5-12-4, 5-13-1, 5-13-2, 5-13-3, 5-13-4, 5-13-5, 5-13-6, 5-13-7, 5-13-8, 5-13-9, 5-13-10, 5-13-11, 5-13-12, 5-13-13, 5-13-14, 5-13-15, 5-13-16, A-1, A-2, A-3, A-4, A-5, A-6, B-1, B-2, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-11, D-1, D-2, D-3, E-1, E-2, E-3, E-4, F-1, F-2, F-3, F-4, F-5, F-6, G-1, G-2, G-3, G-4, G-5, H-1, H-2, H-3, I-1, I-2, I-3, J-1, J-2, J-3, K-1, L-1
erosion and sediment control	1-1, 1-2, 1-3, 1-4, 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 3-1, 3-2, 3-3, 3-4, 3-5, 3-6, 3-7, 3-8, 3-9, 3-10, 3-11, 3-12, 3-13, 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-8, 4-9, 4-10, 4-11, 4-12, 4-13, 4-14, 4-15, 4-16, 5-1-2, 5-1-3, 5-1-4, 5-1-5, 5-1-6, 5-1-7, 5-1-8, 5-1-9, 5-1-10, 5-1-11, 5-2-2, 5-2-3, 5-2-4, 5-2-5, 5-2-6, 5-2-7, 5-2-8, 5-2-9, 5-2-10, 5-2-11, 5-2-12, 5-2-13, 5-3-2, 5-3-3, 5-3-4, 5-3-5, 5-3-6, 5-3-7, 5-3-8, 5-3-9, 5-3-10, 5-3-11, 5-3-12, 5-3-13, 5-3-14, 5-3-15, 5-3-16, 5-3-17, 5-3-18, 5-3-19, 5-3-20, 5-3-21, 5-3-22, 5-3-23, 5-3-24, 5-3-25, 5-3-26, 5-3-27, 5-3-28, 5-4-2, 5-4-3, 5-4-4, 5-4-5, 5-4-6, 5-4-7, 5-4-8, 5-4-9, 5-4-10, 5-4-11, 5-4-12, 5-4-13, 5-4-14, 5-5-2, 5-5-3, 5-5-4, 5-5-5, 5-5-6, 5-5-7, 5-5-8, 5-5-9, 5-5-10, 5-5-11, 5-5-12, 5-5-13, 5-5-14, 5-5-15, 5-5-16, 5-5-17, 5-5-18, 5-5-19, 5-5-20, 5-5-21, 5-5-22, 5-5-23, 5-5-24, 5-5-25, 5-6-2, 5-6-3, 5-6-4, 5-6-5, 5-6-6, 5-6-7, 5-6-8, 5-6-9, 5-6-10, 5-6-11, 5-6-12, 5-6-13, 5-6-14, 5-6-15, 5-6-16, 5-6-17, 5-6-18, 5-6-19, 5-6-20, 5-6-21, 5-6-22, 5-6-23, 5-6-24, 5-6-25, 5-6-26, 5-6-27, 5-6-28, 5-6-29, 5-6-30, 5-6-31, 5-6-32, 5-6-33, 5-7-2, 5-7-3, 5-7-4, 5-7-5, 5-7-6, 5-7-7, 5-7-8, 5-7-9, 5-7-10, 5-7-11, 5-7-12, 5-7-13, 5-7-14, 5-8-2, 5-8-3, 5-8-4, 5-8-5, 5-8-6, 5-8-7, 5-8-8, 5-8-9, 5-8-10, 5-8-11, 5-8-12, 5-8-13, 5-8-14, 5-9-2, 5-9-3, 5-9-4, 5-9-5, 5-9-6, 5-9-7, 5-9-8, 5-9-9, 5-9-10, 5-9-11, 5-9-12, 5-9-13, 5-9-14, 5-9-15, 5-9-16, 5-9-17, 5-9-18, 5-10-2, 5-10-3, 5-10-4, 5-10-5, 5-10-6, 5-10-7, 5-10-8, 5-10-9, 5-10-10, 5-10-11, 5-10-12, 5-10-13, 5-10-14, 5-10-15, 5-10-16, 5-11-2, 5-11-3, 5-11-4, 5-11-5, 5-11-6, 5-11-7, 5-11-8, 5-11-9, 5-11-10, 5-11-11, 5-11-12, 5-11-13, 5-11-14, 5-11-15, 5-11-16, 5-11-17, 5-11-18, 5-11-19, 5-11-20, 5-11-21, 5-11-22, 5-11-23, 5-11-24, 5-11-25, 5-11-26, 5-11-27, 5-11-28, 5-11-29, 5-11-30, 5-11-31, 5-11-32, 5-11-33, 5-11-34, 5-11-35, 5-11-36, 5-11-37, 5-11-38, 5-11-39, 5-11-40, 5-11-41, 5-11-42, 5-11-43, 5-11-44, 5-11-45, 5-11-46, 5-12-2, 5-12-3, 5-12-4, 5-13-1, 5-13-2, 5-13-3, 5-13-4, 5-13-5, 5-13-6, 5-13-7, 5-13-8, 5-13-9, 5-13-10, 5-13-11, 5-13-12, 5-13-13, 5-13-14, 5-13-15, 5-13-16, A-1, A-2, A-3, A-4, A-5, A-6, B-1, B-2, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-11, D-1, D-2, D-3, E-1, E-2, E-3, E-4, F-1, F-2, F-3, F-4, F-5, F-6, G-1, G-2, G-3, G-4, G-5, H-1, H-2, H-3, I-1, I-2, I-3, J-1, J-2, J-3, K-1, L-1
eutrophication	2-7, C-4
FHWA	5-6-19, 5-6-22, C-4
filter	3-11, 5-1-2, 5-1-3, 5-1-7, 5-3-12, 5-3-17, 5-5-4, 5-5-9, 5-5-10, 5-5-12, 5-5-13, 5-5-20, 5-6-18, 5-6-20, 5-7-4, 5-7-6, 5-7-7, 5-7-9, 5-8-3, 5-8-6, 5-8-7, 5-9-10, 5-9-11, 5-10-7, 5-10-16, 5-11-1, 5-11-3, 5-11-4, 5-11-8, 5-11-10, 5-11-14, 5-11-36, 5-11-45, 5-11-46, 5-13-1, 5-13-7, 5-13-14, C-4, C-5, C-11, L-1
floodplain	3-4, 5-9-4, 5-11-5, 5-11-6, C-4, C-6, F-4, F-6
flume	4-1, 4-10, 4-11, 5-6-18, 5-6-19, 5-6-20, 5-6-28, C-2, C-4
freeboard	5-6-19, 5-6-23, 5-7-12, 5-7-13, 5-9-5, 5-9-11, 5-9-12, 5-11-7, 5-11-11, 5-11-12, C-4
fugitive dust	5-2-12, 5-2-13, C-4
gabions	3-11, 4-5, 4-7, 5-1-2, 5-5-1, 5-5-2, 5-5-3, 5-5-4, 5-5-13, 5-5-14, 5-5-15, 5-5-20, 5-10-7, C-4, C-7, C-10, D-1, L-1
geotextile	3-11, 4-3, 4-4, 4-6, 4-7, 4-8, 4-9, 4-10, 4-12, 4-14, 4-15, 5-1-3, 5-1-5, 5-1-7, 5-2-12, 5-5-9, 5-5-10, 5-5-12, 5-5-13, 5-5-20, 5-5-23, 5-6-3, 5-6-18, 5-6-19, 5-6-21, 5-6-30, 5-6-31, 5-7-3, 5-7-4, 5-7-6, 5-8-5, 5-8-6, 5-8-14, 5-10-3, 5-10-12, 5-10-16, 5-11-1, 5-11-2, 5-11-3, 5-11-4, 5-11-29, 5-11-30, 5-11-31, 5-11-34, 5-11-35, 5-11-36, 5-11-37, 5-11-38, 5-11-39, 5-11-40, 5-11-45, 5-11-46, 5-12-2, 5-12-3, 5-13-7, 5-13-14, C-4, C-6, L-1
geotextile silt fence	3-11, 4-9, 4-12, 4-14, 4-15, 5-1-3, 5-1-5, 5-7-3, 5-7-4, 5-7-6, 5-10-12, 5-11-1, 5-11-2, 5-11-30, 5-11-31, 5-11-34, 5-11-35, 5-11-36, 5-11-45, 5-11-46, 5-13-7, 5-13-14, C-4, L-1

grade	1-3, 3-9, 3-11, 4-3, 4-6, 5-1-2, 5-1-3, 5-2-3, 5-2-5, 5-2-8, 5-2-13, 5-3-1, 5-3-2, 5-3-5, 5-3-6, 5-3-13, 5-3-22, 5-4-14, 5-5-1, 5-5-2, 5-5-13, 5-5-16, 5-5-18, 5-5-19, 5-5-23, 5-6-2, 5-6-3, 5-6-21, 5-6-30, 5-7-3, 5-7-6, 5-7-9, 5-7-13, 5-8-2, 5-8-5, 5-8-6, 5-8-7, 5-8-8, 5-9-11, 5-10-2, 5-10-3, 5-10-7, 5-10-12, 5-11-11, 5-11-40, 5-12-2, 5-12-3, 5-13-3, 5-13-8, 5-13-15, C-1, C-2, C-4, C-5, C-11, L-1
gradient	2-4, 2-5, 2-6, 5-2-5, 5-2-7, 5-5-1, 5-5-10, 5-6-16, 5-7-7, 5-7-9, 5-11-4, 5-11-30, 5-11-31, 5-11-35, 5-11-36, C-1, C-3, C-4, C-5, C-11, L-1
grading	3-2, 3-5, 3-8, 3-9, 3-11, 3-12, 3-13, 4-2, 4-3, 4-5, 4-9, 4-10, 5-1-2, 5-1-3, 5-1-4, 5-2-1, 5-2-5, 5-2-6, 5-2-7, 5-2-8, 5-2-9, 5-3-1, 5-3-2, 5-3-6, 5-4-3, 5-4-4, 5-6-3, 5-7-2, 5-7-9, 5-7-10, 5-11-25, 5-13-2, A-2, A-3, C-4, C-5, L-1
gravel filter	C-4
groundwater	2-7, 3-4, 3-5, 3-7, 3-12, 4-5, 5-13-2, 5-2-7, 5-2-12, 5-3-7, 5-5-3, 5-8-2, 5-8-6, C-1, C-5, C-11, L-1
grub	5-2-8, 5-9-12, 5-11-12, 5-11-26, C-5
gully erosion	1-2, 2-2, 2-3, 3-10, 3-11, 5-5-18, 5-7-12, C-5, L-1
hardpan	5-2-3, C-5
hardy	5-3-4, 5-3-16, 5-3-17, 5-3-20, 5-3-24, C-5
hay bale barrier	3-11, 4-9, 5-1-3, 5-7-3, 5-7-4, 5-7-6, 5-10-12, 5-11-1, 5-11-2, 5-11-4, 5-11-30, 5-11-31, 5-11-32, 5-11-33, 5-11-34, 5-11-45, 5-13-7, 5-13-8, C-5, L-1
head	5-5-2, 5-5-18, 5-9-10, 5-9-11, 5-11-10, C-2, C-3, C-5, L-1
head cutting	5-5-2, 5-5-18, 5-9-11, C-2, C-5, L-1
HEC 1	C-5
HEC 2	C-5
HEC 15	5-6-19, C-5
hydraulic gradient	C-5
hydroseeding	5-3-2, 5-3-6, 5-3-7, 5-3-11, C-5
impoundment	5-7-3, 5-9-2, 5-11-3, 5-11-41, C-3, C-5, C-7, L-1
infiltration rate	5-3-7, C-5
inland wetland	3-3, 5-2-12, C-5, F-2, F-4, F-5, F-6, 5-8-2, 5-11-5, 5-13-2, 5-9-2
internal drainage	3-7, C-5
invert elevation	C-5
land grading	3-5, 3-11, 4-2, 4-5, 5-1-2, 5-2-1, 5-2-5, 5-2-6, 5-2-7, 5-2-8, 5-2-9, 5-3-2, 5-3-6, 5-13-2, C-5, L-1
landscape mulch	1-3, 3-11, 5-1-2, 5-1-4, 5-2-12, 5-3-1, 5-3-22, 5-3-23, 5-4-1, 5-4-2, 5-4-8, 5-4-9, 5-4-14, 5-5-21, C-5, L-1
landscape planting	3-11, 5-1-2, 5-2-2, 5-3-1, 5-3-16, 5-3-17, 5-3-18, 5-3-19, 5-3-20, 5-3-21, 5-3-22, 5-3-23, 5-3-24, 5-3-25, 5-3-26, 5-3-27, 5-3-28, 5-4-1, 5-4-8, 5-4-9, 5-4-11, C-5, L-1
level spreader	3-11, 4-9, 5-1-3, 5-10-1, 5-10-2, 5-10-3, 5-10-4, 5-10-5, 5-10-7, 5-11-45, C-5, L-1
liming	5-2-4, 5-3-2, 5-3-6, 5-3-14, C-5
major storm	3-12, 5-4-13, 5-5-16, 5-9-13, C-5
Manning's formula	5-6-2, 5-6-19, 5-8-2, 5-8-5, C-5
meanders	4-9, C-6
mulch for seed	1-3, 3-11, 4-9, 5-1-2, 5-2-3, 5-2-12, 5-3-1, 5-3-3, 5-3-6, 5-3-7, 5-4-1, 5-4-2, 5-4-3, 5-4-5, 5-4-6, 5-4-7, 5-4-9, 5-4-10, 5-4-11, 5-10-3, C-6, L-1
natural rate of erosion	C-6, 2-1
NAVDOCS-7.1	5-8-6, C-6
NPDES	1-3, C-6

NRCS	1-2, 5-3-6, 5-6-2, 5-6-17, 5-6-29, 5-7-12, 5-9-3, 5-9-4, 5-11-6, 5-11-11, C-6, C-8, E-1, I-1, L-1
orifice	5-9-4, 5-11-7, C-5, C-6
outfall or outlet	C-6
outlet channel	5-5-18, 5-8-7, C-6, L-1
outlet protection	3-11, 4-2, 4-9, 5-1-3, 5-2-7, 5-5-8, 5-5-9, 5-5-16, 5-5-20, 5-5-21, 5-6-3, 5-6-20, 5-6-21, 5-9-10, 5-9-13, 5-10-1, 5-10-6, 5-10-7, 5-10-8, 5-10-9, 5-10-10, 5-11-35, 5-13-1, 5-13-3, 5-13-4, 5-13-5, 5-13-6, 5-13-7, C-6, C-8, L-1
owner of record	3-12, 4-2, C-6
P.A.	B-1, B-2, C-6
P.L.	C-6
peak discharge	5-9-2, 5-9-4, 5-11-7, C-6
perennial stream	5-9-3, C-6
permanent diversion	3-11, 4-5, 5-1-3, 5-2-7, 5-4-12, 5-7-1, 5-7-2, 5-7-3, 5-7-6, 5-7-9, 5-7-10, 5-7-12, 5-7-13, 5-7-14, 5-8-8, C-6, L-1
permanent lined waterway	3-11, 4-7, 5-1-2, 5-5-9, 5-5-20, 5-6-1, 5-6-16, 5-6-17, 5-6-18, 5-6-19, 5-6-20, 5-6-21, 5-6-22, 5-6-23, 5-6-24, 5-6-25, 5-6-26, 5-6-27, 5-6-28, 5-7-2, 5-7-6, 5-7-12, 5-7-13, C-5, C-6, L-1
permanent seeding	3-11, 4-6, 4-7, 4-8, 4-9, 5-1-2, 5-2-2, 5-2-3, 5-2-12, 5-3-1, 5-3-4, 5-3-5, 5-3-6, 5-3-7, 5-3-8, 5-3-9, 5-3-10, 5-3-11, 5-4-1, 5-4-3, 5-4-5, 5-4-6, 5-4-7, 5-6-3, 5-6-4, 5-7-12, 5-7-13, 5-9-12, 5-11-12, 5-11-26, 5-11-45, C-6, L-1
permanent turf reinforcement mats	1-3, 5-4-12, 5-4-13
permanent pool	5-9-11, 5-11-6, C-6
permanent slope drain	3-11, 5-1-2, 5-5-1, 5-5-2, 5-5-16, 5-5-17, 5-5-20, C-6, L-1
permeability	2-4, 2-5, 3-8, 3-10, 4-4, 5-2-12, 5-8-2, 5-8-6, 5-11-35, C-6, H-1, I-2, L-1
permissible velocity	5-6-2, 5-6-3, 5-6-19, 5-6-22, 5-6-23, 5-9-11, 5-11-11, C-6
pH	5-2-2, 5-2-3, 5-2-4, 5-3-6, 5-3-24, 5-3-25, 5-3-26, 5-3-27, 5-5-13, 5-11-9, C-6, L-1
phase	3-3, 3-7, 3-8, 3-12, 4-2, 4-3, 4-4, 4-15, 5-7-9, C-6, C-8, F-6
phreatic line	5-11-10, C-6
pipng	5-5-3, 5-5-10, 5-5-23, 5-6-18, 5-6-20, 5-6-21, 5-8-6, 5-8-7, 5-8-8, 5-8-12, 5-8-13, 5-8-14, 5-9-10, 5-9-11, 5-11-8, C-1, C-7, L-1
planting stock	5-3-16, C-7
portable sediment tank	1-3, 3-11, 5-1-3, 5-13-1, 5-13-2, 5-13-3, 5-13-11, 5-13-12, 5-13-13, C-7, L-1
postconstruction stormwater management	1-4
precast concrete	5-5-3, C-7, L-1
preconstruction meeting	4-2, 4-3, 4-4, 5-1-4, C-7
principal spillway	5-9-4, 5-9-5, 5-11-6, 5-11-7, 5-11-8, 5-11-9, 5-11-10, 5-11-11, 5-11-12, 5-11-23, 5-11-24, C-4, C-7
pump intake and outlet protection	3-11, 5-1-3, 5-13-1, 5-13-3, 5-13-4, 5-13-5, 5-13-6, 5-13-7, L-1
pumping settling basin	1-3, 3-11, 4-12, 5-1-3, 5-11-30, 5-12-2, 5-13-1, 5-13-4, 5-13-7, 5-13-8, 5-13-9, 5-13-10, 5-13-11, C-7, L-1
pure live seed	5-3-6, 5-3-11, C-7
raindrop erosion	2-2, C-7

rainfall amount	3-12, 5-3-3, 5-3-7, 5-3-14, 5-4-4, 5-4-7, 5-4-11, 5-4-13, 5-5-16, 5-5-21, 5-5-23, 5-6-4, 5-6-17, 5-6-21, 5-7-7, 5-7-13, 5-9-13, 5-10-3, 5-10-12, 5-11-13, 5-11-27, 5-11-31, 5-11-36, 5-11-46, C-7
rainfall frequency	2-4, C-7
rainfall intensity	2-4, C-7
reinforced concrete	5-6-29, 5-9-4, 5-11-7, C-7
retaining wall	5-5-1, 5-5-2, 5-5-3, 5-5-4, 5-5-5, 5-5-6, 5-5-7, C-4, C-7
retention facility	C-7
revetment	5-5-15, 5-5-20, 5-10-7, C-7, C-10, L-1
rill	1-2, 2-2, 2-3, 3-10, 3-11, 5-3-3, 5-4-4, 5-4-9, 5-4-10, 5-6-4, 5-7-12, 5-7-13, C-7, C-10, I-1, I-2
rill erosion	1-2, 2-2, 2-3, 3-10, 3-11, 5-3-3, 5-4-4, 5-4-9, 5-4-10, 5-6-4, 5-7-13, C-7, C-10, I-2
riparian land	C-7
riprap	3-11, 4-5, 4-7, 4-9, 4-11, 4-14, 5-1-2, 5-3-12, 5-4-14, 5-5-1, 5-5-2, 5-5-8, 5-5-9, 5-5-10, 5-5-11, 5-5-12, 5-5-13, 5-5-20, 5-5-25, 5-6-18, 5-6-19, 5-6-20, 5-6-21, 5-6-23, 5-6-25, 5-6-30, 5-7-9, 5-9-3, 5-9-10, 5-9-11, 5-10-1, 5-10-3, 5-10-6, 5-10-7, 5-10-9, 5-10-10, 5-11-10, 5-11-14, 5-11-26, 5-11-28, 5-11-29, C-4, C-7, C-10, D-2, L-1
riser	5-9-3, 5-9-4, 5-9-9, 5-11-7, 5-11-8, 5-11-10, 5-11-14, 5-11-15, C-3, C-8
root ball	5-3-20, 5-3-22, C-8
root zone	5-1-1, 5-1-2, 5-1-3, 5-1-4, 5-1-6, 5-2-2, C-8, L-1
roughness coefficient	5-6-22, 5-6-25, 5-8-5, C-8
runoff	1-2, 1-4, 2-2, 2-5, 2-6, 2-7, 3-1, 3-5, 3-6, 3-7, 3-8, 3-9, 3-11, 4-5, 4-9, 5-1-2, 5-2-4, 5-2-5, 5-2-7, 5-2-8, 5-2-10, 5-3-3, 5-3-7, 5-3-12, 5-3-16, 5-4-4, 5-4-9, 5-4-14, 5-5-1, 5-5-8, 5-5-13, 5-5-16, 5-5-20, 5-5-23, 5-6-2, 5-6-17, 5-6-18, 5-6-19, 5-7-1, 5-7-3, 5-7-4, 5-7-6, 5-7-9, 5-7-10, 5-7-12, 5-8-2, 5-8-8, 5-9-2, 5-9-3, 5-9-4, 5-9-11, A-2, A-3, A-4, B-1, 5-10-1, 5-10-2, 5-10-3, 5-10-11, 5-11-4, 5-11-5, 5-11-6, 5-11-7, 5-11-11, 5-11-24, 5-11-25, 5-11-31, 5-11-34, 5-11-37, 5-11-40, 5-11-45, 5-11-46, 5-12-3, C-1, C-3, C-4, C-5, C-7, C-8, C-9, C-10, C-11, I-1, I-2, I-3, J-1, L-1
RUSLE	2-4, A-1, C-8, D-2, I-1, I-2, I-3
sand	2-4, 2-7, 4-5, 4-15, 5-1-7, 5-2-3, 5-3-2, 5-3-5, 5-3-6, 5-3-8, 5-3-11, 5-3-25, 5-3-26, 5-6-3, 5-6-20, 5-8-5, 5-8-6, 5-9-10, 5-9-12, 5-10-6, 5-11-7, 5-11-8, 5-11-12, 5-11-22, 5-11-24, 5-12-2, 5-12-3, C-1, C-2, C-4, C-8, C-9, F-2, H-1, H-3, I-2
scale	3-5, 3-6, 3-12, 4-6, 4-7, 5-5-4, 5-7-8, 5-11-15, 5-11-29, 5-11-33, A-3, A-5, C-6, C-8, G-1, G-4
scarify	5-2-8, 5-3-7, C-8
scour	4-16, 5-5-3, 5-5-12, 5-6-3, 5-6-20, 5-6-21, 5-9-9, 5-9-10, 5-9-13, 5-10-1, 5-10-6, 5-11-8, 5-11-10, 5-13-7, C-1, C-6, C-8, D-3
sediment load	2-6, 5-7-10, 5-11-6, C-1, C-8, C-9, I-1
sedimentation	1-1, 1-2, 1-3, 2-1, 2-5, 2-6, 2-7, 3-3, 3-5, 3-7, 3-8, 3-9, 3-13, 4-12, 5-1-1, 5-2-8, 5-3-2, 5-3-5, 5-3-14, 5-4-10, 5-6-2, 5-7-12, 5-9-2, 5-9-4, 5-9-5, 5-11-27, 5-11-30, 5-11-35, A-1, A-2, A-3, A-4, A-6, B-1, B-2, C-8, D-2, F-2, F-3, F-4, I-1, L-1
sedimentation basin	3-8, C-8
seeding	3-11, 4-3, 4-4, 4-6, 4-7, 4-8, 4-9, 4-10, 5-1-2, 5-2-1, 5-2-2, 5-2-3, 5-2-4, 5-2-8, 5-2-11, 5-2-12, 5-3-1, 5-3-2, 5-3-3, 5-3-4, 5-3-5, 5-3-6, 5-3-7, 5-3-8, 5-3-9, 5-3-10, 5-3-11, 5-3-12, 5-4-1, 5-4-2, 5-4-3, 5-4-4, 5-4-5, 5-4-6, 5-4-7, 5-4-11, 5-5-3, 5-6-3, 5-6-4, 5-7-9, 5-7-12, 5-7-13, 5-9-12, 5-11-12, 5-11-26, 5-11-45, C-6, C-8, C-10, L-1
seepage	4-4, 4-5, 4-8, 5-2-5, 5-2-7, 5-4-14, 5-5-1, 5-5-3, 5-5-8, 5-5-10, 5-6-18, 5-7-12, 5-8-4, 5-8-6, 5-8-8, 5-9-10, 5-9-11, 5-9-12, 5-11-8, 5-11-10, 5-11-12, 5-11-25, C-1, C-7, C-8, L-1

sequence	3-7, 3-8, 3-12, 3-13, 4-1, 4-2, 4-3, 4-4, 4-5, 4-10, 4-11, 4-12, 4-13, 5-4-13, 5-5-3, 5-5-8, 5-5-16, 5-5-20, 5-6-2, 5-7-2, 5-9-3, A-2, 5-11-5, 5-11-25, A-3, C-8, G-1, G-4, I-2
settling efficiency	5-11-1, C-8
sheet erosion	2-2, 2-3, 3-10, 5-2-10, C-8, C-9
sheet flow	5-4-3, 5-4-5, 5-7-6, 5-7-9, 5-7-12, 5-10-2, 5-10-3, C-8, L-1
side slope	5-2-6, 5-2-7, 5-6-20, 5-10-2, C-8
silt	2-4, 2-5, 3-8, 3-11, 4-3, 4-4, 4-5, 4-9, 4-12, 4-14, 4-15, 5-1-3, 5-1-5, 5-2-3, 5-2-12, 5-3-2, 5-3-5, 5-3-6, 5-5-23, 5-6-3, 5-7-3, 5-7-4, 5-7-6, 5-7-9, 5-8-5, 5-8-6, 5-10-6, 5-10-12, 5-11-1, 5-11-2, 5-11-3, 5-11-4, 5-11-7, 5-11-12, 5-11-24, 5-11-30, 5-11-31, 5-11-34, 5-11-35, 5-11-36, 5-11-37, 5-11-40, 5-11-41, 5-11-42, 5-11-45, 5-11-46, 5-13-7, 5-13-14, 5-13-16, C-1, C-4, C-8, C-9, H-1, H-3, I-2, I-3, L-1
slash	4-2, 4-3, C-8
slope	1-3, 2-4, 2-5, 2-7, 3-5, 3-7, 3-10, 3-11, 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-8, 4-9, 4-10, 4-16, 5-1-2, 5-2-1, 5-2-3, 5-2-5, 5-2-6, 5-2-7, 5-2-8, 5-2-9, 5-2-10, 5-2-11, 5-2-12, 5-3-2, 5-3-5, 5-3-7, 5-3-12, 5-3-13, 5-4-1, 5-4-3, 5-4-4, 5-4-8, 5-4-9, 5-4-14, 5-5-1, 5-5-2, 5-5-3, 5-5-8, 5-5-10, 5-5-12, 5-5-16, 5-5-17, 5-5-20, 5-5-21, 5-5-23, 5-5-24, 5-5-25, 5-6-2, 5-6-3, 5-6-5, 5-6-18, 5-6-19, 5-6-20, 5-6-21, 5-6-22, 5-6-23, 5-6-30, 5-7-2, 5-7-3, 5-7-4, 5-7-6, 5-7-8, 5-7-9, 5-7-12, 5-7-13, 5-8-2, 5-8-5, 5-8-6, 5-8-8, 5-9-5, 5-9-10, 5-9-11, 5-9-12, 5-10-2, 5-10-3, 5-10-14, 5-10-15, 5-11-3, 5-11-4, 5-11-10, 5-11-14, 5-11-22, 5-11-24, 5-11-26, 5-11-30, 5-11-31, 5-11-32, 5-11-33, 5-11-34, 5-11-35, 5-11-36, 5-11-37, 5-11-38, 5-11-40, 5-11-45, 5-11-46, 5-12-2, 5-13-14, C-1, C-2, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-11, D-2, I-1, I-2, I-3, L-1
slough	4-6, 5-2-3, C-8
sodding	3-11, 4-3, 4-4, 5-1-2, 5-2-2, 5-2-4, 5-2-11, 5-2-12, 5-3-1, 5-3-5, 5-3-12, 5-3-13, 5-3-14, 5-3-15, 5-4-1, 5-6-2, 5-6-3, 5-6-4, 5-7-13, 5-9-11, 5-11-10, 5-11-12, 5-11-45, C-8, L-1
soil	1-1, 1-2, 1-3, 1-4, 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 3-1, 3-2, 3-3, 3-4, 3-5, 3-6, 3-7, 3-8, 3-9, 3-10, 3-11, 3-12, 3-13, 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-8, 4-9, 4-10, 4-11, 4-12, 4-13, 4-14, 4-15, 4-16, 5-1-1, 5-1-2, 5-1-3, 5-1-4, 5-1-5, 5-1-6, 5-1-7, 5-1-8, 5-1-9, 5-1-10, 5-1-11, 5-2-1, 5-2-2, 5-2-3, 5-2-4, 5-2-5, 5-2-6, 5-2-7, 5-2-8, 5-2-9, 5-2-10, 5-2-11, 5-2-12, 5-2-13, 5-3-1, 5-3-2, 5-3-3, 5-3-4, 5-3-5, 5-3-6, 5-3-7, 5-3-8, 5-3-9, 5-3-10, 5-3-11, 5-3-12, 5-3-13, 5-3-14, 5-3-15, 5-3-16, 5-3-17, 5-3-18, 5-3-19, 5-3-20, 5-3-21, 5-3-22, 5-3-23, 5-3-24, 5-3-25, 5-3-26, 5-3-27, 5-3-28, 5-4-1, 5-4-2, 5-4-3, 5-4-4, 5-4-5, 5-4-6, 5-4-7, 5-4-8, 5-4-9, 5-4-10, 5-4-11, 5-4-12, 5-4-13, 5-4-14, 5-5-1, 5-5-2, 5-5-3, 5-5-4, 5-5-5, 5-5-6, 5-5-7, 5-5-8, 5-5-9, 5-5-10, 5-5-11, 5-5-12, 5-5-13, 5-5-14, 5-5-15, 5-5-16, 5-5-17, 5-5-18, 5-5-19, 5-5-20, 5-5-21, 5-5-22, 5-5-23, 5-5-24, 5-5-25, 5-6-2, 5-6-3, 5-6-4, 5-6-5, 5-6-6, 5-6-7, 5-6-8, 5-6-9, 5-6-10, 5-6-11, 5-6-12, 5-6-13, 5-6-14, 5-6-15, 5-6-16, 5-6-17, 5-6-18, 5-6-19, 5-6-20, 5-6-21, 5-6-22, 5-6-23, 5-6-24, 5-6-25, 5-6-26, 5-6-27, 5-6-28, 5-6-29, 5-6-30, 5-6-31, 5-6-32, 5-6-33, 5-7-2, 5-7-3, 5-7-4, 5-7-5, 5-7-6, 5-7-7, 5-7-8, 5-7-9, 5-7-10, 5-7-11, 5-7-12, 5-7-13, 5-7-14, 5-8-2, 5-8-3, 5-8-4, 5-8-5, 5-8-6, 5-8-7, 5-8-8, 5-8-9, 5-8-10, 5-8-11, 5-8-12, 5-8-13, 5-8-14, 5-9-2, 5-9-3, 5-9-4, 5-9-5, 5-9-6, 5-9-7, 5-9-8, 5-9-9, 5-9-10, 5-9-11, 5-9-12, 5-9-13, 5-9-14, 5-9-15, 5-9-16, 5-9-17, 5-9-18, 5-10-2, 5-10-3, 5-10-4, 5-10-5, 5-10-6, 5-10-7, 5-10-8, 5-10-9, 5-10-10, 5-10-11, 5-10-12, 5-10-13, 5-10-14, 5-10-15, 5-10-16, 5-11-2, 5-11-3, 5-11-4, 5-11-5, 5-11-6, 5-11-7, 5-11-8, 5-11-9, 5-11-10, 5-11-11, 5-11-12, 5-11-13, 5-11-14, 5-11-15, 5-11-16, 5-11-17, 5-11-18, 5-11-19, 5-11-20, 5-11-21, 5-11-22, 5-11-23, 5-11-24, 5-11-25, 5-11-26, 5-11-27, 5-11-28, 5-11-29, 5-11-30, 5-11-31, 5-11-32, 5-11-33, 5-11-34, 5-11-35, 5-11-36, 5-11-37, 5-11-38, 5-11-39, 5-11-40, 5-11-41, 5-11-42, 5-11-43, 5-11-44, 5-11-45, 5-11-46, 5-12-1, 5-12-2, 5-12-3, 5-12-4, 5-13-1, 5-13-2, 5-13-3, 5-13-4, 5-13-5, 5-13-6, 5-13-7, 5-13-8, 5-13-9, 5-13-10, 5-13-11, 5-13-12, 5-13-13, 5-13-14, 5-13-15, 5-13-16, A-1, A-2, A-3, A-4, A-5, A-6, B-1, B-2, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-11, D-1, D-2, D-3, E-1, E-2, E-3, E-4, F-1, F-2, F-3, F-4, F-5, F-6, G-1, G-2, G-3, G-4, G-5, H-1, H-2, H-3, I-1, I-2, I-3, J-1, J-2, J-3, K-1, L-1
soil amendment	C-9

soil erosion	1-1, 1-2, 1-3, 1-4, 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 3-1, 3-2, 3-3, 3-4, 3-5, 3-6, 3-7, 3-8, 3-9, 3-10, 3-11, 3-12, 3-13, 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-8, 4-9, 4-10, 4-11, 4-12, 4-13, 4-14, 4-15, 4-16, 5-1-2, 5-1-3, 5-1-4, 5-1-5, 5-1-6, 5-1-7, 5-1-8, 5-1-9, 5-1-10, 5-1-11, 5-2-2, 5-2-3, 5-2-4, 5-2-5, 5-2-6, 5-2-7, 5-2-8, 5-2-9, 5-2-10, 5-2-11, 5-2-12, 5-2-13, 5-3-2, 5-3-3, 5-3-4, 5-3-5, 5-3-6, 5-3-7, 5-3-8, 5-3-9, 5-3-10, 5-3-11, 5-3-12, 5-3-13, 5-3-14, 5-3-15, 5-3-16, 5-3-17, 5-3-18, 5-3-19, 5-3-20, 5-3-21, 5-3-22, 5-3-23, 5-3-24, 5-3-25, 5-3-26, 5-3-27, 5-3-28, 5-4-2, 5-4-3, 5-4-4, 5-4-5, 5-4-6, 5-4-7, 5-4-8, 5-4-9, 5-4-10, 5-4-11, 5-4-12, 5-4-13, 5-4-14, 5-5-1, 5-5-2, 5-5-3, 5-5-4, 5-5-5, 5-5-6, 5-5-7, 5-5-8, 5-5-9, 5-5-10, 5-5-11, 5-5-12, 5-5-13, 5-5-14, 5-5-15, 5-5-16, 5-5-17, 5-5-18, 5-5-19, 5-5-20, 5-5-21, 5-5-22, 5-5-23, 5-5-24, 5-5-25, 5-6-2, 5-6-3, 5-6-4, 5-6-5, 5-6-6, 5-6-7, 5-6-8, 5-6-9, 5-6-10, 5-6-11, 5-6-12, 5-6-13, 5-6-14, 5-6-15, 5-6-16, 5-6-17, 5-6-18, 5-6-19, 5-6-20, 5-6-21, 5-6-22, 5-6-23, 5-6-24, 5-6-25, 5-6-26, 5-6-27, 5-6-28, 5-6-29, 5-6-30, 5-6-31, 5-6-32, 5-6-33, 5-7-2, 5-7-3, 5-7-4, 5-7-5, 5-7-6, 5-7-7, 5-7-8, 5-7-9, 5-7-10, 5-7-11, 5-7-12, 5-7-13, 5-7-14, 5-8-2, 5-8-3, 5-8-4, 5-8-5, 5-8-6, 5-8-7, 5-8-8, 5-8-9, 5-8-10, 5-8-11, 5-8-12, 5-8-13, 5-8-14, 5-9-2, 5-9-3, 5-9-4, 5-9-5, 5-9-6, 5-9-7, 5-9-8, 5-9-9, 5-9-10, 5-9-11, 5-9-12, 5-9-13, 5-9-14, 5-9-15, 5-9-16, 5-9-17, 5-9-18, 5-10-2, 5-10-3, 5-10-4, 5-10-5, 5-10-6, 5-10-7, 5-10-8, 5-10-9, 5-10-10, 5-10-11, 5-10-12, 5-10-13, 5-10-14, 5-10-15, 5-10-16, 5-11-2, 5-11-3, 5-11-4, 5-11-5, 5-11-6, 5-11-7, 5-11-8, 5-11-9, 5-11-10, 5-11-11, 5-11-12, 5-11-13, 5-11-14, 5-11-15, 5-11-16, 5-11-17, 5-11-18, 5-11-19, 5-11-20, 5-11-21, 5-11-22, 5-11-23, 5-11-24, 5-11-25, 5-11-26, 5-11-27, 5-11-28, 5-11-29, 5-11-30, 5-11-31, 5-11-32, 5-11-33, 5-11-34, 5-11-35, 5-11-36, 5-11-37, 5-11-38, 5-11-39, 5-11-40, 5-11-41, 5-11-42, 5-11-43, 5-11-44, 5-11-45, 5-11-46, 5-12-2, 5-12-3, 5-12-4, 5-13-2, 5-13-3, 5-13-4, 5-13-5, 5-13-6, 5-13-7, 5-13-8, 5-13-9, 5-13-10, 5-13-11, 5-13-12, 5-13-13, 5-13-14, 5-13-15, 5-13-16, A-1, A-2, A-3, A-4, A-5, A-6, B-1, B-2, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-11, D-1, D-2, D-3, E-1, E-2, E-3, E-4, F-1, F-2, F-3, F-4, F-5, F-6, G-1, G-2, G-3, G-4, G-5, H-1, H-2, H-3, I-1, I-2, I-3, J-1, J-2, J-3, K-1, L-1
soil horizon	C-5, C-9
spillway	5-5-18, 5-9-2, 5-9-3, 5-9-4, 5-9-5, 5-9-9, 5-9-10, 5-9-11, 5-9-12, 5-10-6, 5-11-2, 5-11-5, 5-11-6, 5-11-7, 5-11-8, 5-11-9, 5-11-10, 5-11-11, 5-11-12, 5-11-14, 5-11-19, 5-11-23, 5-11-24, 5-13-1, 5-13-8, 5-13-16, C-1, C-2, C-3, C-4, C-7, C-9, C-11, L-1
spoil	5-2-8, 5-3-5, 5-3-8, 5-9-12, 5-11-12, C-3, C-9
spreader	3-11, 4-9, 5-1-3, 5-10-1, 5-10-2, 5-10-3, 5-10-4, 5-10-5, 5-10-7, 5-11-45, C-5, C-9, L-1
standpipe	5-13-4, C-9
stilling basin	5-9-10, 5-10-7, 5-10-10, C-9
stone check dam	1-3, 3-11, 4-9, 5-1-3, 5-10-1, 5-10-11, 5-10-12, 5-10-13, 5-10-14, 5-10-15, 5-10-16, 5-11-2, 5-11-3, 5-11-30, 5-11-31, 5-11-35, 5-11-46, C-9, L-1
stone slope protection	1-3, 3-11, 4-6, 5-1-2, 5-2-10, 5-2-12, 5-4-1, 5-4-4, 5-4-8, 5-4-9, 5-4-14, 5-10-3, 5-11-26, C-9, L-1
stormwater	1-2, 1-3, 1-4, 2-7, 3-6, 3-7, 3-9, 5-2-5, 5-5-16, 5-5-23, 5-6-16, 5-9-3, 5-9-4, 5-11-2, 5-11-5, C-3, C-7, C-9, C-10, D-1, F-2, F-6, L-1
stormwater runoff	C-9, 5-5-16
subgrade	4-3, 4-10, 5-2-3, 5-2-4, 5-5-4, 5-5-12, 5-6-18, 5-6-21, 5-11-38, C-9
substrate	2-7, C-9
subsurface drain	3-11, 4-5, 4-6, 4-7, 4-8, 5-1-3, 5-1-7, 5-2-7, 5-4-14, 5-6-2, 5-6-20, 5-8-1, 5-8-2, 5-8-3, 5-8-4, 5-8-5, 5-8-6, 5-8-7, 5-8-8, 5-8-9, 5-8-10, 5-8-11, 5-8-12, 5-8-13, 5-8-14, C-2, C-5, C-9, C-11
sump	5-13-3, 5-13-4, 5-13-5, C-5, C-9
surface roughening	1-3, 5-2-1, 5-2-3, 5-2-8, 5-2-10, 5-2-11, 5-3-2, 5-3-7, C-9, L-1
surface runoff	1-2, 2-7, 5-2-5, 5-2-7, 5-3-12, 5-8-2, C-5, C-9, C-10, I-2, L-1
surface water	2-7, 3-7, 4-3, 5-2-5, 5-2-7, 5-3-2, 5-3-6, 5-5-2, 5-5-20, 5-5-23, 5-6-18, 5-7-12, 5-8-7, 5-8-8, 5-11-30, 5-13-7, 5-13-14, C-2, C-3, C-7, C-8, C-9, F-3, L-1
suspended load	2-6, C-9

swale	5-4-1, 5-6-2, 5-11-4, 5-11-35, 5-11-36, 5-11-39, C-9, C-11, L-1
SWCD	C-9, E-3, E-4
tackifier	5-2-13, 5-4-2, 5-4-4, 5-4-6, 5-4-7, C-9
tacking	C-9
tailwater	5-5-16, 5-6-18, 5-10-7, 5-10-11, C-9
temporary diversion	3-11, 4-9, 4-11, 5-1-3, 5-5-23, 5-6-2, 5-7-1, 5-7-2, 5-7-3, 5-7-9, 5-7-10, 5-7-11, 5-10-2, 5-13-14, C-10, L-1
temporary erosion control blankets	1-3, 5-3-7, 5-4-4, 5-4-10, 5-4-11, 5-7-9, 5-10-3
temporary fill berm	3-11, 5-1-3, 5-2-5, 5-2-8, 5-7-1, 5-7-2, 5-7-3, 5-7-4, 5-7-5, C-10, L-1
temporary lined channel	3-11, 4-9, 5-1-2, 5-5-20, 5-6-1, 5-6-16, 5-6-17, C-10, L-1
temporary lined chute	3-11, 4-4, 5-1-2, 5-5-1, 5-5-2, 5-5-16, 5-5-20, 5-5-21, 5-5-22, 5-7-3, C-10, L-1
temporary pipe slope drain	3-11, 4-4, 5-1-2, 5-2-5, 5-5-1, 5-5-2, 5-5-16, 5-5-20, 5-5-23, 5-5-24, 5-5-25, 5-7-3, 5-7-4, C-10, L-1
temporary sediment basin	3-11, 5-1-3, 5-7-1, 5-9-2, 5-10-1, 5-10-11, 5-11-1, 5-11-2, 5-11-5, 5-11-6, 5-11-7, 5-11-8, 5-11-9, 5-11-10, 5-11-11, 5-11-12, 5-11-13, 5-11-14, 5-11-15, 5-11-16, 5-11-17, 5-11-18, 5-11-19, 5-11-20, 5-11-21, 5-11-22, 5-11-23, 5-11-24, 5-11-25, 5-11-44, C-10, L-1
temporary sediment trap	1-3, 3-11, 5-1-3, 5-7-4, 5-7-6, 5-7-9, 5-10-1, 5-10-11, 5-11-1, 5-11-5, 5-11-25, 5-11-26, 5-11-27, 5-11-28, 5-11-29, 5-11-30, C-10, L-1
temporary seeding	3-11, 4-9, 5-1-2, 5-2-3, 5-2-8, 5-2-12, 5-3-1, 5-3-2, 5-3-3, 5-3-4, 5-4-3, 5-4-5, 5-4-6, 5-4-7, 5-7-9, 5-9-12, 5-11-12, 5-11-26, C-10, L-1
temporary soil protection	1-3, 3-11, 4-9, 5-1-2, 5-2-3, 5-2-12, 5-4-1, 5-4-2, 5-4-3, 5-4-4, 5-4-10, 5-4-11, 5-5-21, C-10, L-1
temporary stream crossing	3-11, 4-9, 4-11, 4-12, 4-14, 5-1-2, 5-6-1, 5-6-29, 5-6-30, 5-6-31, 5-6-32, 5-6-33, 5-7-2, 5-7-6, C-10, L-1
terrace	2-5, 3-6, 5-10-2, C-10, I-1
test pit	3-10, 3-12, C-10
three dimensional geosynthetic	5-4-12, 5-6-2, 5-6-3, C-10
turf reinforcement	5-6-2, 5-6-3, 5-11-42, C-10
turf reinforcement	1-3, 3-11, 5-1-2, 5-3-1, 5-3-7, 5-3-12, 5-4-1, 5-4-12, 5-4-13, 5-5-21, 5-6-1, 5-6-2, 5-6-3, 5-10-3, C-10, L-1
tidal wetland	3-4, 3-13, C-10, F-2
time of concentration	5-6-2, 5-9-2, C-10
topsoiling	3-11, 4-6, 4-7, 4-8, 5-1-2, 5-2-1, 5-2-2, 5-2-3, 5-2-4, 5-2-8, 5-3-1, 5-3-5, 5-3-6, 5-3-13, 5-7-12, C-10, L-1
total suspended solids (TTS)	C-10
TR-20	C-10
TR-55	5-11-6, 5-11-10, C-10
tracking	5-2-3, 5-2-10, 5-2-11, 5-3-2, 5-6-29, 5-12-2, 5-12-3, C-2, C-10
trap efficiency	5-11-1, 5-11-6, 5-11-22, 5-11-24, C-10
trash rack	5-9-5, 5-9-6, 5-9-7, 5-9-8, 5-11-7, 5-11-8, 5-11-17, C-11
tree protection	3-11, 4-2, 4-3, 4-4, 5-1-1, 5-1-2, 5-1-3, 5-1-4, 5-1-5, 5-1-6, 5-1-7, 5-1-8, 5-1-9, 5-1-10, 5-1-11, 5-4-9, C-11, L-1
tree well	5-1-7, 5-1-8, C-11
trunk	5-1-2, 5-1-3, 5-1-4, 5-1-5, 5-1-6, 5-1-11, 5-3-20, 5-4-9, C-11

turbidity	2-4, 2-6, 2-7, 3-11, 5-1-3, 5-11-1, 5-11-2, 5-11-3, 5-11-4, 5-11-41, 5-11-42, 5-11-43, 5-11-44, 5-13-2, 5-6-29, C-11, L-1
turbidity curtain	3-11, 5-1-3, 5-11-1, 5-11-2, 5-11-3, 5-11-41, 5-11-42, 5-11-43, 5-11-44, C-11, L-1
turf	1-3, 3-11, 5-1-2, 5-2-2, 5-3-1, 5-3-7, 5-3-11, 5-3-12, 5-3-13, 5-3-16, 5-4-1, 5-4-12, 5-4-13, 5-5-21, 5-6-1, 5-6-2, 5-6-3, 5-10-3, C-6, C-8, C-10, C-11, L-1
underdrain	5-5-4, 5-13-14, C-11
upstream	4-12, 4-13, 5-5-9, 5-5-18, 5-6-16, 5-6-30, 5-6-31, 5-9-11, 5-9-12, 5-10-12, 5-11-11, 5-11-26, C-2, C-4, C-11, J-1
USDA	3-4, 3-6, 4-9, 4-16, 5-3-20, 5-5-13, 5-9-4, 5-11-6, 5-11-7, A-4, C-6, C-8, C-11, D-1, D-2, D-3, E-1, H-1, H-2, I-1
USGS	3-4, 3-5, C-11
vegetated filter	5-7-6, 5-7-7, 5-11-1, 5-11-3, 5-11-45, 5-11-46, 5-13-7, 5-13-14, C-11, L-1
vegetated waterway	3-11, 5-1-2, 5-2-7, 5-3-13, 5-4-12, 5-5-20, 5-6-1, 5-6-2, 5-6-3, 5-6-4, 5-6-5, 5-6-6, 5-6-7, 5-6-8, 5-6-9, 5-6-10, 5-6-11, 5-6-12, 5-6-13, 5-6-14, 5-6-15, 5-6-18, 5-6-19, 5-7-12, 5-7-13, 5-9-11, C-5, C-11, L-1
velocity	2-2, 2-4, 2-5, 2-6, 3-8, 4-9, 5-2-4, 5-2-10, 5-3-12, 5-3-13, 5-3-14, 5-5-1, 5-5-8, 5-5-9, 5-5-13, 5-5-18, 5-6-2, 5-6-3, 5-6-4, 5-6-18, 5-6-19, 5-6-22, 5-6-23, 5-7-6, 5-7-9, 5-8-5, 5-8-6, 5-8-8, 5-9-5, 5-9-6, 5-9-11, 5-10-2, 5-10-6, 5-10-11, 5-11-1, 5-11-3, 5-11-11, 5-11-30, 5-11-35, 5-11-41, 5-11-42, 5-11-45, C-2, C-4, C-5, C-6, C-8, C-9, C-11, L-1
water bar	3-11, 4-9, 5-1-3, 5-6-31, 5-6-32, 5-7-1, 5-7-2, 5-7-6, 5-7-7, 5-7-8, 5-10-2, 5-12-2, 5-12-3, C-11, L-1
watershed	2-5, 3-3, 3-5, 3-6, 3-7, 3-12, 3-135-6-16, 5-6-17, 5-7-12, 5-9-2, 5-9-3, , 5-10-11, 5-11-5, 5-11-25, 5-11-34, C-3, C-10, C-11, F-3, L-1
watertable	C-11
waterway	3-11, 4-5, 4-7, 5-1-2, 5-2-7, 5-3-13, 5-3-14, 5-4-12, 5-5-9, 5-5-18, 5-5-20, 5-6-1, 5-6-2, 5-6-3, 5-6-4, 5-6-5, 5-6-6, 5-6-7, 5-6-8, 5-6-9, 5-6-10, 5-6-11, 5-6-12, 5-6-13, 5-6-14, 5-6-15, 5-6-16, 5-6-17, 5-6-18, 5-6-19, 5-6-20, 5-6-21, 5-6-22, 5-6-23, 5-6-24, 5-6-25, 5-6-26, 5-6-27, 5-6-28, 5-6-29, 5-6-30, 5-6-31, 5-7-2, 5-7-6, 5-7-12, 5-7-13, 5-8-8, 5-9-11, 5-11-5, C-5, C-6, C-9, C-10, C-11, J-1, L-1
weir	5-9-10, 5-11-10, 5-11-29, C-2, C-11
wet storage	5-11-6, 5-11-13, 5-11-14, 5-11-25, 5-11-26, 5-11-27, 5-13-12, C-11
wind erosion	2-5, 3-11, 5-2-12, C-11