Ds1

GSWCC 2016 Edition

REQUIREMENT FOR REGULATORY COMPLIANCE

Mulch or temporary grassing shall be applied to all exposed areas within 14 days of disturbance. Mulch can be used as a singular erosion control device for up to 6 months, but it shall be applied at the appropriate depth, depending on the material used, anchored and have a continuous 90% cover or greater of the soil surface.

Maintenance shall be required to maintain appropriate depth and 90% cover. Temporary vegetation may be employed instead of mulch if the area will remain undisturbed for less than 6 months.

If any area will remain undisturbed for greater than 6 months, permanent vegetative techniques shall be employed. Refer to **Ds2 -Disturbed Area Stabilization (With Temporary Seeding)**, **Ds3 - Disturbed Area Stabilization (With Permanent Seeding)**, and **Ds4 - Disturbed Area Stabilization (With Sodding)**.

SPECIFICATIONS (Mulching Without Seeding)

This standard applies to graded or cleared areas where seedlings may not have a suitable growing season to produce an erosion retardant cover, but can be stabilized with a mulch cover.

Site Preparation
1. Grade to permit the use of equipment for applying and anchoring mulch.
2. Install needed erosion control measures as required such as dikes, diversions, berms, terraces and sediment barriers.
3. Loosen compact soil to a minimum depth of 3".

Mulching Materials (select one of the following materials and apply at the depth indicated):
1. Dry straw or hay shall be applied at a depth of 2" to 4" providing complete soil coverage. One advantage of this material is easy application.
2. Wood waste (chips, sawdust or bark) shall be applied at a depth of 2" to 3". Organic material from the clearing stage of development should remain on site, be chipped, and applied as mulch. This method of mulching can greatly reduce erosion control costs.
3. Polyethylene film shall be secured over banks or stockpiled soil material for temporary protection. This material can be salvaged and re-used.

Applying Mulch (when mulch is used without seeding, mulch shall be applied to provide full coverage of the exposed area.)
1. Dry straw or hay mulch and wood chips shall be applied uniformly by hand or by mechanical equipment.
2. If the area will eventually be covered with perennial vegetation, 20-30 pounds of nitrogen per acre in addition to the normal amount shall be applied to offset the uptake of nitrogen caused by the decomposition of the organic mulches.
3. Apply polyethylene film on exposed areas.

Anchoring Mulch
1. Straw or hay mulch can be pressed into the soil with a disk harrow with the disk set straight or with a special "packer disk." Disks may be smooth or serrated and should be 20" or more in diameter and 8" to 12" apart. The edges of the disk should be dull enough not to cut the mulch but to press it into the soil leaving much of it in an erect position. Straw or hay mulch shall be anchored immediately after application.
2. Netting of the appropriate size shall be used to anchor wood waste. Openings of the netting shall not be larger than the average size of the wood waste chips.
3. Polyethylene film shall be anchor trenched at the top as well as incrementally as necessary.

DISTURBED AREA STABILIZATION (WITH MULCHING ONLY) - (Ds1)

Ds2

GSWCC 2016 Edition

Table 6-4.1 - Temporary Cover or Companion Cover Crops
PLANT, PLANTING RATE, AND PLANTING DATE FOR TEMPORARY COVER OR COMPANION CROPS [1]

SPECIES	BROADCAST RATES	RESOURCE AREA[2]	PLANTING DATES BY RESOURCE AREA (**SOLID** lines indicate optimum dates, **DOTTED** lines indicate permissible but marginal dates)	REMARKS
BARLEY *Hordeum vulgare*				14,000 seed per pound. Winter hardy. Use on productive soils.
LESPEDEZA, ANNUAL *Lespedeza striata*				200,000 seed per pound. May volunteer for several years. Use inoculant EL.
LOVEGRASS, WEEPING *Eragrostis curvula*				1,500,000 seed per pound. May last for several years. Mix with Sericea lespedeza.
MILLET, BROWNTOP *Panicum fasciculatum*				137,000 seed per pound. Quick dense cover. Will provide excessive competition in mixtures if seeded at high rate.
MILLET, PEARL *Pennisetum glaucum*				88,000 seed per pound. Quick dense cover. May reach 5' in height. Not recommended for mixtures.
OATS *Avena sativa*				13,000 seed per pound. Use on productive soils. Not as a winter hardy as rye or barley.
RYE *Secale cereale*				18,000 seed per pound. Quick cover. Drought tolerant and winter hardy.
RYEGRASS, ANNUAL *Lolium temulentum*				227,000 seed per pound. Dense cover. Very competitive and is not to be used in mixtures.
SUDANGRASS *Sorghum sudanese*				55,000 seed per pound. Good on droughty sites. Not recommended for mixtures.
TRITICALE *X-Triticosecale*				Use on lower part of Southern Coastal Plain and in Atlantic Coastal Flatwoods only.
WHEAT *Triticum aestivum*				15,000 seed per pound. Winter hardy.

[1] Temporary cover crops are very competitive and will crowd out perennials if seeded too heavily.

[2] Reduce seeding rates by 50% when drilled.

[3] M-L represents the Mountain; Blue Ridge; and Ridges and Valleys MLRAs*; P represents the Southern Piedmont MLRA*; C represents Southern Coastal Plain; Sand Hills; Black Lands; and Atlantic Coast Flatwoods MLRAs*

* Refer to Georgia Major Land Resource Areas Map

REQUIREMENT FOR REGULATORY COMPLIANCE

Mulch or temporary grassing shall be applied to all exposed areas within 14 days of disturbance. Temporary grassing, instead of mulch, can be applied to rough graded areas that will be exposed for less than 6 months. If an area is expected to be undisturbed for longer than 6 months, permanent perennial vegetation shall be used. If optimum planting conditions for temporary grassing is lacking, mulch can be used as a singular erosion control device for up to 6 months but it shall be applied at the appropriate depth, anchored, and have a continuous 90% cover or greater of the soil surface. Refer to specification **Ds1-Disturbed Area Stabilization (With Temporary Seeding)**.

CONDITIONS

Temporary vegetative measures should be coordinated with permanent measures to assure economical and effective stabilization. Most types of temporary vegetation are ideal to use as companion crops until the permanent vegetation is established. Note: Some species of temporary vegetation are not appropriate for companion crop plantings because of their potential to out-compete the desired species (e.g. annual ryegrass).

Contact NRCS or the local SWCD for more information.

SPECIFICATIONS

Grading and Shaping
Excessive water run-off shall be reduced by properly designed and installed erosion control practices such as closed drains, ditches, dikes, diversions, sediment barriers and others. No shaping or grading is required if slopes can be stabilized by hand-seeded vegetation or if hydraulic seeding equipment is to be used.

Seedbed Preparation
When a hydraulic seeder is used, seedbed preparation is not required. When using conventional or hand-seeding, seedbed preparation is not required if the soil material is loose and not sealed by rainfall. When soil has been sealed by rainfall or consists of smooth cut slopes, the soil shall be pitted, trenched or otherwise scarified to provide a place for seed to lodge and germinate.

Lime and Fertilizer
Agricultural lime is required unless soil tests indicate otherwise. Apply agricultural lime at a rate determined by soil test for pH. Quick acting lime should be incorporated to modify pH during the germination period. Bio stimulants should also be considered when there is less than 3% organic matter in the soil. Graded areas require lime application. Soils must be tested to determine required amounts of fertilizer and amendments. Fertilizer should be applied before land preparation and incorporated with a disk, ripper, or chisel. On slopes too steep for, or inaccessible to equipment, fertilizer shall be hydraulically applied, preferably in the first pass with seed and some hydraulic mulch, then topped with the remaining required application rate.

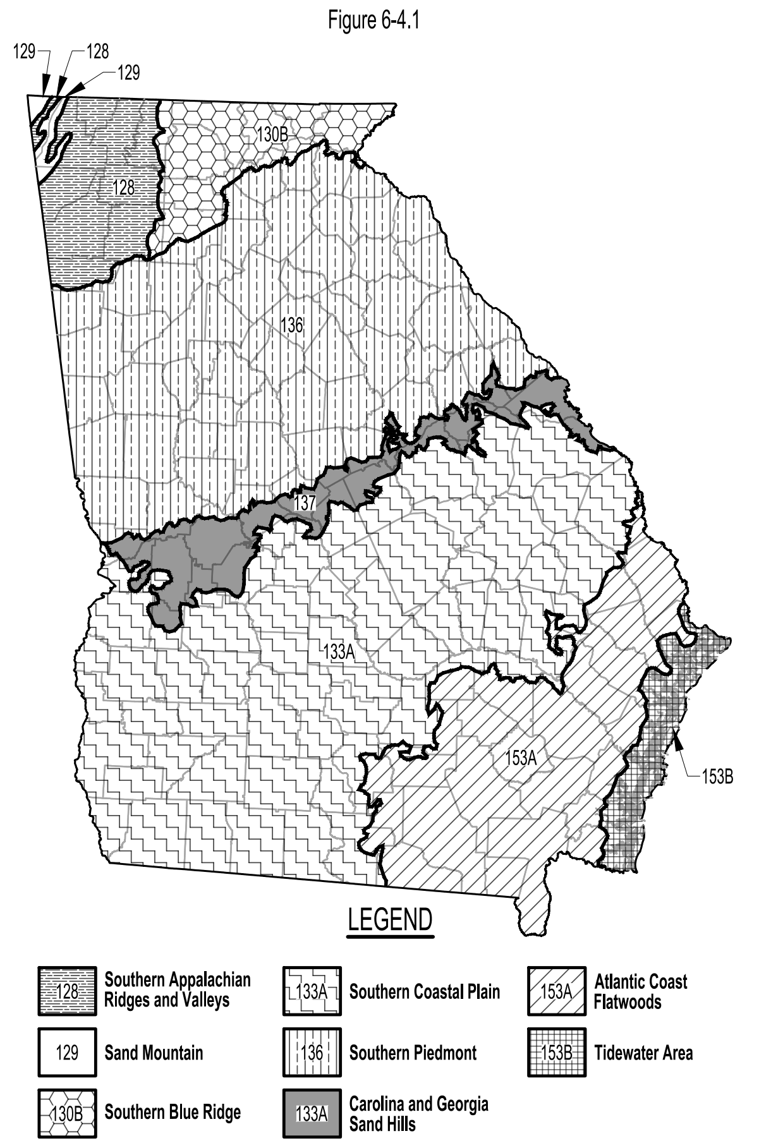
Seeding
Select a grass or grass-legume mixture suitable to the area and season of the year. Seed shall be applied uniformly by hand, cyclone seeder, drill, culti-packer-seeder, or hydraulic seeder (slurry including seed and fertilizer). Drill or cultipacker seeders should normally place seed $\frac{1}{4}$" to $\frac{1}{2}$" deep. Appropriate depth of planting is ten times the seed diameter. Soil should be "raked" lightly to cover seed with soil if seeded by hand. See **Table 6-4.1 - Temporary Cover or Companion Cover Crops**.

Mulching
Temporary vegetation can, in most cases, be established without the use of mulch, provided there is little to no erosion potential. However, the use of mulch can often accelerate and enhance germination and vegetation establishment. Mulch without seeding should be considered for short term protection. Refer to **Ds1 - Disturbed Area Stabilization (With Mulching Only)**.

Irrigation
During times of drought, water shall be applied at a rate not causing runoff and erosion. The soil shall be thoroughly wetted to a depth that will insure germination of the seed. Subsequent applications should be made when needed.

GEORGIA MAJOR LAND RESOURCE AREAS

Figure 6-4.1


129
128
130B
136
133A
153A
153B
137
LEGEND
128 Southern Appalachian Ridges and Valleys
133A Southern Coastal Plain
153A Atlantic Coast Flatwoods
129 Sand Mountain
136 Southern Piedmont
153B Tidewater Area
130B Southern Blue Ridge
137 Carolina and Georgia Sand Hills

N.T.S.

DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING) - (Ds2)

Ds3

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Table 6-5.2 - Permanent Cover Crops
PLANT, PLANTING RATE, AND PLANTING DATE FOR PERMANENT COVER

SPECIES	BROADCAST RATES	RESOURCE AREA	PLANTING DATES BY RESOURCE AREA (SOLID lines indicate optimum dates, DOTTED lines indicate permissible but marginal dates)	REMARKS
BAHIA, PENSACOLA *Paspalum notatum*				
BAHIA, WILMINGTON *Paspalum notatum*				
BERMUDA, COMMON *Cynodon dactylon*				
BERMUDA, COMMON *Cynodon dactylon*				
BERMUDA SPRIGS *Cynodon dactylon*				
CENTIPEDE *Eremochloa ophiuroides*				
CROWNVETCH *Coronilla varia*				
FESCUE, TALL *Festuca arundinacea*				
LESPEDEZA SERICEA *Lespedeza cuneata*				
LESPEDEZA *Ambro virgata*				
LESPEDEZA, SHRUB *Lespedeza bicolor*				
LOVEGRASS, WEEPING *Eragrostis curvula*				
MAIDENCANE *Panicum hemitomon*				
PANICGRASS, ATLANTIC COASTAL *Panicum amarum*				
REED CANARY GRASS *Phalaris arundinacea*				
SUNFLOWER, AZTEC MAXIMILIAN *Helianthus maximiliani*				

[1] Reduce seeding rates by 50% when drilled

[2] PLS is an abbreviation for Pure Live Seed. Refer to Section V.E. of these specifications

[3] M-L represents the Mountain; Blue Ridge; and Ridges and Valleys MLRAs*; P represents the Southern Piedmont MLRA*; C represents Southern Coastal Plain; Sand Hills; Black Lands; and Atlantic Coast Flatwoods MLRAs*

* Refer to Georgia Major Land Resource Areas Map

Table 6-5.1. Fertilizer Requirements

TYPE OF SPECIES	YEAR	ANALYSIS OR EQUIVALENT N-P-K	RATE	N TOP DRESSING RATE
1. Cool Season Grasses	First			50-100 lbs./ac. 1/2/
	Second			---
	Maintenance			30 lbs./ac.
2. Cool Season Grasses and Legumes	First			0-50 lbs./ac. 1/
	Second			---
	Maintenance			---
3. Ground Covers	First			---
	Second			---
	Maintenance			---
4. Pine Seedlings	First			---
5. Shrub Lespedeza	First			---
	Maintenance			---
6. Temporary cover crops seeded alone	First			30 lbs./ac. 5/
7. Warm Season Grasses	First			50-100 lbs./ac. 2/6/
	Second			50-100 lbs./ac. 2/
	Maintenance			30 lbs./ac.
8. Warm Season Grasses & Legumes	First			50 lbs./ac./6/
	Second			---
	Maintenance			---

Table 6-5.3. Durable Shrubs and Ground Covers for Permanent Cover

Table 6-5.4. Trees for Erosion Control

SITE	SOIL MATERIAL	COMMON SOILS	PLANTING TREE SPECIES	SPACING	PLANTING DATES[3]
					M - L, P = 12/1 - 3/15 C = 12/1 - 3/1
					M - L, P = 12/1 - 3/15 C = 12/1 - 3/1
					M - L, P = 12/1 - 3/15 C = 12/1 - 3/1
					ALL

Type of Planting	Tree Spacing	No. of Trees per Acre
Trees Alone	4' x 4'	2,722
Trees in Combination w/ grasses and/or other plants	6' x 6'	1,210

[4] Fertilization of companion crop is ample for this species.

REQUIREMENT FOR REGULATORY COMPLIANCE

This practice shall be applied immediately to rough graded areas that will be undisturbed for longer than 6 months. This practice or sodding shall be applied immediately to all areas at final grade. Final Stabilization means that all soil disturbing activities at the site have been completed, and that for unpaved areas and areas not covered by permanent structures and areas located outside the waste disposal limits of a landfill cell that has been certified by the GA EPD for waste disposal, 100% of the soil surface is uniformly covered in permanent vegetation with a density of 70% or greater, or landscaped according to the Plan (uniformly covered with landscaping materials in planned landscaped areas), or equivalent permanent stabilization measures.

Permanent vegetation shall consist of, planted trees, shrubs, perennial vines; or a crop of perennial vegetation appropriate for the region, such that within the growing season a 70% coverage by perennial vegetation shall be achieved. Final stabilization applies to each phase of construction. For linear construction projects on land used for agricultural or silvicultural purposes, final stabilization may be accomplished by stabilizing the disturbed land for its agricultural or silvicultural use. Until this standard is satisfied and permanent control measures and facilities are operational, interim stabilization measures and temporary erosion and sedimentation control measures shall not be removed.

CONDITIONS

Permanent perennial vegetation is used to provide a protective cover for exposed areas including cuts, fills, dams, and other denuded areas.

PLANNING CONSIDERATIONS

1. Use conventional planting methods where possible.
2. When mixed plantings are done during marginal planting periods, companion crops shall be used.
3. No-till planting is effective when planting is done following a summer or winter annual cover crop. Sericea lespedeza planted no-till into stands of rye is an excellent procedure.
4. Block sod provides immediate cover. It is especially effective in controlling erosion adjacent to concrete flumes and other structures. Refer to Specification **Ds4-Disturbed Area Stabilization (With Sodding)**.
5. Irrigation should be used when the soil is dry or when summer plantings are done.
6. Low maintenance plants, as well as natives, should be used to ensure long-lasting erosion control.
7. Mowing should not be performed during the quail nesting season (May to September).
8. Wildlife plantings should be included in critical area plantings.

Wildlife Plantings
Commercially available plants beneficial to wildlife species include the following:

Mast Bearing Trees
Beech, Black Cherry, Blackgum, Chestnut, Chinkapin, Hackberry, Hickory, Honey Locust, Native Oak, Persimmon, Sawtooth Oak and Sweetgum.
- All trees that produce nuts or fruits are favored by many game species. Hickory provides nuts used mainly by squirrels and bear.

Shrubs and Small Trees
Bayberry, Bicolor Lespedeza, Crabapple, Dogwood, Huckleberry or Native Blueberry, Mountain Laurel, Native Holly, Red Cedar, Red Mulberry, Sumac, Wax Myrtle, Wild Plum and Blackberry.
- Plant in patches without tall trees to develop stable shrub communities. All produce fruits used by many kinds of wildlife, except for lespedeza that produces seeds used by quail and songbirds.

Grasses, Legumes, Vines and Temporary Cover
Bahiagrass, Bermudagrass, Grass-Legume mixtures, Partridge Pea, Annual Lespedeza, Orchardgrass (for mountains), Browntop Millet (for temporary cover), and Native grapes.
- Provides herbaceous cover in clearings for a game bird brood-rearing habitat. Appropriate legumes such as vetches, clovers, and lespedezas may be mixed with grass, but they may die out after a few years.

CONSTRUCTION SPECIFICATIONS

Grading and Shaping
Grading and shaping may not be required where hydraulic seeding and fertilizing equipment is to be used. Vertical banks shall be sloped to enable plant establishment. When conventional seeding and fertilizing are to be done, grade and shape where feasible and practical, so that equipment can be used safely and efficiently during seedbed preparation, seeding, mulching and maintenance of the vegetation. Concentrations of water that will cause excessive soil erosion shall be diverted to a safe outlet. Diversions and other treatment practices shall conform with the appropriate standards and specifications.

Lime and Fertilizer Rates and Analysis
Agricultural lime is required at the rate of 1-2 tons per acre unless soil tests indicate otherwise. Graded areas require lime application. If lime is applied within 6 months of planting permanent perennial vegetation, additional lime is not required. Agricultural lime shall be within the specifications of the GA Department of Agriculture. Lime spread by conventional equipment shall be "ground limestone." Ground limestone is calcitic or dolomitic limestone ground so that 90% of the material will pass through a 10-mesh sieve, not less than 50% will pass through a 50-mesh sieve and not less than 25% will pass through a 100-mesh sieve. Fast-acting lime spread by hydraulic seeding equipment should be "finely ground limestone" spanning from the 180 micron size to the 5 micron size. Finely ground limestone is calcitic or dolomitic limestone ground so that 95% of the material will pass through a 100-mesh sieve. It is desirable to use dolomitic limestone in the Sand Hills, Southern Coastal Plain and Atlantic Coast Flatwoods MLRAs. (See **Figure 6-4.1**) Agricultural lime is generally not required where only trees are planted. Initial fertilization, nitrogen, topdressing, and maintenance fertilizer requirements for each species or combination of species are listed in **Table 6-5.1**.

Lime and Fertilizer Application
When hydraulic seeding equipment is used, the initial fertilizer shall be mixed with seed, innoculant (if needed), and wood cellulose or wood pulp fiber mulch and applied in a slurry. The innoculant, if needed, shall be mixed with the seed prior to being placed into the hydraulic seeder. The slurry mixture will be agitated during application to keep the ingredients thoroughly mixed. The mixture will be spread uniformly over the area within one hour after being placed in the hydroseeder. Finely ground limestone can be applied in the mulch slurry or in combination with the top dressing. When conventional planting is to be done, lime and fertilizer shall be applied uniformly in one of the following ways: 1. Apply before land preparation so that it will be mixed with the soil during seedbed preparation. 2. Mix with the soil used to fill the holes, distribute in furrows. 3. Broadcast after steep surfaces are scarified, pitted or trenched. 4. A fertilizer pellet shall be placed at root depth in the closing hole beside each pine tree seedling.

Seeding
Select a grass or grass-legume mixture suitable to the area and season of the year. Seed shall be applied uniformly by hand, cyclone seeder, drill, culti-packer-seeder, or hydraulic seeder (slurry including seed and fertilizer). Drill or cultipacker seeders should normally place seed $\frac{1}{4}$" to $\frac{1}{2}$" deep. Appropriate depth of planting is ten times the seed diameter. Soil should be "raked" lightly to cover seed with soil if seeded by hand. See **Table 6-4.1 - Temporary Cover or Companion Cover Crops**.

Mulching
Temporary vegetation can, in most cases, be established without the use of mulch, provided there is little to no erosion potential. However, the use of mulch can often accelerate and enhance germination and vegetation establishment. Mulch without seeding should be considered for short term protection. Refer to **Ds1 - Disturbed Area Stabilization (With Mulching Only)**.

Irrigation
During times of drought, water shall be applied at a rate not causing runoff and erosion. The soil shall be thoroughly wetted to a depth that will insure germination of the seed. Subsequent applications should be made when needed.

Plant Selection
Refer to **Tables 6-4.1**, **6-5.2**, **6-5.3** and **6-5.4** for approved species. Species not listed shall be approved by the State Resource Conservationist of the NRCS before they are used. Plants shall be selected on the basis of species characteristics, site and soil conditions, planned use and maintenance of the area; time of year of planting, method of planting; and needs and desires of the land user. Some perennial species are easily established and can be planted alone. Examples of these are Common Bermuda, Tall Fescue, and Weeping Lovegrass. Other perennials, such as Bahia Grass and Sericea Lespedeza, are slow to become established and should be planted with another perennial species. The additional species will provide quick cover and ample soil protection until the target perennial species become established. For example, common seeding combinations are 1) Weeping Lovegrass with Sericea Lespedeza (scarified) and 2) Tall Fescue with Sericea Lespedeza (unscarified). Plant selection may also include annual companion crops. Annual companion crops should be used only when perennial species are not planted during their optimum planting period. A common mixture is Brown Top Millet with Common Bermuda in mid-summer. Care should be taken in selecting companion crop species and seeding rates because annual crops will compete with perennial species for water, nutrients, and growing space. A high seeding rate of the companion crop may prevent the establishment of perennial species. **Ryegrass shall not be used in any seeding mixtures containing perennial species due to its ability to out-compete desired species chosen for permanent perennial cover.**

Seed Quality
The term "pure live seed" is used to express the quality of seed and is not shown on the label. Pure live seed, PLS, is expressed as a percentage of seeds that are pure and will germinate. Information on percent germination and purity can be found on seed tags. PLS is determined by multiplying the percent of pure seed with the percent of germination; i.e., (PLS = % germination x % purity). The percent of PLS helps you determine the amount of seed you need. For example, if the seeding rate is 10 pounds PLS and the bulk seed is 56% PLS (i.e. 70% germination, 80% purity), the bulk seeding rate is: 10 lbs. PLS/acre / 56% PLS = 17.9 lbs/acre. You would need to plant 17.9 lbs/acre to provide 10 lbs/acre of pure live seed.

Seedbed Preparation
Seedbed preparation may not be required where hydraulic seeding and fertilizing equipment is to be used (but is strongly recommended for any seeding process, when possible). When conventional seeding is to be used, seedbed preparation will be done as follows:

Broadcast plantings
1. Tillage, at a min., shall adequately loosen soil to a depth of 4" to 6"; alleviate compaction; incorporate lime and fertilizer; smooth and firm the soil; allow for proper placement of seed, sprigs, or plants; and allow for anchoring of straw or hay mulch if a disk is to be used.
2. Tillage may be done with any suitable equipment.
3. Tillage should be done on the contour where feasible.
4. On slopes too steep for the safe operation of tillage equipment, the soil surface shall be pitted or trenched across the slope with appropriate hand tools to provide two places 6" to 8" apart in which seed may lodge and germinate. Hydraulic seeding may also be used.

Individual Plants
1. Where individual plants are to be set, the soil shall be prepared by excavating holes, opening furrows, or dibble planting.
2. For nursery stock plants, holes shall be large enough to accommodate roots without crowding.
3. Where pine seedlings are to be planted, subsoil under the row 36" deep on the contour 4 to 6 months prior to planting. Subsoiling should be done when the soil is dry, preferably in August or September.

Inoculants
All legume seed shall be inoculated with appropriate nitrogen-fixing bacteria. The inoculant shall be a pure culture prepared specifically for the seed species and used within the dates on the container. A mixing medium recommended by the manufacturer shall be used to bond the inoculant to the seed. For conventional seeding, use twice the amount of inoculant recommended by the manufacturer. For hydraulic seeding, four times the amount of inoculant recommended by the manufacturer shall be used. All inoculated seed shall be protected from the sun and high temperatures and shall be planted the same day inoculated. No inoculated seed shall remain in the hydroseeder longer than one hour.

Planting

Hydraulic Seeding
Mix the seed (inoculated if needed), fertilizer, and wood cellulose or wood pulp fiber mulch with water and apply in a slurry uniformly over the area to be treated. Apply within one hour after the mixture is made.

Conventional Seeding
Seeding will be done on a freshly prepared and firmed seedbed. For broadcast planting, use a culti-packer-seeder, drill, rotary seeder, other mechanical seeder, or hand seeding to distribute the seed uniformly over the area to be treated. Cover the seed lightly with $\frac{1}{8}$" to $\frac{1}{4}$" of soil for small seed and $\frac{1}{2}$" to 1" for large seed when using a cultipacker or other suitable equipment.

No-Till Seeding
No-till seeding is permissible into annual cover crops when planting is done following maturity of the cover crop or if the temporary cover stand is sparse enough to allow adequate growth of the permanent (perennial) species. No-till seeding shall be done with appropriate no-till seeding equipment. The seed must be uniformly distributed and planted at the proper depth.

Individual Plants
Shrubs, vines and sprigs may be planted with appropriate planters or hand tools. Pine trees shall be planted manually in the subsoil furrow. Each plant shall be set in a manner that will avoid crowding the roots. Nursery stock plants shall be planted at the same depth or slightly deeper than they grew at the nursery. The tips of vines and sprigs must be at or slightly above the ground surface. Where individual holes are dug, fertilizer shall be placed in the bottom of the hole, 2" of soil shall be added and the plant shall be set in the hole.

Mulching
Mulch is required for all permanent vegetation applications. Mulch applied to seeded areas shall achieve 75% to 100% soil cover. When selecting a mulch, consider the mulch's functional longevity, vegetation establishment enhancement, and erosion control effectiveness. Select the mulching material from the following and apply as indicated:

1. *Dry straw or dry hay* of good quality and free of weed seeds can be used. Dry straw shall be applied at the rate of 2 tons per acre. Dry hay shall be applied at a rate of 2$\frac{1}{2}$ tons per acre.
2. *Wood cellulose mulch* or *wood pulp fiber* shall be used with hydraulic seeding. It shall be applied at the rate of 500 lbs per acre. Dry straw or dry hay shall be applied (at the rate indicated above) after hydraulic seeding.
3. 1,000 lbs of *wood cellulose* or *wood pulp fiber*, which includes a tackifier, shall be used with hydraulic seeding on slopes 3/4:1 or steeper.
4. *Sericea lespedeza* hay containing mature seed shall be applied at a rate of 3 tons per acre.
5. *Pine straw* or *pine bark* shall be applied at a thickness of 3" for bedding purposes. Other suitable materials in sufficient quantity may be used where ornamentals or other ground covers are planted. This is not appropriate for seeded areas.
6. When using temporary erosion control blankets or block sod, mulch is not required.
7. *Bituminous treated roving* may be applied on planted areas, slopes, in ditches or dry waterways to prevent erosion. Bituminous treated roving shall be applied within 24 hours after an area has been planted. Application rates and materials must meet GA Department of Transportation specifications.

Wood cellulose and wood pulp fibers shall not contain germination or growth inhibiting factors. They shall be evenly dispersed when agitated in water. The fibers shall contain a dye to allow visual metering and aid in uniform application during seeding.

Applying Mulch
Straw or hay mulch will be spread uniformly within 24 hours after seeding and/or planting. The mulch may be spread by blower-type spreading equipment, other spreading equipment or by hand. Mulch shall be applied to cover 75% of the soil surface. Wood cellulose or wood fiber mulch shall be applied uniformly with hydraulic seeding equipment.

Anchoring Mulch
Anchor straw or hay mulch immediately after application by one of the following methods:
1. *Hay and straw mulch* shall be pressed into the soil immediately after the mulch is spread. A special "packer disk" or disk harrow with the disks set straight may be used. The disks may be smooth or serrated and should be 20" or more in diameter and 8" to 12" apart. The edges of the disks shall be dull enough to press the mulch into the ground without cutting it, leaving much of it in an erect position. Mulch shall not be plowed into the soil.
2. *Synthetic tackifiers, binders or hydraulic mulch specifically designed to tack straw*, shall be applied in conjunction with or immediately after the mulch is spread. Synthetic tackifiers shall be mixed and applied according to manufacturer's specifications. All tackifiers, binders or hydraulic mulch specifically designed to tack straw should be verified nontoxic through EPA 2021.0 testing. Refer to **Tackifers-Tac.**
3. Rye or wheat can be included with Fall and Winter plantings to stabilize the mulch. They shall be applied at a rate of $\frac{1}{4}$ to $\frac{1}{2}$ bushel per acre.
4. Plastic mesh or netting with mesh no larger than 1" by 1" may be needed to anchor straw or hay mulch on unstable soils and concentrated flow areas. These materials shall be installed and anchored according to manufacturer's specifications.

Bedding Material
Mulch is used as bedding material to conserve moisture and control weeds in nurseries, ornamental beds, around shrubs, and on bare areas on lawns.

Material	Depth
Grain straw	4" to 6"
Grass Hay	4" to 6"
Pine needles	3" to 5"
Wood waste	4" to 6"

Irrigation
Irrigation will be applied at a rate that will not cause runoff.

Topdressing
Topdressing will be applied on all temporary and permanent (perennial) species planted alone or in mixtures with other species. Recommended rates of application are listed in **Table 6-5.1**.

Second Year and Maintenance Fertilization
Second year fertilizer rates and maintenance fertilizer rates are listed in **Table 6-5.1.**

Lime Maintenance Application
Apply one ton of agricultural lime every 4 to 6 years or as indicated by soil tests. Soil tests can be conducted to determine more accurate requirements, if desired.

Use and Management
Mow Sericea Lespedeza only after frost to ensure that the seeds are mature. Mow between November and March. Bermudagrass, Bahiagrass and Tall Fescue may be mowed as desired. Maintain at least 6" of top growth under any use and management. Moderate use of top growth is beneficial after establishment. Exclude traffic until plants are well established. Because of quail nesting season, mowing should not take place between May and September.

N.T.S.

DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION) - (Ds3)

Cr

GSWCC 2016 Edition

PURPOSE

To provide a fixed travel route for construction traffic and reduce erosion and subsequent regrading of permanent roadbeds between time of initial grading and final stabilization.

CONDITIONS

This practice is applicable where travelways are needed in a planned land use area or wherever stone-base roads or parking areas are constructed, whether permanent or temporary, for use by construction traffic.

DESIGN CRITERIA

Temporary Roads and Parking Areas
The type of vehicle or equipment, speed, loads, climatic, and other conditions under which vehicles and equipment are expected to operate shall be considered.

Location
Temporary roads shall be located to serve the purpose intended, facilitate the control and disposal of water, control or reduce erosion, and make the best use of topographic features. Temporary roads shall follow the contour of the natural terrain to minimize disturbance of drainage patterns. If a temporary road must cross a stream, the crossing must be designed, installed and maintained according to specification **Sr - Temporary Stream Crossing.** Temporary parking areas should be located on naturally fat areas to minimize grading.

Grade and Alignment
The gradient and vertical and horizontal alignment shall be adapted to the intensity of use, mode of travel, and level of development. Grades for temporary roads should not exceed 10% except for very short lengths (200' or less), but maximum grades of 20% or more may be used if necessary for special uses. Frequent grade changes generally cause fewer erosion problems than long continuous gradients. Curves and switchbacks must be of sufficient radius for trucks and other large vehicles to negotiate easily. On temporary roads, the radius should be no less than 35' for standard vehicles and 50' for tractor-trailers. Grades for temporary parking areas should be sufficient to provide drainage but should not exceed 4%.

Width
Temporary roadbeds shall be at least 14' wide for one-way traffic and 20' wide for two way traffic. The width for two-way traffic shall be increased approximately 4' for trailer traffic. A minimum shoulder width shall be 2' on each side. Where turnouts are used, road width shall be increased to a minimum of 20' for a distance of 30'.

Side Slopes
All cuts and fills shall have side slopes designed to be stable for the particular site conditions and soil materials involved. All cut and fills shall be 2:1 or flatter to the extent possible. When maintenance by machine mowing is planned, side slopes shall be no steeper than 3:1.

Drainage
The type of drainage structure used will depend on the type of enterprise and runoff conditions. The capacity and design shall be consistent with sound engineering principles and shall be adequate for the class of vehicle, type of road, development, or use. Structures should be designed to withstand flows from a 25-year, 24-hour frequency storm or the storm specified in Title 12-7-1 of the Official Code of Georgia Annotated. Channels shall be designed to be on stable grades or protected with structures or linings for stability. Water breaks or bars may be used to control surface runoff on low-intensity use roads.

Stabilization
Geotextile should be applied to the roadbed for additional stability. Geotextile selection shall be based on AASHTO M288-06 specification:
1. For subgrades with a CBR greater than or equal to 3 or shear strength greater than 90 kPa, geotextile must meet requirements of section AASHTO M288-06 Section 7.3, Separation Requirements.
2. For subgrades with a CBR between 1 and 3 or sheer strength between 30 and 90 kPa, geotextile must meet requirements of section AASHTO M288-06 Section 8, Geotextile Property Requirements.

A 6" course of coarse aggregate shall be applied immediately after grading or the completion of utility installation within the right-of-way. In areas experiencing "heavy duty" traffic situations, stone should be placed at an 8" to 10" depth to avoid excessive dissipation or maintenance needs. All roadside ditches, cuts, fills, and disturbed areas adjacent to parking areas and roads shall be stabilized with appropriate temporary or permanent vegetation according to specification in **Ds2 - Disturbed Area Stabilization (With Temporary Seeding)** and **Ds3 -Disturbed Area Stabilization (With Permanent Vegetation)**.

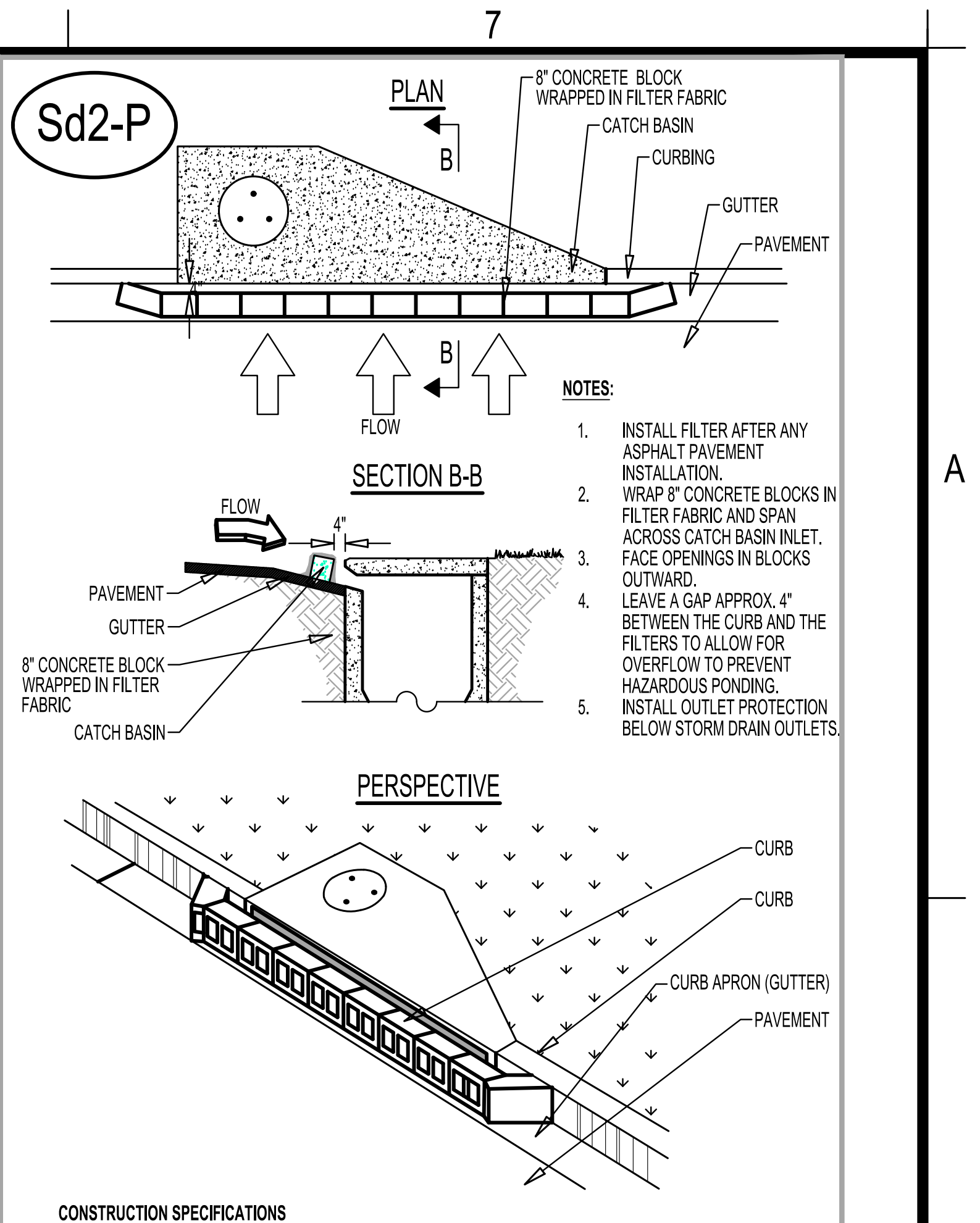
PERMANENT ROADS AND PARKING AREAS
Permanent roads and parking areas shall be designed and constructed according to criteria established by the Georgia Department of Transportation or local authority. Permanent roads and parking areas shall be stabilized in accordance with this specification, applying an initial base course of gravel immediately following grading.

CONSTRUCTION SPECIFICATIONS
1. Trees, stumps, roots, brush, weeds, and other objectionable materials shall be removed from the work area.
2. Unsuitable material shall be removed from the roadbed and parking areas.
3. Grading, subgrade preparation, and compaction shall be done as needed. Fill material shall be deposited in layers not to exceed 9" and compacted with the controlled movement of compacting and earth moving equipment.
4. The roadbed and parking area shall be graded to the required elevation. Subgrade preparation and placement of the surface course shall be in accordance with sound highway construction practice.
5. Structures such as culverts, pipe drops, or bridges shall be installed to the lines and grades shown on the plans or as staked in the field. Pipe conduits shall be placed on a firm foundation. Selected backfill material shall be placed around the conduit in layers not to exceed 6". Each layer shall be properly compacted.
6. Roads shall be planned and laid out according to good landscape management principles.

MAINTENANCE
Roads and parking areas may require a periodic top dressing of gravel to maintain the gravel depth at 6". Vegetated areas should be checked periodically to ensure a good stand of vegetation is maintained. Remove any silt or other debris causing clogging of roadside ditches or other drainage structure.

CONSTRUCTION ROAD STABILIZATION - (Cr)

Sd2-P



NOTES:
1. INSTALL FILTER AFTER ANY ASPHALT PAVEMENT INSTALLATION.
2. WRAP 8" CONCRETE BLOCKS IN FILTER FABRIC AND SPAN ACROSS CATCH BASIN INLET.
3. FACE OPENINGS IN BLOCKS OUTWARD.
4. LEAVE A GAP APPROX. 4" BETWEEN THE CURB AND THE FILTERS TO ALLOW FOR OVERFLOW TO PREVENT HAZARDOUS PONDING.
5. INSTALL OUTLET PROTECTION BELOW STORM DRAIN OUTLETS.

CONSTRUCTION SPECIFICATIONS

Once pavement has been installed, a curb inlet filter shall be installed on inlets receiving runoff from disturbed areas. This method of inlet protection shall be removed if a safety hazard is created.

One method of curb inlet protection uses "pigs-in-a-blanket" - 8" concrete blocks wrapped in filter fabric. Another method uses gravel bags constructed by wrapping DOT #57 stone with filter fabric, wire, plastic mesh, or equivalent material.

A gap of approximately 4" shall be left between the inlet filter and the inlet to allow overflow and prevent hazardous ponding in the roadway. Proper installation and maintenance are crucial due to possible ponding in the roadway, resulting in a hazardous condition.

MAINTENANCE

The trap shall be inspected daily and after each rain, and repairs made as needed. Sediment shall be removed when the sediment has accumulated to one-half the height of the trap.

Sediment shall be removed from curb inlet protection immediately. Sediment shall not be washed into the inlet. It shall be removed from the sediment trap, disposed of and stabilized so that it will not enter the inlet again.

When the contributing drainage area has been permanently stabilized, all materials and any sediment shall be removed, and either salvaged or disposed of properly. The disturbed area shall be brought to proper grade, then smoothed and compacted. Appropriately stabilize all disturbed areas around the inlet.

CURB INLET PROTECTION "Pigs-in-a-Blanket"

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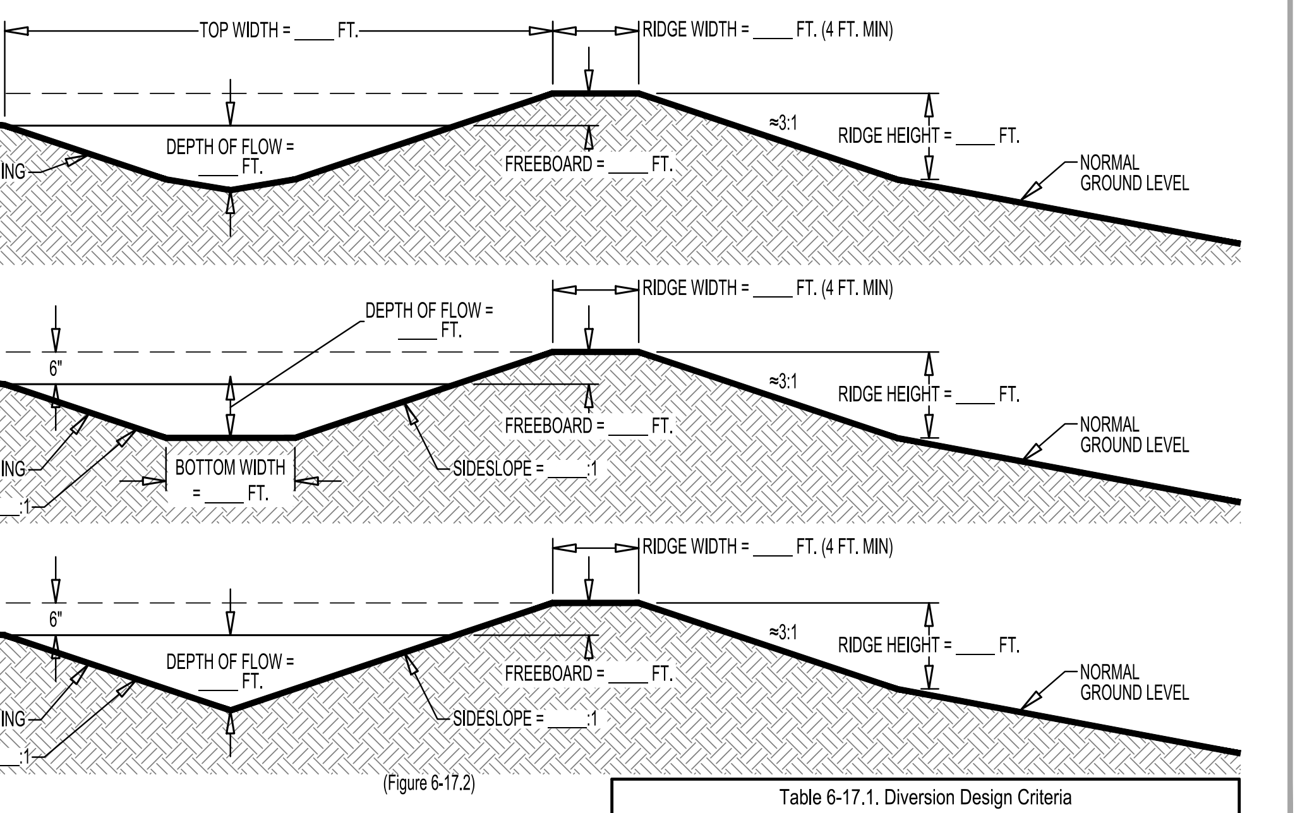
CONSTRUCTION SPECIFICATIONS
1. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE DIVERSION.
2. THE DIVERSION SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND FREE OF IRREGULARITIES THAT WILL IMPEDE NORMAL FLOW.
3. ALL FILLS SHALL BE MACHINE COMPACTED AS NEEDED TO PREVENT UNEQUAL SETTLEMENT THAT WOULD CAUSE DAMAGE IN THE COMPLETED DIVERSION.
4. ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE DIVERSION.
5. DIVERSION CHANNEL SHALL BE STABILIZED IN ACCORDANCE WITH SPECIFICATION **CH - CHANNEL STABILIZATION.**



(Figure 6-17.2)

Table 6-17.1. Diversion Design Criteria

Diversion Type	Land or Improvement Protected	Storm Frequency [1]	Freeboard	Minimum Top Width
Temporary	Construction areas Building sites	10 yrs [2]	0.3'	4'
Permanent	Landscaped, recreation and similar areas	25 yrs	0.3'	4'
	Dwellings, schools, commercial bldgs., and similar installation	50 yrs	0.5'	4'

[1] Use 24-hr storm duration

[2] Use 10 yrs or the storm frequency specified in Title 12 of the Official Code of GA Annotated

PURPOSE

To reduce the erosion of steep, or otherwise highly erodible areas by reducing slope lengths, intercepting storm runoff and diverting it to a stable outlet at a non-erosive velocity.

CONDITIONS

Diversions are applicable when:
1. Runoff from higher areas is or has potential for damaging property, causing erosion, contributing to pollution, flooding, interfering with or preventing the establishment of vegetation on lower areas.
2. Surface and/or shallow subsurface flow is damaging sloping upland.
3. The length of slope needs to be reduced so that soil loss will be reduced to a minimum.

This standard applies to temporary and permanent diversions in developments involving land disturbing activities.

DESIGN CRITERIA

Location
Diversion location shall be determined by considering outlet conditions, topography, land use, soil type, length of slope, seep planes (when seepage is a problem), and the development layout. Diversions should be tailored to fit the conditions for a particular field and local soil type(s). A diversion consists of two components that must be designed - the ridge and the channel.

Ridge Design
The ridge shall be compacted and designed to have stable side slopes, which shall not be steeper than 2:1. The ridge shall be a minimum width of 4' at the design water elevation after settlement. Its design shall allow 10% for settlement.

Channel Design
Land slope must be taken into consideration when choosing channel dimensions. On the steeper slopes, narrow and deep channels may be required. On the more gentle slopes, broad, shallow channels usually are applicable. The wide, shallow section will be easier to maintain. Since sediment deposition is often a problem in diversions, the designed flow velocity should be kept as high as the channel lining will permit. Table 6-17.1 indicates the storm frequency required for the design of the diversion. The required storm frequency is based on the purpose of the diversion. The storm frequency is used to determine the required channel capacity, Q (peak rate of runoff). The channel portion of the diversion may have a parabolic or trapezoidal cross-section. Detailed information for the design of these channels is provided in the specification **Wt - Stormwater Conveyance Channel.**

Outlets
Each diversion must have an adequate outlet. The outlet may be a constructed or natural waterway, a stabilized vegetated area or a stabilized open channel. In all cases, the outlet must discharge in such a manner as to not cause an erosion problem. Protected outlets shall be constructed and stabilized prior to construction of the diversion.

Diversions For Roads and Utility Rights - of - Way
A detailed design is not required for this type of diversion. Diversions installed to divert water off a road or right-of-way shall consist of a series of compacted ridges of soil running diagonally across the road at a 30° angle. Ridges are constructed by excavating a channel up-stream for this type of diversion. The compacted ridge height shall be 8-12" above the original road surface; the channel depth shall be 8-12" below the original road surface. Channel bottoms and ridge tops shall be smooth enough to be crossed by vehicular traffic. The maximum spacing between diversions shall be as follows:

ROAD GRADE (PERCENT)	DISTANCE BETWEEN DIVERSIONS (FEET)
1	400
2	250

ROAD GRADE (PERCENT)	DISTANCE BETWEEN DIVERSIONS (FEET)
5	125
10	80

ROAD GRADE (PERCENT)	DISTANCE BETWEEN DIVERSIONS (FEET)
15	60
20	50

Stable outlets shall be provided for each diversion.

N.T.S.

DIVERSION - (Di)

1. **CLASS 1 RIP-RAP**
   A. NO MORE THAN 10% OF THE STONE SHALL HAVE A DIAMETER GREATER THAN 12"; NO MORE THAN 50% OF THE STONE SHALL HAVE A DIAMETER LESS THAN 10"; AND NO MORE THAN 10% OF THE STONE SHALL HAVE A DIAMETER OF LESS THAN 6". THE THICKNESS OF THE RIP-RAP LINER SHALL BE NO LESS THAN 12".
2. **CLASS 2 RIP-RAP**
   A. NO MORE THAN 10% OF THE STONE SHALL HAVE A DIAMETER GREATER THAN 16"; NO MORE THAN 50% OF THE STONE SHALL HAVE A DIAMETER LESS THAN 12"; AND NO MORE THAN 10% OF THE STONE SHALL HAVE A DIAMETER OF LESS THAN 6". THE THICKNESS OF THE RIP-RAP LINER SHALL BE NO LESS THAN 16".
3. **CLASS 3 RIP-RAP**
   A. NO MORE THAN 10% OF THE STONE SHALL HAVE A DIAMETER GREATER THAN 22"; NO MORE THAN 50% OF THE STONE SHALL HAVE A DIAMETER LESS THAN 16"; AND NO MORE THAN 10% OF THE STONE SHALL HAVE A DIAMETER OF LESS THAN 8". THE THICKNESS OF THE RIP-RAP LINER SHALL BE NO LESS THAN 22".
4. **CLASS 4 RIP-RAP**
   A. NO MORE THAN 10% OF THE STONE SHALL HAVE A DIAMETER GREATER THAN 27"; NO MORE THAN 50% OF THE STONE SHALL HAVE A DIAMETER LESS THAN 22"; AND NO MORE THAN 10% OF THE STONE SHALL HAVE A DIAMETER OF LESS THAN 10". THE THICKNESS OF THE RIP-RAP LINER SHALL BE NO LESS THAN 27".
5. **CLASS 5 RIP-RAP**
   A. NO MORE THAN 10% OF THE STONE SHALL HAVE A DIAMETER GREATER THAN 34"; NO MORE THAN 50% OF THE STONE SHALL HAVE A DIAMETER LESS THAN 27"; AND NO MORE THAN 10% OF THE STONE SHALL HAVE A DIAMETER OF LESS THAN 16". THE THICKNESS OF THE RIP-RAP LINER SHALL BE NO LESS THAN 34".

RIP-RAP CLASSIFICATION SPECIFICATIONS

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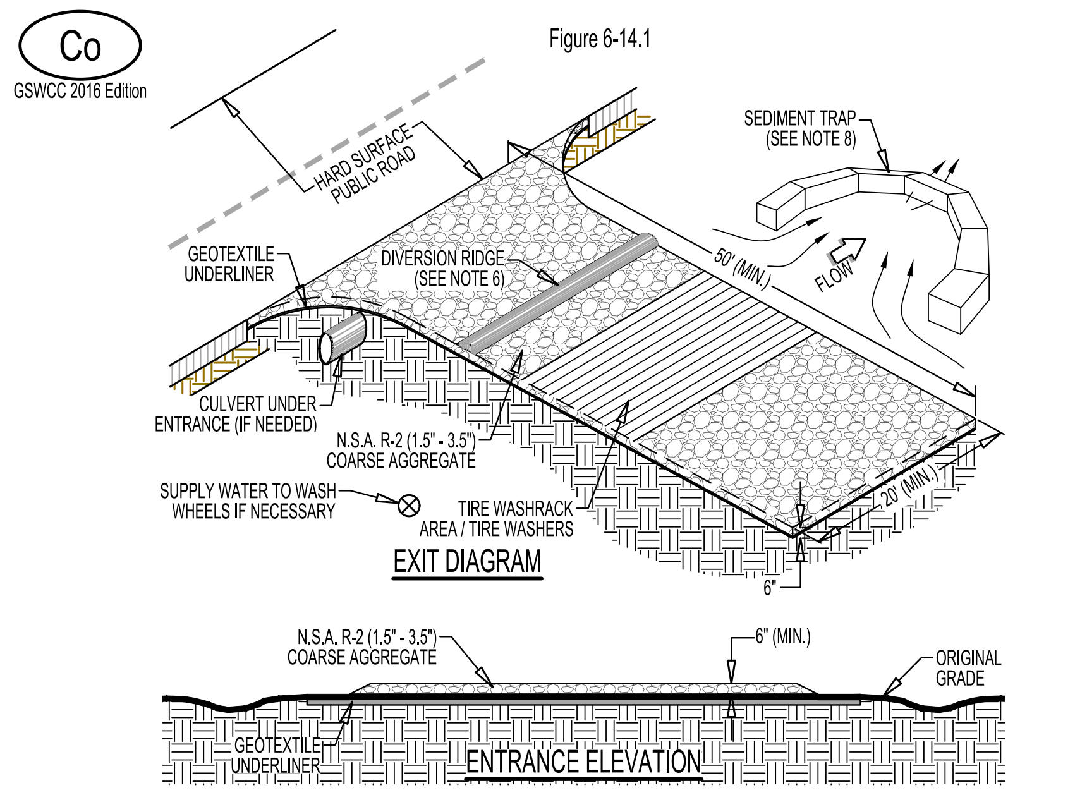
Figure 6-14.1


SEDIMENT TRAP (SEE NOTE 6)
HARD SURFACE PUBLIC ROAD
GEOTEXTILE UNDERLINER
DIVERSION RIDGE (SEE NOTE 6)
50' MIN.
FLOW
CULVERT UNDER ENTRANCE (IF NEEDED)
N.S.A. R-2 (1.5"-3.5") COARSE AGGREGATE
SUPPLY WATER TO WASH WHEELS IF NECESSARY
TIRE WASHRACK AREA / TIRE WASHERS
EXIT DIAGRAM
6" (MIN.)
N.S.A. R-2 (1.5"-3.5") COARSE AGGREGATE
GEOTEXTILE UNDERLINER
ORIGINAL GRADE
ENTRANCE ELEVATION

NOTES:
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
5. PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.
6. A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%.
7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES. PIPE SHALL BE SIZED APPROPRIATELY TO HANDLE EXISTING AND/OR PROPOSED FLOWS.
8. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE).
9. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL **SUITABLE** FOR TRUCK TRAFFIC THAT REMOVES MUD AND DIRT.
10. MAINTAIN AREA IN A WAY THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

CONDITIONS
This practice is applied at appropriate points of construction egress. Geotextile underliners are required to stabilize and support the pad aggregates.

DESIGN CRITERIA
Formal design is not required. The following standards shall be used:

Aggregate Size / Pad Thickness / Pad Width - As noted above

Pad Length
The gravel pad shall have a minimum length of 50'. When the construction is less than 50' from the paved access, the length shall be from the edge of existing pavement to the permitted building being constructed.

Washing
If the action of the vehicle traveling over the gravel pad does not sufficiently remove the mud, the tires should be washed prior to entrance onto public rights-of-way. When washing is required, it shall be done as noted above.

Location
The exit shall be located or protected to prevent sediment from leaving the site.

CONSTRUCTION SPECIFICATIONS
It is recommended that the egress area be excavated to a depth of 3" and be cleared of all vegetation and roots.

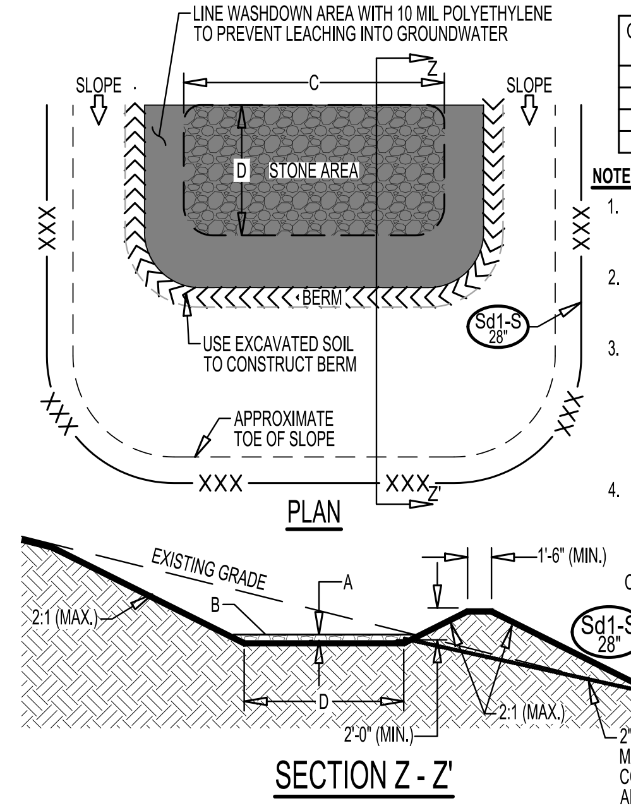
Diversion Ridge
On sites where the grade toward the paved area is greater than 2%, a diversion ridge 6" to 8" high with 3:1 side slopes shall be constructed across the foundation approximately 15' above the road.

Geotextile
Geotextile underliner must be placed the full length and width of the entrance. Geotextile selection shall be based on AASHTO M288-06 specification:
1. For subgrades with a CBR greater than or equal to 3 or shear strength greater than 90 kPa, geotextile must meet requirements of section AASHTO M288-06 Section 7.3, Separation Requirements.
2. For subgrades with a CBR between 1 and 3 or sheer strength between 30 and 90 kPa, geotextile must meet requirements of section AASHTO M288-06 Section 8, Geotextile Property Requirements for Subsurface Drainage, Separation, Stabilization, and Permanent Erosion Control (Geotextile Property Requirements).

MAINTENANCE
The exit shall be maintained in a condition that will prevent tracking or flow of mud onto public rights-of-way. This may require periodic top dressing with 1.5"-3.5" stone, as conditions demand, and repair and/or cleanout of any structures to trap sediment. All materials spilled, dropped, washed, or tracked from vehicles or site onto roadways or into storm drains must be removed immediately.

N.T.S.

CONSTRUCTION EXIT - (Co)

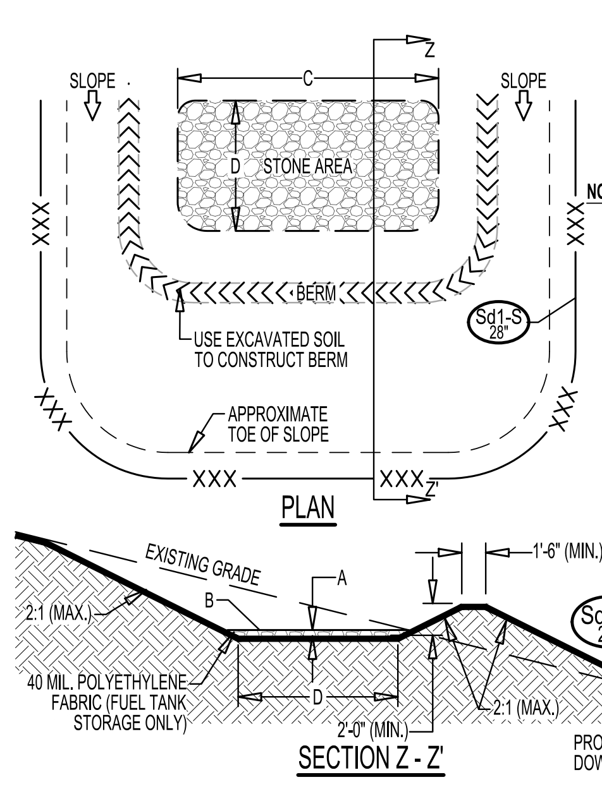

LINE WASHDOWN AREA WITH 10 MIL POLYETHYLENE TO PREVENT LEACHING INTO GROUNDWATER
SLOPE
C
Z
SLOPE
D
STONE AREA
XXX
BERM
Sd1-S 28"
USE EXCAVATED SOIL TO CONSTRUCT BERM
APPROXIMATE TOE OF SLOPE
XXX
XXX
Z'
PLAN
EXISTING GRADE
A
B
2:1 (MAX.)
1'-6" (MIN.)
PROVIDE Sd1-S ON ALL DOWNHILL SIDES OF BMP
Sd1-S 28"
D
2'-0" (MIN.)
2:1 (MAX.)
2" PVC DRAIN PIPE WITH MANUAL VALVE (FOR CONCRETE WASHDOWN AREA ONLY)
SECTION Z - Z'

CONCRETE WASHDOWN SCHEDULE	
A	4"
B	#57 STONE
C	MIN. 20 FT.
D	MIN. 10 FT.

NOTES
1. FUEL TANK STORAGE AND CONCRETE WASHDOWN AREAS ARE SEPARATE.
2. CONCRETE TRUCK DRUM WASHOUT ON SITE IS PROHIBITED.
3. CONCRETE WASHDOWN AREA SHALL HAVE A DRAIN 2" PVC PIPE INSTALLED THROUGH BERM TO ALLOW FOR PERIODIC DRAINING WITH A MANUAL VALVE.
4. POLYETHEYLENE LINING SHALL BE FREE OF HOLES AND OTHER DEFECTS

N.T.S.

CONCRETE WASHDOWN AREA



FUEL TANK STORAGE SCHEDULE	
A	2 FT.
B	#5 STONE
C	MIN. 40 FT.
D	MIN. 20 FT.

NOTES
1. FUEL TANK STORAGE AND CONCRETE WASHDOWN AREAS ARE SEPARATE.
2. FOR FUEL STORAGE AREA, DIMENSIONS MUST BE ADEQUATE FOR 200% OF THE VOLUME OF FUEL STORED.

N.T.S.

FUEL TANK STORAGE AREA

Du

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CONDITIONS

This practice is applicable to areas subject to surface and air movement of dust where on and off-site damage may occur without treatment.

METHOD AND MATERIALS

A. **Temporary Methods**
   - **Mulches**. See standard **Ds1 - Disturbed Area Stabilization (With Mulching Only)**. Synthetic resins may be used instead of asphalt to bind mulch material. Refer to specification **Tac - Tackifiers.** Resins should be used according to manufacturer's recommendations.
   - **Vegetative Cover**. See specification **Ds2 - Disturbed Area Stabilization (With Temporary Seeding)**.
   - **Spray-on Adhesives**. These are used on mineral soils (not effective on muck soils). Keep traffic off these areas. Refer to specification **Tac - Tackifiers.**
   - **Tillage.** This practice is designed to roughen and bring clods to the surface. It is an emergency measure that should be used before wind erosion starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12" apart, spring-toothed harrows, and similar plows are examples of equipment that may produce the desired effect.

   Irrigation.
   This is generally done as an emergency treatment. Site is sprinkled with water until the surface is wet. Repeat as needed.

   Barriers.
   Solid board fences, snowfences, burlap fences, crate walls, bales of hay and similar material can be used to control air currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 15 times their height are effective in controlling wind erosion.

   Calcium Chloride.
   Apply at rate that will keep surface moist. May need retreatment.

B. **Permanent Methods**

   Permanent Vegetation. See specification **Ds3 - Disturbed Area Stabilization (With Permanent Vegetation)**. Existing trees and large shrubs may afford valuable protection if left in place.

   Topsoiling. This entails covering the surface with less erosive soil material. See specification **Tp - Topsoiling.**

   Stone. Cover surface with crushed stone or coarse gravel. See specification **Cr - Construction Road Stabilization.**

DUST CONTROL ON DISTURBED AREAS - (Du)

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PRELIMINARY

Project Information

RFP 2027-3500-01

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MADISON, GA 30650
ZONING: I1 - LIGHT INDUSTRIAL / LIMITED MANUFACTURING

DRAWING DATE:	7.1.26
DRAWN BY:	DBB
CHECKED BY:	JPB

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DATE:	DESCRIPTION:

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Sheet Title

EROSION, SEDIMENTATION, AND POLLUTION CONTROL DETAILS

Sheet Number

C-6.5