DISTURBED AREA STABILIZATION (WITH MULCHING ONLY) Ds1

DEFINITION
Applying plant residues or other suitable materials, produced on the site if possible, to the soil surface.

PURPOSE
-To reduce runoff and erosion
-To conserve moisture
-To prevent surface compaction or crusting
-To control undesirable vegetation
-To modify soil temperature
-To increase biological activity in the soil

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 six 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 six months.

If any area will remain undisturbed for greater than six 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 seedings may not have a suitable growing season to produce an erosion retardant cover, but can be stabilized with a mulch cover.

Site Preparation
-Grade to permit the use of equipment for applying and anchoring mulch.

-Install needed erosion control measures as required such as dikes, diversions, berms, terraces and sediment barriers.

-Loosen compact soil to a minimum depth of 3 inches.

Mulching Materials
Select one of the following materials and apply at the depth indicated:

-Dry straw or hay shall be applied at a depth of 2 to 4 inches providing complete soil coverage. One advantage of this material is easy application.

-Wood waste (chips, sawdust or bark) shall be applied at a depth of 2 to 3 inches. Organic material from the clearing stage of develop- ment should remain on site, be chipped, and applied as mulch. This method of mulching can greatly reduce erosion control costs.

-Polyethylene film shall be secured over banks or stockpiled soil material for tem- porary 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.

-Dry straw or hay mulch and wood chips shall be applied uniformly by hand or by mechanical equipment.

-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.

-Apply polyethylene fi lm on exposed areas.

Anchoring Mulch
-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 inches or more in diameter and 8 to 12 inches 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.

Straw or hay mulch spread with special blower-type equipment may be anchored. Tackifers, binders and hydraulic mulch with tackifier specifically designed for tacking straw can be substituted for emulsified asphalt. Please refer to specification Tac- Tackifers. Plastic mesh or netting with mesh no larger than one inch by one inch shall be installed according to manufacturer's specifications.

-Netting of the appropriate size shall be used to anchor wood waste. Openings of the net- ting shall not be larger than the average size of the wood waste chips.

-Polyethylene fi lm shall be anchor trenched at the top as well as incrementally as necessary.

DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING) Ds2

DEFINITION
The establishment of temporary vegetative cover with fast growing seedings for seasonal protection on disturbed or denuded areas.

PURPOSE
-To reduce runoff and sediment damage of down stream resources
-To protect the soil surface from erosion
-To improve wildlife habitat
-To improve aesthetics
-To improve tilth, infiltration and aeration as well as organic matter for permanent plantings

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 six months. If an area is expected to be undisturbed for longer than six 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 six 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 con- sists 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 deter- mine 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 suit- able 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 one-quarter to one-half inch 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.

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.

GSWCC Georgia Soil and Water Conservation Commission
ALLEN MARGAVICH
Level II Certified Design Professional
CERTIFICATION NUMBER 78219
ISSUED: 8/30/2019 EXPIRES: 8/30/2022

DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION) Ds3

DEFINITION
The planting of perennial vegetation such as trees, shrubs, vines, grasses, or legumes on exposed areas for final permanent stabilization. Permanent perennial vegetation shall be used to achieve final stabilization.

PURPOSE
-To protect the soil surface from erosion
-To reduce damage from sediment and runoff to down-stream areas
-To improve wildlife habitat and visual resources
-To improve aesthetics

REQUIREMENT FOR REGULATORY COMPLIANCE
This practice shall be applied immediately to rough graded areas that will be undisturbed for longer than six 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 ac- cording 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

-Use conventional planting methods where possible.

-When mixed plantings are done during marginal planting periods, companion crops shall be used.

-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.

-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).

-Irrigation should be used when the soil is dry or when summer plantings are done.

-Low maintenance plants, as well as natives, should be used to ensure long-lasting erosion control.

-Mowing should not be performed during the quail nesting season (May to September).

-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, Dog- wood, 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 which 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 one to two tons per acre unless soil tests indicate otherwise. Graded areas require lime application. If lime is applied within six months of planting permanent perennial vegetation, additional lime is not required. Agricultural lime shall be within the specifications of the Georgia Department of Agriculture.

Lime spread by conventional equipment shall be "ground limestone." Ground limestone is calcitic or dolomitic limestone ground so that 90 percent of the material will pass through a 10-mesh sieve, not less than 50 percent will pass through a 50-mesh sieve and not less than 25 percent 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 percent 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:

-Apply before land preparation so that it will be mixed with the soil during seedbed preparation.

-Mix with the soil used to fill the holes, distribute in furrows.

-Broadcast after steep surfaces are scarified, pitted or trenched.

-A fertilizer pellet shall be placed at root depth in the closing hole beside each pine tree seedling.

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 Natural Resources Conservation Service 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 the 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 Seri- cea Lespedeza, are slow to become established and should be planted with another perennial spe- cies. 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 the 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.

Ds3 CONTINUED
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 percent- age of the seeds that are pure and will germinate. Information on percent germination and purity can be found on seed tags. PLS is deter- mined by multiplying the percent of pure seed with the percent of germination; i.e.,

(PLS = % germination x % purity)

EXAMPLE:
Common Bermuda seed 70% germination, 80% purity
-PLS = 70% germination x 80% purity PLS = 56%
The percent of PLS helps you determine the amount of seed you need. If the seeding rate is 10 pounds PLS and the bulk seed is 56 % PLS, the bulk seeding rate is:
-10 lbs. PLS/acre = 17.9 lbs/acre
56% PLS
-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

-Tillage, at a minimum, shall adequately loosen the soil to a depth of 4 to 6 inches; alleviate compaction; incorporate lime and fertilizer; smooth and firm the soil; allow for the proper placement of seed, sprigs, or plants; and allow for the anchoring of straw or hay mulch if a disk is to be used.
-Tillage may be done with any suitable equipment.
-Tillage should be done on the contour where feasible.
-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 inches apart in which seed may lodge and germinate. Hydraulic seeding may also be used.

Individual Plants

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

Innoculants
All legume seed shall be inoculated with appropriate nitrogenfixing bacteria. The innoculant 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 innoculant to the seed. For conventional seeding, use twice the amount of innoculant recommended by the manufacturer. For hydraulic seeding, four times the amount of innoculant 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 (innoculated 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 fi rmed 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 1/8 to 1/4 inch of soil for small seed and 1/2 to 1 inch for large seed when using a cultipacker or other suitable equipment.
No-Till Seeding
No-till seeding is permissible into annual cov- er 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 seed- ing shall be done with appropriate no-till seeding equipment. The seed must be uniformly distrib- uted 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, two inches 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, design professionals should consider the mulch's functional longevity, vegetation establishment enhancement, and erosion control effectiveness. Select the mulching material from the following and apply as indicated:
-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 1/2 tons per acre.
-Wood cellulose mulch or wood pulp fiber shall be used with hydraulic seeding. It shall be applied at the rate of 500 pounds per acre. Dry straw or dry hay shall be applied (at the rate indicated above) after hydraulic seeding.
-One thousand pounds of wood cellulose or wood pulp fiber, which includes a tackifier, shall be used with hydraulic seeding on slopes 3/4:1 or steeper.
-Sericea Lespedeza hay containing mature seed shall be applied at a rate of three tons per acre.
-Pine straw or pine bark shall be applied at a thickness of 3 inches 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.
-When using temporary erosion control blan-kets or block sod, mulch is not required.
-Bituminous treated roving may be applied on planted areas, slopes, in ditches or dry water ways to prevent erosion. Bituminous treated roving shall be applied within 24 hours after an area has been planted. Application rates and materials must meet Georgia Depart- ment 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:

-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 inches or more in diameter and 8 to 12 inches 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.
-Synthetic tackifiers, binders or hydraulic mulch specifi cally designed to tack straw, shall be applied in conjunction with or im- mediately after the mulch is spread. Syn- thetic tackifi ers shall be mixed and applied according to manufacturer's specifications. All tackifi ers, binders or hydraulic mulch specifi cally designed to tack straw should be verifi ed nontoxic through EPA 2021.0 testing. Refer to Tackifi ers-Tac
-Rye or wheat can be included with Fall and Winter plantings to stabilize the mulch. They shall be applied at a rate of one-quarter to one-half bushel per acre.
-Plastic mesh or netting with mesh no larger than one inch by one inch 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 a bedding material to con- serve 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 inches of top growth under any use and management. Moderate use of top growth is beneficial after establishment.
-Exclude traffic until the plants are well established. Because of the quail nesting season, mowing should not take place between May and September.

PLANTS, PLANTING RATES, AND PLANTING DATES FOR TEMPORARY COVER OR COMPANION CROPS

SPECIES (Ds2)	BROADCAST 2/RATES PER ACRE	3/PLS PER 1000 FT2	RESOURCE AREA 4/	PLANTING DATES BY RESOURCE AREAS (DOUBLE LINES INDICATE OPTIMUM DATES, SINGLE LINES INDICATE PERMISSABLE BUT MARGINAL DATES.) J F M A M J J A S O N D	REMARKS
BARLEY (Hordeum vulgare)					14,000 SEED PER POUND. WINTER HARDY. USE ON PRODUCTIVE SOILS.
ALONE	3 bu. (144lbs.)	3.3lbs.	P		
IN MIXTURES	1/2 bu. (24 lbs.)	0.6lbs.			
LESPEDEZA, ANNUAL (Lespedeza striata)					200,000 SEED PER POUND. MAY VOLUNTEER FOR SEVERAL YEARS. USE INOCULENT EL.
ALONE	40 lbs.	0.9lbs.	P		
IN MIXTURES	10 lbs.	0.2lbs.			
LOVEGRASS, WEEPING (Eragrotis curvula)					1,500,000 SEED PER POUND MAY LAST FOR SEVERAL YEARS. MIX WITH SERICEA LESPEDEZA.
ALONE	4 lbs.	0.1 lbs.	P		
IN MIXTURES	2 lbs.	0.05 lbs.			
MILLET, BROWNTOP (Pancium fasciculatum)					137,000 SEED PER POUND. QUICK DENSE COVER. WILL PROVIDE TOO MUCH COMPETITION IN MIXTURES IF SEEDED AT HIGH RATES.
ALONE	40 lbs.	0.9lbs.	P		
IN MIXTURES	10 lbs.	0.2lbs.			
MILLET, PEARL (Pennesetum glaucum)					88,000 SEED PER POUND. QUICK DENSE COVER. MAY REACH 5' IN HEIGHT. NOT RECOMMENDED FOR MIXTURES.
ALONE	50 lbs.	1.1lbs.	P		
IN MIXTURES	N/A	N/A			
OATS (Avena sativa)					13,000 SEED PER POUND. USE ON PRODUCTIVE SOIL. NOT AS WINTER HARDY AS RYE OR BARLEY.
ALONE	4 bu. (128lbs.)	2.9lbs.	P		
IN MIXTURES	1 bu. (32 lbs.)	0.7lbs.			
RYE (Secale cereale)					18,000 SEED PER POUND. QUICK COVER. DROUGHT TOLERANT AND WINTER-HARDY.
ALONE	3 bu. (168 lbs.)	3.9lbs.	P		
IN MIXTURES	1/2 bu. (28 lbs.)	0.6lbs.			
RYEGRASS, ANNUAL (Lolium temulentum)					227,000 SEED PER POUND. DENSE COVER. VERY COMPETATIVE AND IS NOT TO BE USED IN MIXTURES.
ALONE	40 lbs.	0.9lbs.	P		
IN MIXTURES	N/A	N/A			
SUDANGRASS (Sorghum sudanese)					55,000 SEED PER POUND. GOOD ON DROUGHTY SITES. NOT RECOMMEND-ED FOR MIXTURES.
ALONE	60 lbs.	1.4lbs.	P		
IN MIXTURES	N/A	N/A			
WHEAT (Triticum aestivum)					15,000 SEED PER POUND. WINTER HARDY.
ALONE	3 bu. (180lbs.)	4.1lbs.	P		
IN MIXTURES	1/2 bu.	0.7lbs.			

1. TEMPORARY COVER CROPS ARE VERY COMPETITIVE AND WILL CROWN OUT PERENNIALS IF SEEDED TOO HEAVILY.
2. REDUCE SEEDING RATES BY 50% WHEN DRILLED.
3. PLS IS AN ABBREVIATION FOR PURE LIVE SEED.
4. P REPRESENTS THE SOUTHERN PIEDMONT MLRA.

MAINTENANCE STATEMENT:
ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY AND ANY DEFICIENCIES NOTED WILL BE CORRECTED BY THE END OF EACH DAY. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY AFTER ON-SITE INSPECTION BY THE ISSUING AUTHORITY.

INSTALLATION STATEMENT:
THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES SHALL TAKE PLACE PRIOR TO OR CONCURRENT WITH LAND DISTURBING ACTIVITIES.

ALL CUT AND FILL SLOPES MUST BE SURFACED ROUGHENED AND VEGETATED WITHIN (3) DAYS OF THEIR COMPLETION.

ALL FILL SLOPES WILL HAVE SILT FENCE AT TOE OF SLOPE. - CLEARING LIMITS SHALL BE CLEARLY DELINEATED WITH EITHER TREE SAVE FENCE OR OTHER SUITABLE MEANS.

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 Second Maintenance	6-12-12 6-12-12 10-10-10	1500 lbs. / ac. 1000 lbs. / ac. 400 lbs. / ac.	50-100 lbs. / ac. 1/2/ - 30
2. Cool season grasses and legumes.	First Second Maintenance	6-12-12 10-10-10 10-10-10	1500 lbs. / ac. 1000 lbs. / ac. 400 lbs. / ac.	50-100 lbs. / ac. 1/ - -
3. Ground Covers	First Second Maintenance	10-10-10 10-10-10 10-10-10	1300 lbs. / ac. 3/ 1300 lbs. / ac. 3/ 1100 lbs. / ac.	- - -
4. Pine seedlings	First	10/5/2020	one 21-gram pellet per seedling placed in the closing hole	-
5. Shrub Lespedeza	First Maintenance	0-10-10 0-10-10	700 lbs. / ac. 700 lbs. / ac. 4/	-
6. Temporary cover crops seeded alone	First	10/10/2010	500 lbs. / ac.	30 lbs. / ac. 5/
7. Warm season grasses	First Second Maintenance	6-12-12 6-12-12 10-10-10	1500 lbs. / ac. 800 lbs. / ac. 400 lbs. / ac.	50-100 lbs. / ac. 1/6/ 50-100 lbs. / ac. 2/ 30 lbs. / ac.
8. Warm season grasses and legumes	First Second Maintenance	6-12-12 0-10-10 0-10-10	1500 lbs. / ac. 800 lbs. / ac. 400 lbs. / ac.	50 lbs. / ac. 6/

1/ Apply in spring following seeding. 2/ Apply in split applications when high rates are used. 3/ Apply in 3 split applications. 4/ Apply when plants are pruned. 5/ Apply to grass species only. 6/ Apply when plants grow to a height of 2 to 4 inches.

PLANTS, PLANTING RATES, AND PLANTING DATES FOR PERMANENT COVER

SPECIES (Ds3)	BROADCAST RATES 1/ PER ACRE	PLS 2/ PER 1000 FT2	RESOURCE AREA 3/	PLANTING DATES BY RESOURCE AREAS (SOLID LINES INDICATE OPTIMUM DATES, DOTTED LINES INDICATE PERMISSIBLE BUT MARGINAL DATES.) J F M A M J J A S O N D	REMARKS
BAHIA, PENSACOLA (Paspalum notatum) alone or with temporary cover / with other perennials	60 lbs. 30 lbs.	1.4 lbs. 0.7 lbs.	P		166,000 SEED PER POUND. LOW GROWING. SOD FORMING. SLOW TO ESTABLISH. PLAN WITH COMPANION CROP. WILL SPREAD INTO BERMUDA PASTURES AND LAWNS. MIX WITH SERCIA LESPEDEZA OR WEEPING LOVEGRASS.
BAHIA, WILMINGTON (Paspalum notatum) alone or with temporary cover / with other perennials	60 lbs. 30 lbs.	1.4 lbs. 0.7 lbs.	P		SAME AS ABOVE.
BERMUDA,COMMON (Cynodon dactylon) alone / with other perennials	10 lbs. 6 lbs.	0.2 lbs. 0.1 lbs.	P		1,787,000 SEED PER POUND QUICK COVER. LOW GROW-ING AND SOD FORMING. FULL SUN. GOOD FOR ATHLETIC FIELDS.
BERMUDA,COMMON (Cynodon dactylon) Unhulled seed with temporary cover / with other perennials	10 lbs. 6 lbs.	0.2 lbs. 0.1 lbs.	P		PLANT WITH WINTER ANNUALS. PLANT WITH TALL FESCUE.
BERMUDA SPRIGS (Pennesetum glaucum)	40 cu.Ft. or sod plugs 3' x 3'	0.9 cu.Ft.	P		A CUBIC FOOT CONTAINS APPROX-IMATELY 650 SPRIGS. A BUSHEL CONTAINS 1.25 CUBIC FEET OR APPROXIMATELY 800 SPRIGS.
CENTIPEDE (Erernochloa ophiuroides)	Block sod only				DROUGHT TOLERANT. FULL SON OR PARTIAL SHADE. EFFECTIVE ADJA-CENT TO CONCRETE AND IN CONCE-NTRATED FLOW AREAS. IRRIGATION IS NEEDED UNTIL FULLY ESTABLI-SHED. DO NOT PLANT NEAR PAST-URES. WINTER HARDY AS FAR NORTH AS ATHENS AND ATLANTA.
CROWNVETECH (Coronelia varia) with winter annuals or cool season grasses	15 lbs.	0.3 lbs.	P		100,000 SEED PER POUND. DENSE GROWTH. DROUGHT TOLERANT AND FIRE RESISTANT. ATTRACTIVE ROSE, PINK, AND WHITE BLOSSOMS SPRING TO LATE FALL. MIX WITH 30 POUNDS OF TALL FESCUE OR 15 POUNDS OF RYE. INOCULATE SEED WITH M INOCULANT. USE FROM NORTH ATLANTA AND NORTHWARD
FESCUE, TALL (Festuca arundinacea) alone / with other perennials	50 lbs. 30 lbs.	1.1 lbs. 0.7 lbs.	P		227,000 SEED PER POUND. USE ALONE ONLY ON BETTER SITES. NOT FOR DROUGHTY SOILS. MIX WITH PERENNIAL LESPEDEZAS OR CROWNVETCH. APPLY TOP DRESS-ING IN SPRING FOLLOWING FALL PLANTINGS. NOT FOR HEAVY USE AREAS OR ATHLETIC FIELDS.
LESPEDEZA,SERICEA (Lespedeza cuneata) scarified	60 lbs.	1.4 lbs.	P		350,000 SEED PER POUND. WIDELY ADAPTED. LOW MAINTENANCE. MIX WITH WEEPING LOVE GRASS, COMMON BERMUDA, BAHIA, OR TALL FESCUE. TAKES 2-3 YEARS TO BECOME FULLY ESTABLISHED. EXCELLENT ON ROAD BANKS.
unscarified	75 lbs.	1.7 lbs.	P		INOCULATE SEED WITH EL INOCU-LANT. MIX WITH TALL FESCUE OR WINTER ANNUALS.
seed-bearing hay	3 tons	138 lbs.	P		CUT WHEN SEED IS MATURE, BUT BEFORE IT SHATTERS. ADD TALL FESCUE OR WINTER ANNUALS.
LESPEDEZA Ambro virgata (Lespedeza virgata DC) or Appalow (Lespedeza cuneata [Dumont] G. Don) scarified	60 lbs.	1.4 lbs.	P		300,000 SEED PER POUND. HEIGHT OF GROWTH IS 18-24 IN. ADVANT-AGEOUS IN URBAN AREAS. SPREADING TYPE GROWTH. NEW GROWTH HAS BRONZE COROLAT-ION. MIX WITH WEEPING LOVEGRASS, COMMON BERMUDA, BAHIA, TALL FESCUE OR WINTER ANNUALS. DO NOT MIX WITH SERICEA LESPEDEZA. SLOW TO DEVELOP SOLID STANDS.
unscarified	75 lbs.	1.7 lbs.	P		INOCULATE SEED WITH EL INOCULANT.
LESPEDEZA, SHRUB (Lespedeza bicolor) (Lespedeza thumergii) plants	3' x 3'		P		PROVIDE WILDLIFE FOOD AND COVER.
LOVEGRASS,WEEPING (Eragrotis curvula) alone / with other perennials	4 lbs. 2 lbs.	0.1 lbs. 0.05lbs.	P		1,500,000 SEED PER POUND. QUICK COVER. DROUGHT TOLERANT WELL WITH SERICEA LESPEDEZA ON ROAD BANKS.
MAIDENCANE (Panicum hemitomon sprigs	2' x 3'	SPACING	P		FOR VERY WET SITES. MAY CLOG CHANNELS. DIG SPRIGS FROM LOCAL SOURCES. USE ALONG RIVERBANKS AND SHORELINES.
PANICGRASS, ATLANTIC COASTAL (Panicum amarum var. amarulum)	20 lbs.	0.5 lbs.	P		GROWS WELL ON COASTAL SAND DUNES, BORROW AREAS, AND GRAVEL PITS. PROVIDES WINTER COVER FOR WILDLIFE. MIX WITH SERICEA LESPEDEZA EXCEPT ON SAND DUNES.
REED CANARY GRASS (Phalaris arundinacea) alone / with other perennials	50 lbs. 30 lbs.	1.1 lbs. 0.7 lbs.	P		GROWS SIMILAR TO TALL FESCUE.
SUNFLOWER, 'AZTEC' MAXIMILLIAN (Helianthus maximiliani)	10 lbs.	0.2 lbs.	P		227,000 SEED PER POUND. MIX WITH WEEPING LOVEGRASS OR OTHER LOW GROWING GRASSES OR LEGUMES.

1/REDUCE SEEDING RATES BY 50% WHEN DRILLED.
2/PLS IS AN ABBREVIATION FOR PURE LIVE SEED.
3/P REPRESENTS THE SOUTHERN PIEDMONT MLRA.

Rochester & Associates, Inc.
425 Oak Street N.W. • Gainesville, Georgia 30501
(770)718.0600 (770)718.9090 Fax • www.rochester-assoc.com

EROSION CONTROL NOTES & DETAILS - 2
FOR:
DOLLAR GENERAL
WOODSTOCK
LAND LOTS 682 & 683
OF THE 21ST DISTRICT, 2ND SECTION
CHEROKEE COUNTY, GEORGIA

REVISIONS

NO.	DATE	DESCRIPTION
A	2.11.2021	2ND - SUBMITTAL - COUNTY COMMENTS

ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN APPROVAL OF ROCHESTER & ASSOCIATES INC. VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

GEORGIA REGISTERED No. 21049 PROFESSIONAL ENGINEER ALLEN MARGAVICH 2.11.2021

SHEET C-5.2 OF 18
DATE: 12/30/2020
SCALE: N.T.S.
JOB NO. G215090.DGW
DWG NO. .CNST.dwg
DRAWN BY: FDE

Order Plans @ www.LDIILine.com