

COMBINED
EL DORADO COUNTY RESOURCE CONSERVATION DISTRICT
AND
EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION
EROSION CONTROL REQUIREMENTS AND SPECIFICATIONS
July 2006

I. MINIMUM CONSTRUCTION SITE STORM WATER MANAGEMENT PRACTICES

The storm water management practices described below are the minimum, required water quality protection measures applicable to all construction sites, within Western El Dorado County. This listing does not include the various inspection, record keeping, training and reporting requirements. Additionally, there will be instances where project and site conditions require supplementing or deviating from these minimum protection requirements. The contractor is expected to deploy measures sufficient to achieve compliance with the County's Grading Ordinance; and, as applicable (projects which involve one acre or more of disturbed soil or are part of a larger common plan of development that encompasses one acre or more of disturbed soil), with the State Water Resources Control Board's (SWRCB) NPDES General Permit for Storm Water Discharges Associated with Construction Activity.

A. SCHEDULING

Construction shall be scheduled to minimize construction activities in "high-risk areas" and the amount of active disturbed soil areas, during the rainy season (Oct. 15th to May 1st). "High-risk areas" include those areas within 50 feet of USGS watercourses, 100-year flood plains, regulated wetlands, and where slopes exceed 16%.

Unless specifically authorized by the County's on-site representative, during the rainy season the contractor shall not schedule construction activities in "high risk areas" or schedule to have more than 5 acres of active disturbed soil area.

Where permanent storm water treatment devices are to be constructed, these devices should, whenever feasible, be constructed as an early work item.

B. PRESERVATION OF NATURAL FEATURES

Prior to the commencement of soil-disturbing activities, areas of existing vegetation that are to remain and environmentally sensitive areas (i.e. wetlands, protected habitats, etc) shall be fenced for protection. In general, site designs shall preserve existing vegetation to the maximum extent possible; and during construction, existing vegetation shall be preserved (and protected by fencing) for as long as possible to minimize erosion.

C. STORM WATER RUN-ON AND CONCENTRATED FLOWS

Existing watercourses shall be protected; and if diverted, handled in a non-eroding fashion. To the extent feasible, all concentrated water flows shall be channeled away from disturbed soil areas / stockpiles. Concentrated water flows shall be conveyed in a non-eroding fashion.

D. STOCKPILE MANAGEMENT

Stockpiles shall be managed as follows:

1. Soil stockpiles

Rainy season:

- Covered, or protected with soil stabilization measures & perimeter sediment barriers

Non-rainy season:

- Covered or protected with perimeter sediment barriers
2. Concrete/asphalt rubble, rock and aggregate base/sub-base
 - Covered or protected with perimeter sediment barriers
 3. "Cold mix" asphalt
 - Covered

E. SEDIMENT TRACKING CONTROL

Appropriate measures shall be deployed to minimize any tracking of sediment off-site by vehicles and/or equipment. These measures include stabilized construction entrances/exits & roadways, and tire washing. Where tracking occurs, streets shall be swept using a pickup sweeper with water supply.

F. NON-STORM WATER MANAGEMENT

Non-storm water discharges shall be minimized to the extent feasible. Sediment-laden non-storm water is required to be filtered (or equivalent treatment) prior to discharging. Measures required to manage non-storm water discharges include: water conservation practices, dust control, material storage practices, vehicle/equipment operation and maintenance requirements, waste management practices, and spill prevention/control measures.

G. DISTURBED SOIL AREA MANAGEMENT

Disturbed soil areas (DSA) shall be protected with an "effective combination" of measures including soil stabilization, sediment barriers and basins / traps. There may be situations where "Sediment Basins" or "Treatment" are able to substitute as alternative control measures to the normally required "effective combination" of soil stabilization, sediment barriers and basins / traps. However, when substituting these measures, the contractor must be prepared to demonstrate that the sediment load within storm water discharges from the construction site does not exceed natural or pre-construction levels.

1. Soil stabilization measures include:

- Hydraulic mulch (ref. CASQA BMP # EC-3)
- Hydroseeding (ref. CASQA BMP # EC-4)
- Suitably stabilized, non-polluting straw / wood / organic mulch (ref. CASQA BMP #'s EC-6 & EC-8)
- Geotextiles, mats, plastic covers and erosion control blankets (ref. CASQA BMP # EC-7)
- Stabilized construction roadways (ref. CASQA BMP # TC-2)

2. Sediment barriers include:

- Silt fences (ref. CASQA BMP # SE-1)
- Sand/gravel bag barriers (ref. CASQA BMP #'s SE-6 & SE-8)
- Straw bale barriers (ref. CASQA BMP # SE-9)
- Fiber rolls (ref. CASQA BMP # SE-5)

3. Basin / traps include:

- Desilting basins (ref. Caltrans BMPs)
 - Sediment traps (ref. Caltrans BMPs)
4. On DSAs with slope lengths greater than 10 feet, the following measures shall be deployed:
- a. Rainy season (Oct. 15th to May 1st):
- Non-active areas (no soil disturbing activities for 21 or more days)
- On slopes equal to or flatter than 1:20 (V/H), soil stabilization
 - On slopes steeper than 1:20 (V/H), soil stabilization and sediment barriers
- Active areas
- On slopes steeper than 1:20 (V/H), sediment barriers
 - On slopes steeper than 1:2 (V/H) with slope lengths greater than 50 feet: soil stabilization; sediment barriers; and where feasible, basins / traps
- b. Non-rainy season:
- Non-active areas (no soil disturbing activities for 21 or more days)
- On slopes steeper than 1:2 (V/H), sediment barriers
5. General:
- Protection shall be deployed on non-active DSAs within 14 days from the cessation of soil-disturbing activities or one day prior to the predicted (40% or more chance) onset of significant precipitation, whichever occurs first. Protection shall be deployed on active DSAs prior to the predicted (40% or more chance) onset of significant precipitation.
 - “Terraces.” For cut slopes up to 60 feet in height, terraces at least 8 feet (2.4 meters) in width shall be established at not more than 30-foot (9.1 meters) vertical intervals on all cut slopes to control surface drainage and debris except that where only one terrace is required, it shall be at midheight. For cut slopes greater than 60 feet (18 meters) and up to 120 feet (37 meters) in vertical height, one additional terrace at approximately midheight shall be 12 feet (3.6 meters) in width. Terraces shall slope a minimum of 5 percent gradient toward the hillside. Terrace widths and spacing for cut slopes greater than 120 feet (36 meters) in height shall be designed by the Civil Engineer and approved by the Director. Suitable access shall be provided to permit proper cleaning and maintenance.
 - “Sediment Basin:” A basin with a capacity equivalent to at least 3600 cubic feet of storage (as measured from the bottom of the basin to the principal outlet) per acre draining into the basin. The length of the basin shall be more than twice the basin’s width (length is determined by measuring the distance between the inlet and the outlet). The depth of the basin must not be less than three feet nor greater than five feet.
 - “Treatment”: A combination of basin and treatment engineered to capture and treat (to remove 0.01 mm sized particles and larger) the 10-year, 6-hour

rain event using $Q=C \times I \times A$ where $C=0.5$ and I ranges from 0.286 (El Dorado Hills) to 0.500 (Sly Park).

General reference:

1. El Dorado County "Storm Water Management Plan", October 2004. Available online at: <http://www.co.el-dorado.ca.us/emd/solidwaste/storm.html>

Detailed references:

1. California Storm water Quality Association (CASQA) "Construction Handbook," January 2003, Errata September 2004. Available online at: <http://www.cabmphandbooks.com/>
2. Caltrans "Statewide Storm Water Quality Practice Guidelines," April 2003. Available online at: <http://www.dot.ca.gov/hq/env/stormwater/special/newsetup/index.htm>
3. High Sierra Resource Conservation and Development Council "Vegetation Establishment Guidelines for the Sierra Nevada Foothills and Mountains," 2005. Available online at: <http://www.co.el-dorado.ca.us/emd/solidwaste/StormWater/HSRCD%20Vegetation%20Guidelines%20Final%202005.pdf>

II. CRITICAL AREA PLANTING SPECIFICATIONS (January 2006)

- A. SCOPE – Establishing vegetation on severely eroding areas or areas with an erosion potential. Its purpose is to stabilize the soil, minimize or prevent damage from sediment and runoff to downstream areas, protect wildlife habitat, and maintain aesthetic qualities.
- B. AREAS TO BE SEEDDED, TIMING OF SEEDING – Complete revegetation and stabilization of all disturbed soils, both within and outside county rights-of-way, will be accomplished with specified amounts and types of vegetative species, mulch and fertilizer material. See Major Land Resource Area exhibits MLRA 18 OR 22.

All erosion and sediment control practices performed after October 15, shall follow "Rainy Season" specification contained in the Storm Water Management Practices.

C. MATERIAL

1. Seed – All seed shall be delivered to the site tagged and labeled in accordance with the California Agricultural Code and shall be acceptable to the County Agricultural Commissioner.

Seed shall be of a quality which has a minimum pure live seed content of 80% (% purity x % germination) and weed seed shall not exceed 0.5% of the aggregate of pure live seed and other materials. Legume seed shall be inoculated with inoculate specific to its needs within two hours prior to seeding. Inoculants shall not be used later than the date indicated on the

container or as otherwise specified. All inoculated seed shall be labeled to show weight of seed, date of inoculation, and the weight and source of inoculant materials.

2. Fertilizer – A commercial fertilizer shall be Ammonium Phosphate and contain a minimum of 16% nitrogen, 20% phosphorus and 0% potash, uniform in composition, dry and free flowing, pelleted or granular.

All fertilizer shall be delivered in unbroken or unopened containers, labeled in accordance with applicable state regulations and bearing the warranty of the producer for the grade furnished.

3. Mulch – Mulch shall be one of the following materials as approved by the government representative.
 - 3A. Straw – Straw shall be new straw derived from rice, wheat, oats, or barley and be free of mold and noxious weed seed. Straw shall be furnished in air dry bales. Evidence shall be furnished that clearance has been obtained from the County Agricultural Commissioner, as required by law, before straw obtained from outside the county in which it is to be used is delivered to the site of the work.
 - 3B. Wood Fiber Mulch – Wood fiber mulch is a wood cellulose fiber that contains no germinating or growth inhibiting factors. It is colored with a non-toxic, water soluble, green dye to provide a proper gauge for metering over ground surfaces. It has the property to be evenly dispersed and suspended when agitated in water.

D. SEEDING REQUIREMENTS

1. General – All seeding, fertilizer and mulching operations shall begin when approval is given by the appropriate County Engineer or Conservation District representative.
2. Seedbed Preparation – The entire area to be seeded shall be reasonably smooth and conform to the desired shape before actual seedbed preparation is begun. Any debris which would interfere with seeding operations, growth or maintenance of the vegetative cover will be removed. The area to be seeded shall have a firm seedbed which has previously been roughened by scarifying, disking, harrowing, chiseling, or otherwise worked to a depth of two to four inches (2" – 4"). No implement shall be used that will create an excessive amount of downward movement of soil or clods of sloping areas. Seedbed may be prepared at time of completion of earth-moving work.
3. Fertilizing – Fertilizer shall be distributed uniformly over the seedbed at the rate of 300 pounds per acre, and shall be in such physical condition to insure uniform application over the area to be fertilized. Fertilizer may be applied in any way that will result in uniform distribution. The fertilizer shall be incorporated into the soil.
4. Seeding – Seed shall be broadcast by hand, mechanical hand seeder, power operated seeder, hydroseeder or other approved equipment. Seed shall have a soil cover of not more than one-half inch. Seeding will be carried out using either of the following methods:

Method 1 The seed may be drilled, not to exceed one-half (1/2) inch deep and cultipacked or rolled once over with a corrugated roller on all areas where equipment can be operated safely. Seed operations will be across the slope.

Method 2 The seed may be applied in a slurry mix of wood cellulose fiber distributed uniformly at the prescribed rate (see Item E.2, Wood Cellulose Fiber -Hydro-mulching, below). The application unit used for "Hydro Mulch" shall be equipped with an agitator to maintain the seed and mulch in suspension within the unit's tank prior to and during application.

Method 3 Where emergency treatment of exposed soils extends beyond October 15, emergency mulching without seed will be prescribed in accordance with "Soil stabilization measures" described previously.

Special Note: A minimum 70% seed germination with at least 1" growth must be obtained by December 1st, or area must be covered with straw mulch. (Section E-1)

MLRA 18
(elevations below Placerville)

PERIOD	METHOD	TYPE OF SEED	AMOUNT PER ACRE	AMOUNT PER 1000 S.F.	TYPE MULCH
15 Sep-15Oct	Hydroseed	Blando Brome <u>and</u> either Wimerra '62' or Annual Ryegrass	12 lb/ac 9 lb/ac	0.3 lbs 0.2 lbs	Straw or Wood Fiber
15 Sep-15Oct	Broadcasted	Blando Brome and Rose Clover	12 lb/ac 9 lb/ac	0.3 lbs. 0.2 lbs	Straw or Wood Fiber
16 Oct-14Sep	Hydroseed	Blando Brome and either Wimerra '62' or Annual Ryegrass	24 lb/ac 18 lb/ac	0.6 lbs. 0.4 lbs	Straw Only
16 Oct-14Sep	Broadcasted	Blando Brome and Rose Clover	24 lb/ac 18 lb/ac	0.6 lbs 0.4 lbs	Straw Only

A mulch coving shall be applied over the surface of the seeded area. Mulching shall follow immediately after seeding unless otherwise directed. Mulch will be of the material indicated.

MLRA 22
(elevations above Placerville)

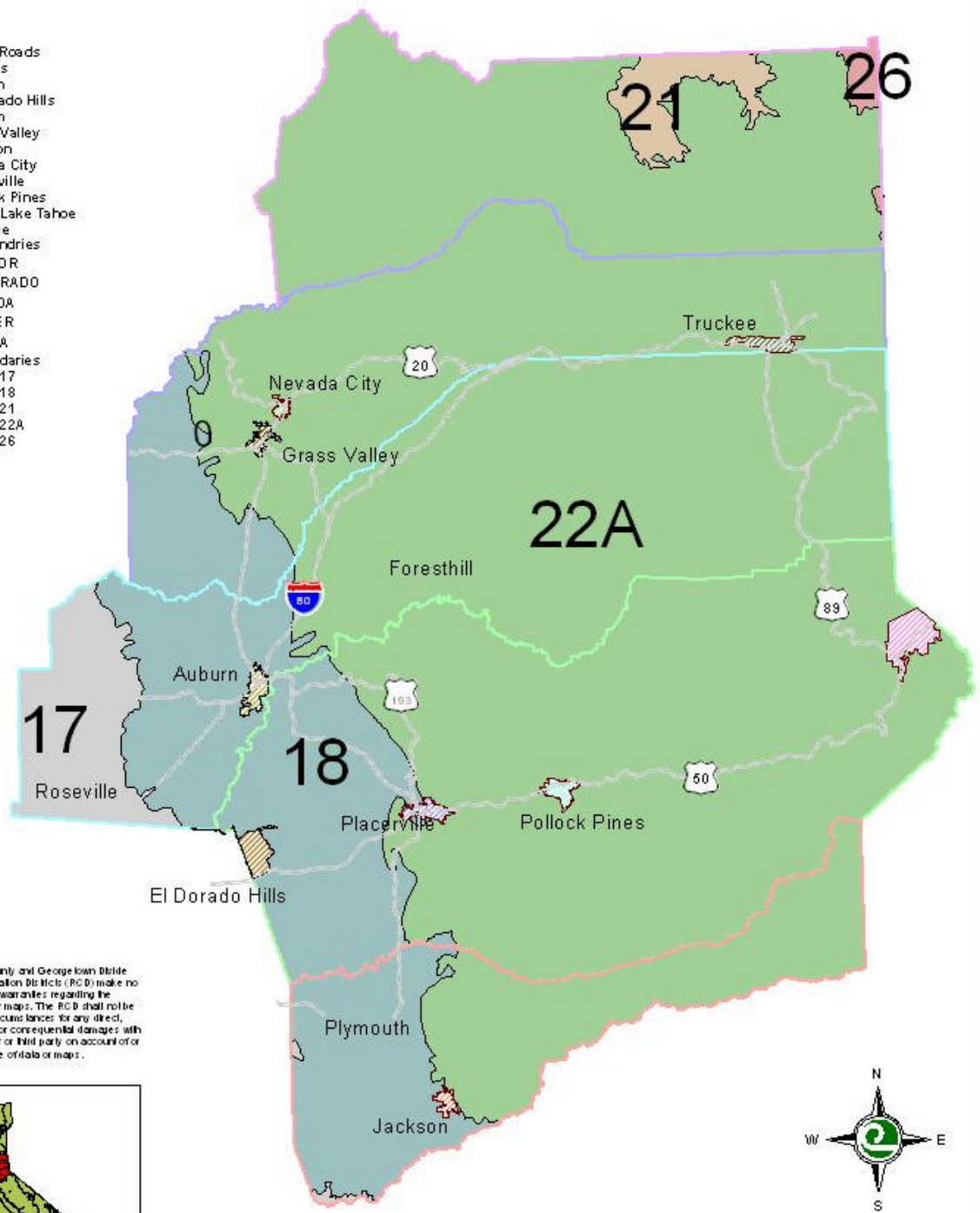
PERIOD	METHOD	TYPE OF SEED	AMOUNT PER ACRE	AMOUNT PER 1000 S.F.	TYPE MULCH
15 Sep-15Oct	Hydroseed or Broadcasted	Potomac Orchardgrass <u>or</u> Luna Pubescent Wheatgrass <u>or</u> Topar Pubescent Wheatgrass <u>and</u> Wimmera '62' Ryegrass	24lb/ac 36 lb/ac 36 lb/ac 6 lb/ac	0.55 lbs 0.8 lbs 0.8 lbs 0.15 lbs	Straw Only
16 Oct – 14 Sep	Hydroseed or Broadcasted	Potomac Orchardgrass <u>or</u> Luna Pubescent Wheatgrass <u>or</u> Topar Pubescent Wheatgrass <u>and</u> Wimmera '62' Ryegrass	48lb/ac 72 lb/ac 72 lb/ac 12 lb/ac	1.1 lbs 1.6 lbs 1.6 lbs 0.3 lbs	Straw Only

A mulch coving shall be applied over the surface of the seeded area. Mulching shall follow immediately after seeding unless otherwise directed. Mulch will be of the material indicated.

Major Land Resource Areas

2005

- Major Roads
- Communities
 - Auburn
 - El Dorado Hills
 - Folsom
 - Grass Valley
 - Jackson
 - Nevada City
 - Placerville
 - Pollock Pines
 - South Lake Tahoe
 - Truckee
- County Boundaries
 - AMA DOR
 - EL DORADO
 - NEVADA
 - PLACER
 - SIERRA
- MLRA Boundaries
 - MLRA 17
 - MLRA 18
 - MLRA 21
 - MLRA 22A
 - MLRA 26



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