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SPECIFICATIONS FOR SEEDING, MULCHING AND SODDING

NOTES: ALL DISTURBED AREAS SHALL BE PERMANENTLY SEEDED UPON COMPLETION OF GRADING ACTIVITIES.

SPECIFICATIONS FOR PERMANENT SEEDED

SITE PREPARATION

1. A subsoiler, plow or other implement shall be used to reduce soil compaction and increase infiltration. (Maximizing infiltration will help control both runoff rate and water quality.) Subsoiling should be done when the soil moisture is low enough to allow the soil to crack or fracture. Subsoiling shall not be done on slope-prone areas where soil preparation should be the most which is necessary for establishing vegetation.
2. The site shall be graded as needed to permit the use of conventional equipment for seeding, incorporation and seeding.
3. Resoil shall be applied where needed to establish vegetation.

SEEDED PREPARATION

1. Lime-Agricultural ground limestone shall be applied to soil soil as recommended by a soil test. In lieu of a soil test, lime shall be applied at the rate of 100 lb./1,000 sq. ft. or 2 tons/acre.
2. Fertilizer-Fertilizer shall be applied as recommended by a soil test. In lieu of a soil test, fertilizer shall be applied at a rate of 12 lb./1,000 sq. ft. or 500 lb./acre. Of 10-10-10 or 12-12-12 analysis.
3. The lime and fertilizer shall be worked into the soil with a disk harrow, spring-tow, roller, or other suitable field implement to a depth of 3 in. On sloping land the soil shall be worked on the contour.

SEEDING DATES AND SOIL CONDITIONS

Seeding should be done March 1 to May 31 or August 1 to September 30. These seeding dates are subject to soil test, with the use of additional mulch and irrigation, seedings may be made any time throughout the

MATERIALS

1. Mulch material should be applied immediately after seeding. Seedlings made during optimum seeding dates and with favorable soil conditions and on very flat areas may not need mulch to achieve adequate establishment. Dormant seeding shall be mulched.
2. Straw-if straw is used it shall be unrotted small-grain straw applied at the rate of 2 tons/acre, or 50 lb./1,000 sq. ft. (two or three bales). The mulch must be applied by hand or mechanically so the soil surface is covered. For uniform distribution of hand-spread mulch, divide area into approximately 1,000 sq. ft. sections and spread two 45-lb. Bales of straw in each section.
3. Hydroseeds-if wood cellulose fiber is used, it shall be used at 2,000 lb./acre, or 46 lb./1,000 sq. ft.
4. Other-Other acceptable mulches include mulch nettings applied according to manufacturer's recommendations or wood chips applied at 1 tons/acre.

STRAW MULCH ANCHORING METHODS

1. Straw mulch shall be anchored immediately to minimize loss by wind or water.
2. Mechanical A: dispenser, or similar type tool should be set straight to punch

growing season. Tillage/seedbed preparation should be done when the soil is dry enough to crumble and not form ribbons when compressed by hand. For winter seeding, see the following section on dormant seeding.

DORMANT SEEDINGS

1. Seedings shall not be planted from October through November. During this period the seeds are likely to germinate but probably will not be able to survive the winter.
2. The following methods may be used for "Dormant Seeding":

From October 1 through November 20, prepare the seedbed, seed the required amounts of lime and fertilizer, then mulch and anchor. After November 20, and before March 15, broadcast the selected seed mixture. Increase the seeding rates by 50% for this type of seeding.

From November 20 through March 15, prepare the seedbed, seed the required amounts of lime and fertilizer, apply the selected seed mixture, mulch and anchor. Increase the seeding rates by 50% for this type of seeding.

Apply seed uniformly with a cyclone spreader, drill, cultipacker or other type of hydro-seeding (slurry may include seed and fertilizer) on a firm, moist seedbed.

Where feasible, except where a cultipacker type seeder is used, the seedbed should be firmed following application. However, if a cultipacker, roller, or light drag. On sloping land, seeding operations should be on the contour where feasible.

or anchor the mulch material into the soil. Straw mechanically anchored shall not be freely chopped but, generally, be left longer than 6 in.

3. Mulch Nettings-Nettings shall be used according to the manufacturer's recommendations. Nettings may be necessary to hold mulch in place in areas of concentrated runoff and on critical slopes.
4. Asphalt Emulsion-Asphalt shall be applied as recommended by the manufacturer or at the rate of 160 gal./acre.
5. Synthetic Binders-Synthetic binders such as Acrylic DLR (Aigmat-Tec), DCA-70, Petrosol, Tern Tech or equal may be used at rates recommended by the manufacturer.
6. Wood Cellulose Fiber-Wood cellulose fiber binder shall be applied at a net dry weight of 750 lb./acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 60-100 gal. Of wood cellulose fiber.

IRRIGATION

1. Permanent seeding shall include irrigation to establish vegetation during dry or hot weather or on adverse site conditions as needed for adequate moisture for seed germination and plant growth.
2. Excessive irrigation rates shall be avoided and irrigation monitored to prevent erosion and damage from runoff.

SPECIFICATIONS FOR MAINTENANCE OF PERMANENT SEEDED

1. Permanent seeding shall not be considered established for at least 1 full year from the time of planting. Seeded areas shall be regularly inspected for failure and vegetation reestablished as needed, depending on site conditions, it may be necessary to irrigate, fertilize, overseed, or reestablish plantings in order to provide permanent vegetation for adequate erosion control.
2. Maintenance fertilization rates shall be established by soil test recommendations or by the rates shown in the following table.

1. Structural erosion- and sediment-control practices such as diversions and sediment traps shall be installed and stabilized with temporary seeding prior to grading the rest of the construction-site.

2. Temporary seed shall be applied between construction operations on soil that will be graded or reworked from 45 days or more. These site areas should be seeded as soon as possible after grading or soil shall be seeded within 7 days. Several applications of temporary seeding are necessary on typical construction projects.

3. The seedbed should be pulverized and loose to ensure the success of establishing vegetation. However, once established, seeding shall not be postponed if ideal seedbed preparation is not possible.
4. Soil Amendments-Aplications of temporary vegetation shall establish adequate stands of vegetation which may require the use of soil amendments. Soil tests should be taken on the site to predict the need for lime and fertilizer

MATERIALS

1. Sod shall be harvested, delivered and installed within a period of 48 hr. Sod not transplanted within this period shall be inspected and approved prior to installation.
2. The sod shall be kept moist and covered during hauling and preparation for placement on the sod bed.
3. Sod shall be machine cut at a uniform soil thickness of 0.75 in. plus or minus 0.25 in., at the time of cutting. Measurements for thickness shall exclude top growth and site preparation.

SITE PREPARATION

1. A subsoiler, plow or other implement shall be used to reduce soil compaction and allow maximum infiltration. (Maximizing infiltration will help control both runoff rate and water quality.) Subsoiling shall not be done on slope-prone areas where soil preparation should be limited to what is necessary for establishing vegetation.
2. Sod shall not be placed on frozen soil.
3. The first row or sod shall be laid in a straight line with subsequent rows placed parallel to and 1/8" wedged against each other. Lateral joints shall be staggered in a

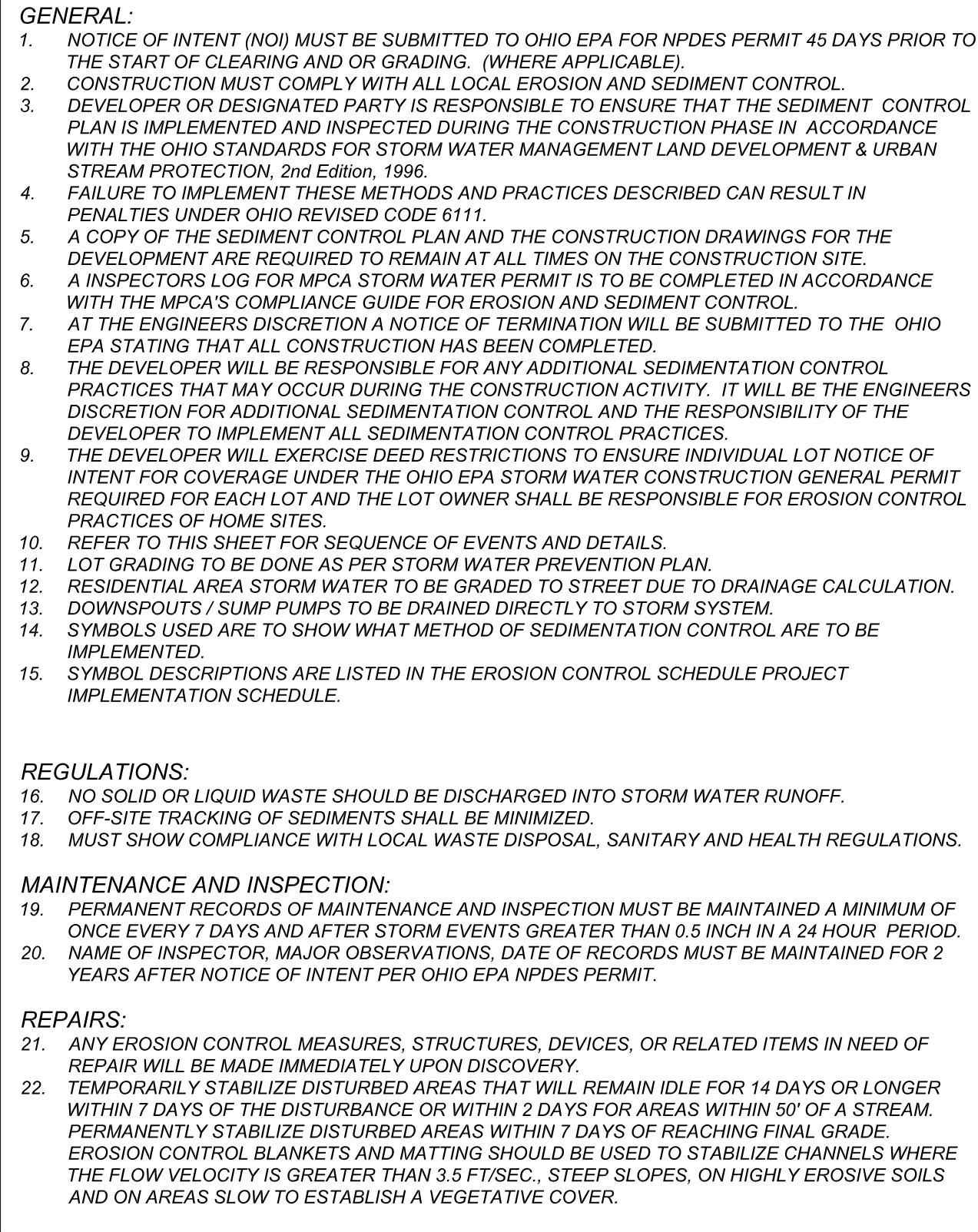
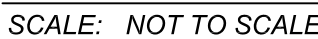
| Seed Mix | Permanent Seeding Seeding Rate | | Notes |
|---------------------------|--------------------------------|-------------------|-------------------------------|
| | lb./sq. yd. | lb./1,000 sq. yd. | |
| | General Use | | |
| Croeping Red Fescue | 10-20 | 10-12 | |
| Dormant Ryegrass | 10-20 | 14-12 | |
| Perennial Bluegrass | 10-20 | 14-12 | |
| Tall Fescue | 40 | 1 | |
| Dwarf Fescue | 40 | 1 | |
| Slope Banks or Cut Slopes | | | |
| Tall Fescue | 40 | 1 | |
| Crown Vetch | 10 | 14 | |
| Grass Mixture | 20 | 12 | Do not seed later than August |
| Tall Fescue | 20 | 12 | |
| Tall Fescue | 20 | 12 | Do not seed later than August |
| Road Ditches and Swales | | | |
| Tall Fescue | 40 | 1 | |
| Dwarf Fescue | 40 | 1 | |
| Perennial Bluegrass | 5 | 2 1/4 | |
| Lawns | | | |
| Kentucky Bluegrass | 6 | 1 1/2 | |
| Perennial Ryegrass | 6 | 1 1/2 | |
| Perennial Bluegrass | 6 | 1 1/2 | |
| Croeping Red Fescue | 6 | 1 1/2 | For shaded areas |

Note: Other accepted seed points may be substituted

SPECIFICATIONS FOR TEMPORARY SEEDED

limited to what is necessary for establishing vegetation

5. The site shall be graded as needed to permit

[illegible]

| ____ YEAR 2013 | J | F | M | A | M | J | J | A | S | O | N | D |
|--------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| CLEARING | | | | | | | | | | * | | |
| SILT FENCE | | | | | | | | | | * | | |
| SEDIMENTATION BASINS | | | | | | | | | | * | | |
| STRAW BALE BARRIERS | | | | | | | | | | | | |
| DRAINAGE-WAY ROUTING | | | | | | | | | * | | | |
| OUTLET PROTECTION | | | | | | | | | | | * | |
| DITCH PROTECTION | | | | | | | | | | | | |
| MULCHING | | | | | | | | | | | * | |
| PERMANENT SEEDING AND MULCHING | | | | | | | | | | | | |

| ____ YEAR 2014 | J | F | M | A | M | J | J | A | S | O | N | D |
|--------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| CLEARING | | | | | | | | | | | | |
| SILT FENCE | | | | | | | | | | | | |
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| MULCHING | | | | | | | | | | | | |
| PERMANENT SEEDING AND MULCHING | | | | | | | | | * | * | | |



Chadwick C. VanSickle
CHADWICK C. VANSICKLE, P.E. #69173

BUCKEYE BRINE, LLC.

PROJECT: PREFERRED FLUIDS MANAGEMENT
RIVERSIDE PARK DEVELOPMENT
UHRICHSVILLE, OHIO

SHEET TITLE: STORM WATER POLLUTION
PREVENTION PLAN (SWPPP) DETAILS & NOTES

SHEET NO

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