

SECTION 705 – SEEDING AND SODDING FOR TURF AREAS

705.01 DESCRIPTION

Seeding: This work shall consist of soil preparation, seeding, mulching, over seeding, and mowing all areas designated for turf establishment as specified in the Contract Documents or as directed by the M-NCPPC CM.

Sodding: This work shall consist of soil preparation, watering and placing grass sod on prepared areas, as specified in the Contract Documents or as directed by the M-NCPPC CM.

705.02 REFERENCE STANDARDS

LCA	Landscape Specification Guidelines, latest edition, Landscape Contractors Association (LCA) of Maryland, Virginia and the District of Columbia.
UMD	“Recommended Turfgrass Cultivars for Certified Sod Production and Seed Mixtures in Maryland,” University of Maryland Turfgrass Technical Update TT-77, most recent edition (formerly Agronomy Mimeo 77 or AM-77).
M-NCPPC	Section 200 - Excavation, Filling, and Grading Section 723 – Landscape Soil Section 728 – Athletic Field Construction

705.03 DEFINITIONS

Sprigging is the process of removing stems (stolons or rhizomes) from mature bermudagrass stands and replanting the vegetative cuttings in a different location.

Cool season grasses for M-NCPPC include fescues (tall, creeping, and red) and bluegrass

Warm season grass for M-NCPPC is Bermuda grass.

705.04 MATERIALS

- A. Soil: See Section 723 Landscape Soil.
- B. No plastic netting shall be used on M-NCPPC projects. Also, only biodegradable stakes and staples to be used.
- C. Grass Seed: Fresh, clean, new crop seed, certified by the Maryland Department of Agriculture, Turf and Seed Section.

1. Seed Mixture:

TYPE	% BY WEIGHT	% PURITY	% GERMINATION
Kentucky Bluegrass	10%	98%	85%
Turf-Type Tall Fescue*	90%	98%	90%
Perennial Rye Grass**	0%	98%	85%

*Use a blend of at least three (3) cultivars. Each cultivar shall make up a minimum of 10% of the total amount of Turf-Type Tall Fescue in the seed mixture.

**Up to 5% Perennial Rye Grass may be substituted for 5% Turf Type Tall Fescue and used with M-NCPPC CM's approval when fast establishment of a stand is deemed necessary.

2. Approved Varieties: Select approved varieties from “Recommended Turfgrass Cultivars for Certified Sod Production and Seed Mixtures in Maryland,” University of Maryland Turfgrass Technical Update TT-77, most recent edition. Available from M-NCPPC CM, Maryland Turfgrass Council <http://www.md turf council.org/Maryland-Resources-and-Technical-Bulletins>.
3. Weed Seed: Maximum 0.02% as tested by seed supplier.
4. All seed and labeling must fully comply with the Maryland Seed Law and these specifications.
5. All seed must be state certified and blended under the supervision of the Maryland Department of Agriculture, Turf and Seed Section.
6. Each bag of seed shall contain proper label and certification tag.

D. Mulching and Stabilizing Materials:

1. Straw: Bright, small grain type straw. Shall be free of mildew, rot and noxious weed seeds. Apply ½ inch to ¾ inch thick layer or 60 to 80 bales per acre. All straw mulch shall be bound with a suitable binder or straw shall be rolled thoroughly with a crimping roller in several directions to prevent erosion of the soil and/or mulch. See LCA, Landscape Specification Guidelines, Seed and Sod specifications.
2. Hydro Mulch: Biodegradable cellulose-fiber mulch, nontoxic, free of plant-growth or germination inhibitors with a maximum content of 15% and pH range of 4.5 to 6.5, applied at a net dry weight of 750 pounds per acre. See LCA, Landscape Specification Guidelines, Seed and Sod specifications.
3. Erosion Control Blankets: Location to be determined by the M-NCPPC CM. Rolanka BioD-Mat 70 or approved equal may be used only if approved by the M-NCPPC CM. No biodegradable or plastics shall be used.
4. The M-NCPPC CM may determine based on site conditions that mulch may not be required.

E. Sod:

1. Maryland Certified (labeled), inspected and approved by the Maryland Department of Agriculture.
2. M-NCPPC reserves the right to inspect the sod at its origin. The Contractor must provide the sod farm location so that the M-NCPPC CM can inspect and approve the sod before harvesting. This information must be provided 30 days before harvest.

3. Seed Mixture:

TYPE	% BY WEIGHT	% PURITY	% GERMINATION
Kentucky Bluegrass	10%	98%	85%
Turf-Type Tall Fescue*	90%	98%	90%

*Use a blend of at least three (3) cultivars. Each cultivar shall make up a minimum of 10% of the total amount of Turf-Type Tall Fescue in the seed mixture.

4. Approved Varieties: Select approved varieties from [“Recommended Turfgrass Cultivars for Certified Sod Production and Seed Mixtures in Maryland,”](#) University of Maryland Turfgrass Technical Update TT-77, most recent edition. Available from M-NCPPC CM, Maryland Turfgrass Council
5. Thickness of Cut: The thickness of the roots and soil shall be ½ inch to ¾ inch.
6. Pad Size: Large roll sod should be used where practical. If not practical, individual pieces of sod may be used. Individual pieces of sod shall be cut to the supplier’s standard width and length. Maximum allowable deviation from standard widths and lengths shall be 5%. Broken pads and torn or uneven ends will be rejected.
7. Strength of Sod Sections: Under ideal conditions, standard size sections of sod shall be strong enough to support their own weight and retain their size and shape when suspended vertically from a firm grasp on the upper 10% of the section without the use of netting.
8. Sod Viability: Sod shall not be harvested or transplanted under drought conditions.
9. Time Limitations: Under optimal conditions, sod shall be harvested, delivered and installed within a period of 36 hours. During periods of unseasonably high temperature and/or low relative humidity, installation shall occur within 24 hours from harvest. Sod not transplanted within this period shall be inspected and approved or rejected by the M-NCPPC CM prior to installation.
10. Sod Staples: Biodegradable sod staples shall be used on slopes greater than 3:1. Sod shall be stapled at a minimum of four (4) staples per square yard of sod. Metal staples are prohibited.

11. The sod soil must match the soil type of the finished soil prepared areas.

F. Sprigging Bermuda grass: Sprigging is the preferred method of Bermuda grass establishment. At the discretion of the M-NCPPC CM, other methods may be approved.

G. Pesticide and Fertilizer Uses:

1. Pesticides Use: All pesticides shall be pre-approved by the M-NCPPC Construction Manager 7 business days prior to application for the intended uses and application rates. Approved pesticide applications shall be performed by an applicator certified by the State of Maryland. Any herbicide, insecticide or fungicide must be registered and approved by EPA and recommended by manufacturer for each specific problem and as required for Project conditions and application. If pesticide use is approved then state, local and M-NCPPC requirements for notification and signage shall be followed. Montgomery County requires prenotification of pesticide use; this includes special signs and web notification which will be handled by a designated M-NCPPC staff person in coordination with the General Contractor or company performing the work. Two types of signs are required: white prenotification sign (provided by CM) which shall be in place 48 hours prior to application and yellow pesticide application signs which shall remain in place for 48 hours following the pesticide application. See appendix **Guide for Contractor Pesticide Applications in Montgomery Parks** for additional information.
2. Fertilizer Use: All fertilization must comply with Maryland's Lawn Fertilizer Law - Mda.maryland.gov/Pages/fertilizer.aspx A single fertilizer application may not exceed 0.9 pounds total nitrogen per 1,000 square feet (except when using enhanced efficiency fertilizer) and may not exceed 0.7 pound of soluble nitrogen per 1,000 square feet.

705.05 SUBMITTALS

A. Seed:

1. Submit proposed seed mixture to the M-NCPPC CM.
2. Submit Manufacturer's certificates of purity and guarantees of germination in accordance with Maryland Seed Law to the M-NCPPC CM.

B. Sod: Submit Maryland Department of Agriculture Inspection, Approval and certification label to the M-NCPPC CM at the time of sod delivery and prior to installation. Provide location of sod farm for approval. Submit Certifications of the sod that will be used as a source material.

C. Sprigging: Submit equipment that will be used for the on-site sprigging operation. Submit certifications of the sod that will be used as source material.

D. Pesticides Uses:

1. If pesticide application is approved for use by the M-NCPPC CM, Contractor shall submit current Maryland Department of Agriculture Certified Pesticide Applicator license.
2. Submit copies of all pesticide application records to the M-NCPPC CM.

E. Water Delivery System: For grass areas that do not have permanent irrigation systems, submit copies of planned water delivery system (e.g. truck mounted tanks, temporary hydrant connections, water wheel, etc.), including equipment sizes and types and design to demonstrate that required water quantities can be delivered within appropriate time frame. Provide hydrant pressure, pipe sizing, flow rates, gallons per minute delivery (for water wheel or other temporary irrigation methods) and other relevant information. All information must be approved by the M-NCPPC CM before any seeding can occur.

F. Equipment: Submit a list of all equipment used for seeding, watering and seed bed preparation to the M-NCPPC CM.

G. Fertilizer Use: Contractor will submit copies of Maryland Department of Agriculture Professional Fertilizer Applicator and Business licenses.

705.07 CONSTRUCTION

A. Project Conditions:

1. Regular Seeding Season (Cool Season):
 - a. Spring: March 1 through May 15.
 - b. Fall: September 1 through October 30.
 - c. Optimal seeding time is September 15 through October 15.
2. Regular Sodding Season (Cool Season):
 - a. Spring: March 1 through May 1
 - b. Fall: October 1 through November 15
3. Regular Sprigging Season (Warm Season):
 - a. Summer: May 1 to July 15
4. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. No broadcast seeding shall take place when wind speeds exceed 5 miles per hour.

5. To begin seed, sod, and sprig installation, obtain approval from the M-NCPPC CM. To seed or sod at times other than those listed above, obtain approval from the M-NCPPC CM.
6. Notification: Follow required posting regulations, the M-NCPPC CM shall be given 48 hours' notice before any pesticide applications are made.

B. Final Soil Grading and Preparation:

1. Final soil grading and preparation shall be inspected by the M-NCPPC CM before seeding and sodding commences. Seed, sod and soil amendments rates and specifications shall adhere to Section 723 Landscape Soil and to the LCA Landscape Specification Guidelines, Seed and Sod specifications.
2. See Section 200 Excavation, Filling, and Grading for tolerance for subsoil and final level tolerances.
3. For athletic field construction, see additional requirements in Section 728 Athletic Field Construction.
4. Weeds and undesirable grasses growing on existing grade that is to be seeded and/or sodded must be removed, including their roots, before soil preparation begins.
5. Before seeding or sodding, all soils shall be loosened by means of tilling and/or disking; then further prepared by York Rake (or other approved equipment) to a minimum depth of six (6) inches. All stones over $\frac{3}{4}$ inches in any dimension shall be removed from the top six (6) inches of soil by use of mechanical screening. In addition, preparation shall include removal of all trash, debris, roots, brush, wire, grade stakes and other objects that would interfere with seeding and/or sodding operations. As measured by penetrometer by the M-NCPPC Inspector, the soils must be non-compacted before the placement of seed or sod. The penetrometer should easily move through the soil in the green zone and not exceed 300psi. Measured by other methods would equate to 85% compaction.
6. Final grade of seedbed must be approved by M-NCPPC CM before seeding or sodding begins and upon completion of the seedbed. Failure to obtain approval of the seedbed may result in repeating seedbed preparation.

C. Seed Application:

1. Turf for Athletic Fields: For Athletic Fields, 100 % of the seed must be applied by Slit Seeder
 - a. Slit Seeder: Apply seed within top $\frac{1}{4}$ inch of soil in two directions at a rate of five (5) pounds per 1,000 ft² in each direction.

2. Non-Athletic Field Turf: 50% of the seed shall be applied by slit seeder and 50% shall be broadcast unless otherwise indicated in the Contract Documents, or approved by the M-NCPPC CM.
 - a. Slit Seeder: Apply seed within top ¼ inch of soil in two directions at a rate of 2.5 pounds per 1,000 ft² in each direction.
 - b. Mechanical Broadcast Seeding: Apply 50% of the seed via mechanical broadcast seeding in two directions at 2.5 pounds per 1,000 ft².
3. Hand/Mechanical Broadcast Seeding (Non-Athletic Fields): With permission of M-NCPPC CM, seed may be broadcast on areas less than 10,000 ft² or on slopes that prohibit the use of a slit seeder.
 - a. The seedbed must be tilled or harrowed prior to seeding.
 - b. After broadcasting the seed, the seedbed must be lightly harrowed or ¼ inch of topsoil must be broadcast on top of the seed to ensure optimal soil contact.
 - c. Apply seed at twelve (12) pounds per 1,000 ft².
4. Do not seed against newly planted trees. Limit extent of seed to outside edge of planting saucer.
5. Mulching: Apply mulching material to retain moisture and minimize erosion.
6. Stabilizing Materials: Stabilize the mulch by mulch anchoring tool, cellulose fiber, liquid mulch binders.

D. Hydroseeding:

1. Water, Seed and Fertilizer method: The mixture shall be sprayed on the previously prepared seedbed in the form of an aqueous mixture. All mixtures shall be constantly agitated from the time they are mixed until they are finally applied to the seedbed.
 - a. If fertilizer is mixed into the slurry, no more than 30 minutes shall lapse before it is applied to prevent the fertilizer from burning the seed. Care shall be exercised to ensure uniform coverage.
 - b. Straw shall be applied by hand or with a blower and stabilized. Apply mulching material to retain moisture and minimize erosion.
2. Seed, Fertilizer, Water and Cellulose Fiber Method: The mixture shall be sprayed on the previously prepared seedbed in the form of an aqueous mixture. All mixtures shall be constantly agitated from the time they are mixed until they are finally applied to the seedbed.
 - a. Apply cellulose fiber at a rate of 50 pounds per 100 gallons of water.
 - b. If fertilizer is mixed into the slurry, no more than 30 minutes shall lapse before it is applied to prevent the fertilizer from burning the seed. The Contractor shall ensure uniform coverage.

- c. Straw shall be applied by hand or with a blower and stabilized. Apply mulching material to retain moisture and minimize erosion.

E. Sodding:

1. No sod shall be applied to frozen ground and/or frozen sod is not to be laid. Do not lay dormant sod.
2. Moistening Soil: During periods of high temperature, lightly irrigate the soil immediately prior to laying the sod.
3. Starter Strip: The first row of sod shall be laid in a straight line with subsequent rows placed parallel to and tightly against one another. Lateral joints shall be staggered to promote more uniform growth and strength. Contractor shall ensure that the sod is not stretched or overlapped and that all joints are butted tightly in order to prevent voids.
4. Watering and Rolling: The Contractor shall lightly water sod during installation to prevent excessive drying. As sodding is completed in any one section, an entire area shall be lightly rolled to ensure contact with subgrade, eliminate air pockets and form a smooth surface. Thoroughly irrigate sod within two (2) hours of planting so that the underside of the new sod pad and soil immediately below the sod are thoroughly wet. The Contractor shall be responsible to have adequate water available at the site prior to and during installation of sod, unless otherwise stated.
5. On slopes of 3:1 or steeper, biodegradable stakes or stabilization unit at a minimum of four (4) staples per square yard of sod. On sledding hills, 18" X 1" X 1" grade stakes will be used with top 12" exposed.

F. Sprigging of Bermudagrass: Follow sodding requirements (no staples required). Sprigging should occur at the site and the sprigs shall be planted immediately. The rate of application is 800 bushels of sprigs per acre.

G. Maintenance: Maintenance of grass areas shall consist of watering, mowing, weeding, re-seeding and/or re-sodding as necessary to obtain an approved stand of grass. Maintenance shall continue until M-NCPPC CM accepts the project.

1. Watering: Water every day for the first 10 days after installation. Soil must remain moist at all times without having water pooling on the grass area. Bermuda grass shall be watered within 30 minutes of planting. After germination, water shall be applied at a rate equivalent to one (1) inch of rainfall per week and to maintain moist soil to a depth of four (4) inches. Rainfall shall be supplemented with manual watering to reach above moisture levels. Watering shall continue until the stand of turf is accepted by the M-NCPPC CM.
2. Mowing: All mowing shall be the Contractor's responsibility until final acceptance of the project.

- a. Cool Season: Height of the grass shall be maintained between 2 ½ and 3 inches unless otherwise specified. No individual mowing shall remove more than 1/3 of the grass blade length. Heavy mowing resulting in grass piles shall be double-mowed or the contractor shall remove the piles.
 - b. Warm Season: Height of the grass will be maintained at 1". This may require mowing 3-4 times per week when heavily growing.
3. Re-Seeding
- a. Bare spots that persist after three (3) weeks of favorable growing weather shall be re-cultivated, re-seeded, raked and rolled. Re-seeding of bare spots shall be done as many times as necessary until an acceptable stand of turf is established.
 - b. If entire stand provides between 50% and 90% ground coverage, overseed and fertilize using half the rates originally applied.
 - c. If the stand provides less than 50% coverage, reestablish the stand following original rates and procedures.
4. Re-Sodding: Bare spots shall be re-sodded until deemed acceptable by the M-NCPPC CM. If the turf stand is not accepted by the following seeding and sod season, the Contractor shall sod and fertilize, as necessary, the unaccepted areas at no additional charge the M-NCPPC.
5. Re-Springing: Bare spots shall be re-sprigged by hand until deemed acceptable by the M-NCPPC CM. If the turf stand is not accepted by the following sprigging season, the Contractor shall re-sprig and fertilize, as necessary, the unaccepted areas at no additional charge the M-NCPPC.
6. Flooded, washed-out, rilled or otherwise damaged or defective areas of seeding, sod, mulch, grade, swales or berms shall be reconstructed and all grades re-established in accordance with the grading plans or other specifications or when, in the judgement of the M-NCPPC CM, such defects or damages are the result of poor workmanship, or failure to meet the requirements of the specifications.
7. Bermuda grass growth covers: Growth covers to be provided and installed after dormancy and no temperatures over 70 degrees are forecasted for the rest of the fall/winter season and before soil freezes. Covers will remain the property of M-NCPPC at the conclusion of the project.

H. Final Acceptance

- 1. Turf installations shall meet the following criteria as determined by the M-NCPPC Project Manager:
 - a. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with

- coverage exceeding 90% over any 10 square foot and bare spots not exceeding three (3) inches by three (3) inches.
- b. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored viable turf has been established, free of weeds, open joints, bare areas and surface irregularities.

2. Following are examples of delays in final acceptance of a Project:

- a. Improper Grades:
 - i. Low or high spots on flat or fairly level areas.
 - ii. Improper drainage such as swales, low areas, rip-rapped outlets or paved areas.
 - iii. Washed out or rilled areas.
 - iv. Exposed debris.
- b. Turfgrass Conditions:
 - i. Poor or Thin Stand: Improper application of sod, dead grass or sod, use of seed mixtures or sod other than approved in specifications.
 - ii. Improper Fertilizer Application: Uneven spreading, insufficient amounts, failure to re-fertilize during extended acceptance.
 - iii. Persistent weeds established in turf areas.

705.08 MEASUREMENT AND PAYMENT

Payment will be full compensation for all material, labor, equipment, tools and incidental items necessary to complete the work. Payment shall be made on a unit rate or lump sum basis as shown in the bid proposal.

Guide for Contractor Pesticide Applications in Montgomery Parks

Important Information

- NO PESTICIDES are allowed in Pesticide-free parks! **See Attachment B Pesticide free park list.**
- Website prenotification is required for all pesticide applications (at least 48-hours prior to application).
- Prenotification signs are required for pesticide applications: 1) on athletic fields, 2) on managed turf and 3) within 25' of a stream, creek, river.
- **Emergency pesticide use** does not require prenotification. (Examples: wasp sprays, disease on athletic field). Post application signs at the site at time of emergency applications.
- Yellow pesticide application signs must be installed at the time of application and remain in place for 48 hours following pesticide applications. Exception for applications in forests with no trail access.
- If a pesticide treatment is within 25' of a waterbody (above-ground river, stream or creek or area subject to the ebb and flow of the tide) then
 - ✓ only approved invasive weed species can be treated with registered pesticides.
 - ✓ prenotification signs and on the web are required at least 48 hours prior to application.
- If contractors apply pesticides, all pre-notifications (web & signs) shall be done by Parks' staff managing the contract. Contractor must provide a copy of the pesticide application record form following each treatment.
- ALL pesticide application record forms (applied by staff and contractors) must be scanned then saved to X:\Pesticide Application Records

Managed Turfgrass & Athletic Field Pesticide Treatments

- Website prenotification at least 48 hours prior to pesticide application. Web notification is done by Parks' staff person managing a contract.
- White prenotification signs 48 hours prior posted at the site by Parks' staff person managing a contract.
- Yellow sign at the time of application. Sign must be removed after 48 hours.

Landscape Beds & Amenities (tracks, paved surfaces, benches, etc.) Pesticide Treatments

- Website prenotification at least 48 hours prior to pesticide application. Web notification is done by Parks' staff person managing a contract.
- Yellow signs at the time of application. Signs must be removed after 48 hours.

Stormwater Facility Pesticide Treatments

- Website prenotification at least 48 hours prior to pesticide application. Web notification is done by Parks' staff person managing a contract.
- Yellow signs at the time of application. Signs must be removed after 48 hours.
- Products used must be labeled for use near aquatic environments.

Invasive Weeds (NNI), Reforestation and Pond Pesticide Treatments

- Website prenotification at least 48 hours prior to pesticide application. Web notification is done by Parks’ staff person managing a contract. See below for sign details.
- If application occurs near a trail or public access area
 - ✓ Post yellow signs at the time of application. Signs must be removed after 48 hours.
- If pesticide treatment is within 25’ of a waterbody (above-ground river, stream or creek or area subject to the ebb and flow of the tide)
 - ✓ Only approved weed species can be treated with registered pesticides.
 - ✓ Requires web & sign notification the week prior to application. Parks staff does this.
 - ✓ Products used must be labeled for use near aquatic environments.

Signs to notify of a pesticide application:

- White signs are for prenotification (48-hr prior)
 - Yellow signs are installed at time of application
 - Small signs fit on black plastic step-stakes
- Large signs fit on “H” shaped wire holders or can be nailed to a post



Notice of Planned Pesticide Application
Aviso de Plan de Aplicación de Pesticida

Planned Date: _____ Time: _____
Fecha Prevista de Aplicación

Product: _____

Reason: Weeds (Malezas)
Razón Disease (Enfermedade Vegetal)
 Insects (Insectos)

Place: _____
Lugar

PFC

CAUTION
PESTICIDE APPLICATION
by M-NCPPC

Date applied: _____ Time: _____

Place (el lugar): _____

For more information: _____

Maryland-National Capital Park and Planning Commission

M-NCPPC Montgomery Parks Pesticide Posting Regulations: Contractors

We post signs to inform staff, workers and visitors of pesticide applications. Montgomery Parks adheres to all Federal, County, and Maryland State Pesticide Use laws. In addition, Montgomery Parks has a pesticide policy, which includes additional posting location requirements. All contractors are required to comply with Federal, County, State and Park regulations.

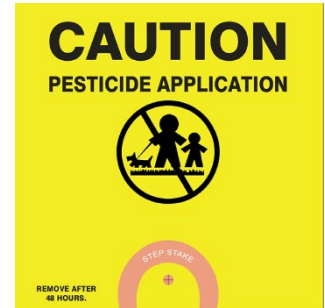
State Law: When pesticides are applied to a lawn or to exterior landscape plants the Applicator must place a sign at the primary access points. If it is a single plant or spot treatment, place the sign at the treatment site with the front facing the most probable path of entry. The sign shall remain in place for 48 hours following the pesticide application, and then it must be removed.



The sign must be rigid, as opposed to a flag. (4" x 5")

The sign should indicate date applied, name of applicator or licensee, and telephone number leading to an individual who can respond with details of the application (the phone number is up to each site to determine and may or may not be the

applicator's)

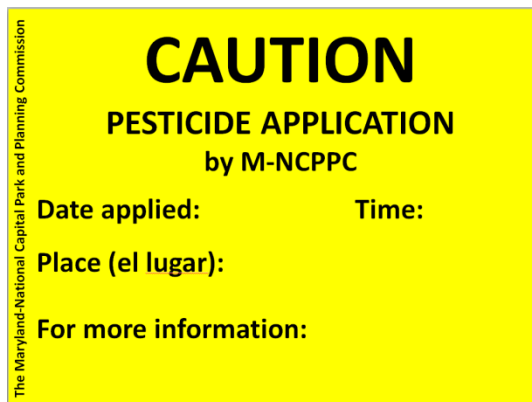


Date: _____

Name: _____

Phone: _____

Montgomery Parks regulations requires pesticide applicators to also post signs if pesticides are **applied along parking lots, sidewalks, fences, fire hydrants, signs, buildings, etc.** (See examples of the typical small (4" x 5") & larger Montgomery Parks signs right and below). Signs must be posted at each primary access to the treated area and where persons approaching the treated site can read them. The larger signs can be placed at eye-level so they are conspicuous from other use locations (they can be lower, but the bottom should be no less than 12 inches from the ground).



For Contractors: You may use a stamp to add the required Name and Phone number for your company contact. The Date of application should also be on the back according to state law.



Signs must be removed after 48 hours! Please note each sign location and contact Parks staff if you are unable to return so we can remove the signs.

Copies of your pesticide record with details required by the Maryland Department of Agriculture must be submitted to M-NCPPC Construction Manager for each pesticide application.