City of Moscow Mills
500 Highway MM
P.O. Box 36 Moscow Mills, Missouri 63362
P 636-356-4220 F 636-356-4010

GRADING PERMIT APPLICATION

APPLICANT: _____
(Name)

_____
(Address)

_____

_____
(Phone)

LOCATION OF PROPERTY/DEVELOPMENT (ADDRESS/NAME):_____

_____

OWNER(s) (attach additional)

_____
Printed Name

_____
Printed Name

_____
Street Address

_____
City/State/Zip Code

_____
Telephone Facsimile

LEGAL DESCRIPTION OF PROPERTY (other than address)_____
_____
_____

EXISTING ZONING: _____

PROPOSED USE: _____

GRADING PERMIT PLAN REVIEW FEE (see Zoning Ordinance): *$*_____
(Checks Payable to the City of Moscow Mills)

GRADING PERMIT PROCESS

A. Any development greater than twenty thousand (20,000) square feet and requiring the preparation of complete improvement plans in accordance with City Ordinance as determined by the City Engineer shall be required to obtain a grading permit from the City of Moscow Mills. Once the preliminary plat or P.U.D. Area Plan has been approved by the Planning and Zoning Commission, the grading permit process shall be as described herein. Grading plans may be submitted to the City Engineer as part of the improvement plans, or separately prior to the submission of improvement plans; however, a grading permit shall be submitted and processed in either case.

B. Filing Procedures: The applicant shall submit five (5) copies of the proposed Grading Plan, and a completed application form to the City Engineer. (Two (2) copies are sufficient for the initial submittal.)

C. Information Required: The following information is required for all Grading Plan submittals for approval. The required information may be combined for presentation on one or more drawings or maps. In the interests of clarity, speed and efficiency in the review process, the City Engineer may request that information in addition to the Grading Plan be presented on drawings or maps. In all cases, the grading plan submission must minimally include the following:

1. The grading plan shall be of a scale not to be greater than one (1) inch equals twenty (20) feet nor less than one (1) inch equals two hundred (200) feet, and of such accuracy that the City Engineer can readily interpret the Plan, and shall include more than one drawing where required for clarity.

2. The property is identified by lot lines and location, including dimensions, angles and size, correlated with the legal description of said property. The grading plan shall be designed and prepared by a qualified land planner, registered professional architect, and engineer or land surveyor. It shall also include the name and address of the property owner(s), developer(s), and designer(s).

3. It shall show the scale, north point, boundary dimensions, natural features such as woodlots, streams, rivers, lakes, drains, topography (at least five (5) foot contours intervals; when terrain is irregular or drainage critical, contour interval shall be at least two (2) foot), and similar features. All topographic data shall directly relate to USGS datum.

4. It shall show existing manmade features such as buildings, structures, easements, high tension towers, pipe lines, existing utilities such as water and sewer lines, etc., excavations, bridges, culverts, and drains and shall identify adjacent properties within three hundred (300) feet and their existing uses.

5. Any proposed alterations to the topography or other natural features are indicated.

6. All filled places under proposed storm and sanitary sewer lines and/or paved areas shall be compacted to ninety (90) percent of maximum density as determined by the Modified AASHTO T-180 Compaction Test or ninety-five (95) percent of maximum density as determined by the Standard Proctor Test AASHTO T-99.

7. All fill placed in proposed roads areas shall be compacted from the bottom of the fill up to ninety (90) percent of maximum density as determined by the Modified AASHTO T-180 Compaction Test or ninety-five (95) of maximum density as determined by the Standard Proctor Test AASHTO T-99. All tests shall be verified by a soils engineer concurrent with grading and backfilling operations.

8. The sediment control plan must be implemented before grading begins. No graded area is to remain without at least seventy-five (75) percent of vegetative ground cover for more than thirty (30) days without being seeded and mulched or sodded. Also, positive steps must be exercised to prevent transported soil from damaging adjacent property and being deposited in the form of silt in storm drainage systems whether on-site or off-site.

   a. Sediment & Erosion Control Plan Approval:

      i. The sediment and erosion control plan must define the measures that shall be taken to meet erosion control principles and standards as defined in Section C. 8. b. below. The plan must assure that the sediment is not transported from the site by a storm event of 15-year (frequency) 20 minute (inlet time) or less.

      ii. When a plan submitted, the City Engineer may make comments and recommendations. All such comments and recommendations shall be made within forty-five (45) days of receipt. Such comments may pertain to, but may not be limited to:
         A. Erosion and sedimentation control.
         B. Soil use limitation.
         C. Environmental considerations.

      iii. All plans and specifications submitted for review and/or approval shall be prepared by or under the direct supervision of a registered Professional Engineer in the State of Missouri and shall be dated and bear his original seal and signature.

b. Principles and Standards:

i. All excavations, grading, or filling shall have a finished grade not to exceed a thirty-three (33) percent (3 horizontal to 1 vertical) slope. Steeper grades may be approved by the City Engineer if the excavation is through rock or if the excavation or the fill is adequately protected (a designed head wall or toe wall my be required). Turf Reinforced Mattresses (TRM), rock slopes, and other Best Management Practice (BMP) designs may be utilized for slopes in excess of thirty-three (33) percent, but must be designed by a qualified geotechnical engineer hired by the developer and approved by the City Engineer prior to and/or during installation. Retaining walls that exceed a height of forty-two (42) inches shall require the construction of safety guards as identified in the appropriate sections(s) of the adopted IBC Codes and must be approved by the City Building Code Official. Permanent safety guards shall be constructed in accordance with the appropriate sections(s) of the adopted IBC Codes (latest edition). Also, the following water quality issues as a reference can be used: Protecting Water Quality - A field guide to erosion, sediment and storm water best management practices for development sites in Missouri. Publication of this manual was funded in part by the Missouri Department of Natural Resource, and administered by the Water Pollution Control Program, Division of Environmental Quality under an EPA 319 grant. Copies of this reference are available from the Missouri Department of Natural Resources.

ii. Sediment and erosion control plans for sites that exceed 10,000 square feet of grading area shall provide BMPs for land disturbance. BMP's are a schedule of activities, practices or procedures that reduce the amount of soil available for transport or a device that reduces the amount of suspended solids in runoff before discharge to waters of the state. Types of BMP's from storm water control include, but are not limited to:

A. State-approved standard specifications and permit programs;
B. Employee training in erosion control, material handling and storage and housekeeping for maintenance areas;
C. Site preparation such as grading, surface roughening, topsoiling, tree preservations and protection, and temporary construction entrances;

D. Surface stabilization such as temporary seeding, permanent seeding, mulching, sodding, ground cover including vines and shrubs, riprap and geotextile fabric. Mulches may be hay, straw, fiber mats, netting, wood cellulose, corn or tobacco stalks, bark, corn cobs, wood chips or other suitable material which is reasonably clean and free of noxious weeds and deleterious materials. Grasses used for temporary seeding shall be a quick growing species such as rye grass, Italian rye grass or cereal grasses suitable to the area and which will not compete with the grasses sown later for permanent cover.

E. Runoff control measures such as temporary diversion dikes or berms, permanent diversion dikes or berms, right-of-way or perimeter diversion devices, and retention and detention basins; and sediment traps and barriers, sediment basins, sediment (silt) fence and staked straw bale barriers.

F. Runoff conveyance measures such as grass-lined channels, riprap and paved channels, temporary slope drains, paved flumes or chutes; and slope drains may be constructed of pipe, fiber mats, rubble, portland cement concrete, plastic sheets or other materials that adequately will control erosion;

G. Inlet and outlet protection;

H. Streambank protection such as a vegetative greenbelt between the land disturbance and the watercourse. Also, structural protection which stabilizes the stream channel;

I. A critical path method analysis or a schedule for performing erosion control measures; and

J. Other proven methods for controlling runnoff and sedimentation as approved by the City Engineer.

iii. A written Storm Water Pollution Prevention Plan shall be developed for the site in accordance with the Missouri Department of Natural Resources (MDNR) requirements. The plan shall briefly outline and discuss all proposed structural and non-structural BMPs, anticipated sources of any type of storm water pollution from the site, potential impacts to the regional stream conditions, and post-construction maintenance and operation of BMPs.

iv. All BMP designs are to be approved by the City Engineer. Temporary siltation control measures (structural) shall be maintained until at least seventy-five (75) percent vegetative cover of area disturbed is established at a sufficient density to provide erosion control on the site, as determined by the City Engineer. (Refer to the Subdivision Ordinance).

v. Where natural vegetation is removed during grading, vegetation shall be reestablished in such a density (at least seventy-five (75) percent vegetative cover of area disturbed) as to prevent erosion. Permanent type grasses shall be established as soon as possible or during the next seeding period after grading has been completed. (Refer to the Subdivision Ordinance).

vi. When grading operations are completed or suspended for more than thirty (30) days, permanent grass must be established at sufficient density (at least seventy-five (75) percent vegetative cover) to provide erosion control on the site. Between permanent grass seeding periods, temporary cover shall be provided according to the City Engineer's recommendations. (Refer to the Subdivision Ordinance).

vii. All finished grades (areas not to be disturbed by future improvement) in excess of twenty (20) percent slopes (5 horizontal to 1 vertical) shall be mulched and tacked as prescribed in Appendix A of Ordinance No. 46.

viii. Provisions shall be made to accommodate the increased runoff caused by changed soil and surface conditions during and after grading. Unvegetated open channels shall be designed so that gradients result in velocities of two (2) feet per second or less. Open channels with velocities more than two (2) foot per second and less than five (5) foot per second shall be established in permanent vegetation by use of commercially available erosion control blankets or lined with rock riprap or concrete or other suitable materials as approved by the City Engineer. Detention basins, diversions, or other appropriate structures shall be constructed to prevent velocities above five (5) feet per second. (Refer to the Subdivision Ordinance).

ix. The ground adjoining development sites shall be provided with protection from accelerated and increased surface water, silt from erosion, and any other consequences of erosion. Runoff water from developed areas (parking lots, paved sites, buildings, etc.) above the area to be developed shall be directed to diversion ditches, detention basins, concrete gutters and/or underground outlet systems. Sufficiently anchored straw bales may be temporarily substituted with the approval of the City Engineer. (Refer to the Subdivision Ordinance).

x. Development along natural watercourses shall have residential lot lines, commercial or industrial improvements, parking areas or driveways set back a minimum of fifty (50) feet from the top of the existing stream bank or 100-year 20-minute water surface elevation where not defined bank exists. The watercourse shall be maintained and made the responsibility of the subdivision trustees or, in the case of a site plan, by the property owner. Permanent vegetation shall be left intact. Variances may be approved and may include designed streambank erosion control measures and shall be approved by the City Engineer. City of Moscow Mills, Federal Emergency Management Agency, and U.S. Army Corps of Engineers regulations and guidelines shall be followed where applicable regarding site development areas designated as floodplains and wetlands.

xi. All lots shall be seeded and mulched at the rates defined in the Subdivision Ordinance or sodded before an occupancy permit shall be issued except that a temporary occupancy permit may be issued by the Building Department in cases of undue hardship because of unfavorable ground conditions.

xii. All erosion and sediment control facilities shall be inspected following each rainstorm causing significant runoff, or being of sufficient intensity or duration as to stop construction or grading progress.

A. As a result of such inspections, or any time the following are found, the sediment control facilities shall be cleaned of sediment, repaired if damaged, and restored to serviceable conditions:

B. Excess sediment has accumulated in silt control devices,
C. Sediment/erosion control devices have been damaged,
D. Obvious gullies or sediment deposits have formed on the downstream side of control devices, or
E. Sediment has been carried beyond the working site;

xiii. Pre-development and post-development drainage maps area required and must be developed from a base reproduction of the grading plan. The design criteria used in determining the amount of runoff shall be the same as set out in the City of Moscow Mills, Missouri, Subdivision Ordinance, as amended. For areas not in a floodplain, the following information shall be provided by the developer.

A. No sheet flow will normally be allowed over terraces that are steeper than a thirty-three (33) percent slope and/or greater than five (5) feet in height. Berms and/or swales shall be provided to collect the flow at the top of the terrace and carry it to a drainage structure. Total accumulation inside berms and/or swales shall be a maximum of four (4) cubic feet per second.

B. Provide critical cross sections, profiles, and hydraulic computations for ditches and swales with flows in excess of one (1) cubic foot per second and creeks with flows in excess of four (4) cubic feet per second.

xiv. All low places whether on-site or off-site must be graded to allow drainage. This can be accomplished with temporary ditches.

xv. When applicable, the developer must also apply for MDNR Land Disturbance Permit. A copy of the MDNR application or approved permit must be included with this submittal. A copy of the approved MDNR permit must be submitted to the City when obtained.

D. Review Procedures: The City Engineer shall review the grading plan for its conformance to standards and specifications set forth in this Ordinance and other applicable Ordinances. The City Engineer may request modifications in the grading plan. The City Engineer shall then confer approval, conditional approval or disapproval of the grading plan within forty-five (45) days of filing and shall notify the applicant with written reasons for its action.

E. Effect of Grading Plan Approval: Grading Plan approval shall confer upon the developer, for a period of one (1) year from date of approval, the conditional right that the general terms and conditions under which the approval was granted will not be changed by the City Engineer. This one (1) year period may be extended by the City Engineer if the developer has applied in writing for such an extension and the City Engineer determines a longer period should be granted due to unusual circumstances. If an extension is not granted, the grading plan approval is null and void. After approval of the grading plan, the developer may proceed with the grading operations upon the final direction of the City Engineer.

AS-BUILT PLANS

The developer shall cause the "as-built" location of each storm-sewer outfall of the project to be displayed on the "as-built" plans with horizontal coordinates of the end point of the outfall clearly labeled and referenced to the Missouri Coordinate System of 1983 as defined by R.S. Mo 60.401 and shall display the project Grid Factor. In addition, the vertical elevation of each outfall shall be labeled on the "as-built" plans and shall be referenced to the project's vertical datum.

One mylar set, two paper sets, and one digital copy in AutoCAD format of the "as-built" plans shall be submitted to the City Engineer before the City shall release the escrow established insuring or guaranteeing the stabilization and revegetation of the site as described in Section 3 below.

ESCROW REQUIREMENTS

The developer shall post a lenders or escrow agreement insuring or guaranteeing the stabilization and revegetation of the site. The lenders or escrow agreement shall be the following amounts:

Grading sites of 0.01 to 5.00 acres……..$3,000/Acre
Grading sites of 5.01 to 20.00 acres…… $2,000/Acre
Grading sites of greater than 20.00 acres…… $1,500/Acre

____ Two (2) copies of the plan are provided.
Additional copies will be requested upon review.

____ Grading plan review fee is provided.

_____ _____
Applicant's Signature Date

_____ _____
Owner's Signature (additional below) Date

NOTE: By affixing signatures to this application form, the Applicant and Owner hereby verify that: they have reviewed the applicable subdivision regulations; they are familiar with the specific requirements relative to this application; and they take full responsibility for this application. The above signatures further indicate that the information provided on this form and on any additional data attached hereto is true, complete, and accurate.