

GENERAL NOTES:

- I. SOIL:
 - A. Soil preparation and revegetation shall consist of seeding fescue between March 1 and June 1 at a rate of 30 pounds per acre. See Appendix A of the Model Sediment and Erosion Control Regulations for Urban Development.
 - B. Property Owner/Developer assumes full responsibility for performance of grading operation and assurance that all properties and City, County and State roads will be adequately protected.
 - C. If siltation control devices are destroyed by heavy rains, vandalism, etc., they are to be replaced immediately by Contractor.
 - D. Where natural vegetation is removed during grading, vegetation shall be reestablished in such a density 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.
 - E. When grading operations are completed or suspended for more than 30 days, permanent grass must be established at sufficient density to provide erosion control on the site. Between permanent grass seeding periods, temporary cover shall be provided according to the Designated Official's recommendation. All finished grades (areas not to be disturbed by future improvements) in excess of 20 mulched and tacked at the rate of 100 pounds per 1,000 square feet when seeded.
 - F. Any wells and/or springs which may exist on this property should be located and treated in a manner acceptable to the local governing authority.
 - G. All existing trash, debris and broken concrete pieces on site must be removed and legally disposed of off site.
 - H. Debris material from any existing on site building or structure which is scheduled to be removed shall be removed for this development must be legally disposed of off site.
 - I. Soft soils in the bottom and banks of existing or former pond sites or tributaries should be removed, spread out and permitted to dry sufficiently to be used as fill. None of this material should be placed in proposed public right-of-way locations or on any storm sewer location.
 - J. The fill material shall be placed as directed by the Geotechnical Engineer.

II. SILTATION CONTROL:

- A. Siltation control shall consist of temporary berms and swales to divert storm water runoff to a natural discharge point (see Grading Plan for location), at which point there shall be a siltation fence (see details, this sheet). In areas where a berm and swale are not feasible, a single row of siltation fence shall be placed end to end to protect adjacent property and rights-of-way. This shall be the responsibility of the Grading Contractor or Developer.
- B. Upon completion of storm sewers, if any, siltation devices shall be placed on all sides of inlet structures to keep silt out of storm sewer. This shall be the responsibility of the Sewer Contractor or the Developer. All siltation fences shall be securely anchored and properly maintained until all disturbed areas are paved or vegetation is established.
- C. Temporary siltation control measures shall be maintained until vegetative cover is established at a sufficient density to provide erosion control on the site.

GENERAL PRINCIPALS OF THE EROSION CONTROL PLAN:

1. Schedule Clearing and/or Grading
 Coordinate clearing/grading sequence and installation of erosion/sediment control measures to most effectively control erosion. Key sediment control measures shall be installed prior to clearing/grading. Clearing/grading shall be scheduled and phased when practicable. Existing storm water facilities shall be protected.
2. Protect the Land Surface
 Schedule and limit clearing/grading/grubbing to minimize bare soil areas and time of exposure. Stormwater diversions and perimeter protection, to intercept runoff and divert it away from bare soil slopes, are to be installed before clearing/grading begins or ASAP thereafter.
3. Keep Runoff Velocities Low
 Natural vegetation shall be preserved where possible. Exposed areas to be protected ASAP. Practices that shorten or "break" the flows to reduce flow velocities shall be utilized. Stormwater shall be conveyed to stable outlets and water detained in holding ponds or sediment traps before leaving the site.
4. Capture Sediment on the Site
 Design and utilize sediment traps, basins and barriers. Multiple sediment traps/barriers located at the border of disturbed area, at area inlets and where water will discharge onto streets shall be preferred over a single large sediment basin near a site boundary.

SEEDING GUIDELINES:

VEGETATIVE ESTABLISHMENT
 For Urban Development Sites

APPENDIX A

Seeding rates:

Permanent:

- Tall Fescue - 30 lbs./acre
- Smooth Brome - 20 lbs./acre
- Combined: Fescue @ 15 lbs./acre and Brome @ 10 lbs./acre

Temporary:

- Wheat or Rye - 150 lbs./acre (3.5 lbs. per square foot)
- Oats - 120 lbs./acre (2.75 lbs. per square foot)

Seeding periods:

- Fescue or Brome - March 1 to June 1
 August 1 to October 1

- Wheat or Rye - March 15 to November 1
- Oats - March 15 to September 15

Mulch rates: 100 lbs. per 1,000 sq. feet (4,356 lbs. per acre)

- Fertilizer rates:
- Nitrogen 30 lbs./acre
 - Phosphate 30 lbs./acre
 - Potassium 30 lbs./acre
 - Lime 600 lbs./acre

*ENM = Effective neutralizing material as per State evaluation of quarried rock.

MUNICIPAL GRADING NOTES:

1. Notify the City Department of Public Works 48 hours prior to the commencement of grading and/or prior to the commencement of construction.
2. Parking on unsurfaced areas is prohibited to eliminate the condition whereby mud from construction and employee vehicles is tracked onto the existing pavement causing hazardous roadway and driving conditions. Contractor shall keep road clear of mud and debris.
3. The streets surrounding this development and any street used for construction access thereto shall be cleaned throughout the day.
4. Erosion and siltation control shall be installed prior to any grading and be maintained by the Contractor throughout the project until acceptance of the work by the Owner and/or controlling regulatory agency and adequate vegetative growth ensures no further erosion of the soil.
5. Additional siltation control may be required as deemed necessary by the City.
6. Temporary structural siltation control measures shall be maintained by the Contractor until vegetative cover is established at a sufficient density to provide erosion control on the site.
7. Where natural vegetation is removed during grading, vegetation shall be reestablished in such a density as to prevent erosion.
8. When clearing and/or grading operations are completed or suspended for more than 30 days, all necessary precautions shall be taken by the Contractor to retain soil materials on site. Protective measures may be required by the Director of Public Works/City Engineer such as permanent seeding, periodic wetting, mulching or other suitable means.
9. If grading operations occur during a season not favorable for immediate establishment of permanent ground cover, a fast germinating annual such as rye grasses or Sudan grasses shall be utilized to retard erosion, if adequate storm water detention and erosion control devices have not been established.
10. All finished grades (areas not to be disturbed by future improvement) in excess of 20% slopes (5:1) shall be mulched and tacked at the rate of 100 pounds per 1,000 square feet when seeded.
11. The site shall be seeded and mulched at the minimum rates defined in Appendix "A" of the "Model Sediment and Erosion Control Guidelines" or sodded before grading is considered complete by the City.
12. No excavation shall be made so close to the property line as to endanger any adjoining property or any public or private street without supporting and protecting such public or private street or property from settling, cracking or other damage.
13. Storm water pipes, outlets and channels shall be protected by silt barriers and kept free of debris and silt at all times prior to final surface stabilization and/or paving.
14. Siltation fences shall be inspected periodically for damage and for the amount of sediment that has accumulated. Removal of sediment will be required when it reaches 1/2 the height of the siltation fence.
15. Straw bales shall be inspected periodically for deterioration. Bales which have rotted or failed shall be replaced. Removal of sediment will be required when it reaches 1/2 the height of the bales.
16. All fills placed under proposed storm and sanitary sewer lines and/or paved areas, including trench backfills within and off the road right-of-way, shall be compacted to 90% of maximum density as determined by the "Modified AASHTO T-180 Compaction Test" (ASTM D-1557) for the entire depth of the fill. Compacted granular backfill is required in all trench excavations within the street right-of-way and under all paved areas. All tests shall be performed under the direction of and verified by a Geotechnical Engineer concurrent with grading and backfilling operations.
17. Soft soils in the bottom and banks of any existing or former pond sites or tributaries or any sediment basins or traps shall be removed, spread out and permitted to dry sufficiently to be used as fill. None of this material shall be placed in proposed public right-of-way locations or in any storm sewer location.
18. All trash and debris on site, either existing or from construction, must be removed and legally disposed of off site.
19. Debris and foundation material from any existing on site building or structure that is scheduled to be razed for this development must be legally disposed of off site.
20. Any wells, cisterns and/or springs, which may exist on this property, shall be located and sealed in a manner acceptable to the City and the Missouri Department of Natural Resources.
21. All excavations, grading or filling shall have a finished grade not to exceed a 3:1 slope (33%), unless specifically approved otherwise.

SECTION 405.070: GRADING PLAN PROCESS The developer shall submit five (5) copies of the proposed Grading Plan, and a completed Filing Procedures.

- A. application form to the City Engineer. The following information is required for all Grading Plan submittals for approval. The Information Required.
 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 (1) 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, 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 wood lots, streams, rivers, lakes, drains, topography (at least five (5) foot contours intervals; when terrain is irregular or drainage critical, contour interval shall be two (2) foot), and similar features. All topographic data shall directly relate to USGS data.
 4. It shall show existing man-made 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 one hundred (100) yards and their existing uses.
 5. Any proposed alterations to the topography or other natural features is indicated.
 6. All filled places under proposed storm and sanitary sewer lines and/or paved areas shall be of maximum density as determined by the Modified AASHTO T-180 Compaction Test or be compacted to 90% of maximum density as determined by the Standard Proctor Test AASHTO ninety-five (95) ninety (90) % maximum T-99.
 7. All filled places in proposed roads shall be compacted from the bottom of the fill up to 90% of maximum density as determined by the Modified AASHTO T-180 Compaction Test or ninety-five (95) ninety (90) % maximum T-99. All tests shall be determined by the Standard Proctor Test AASHTO ninety-five (95) ninety (90) % maximum T-99. All tests shall be verified by a soils engineer concurrent with grading and backfilling operations.
 8. The sediment control plan should be implemented before grading begins. No graded area is to remain bare without being seeded and mulched. Also, when deemed necessary positive steps should be exercised to prevent this soil from damaging adjacent property and silting up all storm drainage systems whether on or off site.
 9. All low places whether on or off site should be graded to allow drainage. This can be accomplished with temporary ditches. The City Engineer shall review the grading plan for its conformance to standards and Review Procedures.
- C. specifications set forth in this Chapter 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 City Planner and Building Official with written reasons for its action. Grading Plan approval shall confer upon the developer, for a period of one (1) Effect of Grading Plan Approval.
 - D. 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 and under the inspection of the Building Department. After approval of the Grading Plans by the City, the Improvement Installation or Performance Guarantee.
 - E. Owner/Developer must post a financial guarantee of performance as required by Section 405.110. The following items if they apply shall be included in the financial guarantee:
 1. Grading.
 2. Siltation control.
 3. Temporary storm drainage.
 4. Seeding and mulching.

(Ord. No. 1573 §§303.0--303.5, 4-7-88; Ord. No. 1803 §1, 4-5-90)



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All the improvements & facilities and utilities, above ground and underground shown herein were plotted from available information and do not necessarily reflect the actual existence, nonexistence, elevation, size, type, number or location of these or other improvements, facilities, or utilities. The General Contractor and/or owner shall be responsible for verifying the actual location & elevation of all improvements, facilities, & utilities shown or not shown, and said improvements, facilities, & utilities shall be located in the field prior to any grading, excavation or construction of any improvements. These provisions shall in no way absolve any part from complying with the Underground Facility Safety & Damage Prevention Act, Chapter 319, RSMo.

CALL MISSOURI ONE-CALL, 1-800-DIG-RITE.

ENGINEERS CERTIFICATION:
 The following applies to ALL sheets and documents involved in the preparation of the plans and documents for this project. The responsibility for Professional Engineering liability on this project is limited to the set of plans displaying the signature and an original stamped seal of the Engineer on each sheet. ALL responsibility is Disclaimed: until ALL review agency approvals are granted; for all other plan sheets issued prior to this plan set date; for this set when another set is issued after this date; if the sheets are used individually instead of a set. This applies for ALL sheets and documents involved in this project whether this statement appears on them or not. Copyright. All Rights Reserved.

ROBERT E. BAXTER
 NUMBER E-25639
 11/2/04
 ROBERT E. BAXTER # 25639 DATE

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