operations.

- The Contractor shall notify the Soils Engineer at least two days in advance of the start of the grading operation.
- 4. All areas shall be allowed to drain. All low points shall be provided with temporary ditches.
- 5. All filled places, including trench backfills, under buildings, proposed storm and sanitary sewer lines proposed right-of-way and/or paved areas, shall be compacted to 90% of maximum density as determine by the "Modified AASHTO T-180 Compaction Test," (A.S.T.M.-D-1557), or 95% maximum density as determined by the Standard Proctor Test AASHTO T-99. All filled places within public roadways shall be compacted from the bottom of the fill up to 90% maximum density as determined by the ModifiedAASHTO T-180 Compaction Test or 95% of maximum density as determined by the Standard Proctor Test AASHTO T-99, Method "C" (A.S.T.M.-D-698). All test shall be verified by a soils engineer concurrent with grading and backfilling operations. Ensure the moisture content of the soil in fill dreas is to correspond to the compactive effort as defined by the Standard or Modified Proctor Test. Optimum moisture content shall be determined using the same test that was used to the placement of fill. Proof rolling may be required to verify soil stability at the discretion of the City of
- 6. A sediment control plan that includes monitored and maintained sediment control basins and/or straw bales should be implemented as soon as possible. No graded area is to be allowed to remain bare without being seeded and mulched. Care should be exercised to prevent soil from damaging adjacent property and silting up existing downstream storm drainage systems. All erosion control systems shall be inspected and necessary corrections made within 24 hours of any rain storm resulting in 1/2 inch of rain or more.

. Debris and foundation material from any existing on-site building or

- 8. All trash and debris on site, either existing or from construction, must be removed and properly disposed of off-site.
- 3. Soft soil in the bottom and banks of any existing or former pond sites or tributaries or on any sediment basins or traps 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 locations.
- Site preparation includes the clearance of all stumps, trees, bushes, shrubs, and weeds; the grubbing and removal of roots and other surface obstructions from the site; and the demolition and removal of any man-made structures. The material shall be properly disposed of off-site. Topsoil and grass in the fill areas shall be thoroughly disced prior to the placement of any fill. The Soils Engineer shall approve the discing operation.
- Compaction equipment shall consist of tamping rollers, pneumatic—tired rollers, vibratory roller, or high speed impact type drum rollers acceptable to the Soils Engineer. The roller shall be designed so as to avoid the creation of a layered fill without proper blending of successive fill layers.
- 2. The Soils Engineer shall observe and test the placement of the fill to verify that specifications are met. A series of fill density tests will be determined on each lift of fill. Interim reports showing fill quality will be made to the Owner at regular intervals.
- 3. The Soils Engineer shall notify the Contractor of rejection of a lift of fill or portion thereof. The Contractor shall rework the rejected portion of fill and obtain notification from the Soils Engineer of its acceptance prior to the placement of additional fill.
- 4. All areas to receive fill shall be scarified to a depth of not less than 6 inches and then compacted in accordance with the specifications given below. Natural slopes steeper than 1 vertical to 5 horizontal to receive fill shall have horizontal benches cut into the slopes before the placement of any fill. The width and height to be determined by the Soils Engineer. The fill shall be loosely placed in horizontal layers not exceeding 8 inches in thickness and compacted in accordance with the specifications given below. The Soils Engineer shall be responsible for determining the acceptability of soils placed. Any unacceptable soils placed shall be removed at the Contractor's expense.
- The sequence of operation in the fill areas will be fill, compact, verify acceptable soil density, and repetition of the sequence. The acceptable moisture contents during the filling operation are those at which satisfactory dry densities can be obtained. The acceptable moisture contents during the filling operation in the remaining areas are from 2 to 8 percent above the optimum moisture control.
- 16. The surface of the fill shall be finished so that it will not impound water. If at the end of a days work it would appear that there may be rain prior to the next working day, the surface shall be finished smooth. If the surface has been finished smooth for any reason, it shall be scarified before proceeding with the placement of succeeding lifts. Fill shall not be placed on frozen ground, nor shall filling operations continue when the temperature is such as to permit the layer under placement to freeze.
- . Developer must supply City construction inspectors with soil reports prior to or during site soil testing.
- 18. Fill and backfill should be compacted to the criteria specified in the following table:

CATEGORY	MINIMUM PERCENT COMPACTION
Fill in building areas below footings Fill under slabs, walks, and pavement Fill other than building areas Natural subgrade Pavement subgrade Pavement base course	90% 90% 88% 88% 90%

Measured as a percent of the maximum dry density as determined by modified Proctor Test (ASTM-D-1557).

Moisture content must be within 2 percent below or 4 percent above optimum moisture content if fill is deeper than 10 feet.

# REFERENCE BENCHMARK

RM39 AS PUBLISHED ON ST. CHARLES COUNTY, MISSOURI FIRM MAP 29183C0220 E DATED AUGUST 2, 1996

CHISELED SQUARE ON THE NORTH END OF THE WEST HEADWALL OF POST ROAD BRIDGE OVER TRIBUTARY NO. 15

#### SITE BENCHMARK

OLD STONE AT THE NORTHWEST BOUNDARY CORNER. ELEV. - 621.65 (U.S.G.S.)

## PRINCIPALS & STANDARDS

- 1. All excavations, grading, or filling shall have a finished grade not to exceed a 3:1 slope (33%). Steeper grades may be approved by the designated official if the excavation is through rock or the excavation or the fill is adequately protected (a designed head wall or toe wall may be required). Retaining walls that exceed a height of four (4) feet shall require the construction of safety guards as identified in the appropriate section(s) of the adopted BOCA Codes and must be approved by the City Building Department. Permanent safety guards will be constructed in accordance with the appropriate section(s) of the adopted BOCA Codes.
- 2 Sediment and erosion control plans for sites that exceed 20,000 square feet of grading shall provide for sediment or debris basins, silt traps or filters, staked straw bales or other approved measures to remove sediment from run-off waters. Temporary siltation control measures shall be maintained until vegetative cover is established at a sufficient density to provide erosion control on the
- structure which is scheduled to be razed for this development must be 3. Where natural vegetation is removed during grading, vegetation shall be re-established in such a density as to prevent erosion. Permanent type grasses shall be established as soon as possible during the next seeding period after grading has been completed.
  - 4. When grading operations are completed or suspended for more than 14 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. All finished grades (greas 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.
  - 5. Provisions shall be made to accommodate the increased runoff caused by changed soils and surface conditions during and after grading. Unvegetated open channels shall be designed so that gradients result in velocities of 2 fps (feet per second) or less. Open channels with velocities more than 2 fps and less that 5 fps shall be established in permanent vegetation by use of commercial erosion control blankets or lined with rock riprap or concrete or other suitable materials. Detention basins, diversions or any other appropriate structures shall be constructed to prevent velocities above 5 fps. 6. The adjoining ground to development sites (lots) shall be provided with protection from accelerated and increased surface water, silt from erosion, and any other consequence of erosion. Run-off water from developed areas (parking lots, paved sites and buildings) above the area to be developed shall be directed to diversions, detention basins, concrete gutters and/or underground outlet systems. Sufficiently anchored straw bales may be temporarily substituted.
  - Development along natural watercourses shall have residential lot lines, commercial or industrial improvements, parking areas or driveways set back from the undisturbed drainage easement. 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 should be left intact. Variances will include designed streambank erosion control measures. FEMA and U.S. Army Corps of Engineers guidelines shall be followed where applicable regarding site development areas designated as flood plains and wetlands.
  - 8. All lots shall be seeded and mulched 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.
  - 9. The grading and elevations shown on the grading plans are for construction purposes only. Finished grades and slopes will vary from those shown on the plans depending upon location, size, and type of house built on lot. However, care should be taken to insure that the finished grading conforms to the drainage area maps.
  - 10. All erosion control systems shall be inspected and necessary corrections made within 24 hours of any rainstorm resulting in one-half inch of rain or more.
  - 11. Erosion control shall not be limited to what is shown on the plan. Whatever means necessary shall be taken to prevent siltation and erosion from entering natural streams and adjacent roadways. properties and ditches.
  - 12. The Contractor shall assume complete responsibility for controlling all siltation and erosion of the project area. The Contractor shall use whatever means necessary to control erosion and siltation including, but not limited to, staked straw bales and/or siltation fabric fences (possible methods of control are detailed in the plan). Control shall commence with grading and be maintained throughout the project until acceptance of the work by the Owner and/or the City of O'Fallon and/or MODOT. The Contractor's responsibilities include all design and implementation as required to prevent erosion and the depositing of silt. The Owner and/or the City of O'Fallon and/or MODOT may at their option direct the Contractor in his methods as deemed fit to protect property and improvements. Any depositing of silts or mud on new or existing pavement or in new or existing storm sewers or swales shall be removed after each rain and affected areas cleaned to the satisfaction of the Owner and/or the City of O'Fallon and/or MODOT.
  - 13. The developer shall post a financial guarantee of performance(per an approved cost estimate) as required by the O'fallon subdivision ordinance article 403.

# A ROUGH GRADING & SEDIMENT EROSION CONTROL PLAN FOR WILLOW WALK ESTATES

TRACTS OF LAND IN U.S. SURVEY 418, AND IN FRACTIONAL SECTION 17, TOWNSHIP 46 NORTH, RANGE 2 EAST OF THE FIFTH PRINCIPAL MERIDIAN ST. CHARLES COUNTY, MISSOURI



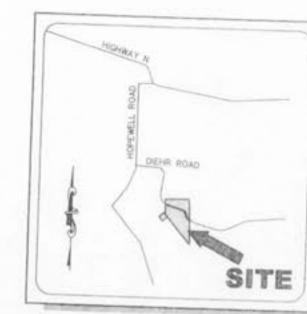


CALL BEFORE YOU DIG! -800-DIG-RITE

### GENERAL NOTES

- 1. Underground utilities have been platted from available information and therefore their locations shall be considered approximate only. The verificattion of the location of all underground utilities, either shown or not shown on these plans shall be the responsibility of the contractor, and shall be located prior to any grading or construction of the improvements.
- 2. No area shall be cleared without the permission of the Project Engineer.
- 3. All existing site improvements disturbed, damaged or destroyed shall be repaired or replaced to closely
- 4. The contractor shall prevent all storm, surface water, mud and construction debris from entering the existing sanitary sewer system.
- 5. Any permits, licenses, easements, or approvals required to work on public or private properties or roadways are the responsibility of the developer.
- 6. The City of O'Fallon shall be notified 48 hours prior to construction for coordination and inspection.
- 7. All construction and materials shall conform to the current construction standards of the City of O'Fallon.
- 8. All trench backfills under paved areas shall be granular backfill. All other trench backfills may be earth material (free of large clods or stones). All trench backfills shall be water jetted. 9. All tops & flowlines built without elevations furnished by the Engineer will be the responsibility of the
- 10. All pipes shall have positive drainage through manholes. No flat base structures are allowed.
- 11. Gas, water and other underground utilities shall not conflict with the depth or horizontal location of existing or proposed sanitary or storm sewers, including house laterals. 12. Concrete pipe for storm sewers shall be Class III, A.S.T.M. C-76 with a minimum diameter of 12" except in the R.O.W. it shall be 15".
- 13. All flored end sections and inlet structures will be concrete."
- 14. All storm inlets must be installed with a 5/8" trash bar across the opening.
- 15. Concrete pipe joints shall be MSD type "A" approved compression—type joints and shall conform to the requirements of the specifications for joints for circular concrete sewer and culvert pipe, using flexible, watertight, rubber-type gaskets (A.S.T.M.-C-443). Band-type gaskets depending entirely on cement for adhesion and resistance to displacement during jointing shall not be used.
- 16. All concrete pipe or ADS N-12 pipe shall be installed with "O-Ring" Rubber type gaskets per M.S.D. standard construction specifications or manufacturer.
- 17. Discharge pipes at sediment basins are sized for future detention basin requirements, will remain after grading operations are completed and will be installed at developers own risk.
- 18. Power poles are not to be disturbed during grading operations. Any adjustments to power poles will be made

19. Traffic control shall be per MoDOT or MUTCD, whichever is most stringent.



LOCATION MAP

### DEVELOPMENT NOTES

1. Area of Tract: 57.92 Ac. Existing Zoning: R-1 (City of O'Fallon) Proposed Use: Single Family Homes Number of Lots Proposed Area in Common Ground 18.55 Acres Area in Right-of-Way 6.03 Acres Area in Lots: 33.33 Acres 8. Average Lot Area (not including common ground) 17,145 Square Feet 9. Average Lot Area (including common ground) 25,229 Square Feet 10. The proposed height and lot setbacks are as follows: Minimum Front Yard: 25 feet

Minimum Side Yard: 5 feet Minimum Rear Yard: 25 feet Minimum Lot Area: 10,000 square feet Maximum Height of Building: 2 1/2 stories or 35 feet 11. Current Owner of Property:

First Land Company of St. Charles County P.O. Box 176 St. Peters, MO 63376 (636) 928-4988 12. Site is served by: Duckett Creek Sanitary District

Culvre River Electric Cooperative Laclede Gas Company St. Charles County Public Water District No. 2 Century Tel Inc. Wentzville School District New Melle Fire Protection District 13. No floodplain exists on this tract per F.I.R.M. #29183 C 0405E.

dated Aug. 2, 1996. 14. Topographic information is per derial topography by Sanborn Associates on U.S.G.S. Datum.

15. Boundary information is per survey as compiled by Bax Engineering during August, 2004. 16. One tree shall be planted for every 50' of street frontage. All

street trees will be planted in the right-of-way. All local streets will be constructed to City of O'Fallon standards. Strawts will consist of 26 foot wide concrete pavement with integral rolled curb centered in a 50 foot right-of-way.

Minimum radius shall be 150 feet. 18. All cul-de-sacs and bubbles will have pavement radii of 42 feet with right-of-way radii of 54 feet. Street intersections shall have a minimum rounding radius of 25 feet with pavement radii

19. Minimum street grades shall be 1% 20. A 4 loot wide concrete sidewalk shall be constructed on one side of streets where indicated

21. All nomes shall have a minimum of 2 off-street parking places 22. All proposed utilities must be located underground. The developer realizes that they will comply with current Tree

Preservation Ordinance Number 1689 and provide landscaping as set forth in Article 23 of the City of O'Follon Zoning Ordinances. 24. Additional lighting may be required by the City of O'Fallon. 25. The following lots are susceptible to street movement: 6-10, 12-15, 21, 22, 23-27, 32-35, 41-45, 47-51, 53-56, 57-61, 65-69, 75-81, 83, 84, 86, 87, 90-94,

26. Calculations in accordance to the Tree Preservation Ordinance: Existing trees 57.74 ocres 11.55 gcres Trees to Remain 18.46 acres Trees removed 39.28 gcres

Meets the City of O'fallon requirements for tree preservation 27. Detention for this development to be provided by the basins

within the common ground areas. 28. All existing creeks and streams will have an associated storm

water easement that will be provided on the Record Plat. 28. All the requirements of the Planning and Zoning Comminssion are addressed.

Fertilizer Rates: Nitrogen

#### LEGEND

P.V.C.

VEGETATIVE ESTABLISHMENT CURB INLET STREET LIGHT For Urban Development Sites DOUBLE CURB INLET AREA INLET Seeding Rates MANHOLE -582 -- PROPOSED CONTOUR Permanent: FLARED END SECTION Tall Fescue - 30 lbs./ac. SPREET SIGN CONCRETE PIPE Smooth Brome - 20 lbs./ac. RENFORCED CONCRETE PIPE NO PARKING SIGN CORRUGATED METAL PIPE Combined Fescue @ 15 lbs./ac. and Brome @ 10 lbs./ac. CAST IRON PIPE POLY VINYL CHLORIDE (PLASTIC) B.O. BLOW OFF ASSEMBLY Wheat or Rye - 150 lbs./ac. (3.5 lbs. per square foot) Temporary: CLEAN OUT - 120 lbs./ac. (2.75 lbs. per square foot) FIRE HYDRANT LOWLINE ELEVATION OF STORM SEWER HOUSE CONNECTION Seeding Periods: O SANITARY SEWER - FLOWLINE ELEVATION OF Fescue or Brome - March 1 to June 1 August 1 to October 1 Wheat or Rye - March 15 to November 1

SHEET INDEX

COVER SHEET 2-4 GRADING PLANS

5-7 SEDIMENT AND EROSION CONTROL PLANS 8 PREDEVELOPED DRAINAGE AREA

9 POST DEVELOPED DRAINAGE AREA 10 TREE PERSERVATION PLAN

11 GRADING DETAILS

30 lbs./qc.

30 lbs./gc.

30 lbs /ac

600 lbs./oc ENM\*

- March 15 to September 15

Phosphate

Potassium

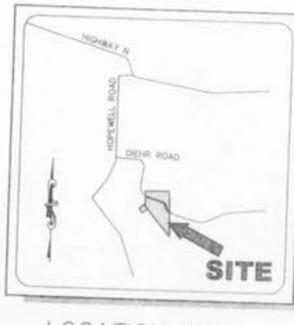
Lime

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

\* ENM = effective neutralizing material as per State

evaluation of quarried rock

O'FALLON FILE NUMBER 5104.01



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hereby specify that the documents intender to be authenticated by my seal are limited this abest, and I hereby disclaim any respon for any part or parts of the architectural or engineering project or survey.



REVISIONS 4-25-06 CITY COMMENTS



ENGINEERING PLANNING SURVEYING

221 Point West Blvd. St. Charles, MO 63301 636-928-5552 FAX 928-1718

03-15-06 04-12901 PROJECT NUMBER SHEET OF FILE NAME DRAWN JDH: MGG

DESIGNED CHECKED