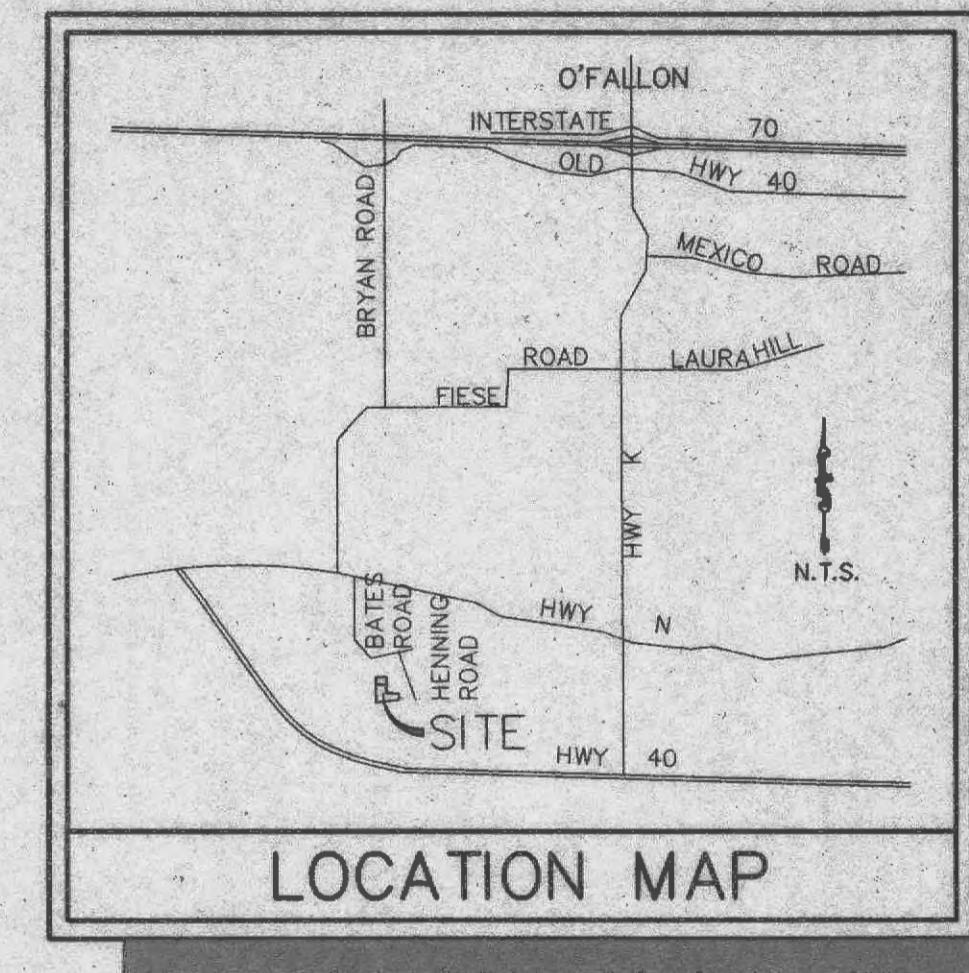


A GRADING, SEDIMENT AND EROSION CONTROL PLAN FOR

# THE KNOLLS

A TRACT OF LAND BEING PART OF  
U.S. SURVEY 1641, TOWNSHIP 46 NORTH,  
RANGE 3 EAST OF THE FIFTH PRINCIPAL MERIDIAN,  
ST. CHARLES COUNTY, MISSOURI

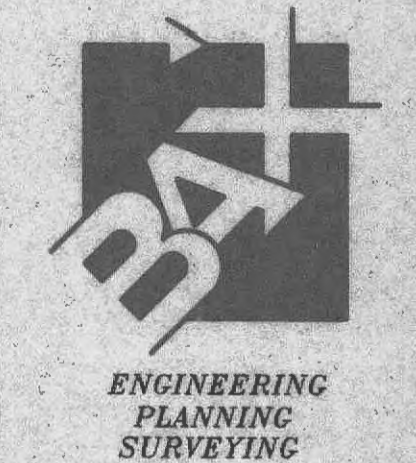


PREPARED FOR:  
**JERRY SCHEIDEGGER**  
205 N. FIFTH STREET SUITE 204  
ST. CHARLES, MO. 63301  
(314) 946-0761

DISCLAIMER OF RESPONSIBILITY  
I hereby specify that the documents intended to be authorized by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other drawings, Specifications, Estimates, Reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.

Copyright 1994  
Box Engineering Company, Inc.  
All Rights Reserved

REVISIONS	



ENGINEERING  
PLANNING  
SURVEYING  
1052 South Cloverleaf Drive  
St. Peters, MO. 63376-6445  
314-928-6552  
FAX 928-1718

12-30-97  
DATE  
97-9197  
PROJECT NUMBER  
1 of 6  
SHEET OF  
9197CON.DWG  
FILE NAME  
MRK MGG  
DRAWN CHECKED

## GRADING NOTES

- A Geotechnical Engineer shall be employed by the owner and be on site during grading operations. All soils tests shall be verified by the Geotechnical Engineer concurrent with the grading and backfilling operations.
- The grading contractor shall perform a complete grading and compaction operation as shown on the plans, stated in these notes, or reasonably implied there from, all in accordance with the plans and notes as interpreted by the Geotechnical Engineer.
- The Contractor shall notify the Soils Engineer at least two days in advance of the start of the grading operation.
- All areas shall be allowed to drain. All low points shall be provided with temporary ditches.
- 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 system.
- Debris and foundation material from any existing on-site building or structure which is scheduled to be razed for this development must be disposed of off-site.
- All trash and debris on site, either existing or from construction, must be removed and properly disposed of off-site.
- 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.
- 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.
- 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.
- 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.
- 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.
- Fill and backfill should be compacted to the criteria specified in the following table:

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

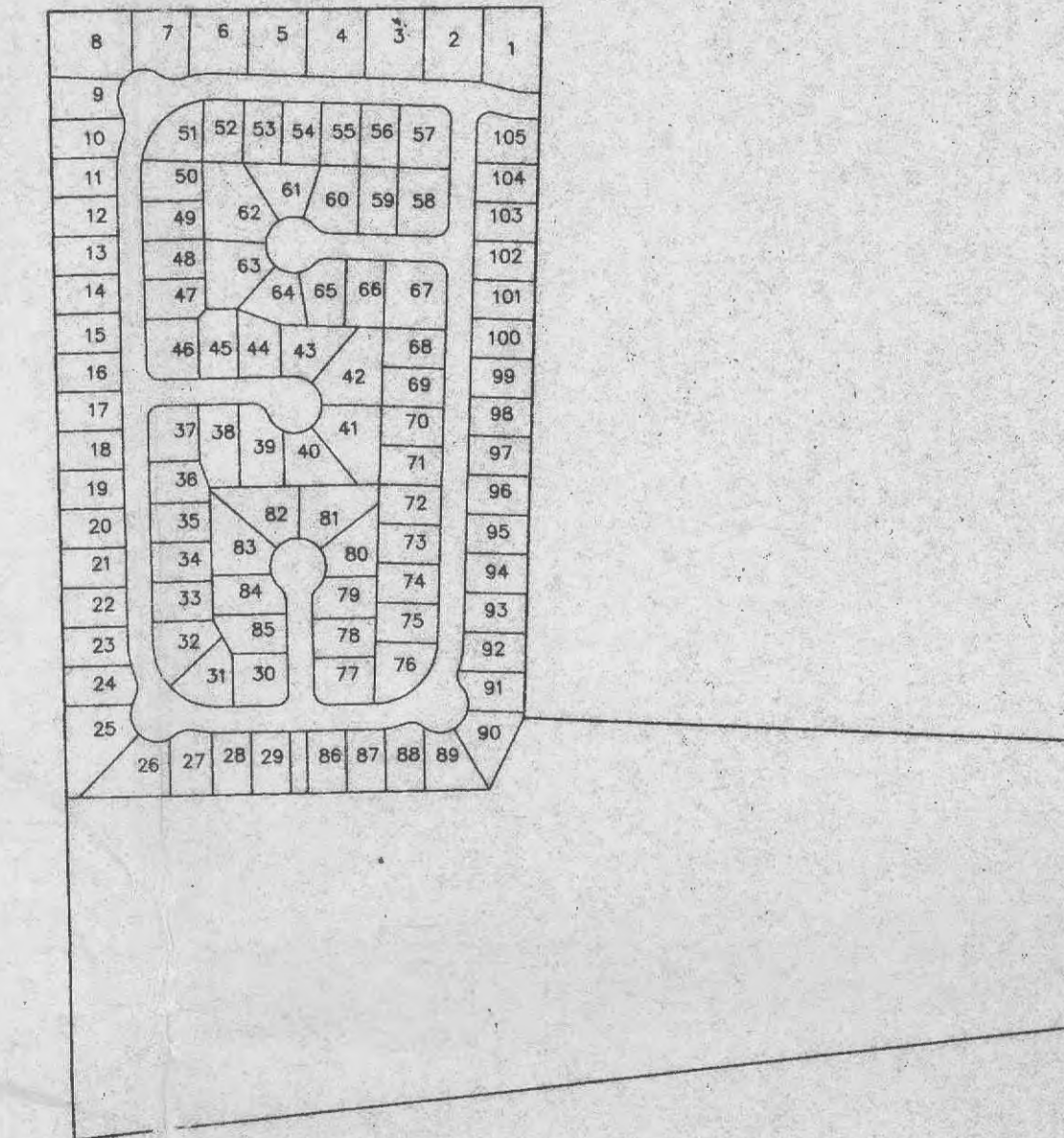
Measured as a percent of the maximum dry density as determined by modified Proctor Test (ASTM-D-1557).  
Moisture content must be within 2 percent below or 4 percent above optimum moisture content if fill is deeper than 10 feet.

## PRINCIPALS & STANDARDS

- 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.
- 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 site.
- 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.
- When grading operations are completed or suspended for more than 30 days permanent grass control 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 (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.
- 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 than 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.
- 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 a minimum of 25 feet from the top of the existing stream bank. 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.
- 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.

## DEVELOPMENT NOTES

- Area of Tract: 60.60 Acres
- Existing Zoning: R-1 PUD Single Family Residential (City of O'Fallon)
- Proposed Use: Single Family Homes
- Number of Lots Proposed: 105 Lots
- Minimum Lot Area Proposed: 9,000 Square Feet
- Average Lot Area (not including common ground): 10,600 Square Feet
- Average Lot Area including Common Ground: 22,655 Square Feet
- The proposed height and lot setbacks are as follows:  
Minimum Front Yard: 25 feet  
Minimum Side Yard: 6 feet  
Minimum Rear Yard: 25 feet  
Maximum Height of Building: 2 1/2 stories or 35 feet
- Site is served by:  
Duckett Creek Sewer District  
Union Electric Company  
St. Charles Gas Company  
St. Charles County Water-District No. 2  
GTE Telephone Company  
Fort Zumwalt School District  
Francis Howell School District  
O'Fallon Fire Protection District  
Wentzville Fire Protection District
- Flood Plain information is per F.I.R.M. #29183 C 0240 E. August 2, 1996
- Topographic information is per Walker and Associates Topo on U.S.G.S. Datum
- Boundary information is per deed and record information as compiled by Box Engineering Co., during July, 1997.
- All streets will be constructed to City of O'Fallon standards. Streets will consist of 26 foot wide concrete pavement with integral rolled curb centered in a 50 foot right-of-way.  
A minimum centerline radius shall be 150 feet.
- 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 of 37 feet.
- Minimum street grades shall be 1%.
- All homes shall have a minimum of 2 off-street parking places with 2-car garages.
- All utilities must be located underground.
- All Lot Lines must have a minimum lot width of 75 ft. at the front building line.
- A 4' foot wide concrete sidewalk shall be constructed on one side of streets as indicated on plan.
- The developer realizes that they will comply with the current Tree Preservation Ordinance Number 1689 and provide landscaping as set forth in Article 23 of the City of O'Fallon Zoning Ordinance.
- The following lots are susceptible to street movement: Lots 1,2,6,7,8,9,10,11,16,17,23,24,25,26,27,28,31,32,33,39,40,41,42,43,50,50,61,62,63,64,65,76,79,80,81,82,83,84,87,88,89,90,91,92,102,105
- A 80' (feet) wide stormwater drainage easement shall be provided along the existing creek, measured from the centerline, 30' (feet) on each side. This shall be shown on the record plat, per City of O'Fallon ordinances.



## KEY MAP

## SHEET INDEX

- 1 - COVER SHEET
- 2 THRU 5 - GRADING/EROSION CONTROL PLAN
- 6 - DETAILS

## GRADING QUANTITY

303,800 cu.yds.  
(INCLUDES 15% SHRINKAGE)

The above quantity is an approximation only. NOT FOR BIDDING PURPOSES. Contractors shall verify quantities prior to construction.

It is the intention of the Engineer for the earthwork to balance on-site. The Engineer shall be notified if any difficulties arise in achieving the balance.

## TREE PRESERVATION CALCULATIONS:

TOTAL AREA OF EXISTING TREE MASSES: 4.18 AC.  
4.18 AC. X .20% = 0.84 AC.  
TOTAL AREA OF PROPOSED CLEARING: 0.00 AC  
TOTAL AREA OF REMAINING TREES: 4.18 AC.  
4.18 AC. > 0.84 AC. = (NO ADDITIONAL TREES NEEDED)

## LANDSCAPE REQUIREMENTS:

LENGTH OF CENTERLINE OF STREETS = 4,654 L.F.  
4,654 L.F. X 2' = 9,308 L.F.  
9,308 L.F. / 50 L.F. = 187 TREES  
TOTAL PROPOSED = 187 TREES

NOTE: PROPOSED REPLACEMENTS TREES WILL BE HARDWOOD VARIETIES WITH 2" MINIMUM DIAMETER AND A HEIGHT OF 8'. TREES TO BE PLANTED ON THE INDIVIDUAL LOTS WILL BE PLANTED AFTER HOME CONSTRUCTION AND YARD FINISH GRADING BY THE HOMEOWNER AS REQUIRED IN THE COVENANTS AND RESTRICTIONS FOR THE KNOLLS.

## LEGEND

- |        |                               |                 |  |
|--------|-------------------------------|-----------------|--|
| C.I.   | CURB INLET                    | ☆               | STREET LIGHT                           |
| D.C.I. | DOUBLE CURB INLET             | ---             | EXISTING CONTOUR                       |
| A.I.   | AREA INLET                    | ---             | PROPOSED CONTOUR                       |
| M.H.   | MANHOLE                       | S <sub>15</sub> | STREET SIGN                            |
| F.E.   | FLARED END SECTION            | ---             | NO PARKING SIGN                        |
| E.P.   | END PIPE                      | W               | WATER VALVE                            |
| C.P.   | CONCRETE PIPE                 | B.O.            | BLOW OFF ASSEMBLY                      |
| R.C.P. | REINFORCED CONCRETE PIPE      | ---             | FLOWLINE ELEVATION OF HOUSE CONNECTION |
| C.M.P. | CORRUGATED METAL PIPE         | ---             | FLOWLINE ELEVATION OF SEWER MAN        |
| C.I.P. | CAST IRON PIPE                |                 |  |
| P.V.C. | POLY VINYL CHLORIDE (PLASTIC) |                 |  |
| C.O.   | CLEAN OUT                     |                 |  |
| ---    | FIRE HYDRANT                  |                 |  |
| ---    | STORM SEWER                   |                 |  |
| ---    | SANITARY SEWER                |                 |  |

File  
**APPROVED**  
1/31/98  
Jan Cullum