

GRADING QUANTITY

GRADING QUANTITY
138,110 cu.yds.
(INCLUDES 8% SHRINKAGE)

The above yardage 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.

GRADING NOTES

- 1. 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.
2. 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, in accordance with the plans and notes as interpreted by the Geotechnical Engineer.
3. 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. 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 over the winter without being seeded and mulched. Care should be exercised to prevent soil from damaging adjacent property and silting up existing downstream storm drainage system.
6. Soft soil in the bottom and banks of any 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 right-of-way locations or on storm sewer locations.
7. 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 unsuitable 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.
8. 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.
9. 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.
10. 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.
11. 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.
12. 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.
13. 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.

Table with 2 columns: CATEGORY and MINIMUM PERCENT COMPACTION. Rows include: 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%).

GENERAL NOTES

- 1. Underground utilities have been plotted from available information and therefore their locations shall be considered approximate only. The verification 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. All manhole tops built without elevations furnished by the Engineer will be the responsibility of the sewer contractor.
3. 8" P.V.C. sanitary sewer pipe shall meet the following standards. A.S.T.M.-D-3034 SDR-35, with wall thickness compression joint A.S.T.M.-D-3212. An appropriate rubber seal waterstop as approved by the sewer district shall be installed between P.V.C. pipe and masonry structures.
4. All filled places, including trench backfills, under buildings, proposed storm and sanitary sewer lines and/or paved, areas, shall be compacted to 90% maximum density as determined by the "Modified AASHTO T-180 Compaction Test," (A.S.T.M.-D-1557). All filled places within public roadways shall be compacted to 95% of maximum density as determined by the "Standard Proctor Test AASHTO T-99, Method C" (A.S.T.M.D.-698).
5. All trench backfills under paved areas shall be granular backfill, and shall be compacted to 90% of the maximum density as determined by the "Modified AASHTO T-180 Compaction Test," (A.S.T.M.-D-1557). All other trench backfills may be earth material (free of large clods or stones). All trench backfills shall be water jetted.
6. All sanitary house connections have been designed so that the minimum vertical distance from the low point of the basement to the flow line of a sanitary sewer at the corresponding house connection is not less than the diameter of the pipe plus the vertical distance of 2 1/2 feet.
7. No area shall be cleared without the permission of the Project Engineer.
8. All grades shall be within 0.2 feet of those shown on the grading plan.
9. No slope shall be steeper than 3:1 or as called for in the soils report for the project. All slopes shall be sodded or seeded and mulched.
10. All construction and materials used shall conform to current City of O'Fallon Standards.
11. All P.V.C. sanitary sewer is to be SDR-35 or equal with clean 1/2" to 1" granular stone bedding uniformly graded. This bedding shall extend from 6" below the pipe to 12" above the springline of the pipe. Immediate backfill over pipe shall consist of same size "clean" or minus stone from springline of pipe to 6" above the top of pipe.
12. All soils test shall be verified by a Soils Engineer concurrent with the grading and backfilling operations.
13. Easements shall be provided for sanitary sewers, and all utilities on the Record Plat. See Record Plat for location and size of easements.
14. Maintenance and upkeep of the common ground area shall be the responsibility of the developer and/or successors.
15. A 25' building line shall be established along all Public Right-Of-Way.

PLANS FOR CONSTRUCTION OF SANITARY SEWERS, STORM SEWERS, GRADING, PAVING, AND WATER MAINS FOR

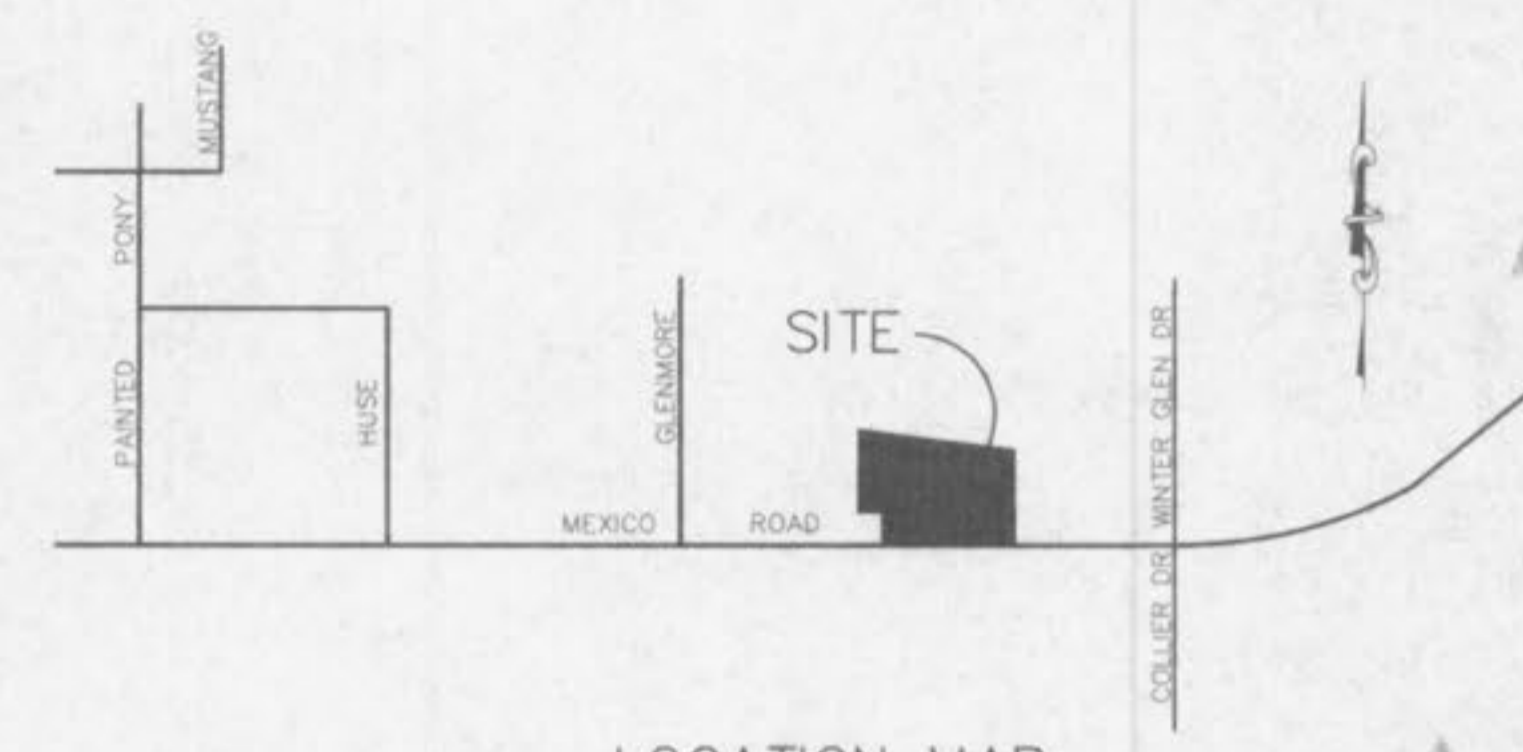
PINEHURST

A TRACT OF LAND BEING PART OF FRACTIONAL SECTION 32, TOWNSHIP 47 NORTH, RANGE 3 EAST, OF THE FIFTH PRINCIPAL MERIDIAN ST. CHARLES COUNTY, MISSOURI

- 14. Fill and backfill should be compacted to the criteria specified in the following table:
17. All water lines shall be laid at least 10 feet horizontally, from any sanitary sewer, storm sewer, or manhole. Whenever water lines must cross sanitary sewers, laterals, or storm drains the water line shall be laid at such an elevation that the bottom of the water line is above the top of the drain or sewer. A full length of water pipe shall be centered over the sewer line to be crossed so that the joints will be equally distant from the sewer and as remote therefrom as possible. This vertical separation shall be maintained for that portion of the water line located within 10 feet horizontally, of any sewer or drain it crosses.
18. All PVC water pipe 6" and larger in size shall be Class C-900 per St. Charles County Public Water District No. 2 Specifications. All other mains shall have a minimum pressure rating of PR-200 or SDR-21. NOTE: Ultra-Blue PVC (MO) Pressure Pipe with a minimum pressure rating of 200 p.s.i. shall also be considered acceptable.
19. Water lines, valves, sleeves, meters, and fittings shall meet all specifications and installation requirements of St. Charles County Public Water District No. 2.
20. All water hydrants and valves shall be ductile iron and installed in accordance with plans and details. All ductile iron pipe for water mains shall conform to A.W.W.A. Specifications C-106 and/or C-108. The ductile iron fittings shall conform to A.W.W.A. Specification CC-110. All rubber gasket joints for water ductile iron pressure pipe and fittings shall conform to A.W.W.A. Specification C-111.
21. All sanitary manholes shall be waterproofed on the exterior in accordance with Missouri Department of Natural Resources specifications 10 CSR-8.120 (7)E.
22. The grading yardage shown on the drawings is an approximation only, and is not for bidding purposes. The contractor shall verify quantities prior to construction. It is the intention of the Engineer for the earthwork to balance onsite. The Engineer shall be notified if any difficulties arise in achieving the balance.
23. Brick will not be used in the construction of sanitary sewer manholes.
24. All pipes shall have positive drainage through manholes. No flat base structures are allowed.
25. All sanitary sewer manholes to be 42 inch minimum inside diameter in accordance with Missouri Department of Natural Resources specification 10 CSR 20-8.
26. The City of O'Fallon shall be notified 48 hours prior to construction for coordination and inspection.
27. The use of high density polyethylene corrugated pipe with an acceptable alternative to reinforced concrete pipe. Pipe shall meet A.S.T.M O-2321 and AASHTO M-294-291. Concrete flared end sections and inlet structures shall be required. Pipe must have smooth interior wall and is not to be used inside the public right-of-way.
28. All concrete pipe shall be installed with O-Ring rubber type gaskets per M.S.D. Standard Construction Specifications.

DEVELOPMENT NOTES

- 1. Area of Tract: 39.80 Acres
2. Existing Zoning: R-1 (City of O'Fallon)
3. Proposed Use: Single Family Homes
4. Number of Lots Proposed: 106 Lots
5. The proposed height and lot setbacks are as follows:
Minimum Front Yard: 25 feet
Minimum Side Yard: 8 feet
Minimum Rear Yard: 25 feet
Minimum Lot Area: 10,000 square feet
Maximum Height of Building: 2 1/2 stories or 35 feet
6. Current Owner of Property: First Land Company of St. Charles County, Inc. P.O. Box 176 St. Peters, MO. 63376
7. Site is served by:
City of O'Fallon Sewer District
Union Electric Company
St. Charles Gas Company
St. Charles County Public Water District No. 2
GTE Telephone Company
Fort Zumwalt School District
O'Fallon Fire Protection District
8. No Flood Plain exists on this site per F.I.R.M. #29183C0237 E dated August 2, 1996.
9. All streets will be constructed to City of O'Fallon standards. Streets will consist of 26 foot wide concrete pavement with integral raised curb centered in a 50 foot right-of-way. Minimum radius shall be 150 feet.
10. All cut-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.
11. Minimum street grades shall be 1%.
12. A 4 foot wide concrete sidewalk shall be constructed on one side of streets where indicated.
13. All homes shall have a minimum of 2 off-street parking places with 2-car garages.
14. All utilities must be located underground.
15. The developer realizes that they will comply with current Tree Preservation Ordinance Number 1688 and provide landscaping as set forth in Article 23 of the City of O'Fallon Zoning Ordinances.
16. Existing tree masses shall be identified during the topographic survey. An overall landscape plan shall be submitted prior to any grading operation.
17. Additional lighting may be required by the City of O'Fallon.
18. The following lots are susceptible to street movement: lots 8,9,10,11,12,15,18,22,24,29,30,31,34,36,37,42,43,44,50,51,57,58,59,60,66,70,71,72,73,77,86,87,89,93,94



LOCATION MAP NO SCALE

LEGEND

- C.I. CURB INLET
D.C.I. DOUBLE CURB INLET
A.I. AREA INLET
M.H. MANHOLE
F.E. FLARED END SECTION
E.P. END PIPE
C.P. CONCRETE PIPE
R.C.P. REINFORCED CONCRETE PIPE
C.M.P. CORRUGATED METAL PIPE
C.I.P. CAST IRON PIPE
P.V.C. POLY VINYL CHLORIDE (PLASTIC)
C.D. CLEAR CUT
FIRE HYDRANT
STORM SEWER
SANITARY SEWER
STREET LIGHT
EXISTING CONTOUR
PROPOSED CONTOUR
STREET SIGN
WATER VALVE
BLOW OFF ASSEMBLY
FLOWING ELEVATION OF HOUSE CONNECTION
FLOWING ELEVATION OF SEWER MAIN
STREET ADDRESS

APPROVED

File Copy

- Contingent upon:
1) Providing a 3' cut-off wall at FE SD,
2) Providing building elevations or documentation that the building will be the same as another development, and
3) Providing the soils report per the sanitary sewer plan approval.

Note: Approval is required by the water district

11/7/96 Colleen Kiamme

BENCHMARKS

- U.S.G.S. BENCHMARK: RM 65 chiseled "L" on south end of west headwall of county Hwy K bridge over Belleau Creek Elevation 509.47
SITE BENCHMARK: chiseled "L" cut in top S.W. corner of double curb inlet on north side Mexico Road opposite Lot 71 Elevation 571.27

Go to Page 2 of 3 of the Grading Plan for Tree Pres. + Landscaping Calculations

SHEET INDEX

Table with 2 columns: SHEET NUMBER and DESCRIPTION. Rows include: 1 OF 27 - COVER SHEET, 2 OF 27 - FLAT PLAN, 3 OF 27 - FLAT PLAN, 4 OF 27 - WATER PLAN, 5 OF 27 - WATER PLAN, 6 OF 27 - GRADING PLAN, 7 OF 27 - GRADING PLAN, 8 OF 27 - STREET PROFILE, 9 OF 27 - STREET PROFILE, 10 OF 27 - STREET PROFILE, 11 OF 27 - STREET PROFILE, 12 OF 27 - SANITARY PROFILE, 13 OF 27 - SANITARY PROFILE, 14 OF 27 - SANITARY PROFILE, 15 OF 27 - SANITARY PROFILE, 16 OF 27 - STORM PROFILE, 17 OF 27 - STORM PROFILE, 18 OF 27 - STORM PROFILE, 19 OF 27 - STORM PROFILE, 20 OF 27 - DRAINAGE MAP, 21 OF 27 - DRAINAGE MAP, 22 OF 27 - CONSTRUCTION DETAILS, 23 OF 27 - CONSTRUCTION DETAILS, 24 OF 27 - CONSTRUCTION DETAILS, 25 OF 27 - CONSTRUCTION DETAILS, 26 OF 27 - CONSTRUCTION DETAILS, 27 OF 27 - WATER DETAILS

PREPARED FOR: FIRST LAND COMPANY OF ST. CHARLES COUNTY, INC. P.O. BOX 176 ST. PETERS, MO 63376 314-928-4988



REVISIONS table with columns: NO., DATE, CITY COMMENTS. Rows 10-22-96 and 11-1-96.



1052 South Cloverleaf Drive St. Peters, MO. 63376-8445 918-928-5552 FAX 928-1718

OCTOBER 8, 1996 DATE: 96-8115 PROJECT NUMBER: 1 OF 27 SHEET OF: 8115COV.DWG FILE NAME: MGG - RF DRAWN: CHECKED