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

AVONDALE

A TRACT OF LAND BEING LOTS 45 THRU 54 AND 60 THRU 67 OF DARDENNE FARMS PLAT 2
AND A TRACT OF LAND IN SECTION 10, TOWNSHIP 46 NORTH, RANGE 3 EAST,
CITY OF O'FALLON,
ST. CHARLES COUNTY, MISSOURI

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, all 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. All grades shall be within 0.2 feet of those shown on grading plan.
14. 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.
15. 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.
16. 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.

NOTE: Trash and debris shall be hauled off site.

GENERAL NOTES

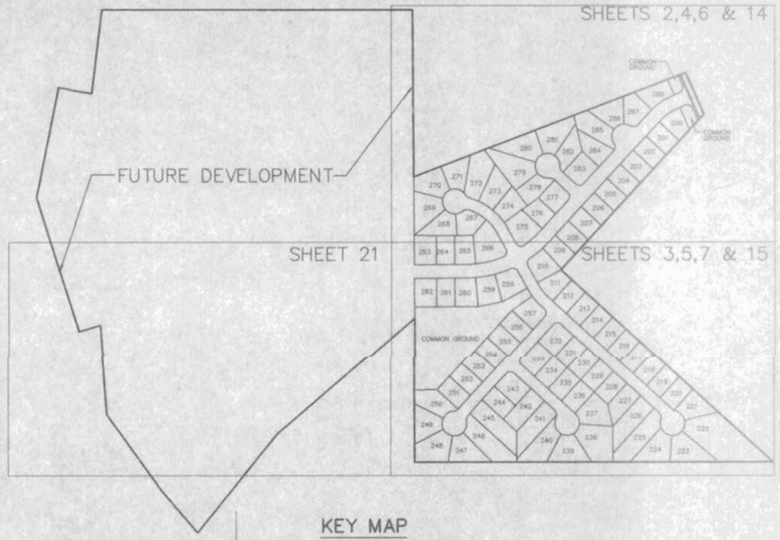
1. Underground utilities have been plotted from available information and therefore their locations shall be considered approximate only. The verification of the location of all underground utilities, either shown or not shown on these plans shall be the responsibility of the contractor, and shall be 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 4" below the pipe to the springline of the pipe. Immediate backfill over pipe shall consist of same size "clean" or minus stone from springline of pipe to 12" 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.
17. All water lines shall be laid at least 10 feet horizontally, from any sanitary sewer, storm sewer, or manhole. 18" vertical clearance from outside of pipe to outside of pipe shall be maintained wherever 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.

DEVELOPMENT NOTES

1. Area of P.U.D.: 35.07 Acres
2. Existing Zoning: R-1
3. Proposed Zoning: R-1
4. Proposed Use: Single Family Homes
5. Number of Lots Proposed: 89 Lots
6. Area in Common Ground: 2.05 Acres
7. Area in Right-of-Way: 6.00 Acres
8. Area in Lots: 27.02 Acres
9. Minimum Lots Area: 10,000 Square Feet
10. Average Lot Area (not including common ground): 13,225 Square Feet
11. Average Lot Area including Common Ground: 14,227 Square Feet
12. The proposed height and lot setbacks are as follows:

Minimum Front Yard:	25 feet
Minimum Side Yard:	6 feet
Minimum Rear Yard:	25 feet
Minimum Lot Area:	10,000 square feet
Maximum Height of Building:	2 1/2 stories or 35 feet

13. Current Owner of Property: Kaplan Lumber Co.
P.O. Box 340
St. Peters, MO 63376
14. Site is served by:
Duckett Creek Sewer District
Union Electric Company
St. Charles Gas Company
Missouri Cities Water Company
GTE Telephone Company
Fort Zumwalt School District
O'Fallon Fire Protection District
15. No Flood Plain exists on this site per F.I.R.M. #29183 0115D dated Dec. 15, 1992.
16. Topographic information is per topographic survey by Walker & Associates during January,1996
17. Boundary information is per survey by Bax Engineering Co. dated January, 1996
18. All lots shall have two (2) trees (deciduous) planted in front yard.
19. 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. Minimum radius shall be 150 feet.
20. 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.
21. Minimum street grades shall be 1%.
22. A 4 foot wide concrete sidewalk shall be constructed on one side of streets where indicated.
23. All homes shall have a minimum of 2 off-street parking places with 2-car garages.
24. All utilities must be located underground.
25. 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'Fallon Zoning Ordinances.
26. The 10 smallest lots in this development will all be 10,000 square feet.
27. The developer shall receive approval from St. Charles County for access onto Knaust Road and shall provide such permission to the City Engineer and the City Planner.
28. The developer realizes that only 30% of the site may be covered by structures.
29. Proposed water line will be approved by Missouri American Water Company prior to construction plan approval.
27. 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.
28. All existing site improvements disturbed, damaged or destroyed shall be repaired or replaced to closely match preconstruction conditions.
29. The contractor shall prevent all storm, surface water, mud and construction debris from entering the existing sanitary sewer system.
30. All construction and materials shall conform to the current construction standards of the Duckett Creek Sanitary District.
31. The Duckett Creek Sanitary District shall be notified at least 48 hours prior to construction for coordination and inspection.
32. All sanitary and storm sewer trench backfills shall be water jetted. Granular backfill will be used under pavement areas.
33. All existing improvements disturbed during construction of the offsite sewer line shall be repaired or replaced in kind.
34. All creek crossings shall be grouted rip rap as directed by district inspector.



KEY MAP

LOCATION MAP

NO SCALE

LEGEND

C.I. CURB INLET	582 EXISTING CONTOUR
D.C.I. DOUBLE CURB INLET	582 PROPOSED CONTOUR
A.I. AREA INLET	STREET SIGN
M.H. MANHOLE	WATER VALVE
F.E. FLARED END SECTION	BLOW OFF ASSEMBLY
E.P. END PIPE	FLOWLINE ELEVATION OF HOUSE CONNECTION
C.P. CONCRETE PIPE	FLOWLINE ELEVATION OF SEWER MAIN
R.C.P. REINFORCED CONCRETE PIPE	XXX STREET ADDRESS
C.M.P. CORRUGATED METAL PIPE	
C.I.P. CAST IRON PIPE	
P.V.C. POLY VINYL CHLORIDE (PLASTIC)	
C.O. CLEAN OUT	
FIRE HYDRANT	
STORM SEWER	
SANITARY SEWER	
STREET LIGHT	

GRADING QUANTITY
80,000 cu.yds.
(INCLUDES 15% 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.

SITE BENCHMARK: = 580.09
"O" in open on top of fire hydrant at S.E. corner of High Trail Drive and Knaust Road. Approximately 205' from N.E. corner of site.

APPROVED
6/12/96
Colleen Kramer

SHEET INDEX

① No street lights
② No street signs
③ water main not complete

PREPARED FOR:
TOM JOHNSON CONSTRUCTION
413 KATY LANE
ST. CHARLES, MO 63303
PHONE: (314) 928-6420

REVISIONS
4/29/96 DUCKETT CREEK
4/29/96 CITY OF O'FALLON
5/17/96 DUCKETT CREEK

ENGINEERING
PLANNING
SURVEYING
1052 South Cloverleaf Drive
St. Peters, MO. 63376-6445
314-928-5552
FAX 928-1718

3-13-96
DATE
95-7230
PROJECT NUMBER
1 OF 27
SHEET OF
7230CON.DWG
FILE NAME
PJS
DRAWN CHECKED

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