

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 therefrom, 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 shall 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. Developer must supply City construction inspectors with soil reports prior to or during site soil testing, if reports have been prepared for the project.
- 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.

GENERAL NOTES

- 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.
- All manhole tops & flowlines built without elevations furnished by the Engineer will be the responsibility of the sewer contractor.
- 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.
- 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).
- 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.
- 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.
- No area shall be cleared without the permission of the Project Engineer.
- 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 some size "clean" or minus stone from springline of pipe to 12" above the top of pipe.
- All soils test shall be verified by a Soils Engineer concurrent with the grading and backfilling operations.
- Easements shall be provided for sanitary sewers, and all utilities on the Record Plat. See Record Plat for location and size of easements.
- Maintenance and upkeep of the common ground area shall be the responsibility of the developer and/or successors.
- A 25' building line shall be established along all Public Rights-Of-Ways.
- 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.
- All PVC water pipe shall conform to A.S.T.M.-D-2241, SDR 21 Standard Specification for P.V.C. Pressure Pipe, 200 P.S.I. working pressure for water, with approved joint.
- Water lines, valves, sleeves, meters, and fittings shall meet all specifications and installation requirements of The City of O'Fallon.
- 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.
- All sanitary manholes shall be waterproofed on the exterior in accordance with Missouri Department of Natural Resources specifications 10 CSR-8.120 (7)E.
- Brick will not be used in the construction of sanitary sewer manholes.
- All pipes shall have positive drainage through manholes. No flat base structures are allowed.
- The City of O'Fallon shall be notified 48 hours prior to construction for coordination and inspection.
- 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.
- All existing site improvements disturbed, damaged or destroyed shall be repaired or replaced to closely match pre-construction conditions.
- The contractor shall prevent all storm, surface water, mud and construction debris from entering the existing sanitary sewer system.
- All construction and materials shall conform to the current construction standards of the City of O'Fallon.
- All sanitary and storm sewer trench backfills shall be water jetted. Granular backfill will be used under pavement areas.
- All existing areas disturbed during construction of the off-site sanitary sewer line shall be seeded and mulched to prevent erosion.
- All sanitary sewer laterals shall be a minimum of 4" in diameter per City of O'Fallon.
- No flushing hydrants or water meters shall be located in driveways and or walkways.
- All storm inlets must be installed with a 5/8" trash bar across the opening, except for inlets in St. Charles County Right-of-Way.(A1 31)
- 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".
- The ADS N-12 pipe shall have a smooth interior wall.

A SET OF IMPROVEMENT PLANS FOR
THE MEADOWS OF PARKWOOD ESTATES

A TRACT OF LAND BEING PART OF
U.S. SURVEY NO. 55,
TOWNSHIP 47 NORTH, RANGE 3 EAST,

VEGETATIVE ESTABLISHMENT
For Urban Development Sites
APPENDIX A

Seeding Rates:
Permanent:
Tall Fescue - 30 lbs./ac.
Smooth Brome - 20 lbs./ac.
Combined Fescue @ 15 lbs./ac. and Brome @ 10 lbs./ac.
Temporary:
Wheat or Rye - 150 lbs./ac. (3.5 lbs. per square foot)
Oats - 120 lbs./ac. (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 15
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./ac.
Phosphate 30 lbs./ac.
Potassium 30 lbs./ac.
Lime 600 lbs./ac. ENM*

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

GENERAL NOTES (CONT.)

- 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.
- When HDPE pipe is used, City of O'Fallon specifications or manufacturers specifications, which ever are more stringent, shall be followed.
- The use of High Density Polyethylene Corrugated pipe, ADS N-12 or equal will be permitted as an acceptable alternative to reinforced concrete pipe, ADS N-12 HC shall be used for all ADS pipe greater than 36". Pipe shall meet A.S.T.M.-D-2321 and A.A.S.H.T.O. M-294-291. H.D.P.E. pipe will not be allowed in St. Charles County Right-of-Way.
- All flared end sections and inlet structures will be concrete.
- All storm sewer pipe installed in the Public Right-of-Way shall be Reinforced concrete Class III pipe.
- 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.
- Blow-off hydrants and water meters shall not be located in any pavement or hard surfaced area including, but not limited to, driveways, sidewalks, and streets. Since the location of all such areas is not shown on this plan all costs to relocate any blow-off hydrants and water meters from any pavement or hard surfaced areas shall be borne by the Developer or the Builders.
- All creek crossings shall be grouted rip-rap as directed by District inspectors. (All grout shall be high slump ready-mix concrete.)
- Existing sanitary sewer service shall not be interrupted.
- Pre-manufactured adapters shall be used at all PVC to DIP connections. Rubber boot/Mission-type couplings will not be allowed.
- Any permits, licenses, easements, or approvals required to work on public or private properties or roadways are the responsibility of the developer.
- No slopes shall exceed 3(H):1(V).
- Driveway locations shall not interfere with the sidewalk curb ramps.
- All sign posts and backs and bracket arms shall be painted black using Carboline Rustbond Penetrating Sealer SG and Carboline 133 HB point (or equivalent as approved by the City of O'Fallon and MoDOT).
- City approval of the Construction plans does not mean that Single Family and Two Family dwelling units can be constructed on lots without meeting the minimum building setbacks as required by the Zoning Code.
- Sidewalks and sidewalk curb ramps shall be constructed in accordance with the current approved "Americans with Disabilities Act Accessibility Guidelines" (A.D.A.A.G.). If any conflict occurs between the above information and the plans the A.D.A.A.G. shall take precedence and the contractor prior to any construction shall notify the Project Engineer.
- 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. 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 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 City of O'Fallon.
- Only wyes are to be used for lateral connection to sanitary mains. Tees may be used only if approved by the City of O'Fallon.
- St. Charles County Highway Department shall be notified 24 hours prior to the start of construction. Contact Vance Gribble, Chief Inspector, at 636-949-7305.
- A Special Use Permit shall be obtained from St. Charles County Highway Department before any work is performed within Plackemeier Road right-of-way. Contact Donna C. Roy, Highway Project Engineer, at 636-949-7305.



DEVELOPMENT NOTES

- Area of tract: 10.28 Acres
- Existing Zoning: "R-1" Single Family Residential
- Proposed Use: Single Family Residential
- Number of Lots Proposed: 29 Single Family
- Yard Requirements - "R-1"
 - A. Front Yard: 25 Feet
 - B. Side Yard: 6 Feet
 - C. Rear Yard: 25 Feet
- Height Requirement: "R-1": 2 1/2 stories or 35 feet
- Enclosed decks must maintain a 25 foot setback from rear property line.
- Current Owner: J & M Investments L.L.C. 5733 Westwood St. Charles, MO 63304
- The site is served by the following:
 - A. Sanitary Sewers: City of O'Fallon
 - B. Water: St. Charles County P.W.S.D. #2
 - C. Electric: AmerenUE Electric Company
 - D. Telephone: CenturyTel Telephone Company
 - E. Gas: St. Charles Gas Company
 - F. School: Fort Zumwalt
 - G. Fire: O'Fallon Fire Protection District
- No flood plain exists on this site per F.I.R.M. #29183C0237E. Dated: Revised August 2, 1996.
- All local 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.
- All cul-de-sacs and bubbles will have a minimum pavement radii of 40 feet with a minimum right-of-way radii of 52 feet. Street intersections shall have a minimum rounding radii of 25 feet with pavement radii of 37 feet.
- Minimum street grades shall be 1%.
- A 4 foot wide concrete sidewalk shall be constructed on one side of streets where indicated.
- All homes shall have a minimum of 2 off-street parking places with 2-car garages
- All 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'Fallon Zoning Ordinances.
- Additional lighting may be required by the City of O'Fallon
- The following lots are susceptible to street movement: 1, 2, 6, 7, 10, 11, 12, 13, 14, 17, 18, 19 & 20
- Calculations in accordance to the "Tree Preservation Ordinance":
 - Existing Trees = 7.20 Acres
 - Saved Trees = 0.42 Acres (6%)
 - Trees Removed = 6.78 Acres (94%)
 - Trees required to be replaced = 7.20 x .20 = 1.44
 - 1.44 - .42 = 1.02 Acres
- 1.02 Acres to be replaced @ 15 trees per acre
- Lot Trees = 1 Tree/Lot, 2 Trees per corner lot = 34 trees
- Total Trees to be planted = 34+16 = 50 trees
- Note: Proposed trees shall be hardwood varieties with a 2" minimum diameter and a minimum height of 8'. Trees to be planted on the individual lots shall be planted after home construction and yard finish grading by the homeowner, as required by the covenants and restrictions.
- Street trees shall be centered within the area between back of curb and sidewalk or back of curb and property line.
- The location of the 50 trees to be planted will be shown on the Site Plan. See sheet 2 of 18.
- Stormwater detention will be provided on site in the form of a Dry Detention Basin.
- Maximum slope on yard slopes will be 3:1.
- Common ground and stormwater detention areas will be maintained by the homeowner's association.



SHEET INDEX

- COVER SHEET
- SITE PLAN
- GRADING PLAN
- WATER PLAN
- STREET PROFILES
- WARPING DETAILS
- SANITARY SEWER PROFILES
- STORM SEWER PROFILES
- DRAINAGE AREA MAP
- EXISTING DRAINAGE MAP
- PAVEMENT DETAILS
- WATER DETAILS
- CONSTRUCTION DETAILS

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.O. CLEAN OUT
- F.I. FIRE HYDRANT
- S.S. STORM SEWER
- S.S. SANITARY SEWER
- S.L. STREET LIGHT
- EXISTING CONTOUR
- PROPOSED CONTOUR
- STREET SIGN
- NO PARKING SIGN
- WATER VALVE
- W.D. WELD OFF ASSEMBLY
- F.L.E. FLOWLINE ELEVATION OF HOUSE CONNECTION
- F.L.E. FLOWLINE ELEVATION OF SEWER MAIN

REFERENCE BENCHMARK

ELEV=542.80 NAVD88 DATUM (GRS STATION F-149)
USC&GS BRASS VERTICAL MARK DISK STAMPED "F 149 1935"
SET IN A 6 INCH SQUARE CONCRETE MONUMENT, PROJECTING ABOUT 2.5 INCHES ABOVE THE GROUND SURFACE, LOCATED IN THE NORTHEAST ANGLE OF A RAILROAD CROSSING AT NORTH MAIN STREET, SOUTH OF THE ENTRANCE TO THE CITY OF O'FALLON MUNICIPAL CENTRE. IT IS 46.5 FEET NORTH OF THE CENTER OF THE TRACKS, 2.4 FEET EAST OF A GUY POLE, 9.5 FEET EAST OF THE EAST EDGE OF SIDEWALK AND 5.7 FEET SOUTHWEST OF A PLASTIC BURIED CABLE MARKER AND PEDESTAL.

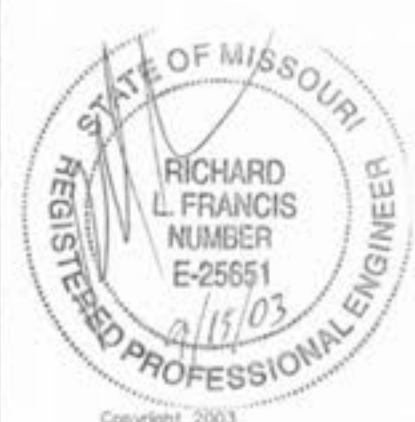
SITE BENCHMARK

ELEV=540.64 FOUND IRON PIPE AT THE SOUTHEAST CORNER OF SUBJECT PROPERTY.

PREPARED FOR: J & M INVESTMENTS L.L.C.
5733 WESTWOOD
ST. CHARLES, MO. 63304
(636) 441-0200

IMPROVEMENT PLANS FOR - THE MEADOWS OF PARKWOOD

DECLARATION OF RESPONSIBILITY
I hereby certify that the documents intended to be submitted for my seal are correct 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.



REVISIONS

DATE	REVISIONS
04/02/03	CITY COMMENTS
04/08/03	CITY COMMENTS
05/29/03	REVISIONS
07/15/03	COUNTY COMMENTS
07/25/03	COUNTY COMMENTS
09/08/03	CITY COMMENTS
09/12/03	CITY COMMENTS

RECEIVED
FEB 23 2004

APPROVED
C. J. [Signature]

ENGINEERING PLANNING SURVEYING
1052 South Cloverleaf Drive
St. Peters, MO. 63376-6445
636-928-5552
FAX 928-1718

FEB. 19, 2003
DATE
02-12003
PROJECT NUMBER
1 OF 18
SHEET OF
12003C0V.DWG.
FILE NAME
JLM
DRAWN
PBS MCG
DESIGNED CHECKED

CALL BEFORE YOU DIG!
1-800-DIG-RITE