

APPROVED

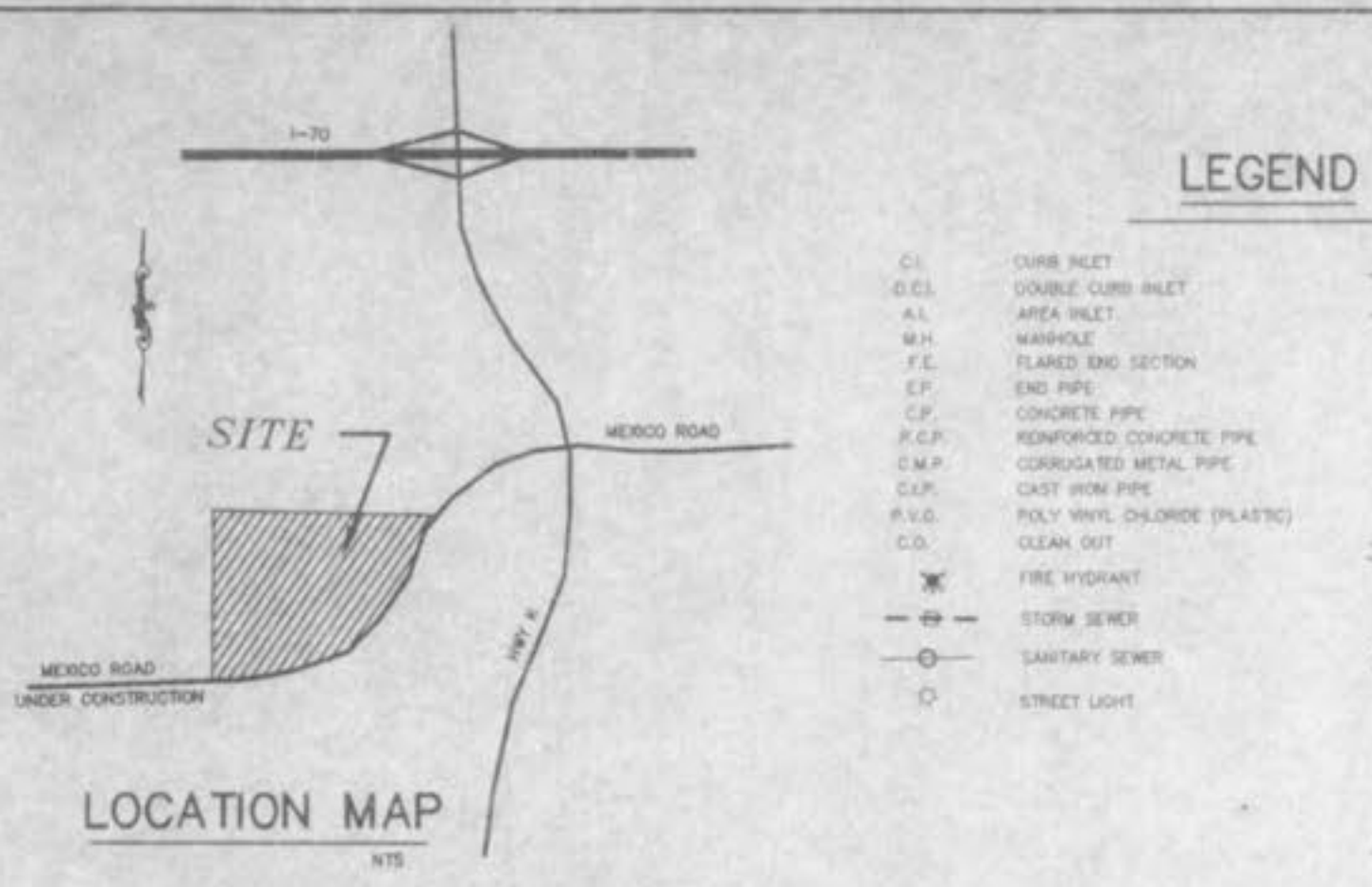
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Contingent on developer submitting copy of all site construction essential for sanitary sewer. No off-site construction prior to submitted essential documents to this office.  
Jim King  
4-20-95

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

# WINTERHAVEN

A TRACT OF LAND BEING PART OF U.S. SURVEY 55 AND PART OF FRACTIONAL SECTION 32, T.47 N., R.3 E., ST. CHARLES COUNTY, MISSOURI



LOCATION MAP  
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 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.
- 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.
- 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 disking 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 8 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.

## LEGEND

- CURB INLET
- DOUBLE CURB INLET
- AREA INLET
- MANHOLE
- FLARED END SECTION
- END PIPE
- CONCRETE PIPE
- REINFORCED CONCRETE PIPE
- CORRUGATED METAL PIPE
- CAST IRON PIPE
- POLY VINYL CHLORIDE (PVC)
- CLEAN OUT
- FIRE HYDRANT
- STORM SEWER
- SANITARY SEWER
- STREET LIGHT
- EXISTING CONTOUR
- PROPOSED CONTOUR
- STREET SIGN
- WATER VALVE
- BLOW OFF ASSEMBLY
- FLOWLINE ELEVATION OF HOUSE CONNECTION
- FLOWLINE ELEVATION OF SEWER MAIN
- STREET ADDRESS

14. 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.

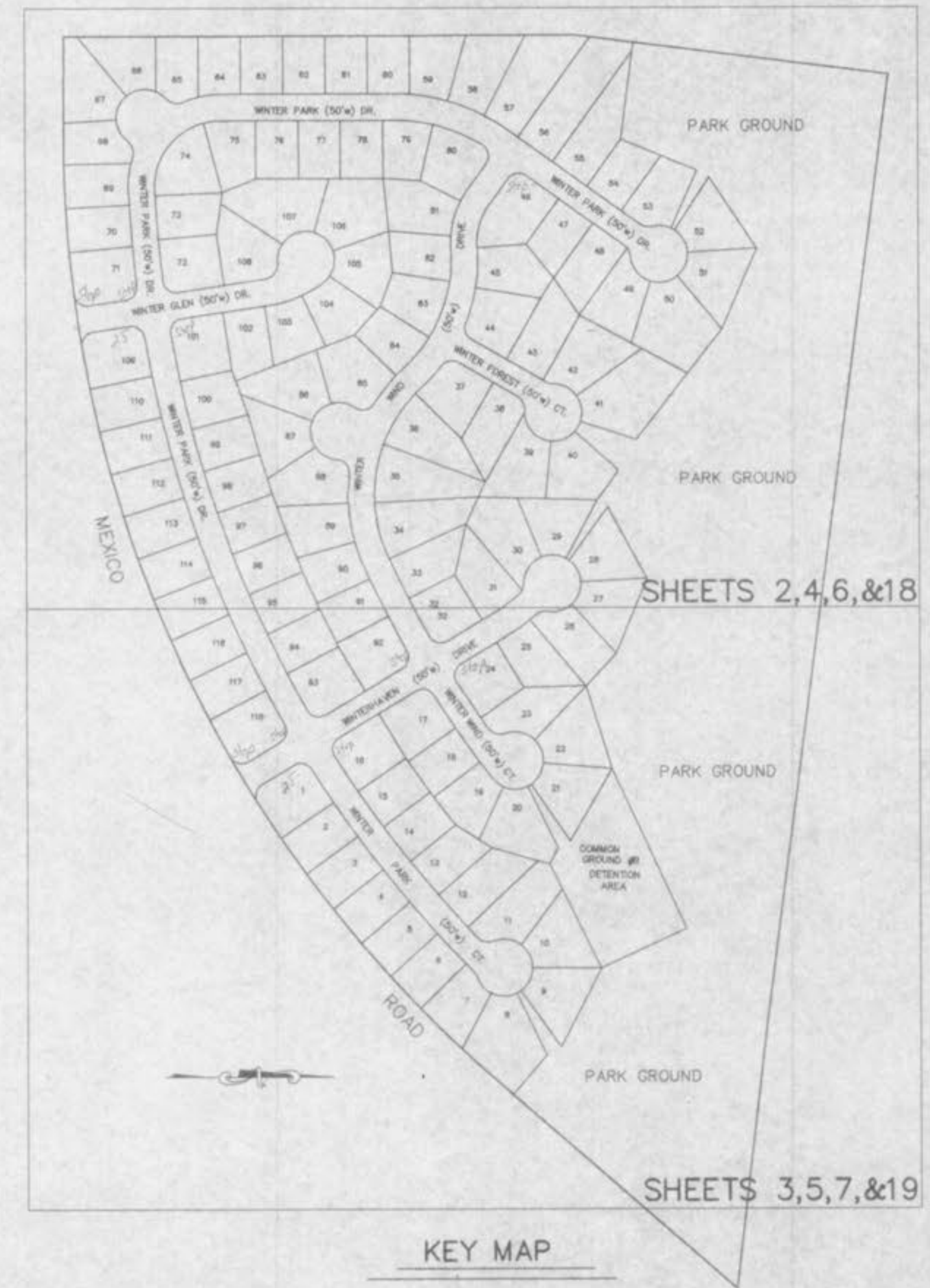
## GENERAL NOTES

- 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 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 w/oth 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 grades shall be within 0.2 feet of those shown on the grading plan.
- 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.
- All construction and materials used shall conform to current City of O'Fallon Standards.
- 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 6" 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 Right-Of-Way.

- All water lines shall be laid on 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.
- 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.
- Water lines, valves, sleeves, meters, and fittings shall meet all specifications and installation requirements of St. Charles County Public Water District No. 2.
- 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.
- 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.
- 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.
- All sanitary sewer manholes to be 42 inch minimum inside diameter in accordance with Missouri Department of Natural Resources specification 10 CSR 20-8.
- The City of O'Fallon shall be notified 48 hours prior to construction for coordination and inspection.

## DEVELOPMENT NOTES

- Existing Zoning: R-1 P.U.D.
- Number of Lots Proposed: 118 Lots
- Area of Tract: 56.850 acres
- Area in R.O.W.: 7.520 acres
- Area in Lots: 30.512 acres
- Area in Common Ground: 1.182 acres
- Area in Park Ground: 17.634 acres
- Average Lot Area: 11,263 sq.ft.
- Average Lot Area (incl.common ground): 11,699 sq.ft.
- Minimum Lot Area: 8,800 sq.ft.
- 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
- Current Owner of Property and Developer: FIRST ST CHARLES CO. CONST. CO. P.O. Box 176 St. Peters, MO 63376 314-928-4988
- Site is served by:
  - City of O'Fallon Sewer District 281-2858
  - Union Electric Company 639-8210
  - St. Charles Gas Company 946-2422
  - St. Charles County Public Water District No. 2 561-3737
  - GTE Telephone Company 332-7366
  - Ft. Zumwalt School District 272-6620
  - O'Fallon Fire Protection District 272-3493
- Boundary information is per survey by Box Engineering Co. dated June 10, 1994.
- Topographic information is per topographic survey provided by owner.
- 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.
- All cul-de-sacs will have pavement radii of 42 feet with right-of-way radii of 54 feet. Street intersection shall have a minimum rounding radii of 25 feet with pavement radii of 37 feet.
- Minimum street grades shall be 1%.



KEY MAP

- The minimum house size will be 1,100 square feet.
- All utilities must be located underground.
- Siltation control devices shall be approved by the City Engineer. Additional siltation control, if required, will be placed at the direction of the soils Engineer on site and/or the City Engineer prior to placement.
- The Developer shall comply with current Tree Preservation Ordinance Number 1689 and provide landscaping as set forth in Article 23 of the City of O'Fallon Zoning Ordinance.
- 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 spaces with 2-car garages.
- Flood plain information is per F.I.R.M. Maps # 29183 C0116 D and 29183 C0110 D.
- This project shall be developed and platted in one phase only.

## 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 4 Elevation 559.04
- 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

## SHEET INDEX

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REVISIONS

DATE	BY	DESCRIPTION
12/27/94	JT	ADD COMMENTS
3/14/95	JT	ADD COMMENTS



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

NOV. 7, 1994  
DATE  
94-5208  
PROJECT NUMBER  
1 OF 25  
SHEET OF  
5208CON.DWG  
FILE NAME  
B-JB  
DRAWN CHECKED

PREPARED FOR:  
FIRST ST. CHARLES COUNTY CONSTRUCTION CO.  
P.O. BOX 176  
ST. PETERS, MO 63376  
(314) 928-4988