

# A SET OF IMPROVEMENT PLANS FOR WHITEGATE VILLAS

A TRACT OF LAND BEING PART OF THE NORTHWEST QUARTER OF SECTION 4, TOWNSHIP 46 NORTH, RANGE 3 EAST, AND PART OF SECTION 33, TOWNSHIP 47 NORTH, RANGE 3 EAST, ST. CHARLES COUNTY, MISSOURI

## 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:

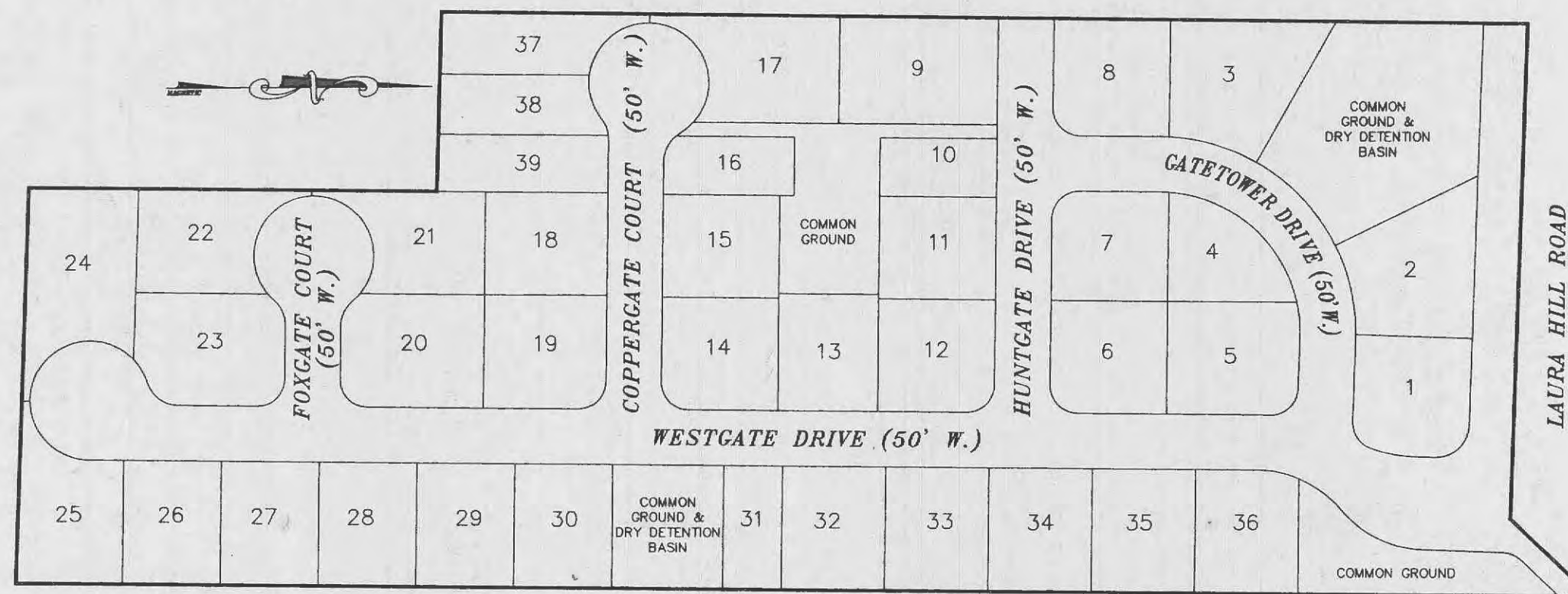
CATEGORY	MINIMUM PERCENT COMPACTION
Fill in building areas below footings	90%
Fill under slabs, walks, and pavement	90%
Fill other than building areas	88%
Natural subgrade	88%
Pavement subgrade	90%
Pavement base course	90%

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.

## 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 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 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.
- 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 15' building line shall be established along all Public Rights-Of-Way.
- 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 Public Water Supply District No. 2 of St. Charles County.
- 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 (7E).
- 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.



**BENCHMARK**  
U.S.G.S. ELEV. = 581.74  
"X" CUT ON THE WEST BOLT OF A FIRE HYDRANT LOCATED AT THE NORTHEAST CORNER OF MILL POND DRIVE AND SPRING HILL DRIVE.  
**SITE ELEV. 592.02**  
OLD IRON PIPE 15.99' SOUTH OF THE NORTHWEST CORNER OF TRACT "A".

- 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.
- 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.
- 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.
- All flared end sections and inlet structures will be concrete.
- 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.
- All Fire Hydrants and Water Meters shall not be located in driveways and/or sidewalks.

## LEGEND

CL	CURB INLET	ST	STREET LIGHT
D.C.L.	DOUBLE CURB INLET	---	EXISTING CONTOUR
AL	AREA INLET	-S-2-	PROPOSED CONTOUR
M.H.	MANHOLE	S X S	STREET SIGN
F.E.	FLARED END SECTION	---	NO PARKING SIGN
R.C.P.	REINFORCED CONCRETE PIPE	W	WATER VALVE
C.P.	CONCRETE PIPE	B.O.	BLOW OFF ASSEMBLY
C.I.P.	CAST IRON PIPE	---	FLOWLINE ELEVATION OF HOUSE CONNECTION
P.V.C.	POLY VINYL CHLORIDE (PLASTIC)	---	FLOWLINE ELEVATION OF SEWER MAIN
C.O.	CLEAN OUT		
	FIRE HYDRANT		
	STORM SEWER		
	SANITARY SEWER		

## SHEET INDEX

1	COVER SHEET
2	SITE PLAN
3	GRADING PLAN
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5-7	STREET PROFILES & WARPINGS
8	SANITARY SEWER PROFILES
9	SANITARY & STORM SEWER PROFILES
10	STORM SEWER PROFILES
11	DRAINAGE AREA MAP
12-18	CONSTRUCTION DETAILS

## DEVELOPMENT NOTES

- Area of Tract: 14.73 Acres
- Existing Zoning: R-2 P.U.D.
- Proposed Use: Multi-Family Residential
- Number of Lots Proposed: 39 Lots
- Number of Units Proposed: 71 Units
- The proposed height and lot setbacks are as follows:  
Minimum Front Yard: 15 feet  
Minimum Side Yard: 6 feet  
Minimum Rear Yard: 25 feet  
Maximum Height of Building: 2 1/2 stories or 35 feet

7. Site can be served by:

AmeriUE Electric Company  
G.T.E. Telephone Company  
St. Charles Gas Company  
O'Fallon Fire Protection District  
Public Water Supply District No. 2  
of St. Charles County  
(Sanitary Sewers & Water)  
Fort Zumwalt School District

APPROVED  
10 13 2000  
37-39  
APPROVED

- No 100 Year Flood Plain exists on this tract per F.I.R.M. #29183C0239E dated August 2, 1996.
- Topographic information is per Bax Engineering by field topography.
- Boundary information is per survey as compiled by Bax Engineering Co., during June 1998 and March 1999.
- All streets will be constructed to City of O'Fallon standards. Streets will consist of 26 foot wide concrete pavement with integral rolled curb and a 5 foot wide concrete sidewalk 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.
- 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.

**Tree Preservation Calculations:**

Total Area of Existing Tree Mosses:	1.12 AC.
1.12 AC. X 20% =	0.22 AC.
Total Area of Proposed Clearing:	1.04 AC.
Total Area of Remaining Trees:	0.08 AC.
0.08 AC. < 0.22 AC. = (ADDITIONAL TREES NEEDED)	
0.22 AC. - 0.08 AC. = 0.14 AC. X 15 = 2.10	
3 ADDITIONAL TREES ARE TO BE ADDED	

**Landscape Requirements:**

2,629 LF of streets	
2,629 x 2 = 5,258 LF of street frontage	
5,258 / 50 LF = 106 trees required	
68 Units Proposed	
68 Units x 1 Tree per every two units = 34 Trees	
Total Trees Required = 3+106+34 = 143 Trees	

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

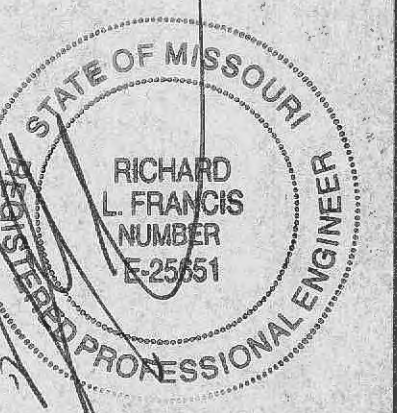
- No slope shall exceed 3 (H) to 1 (V).
- Construction joints shall be made every 16' in the concrete swale. All joints shall be sealed.
- City approval of the construction site plans does not mean that the single family and two family dwelling units can be constructed on the lots without meeting the building setbacks as required by the zoning codes.
- All proposed fencing will require a separate permit through the Planning Department.
- Plot plans will indicate if decks, patios, or enclosed porches will be constructed with each building.

WHITEGATE VILLAS

T. R. HUGHES INC.  
239 FOX HILL ROAD  
ST. CHARLES, MO 63301  
(314) 940-9300

PREPARED FOR

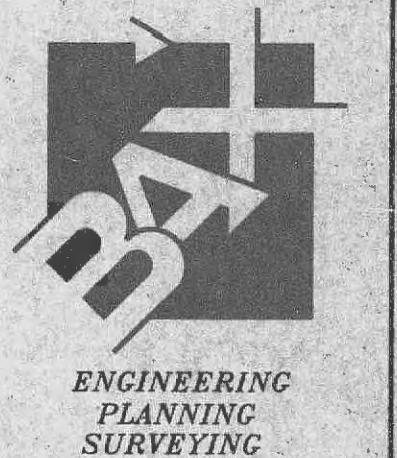
DECLARATION OF RESPONSIBILITY  
I hereby certify that the documents intended to be authorized by my seal are limited to the sheet, and I hereby disclaim any responsibility for all other drawings, specifications, estimates, reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.



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REVISIONS

03-02-00	CLIENT COMMENTS
04-10-00	CITY COMMENTS
05-02-00	CITY COMMENTS
09-26-00	ADDED 3 UNITS
10-11-00	CITY COMMENTS



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

01-28-00  
DATE  
98-10343  
PROJECT NUMBER  
1 OF 18  
SHEET OF  
10343CON.DWG  
FILE NAME  
JL/RA MGG  
DRAWN CHECKED