

CONSTRUCTION NOTES

The underground utilities shown herein were plotted from available information and do not necessarily reflect the actual existence, nonexistence, size, type, number, or location of these or other utilities. The general contractor shall be responsible for verifying the actual location of all underground utilities, shown or not shown, and said utilities shall be located in the field prior to any grading, excavation, or construction of improvements. These provisions shall in no way absolve any party from complying with the Underground Facility Safety and Damage Prevention Act, Chapter 319, RSMo.

All construction and materials used shall conform to current City of O'Fallon, Mo., St. Charles County Dept. of Highways and Traffic, and latest Duckett Creek Sanitary District standards and construction specifications.

All utility relocations will be determined by the individual utility company.

Consult Soils Engineer for soil compaction recommendations.

No area shall be cleared without permission of the developer.

All grades shall be within 0.2 feet, plus or minus, of those shown on the grading plan.

All swales shall be sodded, unless otherwise noted on the plans.

No slope shall be steeper than 3 horizontal to 1 vertical.

Grading shall comply with recommendations in the soils report by SCI Engineering, Inc. dated August, 1999.

If cut & fill operations occur during a season not favorable for immediate establishment of a permanent ground cover, a fast germinating annual such as rye grasses or sudan grasses shall be utilized to retard erosion.

Contractor is responsible for monitoring grading operation and accuracy of final rough grades. Contact engineer of any discrepancies affecting final grading balance.

Contractor is responsible for maintaining all siltation control devices shown, and provide additional siltation control devices as deemed necessary due to field conditions or as required by the City of O'Fallon Dept. of Public Works. See approved grading plan set for location of devices.

All sanitary sewer building connections shall be 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 building connection shall not be less than the diameter of the pipe plus the vertical distance of 2 1/2 feet.

P.V.C. gravity sanitary sewer pipe size 4" through 15" shall conform to the requirements of A.S.T.M. D-3034, for the PSM-PVC sewer pipe fittings, SDR-35. Large diameter plastic gravity sewer pipe and fittings shall conform to the requirements of A.S.T.M. F-679. All fittings for P.V.C. pipe shall be of the same material and strength requirements as the sewer pipe.

When P.V.C. pipe is used, appropriate rubber seal waterstop, as approved by the sewer district, shall be installed between P.V.C. pipe and masonry concrete and brick structures.

All sanitary laterals shown on the plan are to be constructed of 6-inch P.V.C. pipe.

All manhole and inlet tops built without elevations furnished by the engineer will be the responsibility of the sewer contractor. At the time of construction stakeout of the sewer lines, all curb and grate inlets will be face staked, provided said stakes do not fall in the ditch line. If stakes fall within the ditch line, the sewer company of job superintendent shall notify the engineer by phone that stakes are needed and allow 48 hours for cuts.

All storm sewer pipe regardless of size shall be reinforced concrete pipe A.S.T.M. C-76, Class III Minimum, unless otherwise shown on the plans.

Corrugated metal pipe shall conform to the standard specifications for corrugated iron or steel/galvanized culvert pipe AASHTO M-36.

Blasting will require a permit from the City of O'Fallon, MO.

Erosion and siltation control shall be installed prior to any grading and be maintained throughout the project until acceptance of the work by the owner and/or controlling regulatory agency and adequate vegetative growth insures no further erosion of soil.

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. Grading shall comply with recommendations in the soils report by Soils Consultants Inc. dated July 1997.

The Contractor shall notify the Soils Engineer at least two days in advance of the start of the grading operation.

Parking on non-surfaced areas is prohibited in order to eliminate the condition whereby mud from construction and employee vehicles is tracked onto the pavement causing hazardous roadway and driving conditions. Contractor shall keep road clear of mud and debris.

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. Contractor is responsible for monitoring grading operation and accuracy of final rough grades. Notify engineer of any discrepancies affecting final grading balance.

Storm water pipes, outlets and channels shall be protected by silt barriers and kept free of waste and silt at all times prior to final surface stabilization and/or paving.

Siltation fences shall be inspected periodically for damage and for the amount of sediment which has accumulated. Removal of sediment will be required when it reaches 1/2 the height of the fences.

Straw bales shall be inspected periodically for deterioration. Bales which have rotted or failed shall be replaced. Removal of sediment will be required when it reaches 1/2 the height of the bales.

Undercutting for treatment of plastic clay conditions for foundations has not been considered in grading computations shown. Contact soils engineer if this condition exists.

All trench backfills under pavement within the public right-of-way shall be granular backfilled. Trench backfills under paved areas, outside of public right-of-way may be granular backfill in lieu of the earth backfill compacted to 90 percent of the Modified AASHTO T-180 compaction test A.S.T.M. D-1557.

Maintenance of the sanitary sewer mains shall be the responsibility of the Duckett Creek Sanitary District upon dedication of the sewers to the District. Maintenance of the storm sewers shall be the responsibility of the City of O'Fallon, MO, upon acceptance by the city for these storm sewers.

All disturbed earth areas within City, County and State right-of-way shall be sodded.

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, shall be removed, spread out and permitted to dry sufficiently to be used as fill. None of this material shall 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 dsced prior to the placement of any fill. The Soils Engineer shall approve the dscing operation.

Compaction equipment shall consist of tamping rollers, pneumatic-tired 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.

CONSTRUCTION NOTES

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 percent below to 8 percent above the optimum moisture content.

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.

The contractor shall prevent all storm, surface water, mud and construction debris from entering the existing sanitary sewer system.

Easements shall be provided for all sanitary sewers, storm sewers and all utilities on the record plat.

The Duckett Creek Sanitary District shall be notified at least 48 hours prior to construction for coordination of inspection.

All sanitary sewer manholes shall be waterproofed to the exterior in accordance with Missouri Dept. of Natural Resources specification 10CSR-8.120(7)(E)

All PVC sanitary sewer pipe shall conform to the requirements of ASTM D-3034 Standard Specification for PSM Polyvinyl Chloride Sewer Pipe, SDR-35 or equal, with "clean" 1/2 inch to 1 inch granular stone bedding uniformly graded. This bedding shall extend from 4 inches below the pipe to springline of pipe. Immediate backfill over pipe shall consist of same size "clean" or "minus" stone from springline of pipe to 6 inches above the top of pipe.

All sanitary and storm sewer trench backfills shall be water jetted. Granular backfill will be used under pavement areas.

All pipes shall have positive drainage through manholes. No flat invert structures are allowed.

Brick shall not be used on sanitary sewer manholes.

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.

Gas, water and other underground utilities shall not conflict with the depth or horizontal location of existing or proposed sanitary and storm sewers, including house laterals.

LEGEND

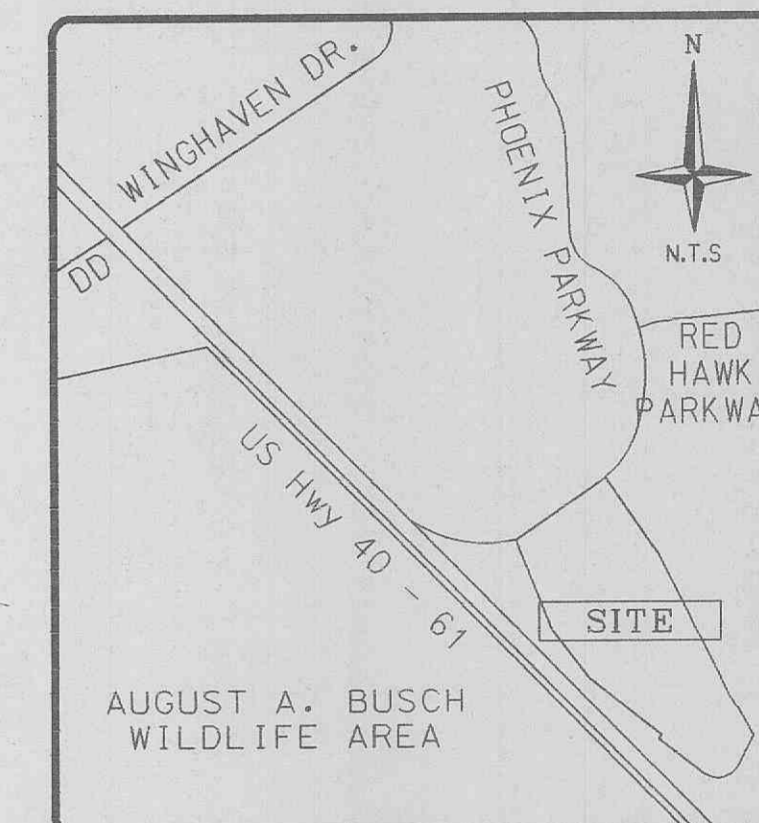
—UC—	EXISTING UNDERGROUND CABLE TV
—UT—	EXISTING UNDERGROUND TELEPHONE
—UE—	EXISTING UNDERGROUND ELECTRIC
—OU—	EXISTING OVERHEAD UTILITY WIRES
—G—	EXISTING GAS MAIN
—W—	EXISTING WATER MAIN
—F—	PROPOSED FORCE MAIN
—F—	EXISTING FORCE MAIN
—	BUILDING LINE
—	EXISTING SANITARY SEWER
—	PROPOSED SANITARY SEWER
—	EXISTING STORM SEWER
—	PROPOSED STORM SEWER
—	EXISTING CONTOUR
—	PROPOSED CONTOUR
—	EXISTING TREE LINE
—	PROPOSED TREE LINE
—	SILTATION CONTROL
—	EX FLOW LINE
—	GRADE BREAK
—	STREET SIGN
—	SWALE
—	DIRECTION OF SHEET FLOW
—	CLEARING AND GRADING LIMITS
—	FIRE HYDRANT
—	LIGHT STANDARD
—	VALVE
—	LATERAL
—	ADDRESS
—	TREE
—	SANITARY SEWER DESIGNATOR
—	STORM SEWER DESIGNATOR

PROJECT INFORMATION

PREPARED FOR:
BOMASADA GROUP
10255 RICHMOND AVENUE, SUITE 300
HOUSTON, TEXAS 77042
PHONE: (713) 783-7830

PREPARED BY:
VOLZ INCORPORATED
10849 INDIAN HEAD INDUSTRIAL BOULEVARD
ST. LOUIS, MISSOURI 63132-1166
PHONE: (314) 426-6212 FAX: (314) 890-1250
WUNNENBERG'S MAP: PAGES 37, 38 & 47, 48
ZIP CODE: 63366
MUNICIPALITY: O'FALLON, MISSOURI

LOCATION MAP



REVISIONS

SHEET NO.	SUBMITTAL TO CITY OF O'FALLON				REMARKS
	DESIGN	PERMIT	CONTRACT	CONSTRUCTION	
1	X	X	X	X	
2	X	X	X	X	
3	X	X	X	X	
4	X	X	X	X	
5	X	X	X	X	
6	X	X	X	X	
7	X	X	X	X	
8	X	X	X	X	
9	X	X	X	X	
10	X	X	X	X	
11	X	X	X	X	
12	X	X	X	X	
13	X	X	X	X	
14	X	X	X	X	
15	X	X	X	X	
16	X	X	X	X	
17	X	X	X	X	
18	X	X	X	X	
19	X	X	X	X	
20	X	X	X	X	

SOILS ENGINEER NOTES

SCI Engineering, Inc. and the undersigned engineer have not prepared any part of these plans. The seal of the undersigned professional engineer has been affixed at the request of St. Louis County and is a professional opinion to indicate that the undersigned has reviewed the site improvement plans and revisions through the date given below and that in my opinion that the grading and improvements as shown on the plans are compatible with the soil and geologic conditions at the site as described in the geotechnical report for the project dated August, 1999. Roads and building foundations may be supported on naturally occurring or fill soil slopes may be constructed as shown.

The above opinion is based on data from the geotechnical report(s) which were based on widely spaced explorations. Conditions may vary from those encountered in the explorations, or can change due to the construction activities or weather conditions. Therefore, the undersigned must be involved during the construction phase of this project in order to determine that subsurface conditions are as anticipated from the exploration data that recommendations relative to construction are implemented.

SCI Engineering, Inc. and the undersigned have no responsibility for services provided by others, except as they relate to the geotechnical aspects of the design. Services by others may include: establishment of grades, sewer plans and grades, drainage, boundary, and topographic surveys; all structural and electrical components; water, gas, electric and telephone services and distribution facilities; any and all other engineering plans, specifications, estimates, plats, reports, surveys; or other documents or instruments relating to or intended to be used for any part or parts of this project. Construction means and methods for implementation of the grading plan shall be left to the contractor with verification by the geotechnical engineer in writing.

SCI ENGINEERING, INC.

UTILITY NOTES

St. Charles County Water District No. 2 and Missouri-American Water Company.

Duckett Creek Sanitary Sewer District.

Union Electric Company.

GTE Telephone.

St. Charles Gas Company.

Wentzville Fire Protection District and O'Fallon Fire Protection District.

Wentzville School District and Fort Zumwalt School District.

ABBREVIATIONS

ATG	ADJUST TO GRADE	2GSI	2 GRATE INLET WITH SIDE INTAKE
AI	AREA INLET	MH	MANHOLE
BF	BASEMENT FLOOR	MAX	MAXIMUM
CL	CENTERLINE	MIN	MINIMUM
CC	CONCRETE COLLAR	N/F	NOW OR FORMERLY
CO	CLEAN OUT	PVC	POLYVINYLCHLORIDE (PLASTIC PIPE)
CI	CURB INLET	RCP	REINFORCED CONCRETE PIPE
CMP	CORRUGATED METAL PIPE	R/W	RIGHT OF WAY
DCI	DOUBLE CURB INLET	STA	STATION
ESMT	EASEMENT	TBR	TO BE REMOVED
EP	END OF PIPE	TBRBO	TO BE REMOVED BY OTHERS
ED	ENERGY DISSIPATOR	TBR&R	TO BE REMOVED AND REPLACED
EX	EXISTING	TF	TOP OF FOUNDATION
FF	FINISHED FLOOR	TYP	TYPICAL
FH	FIRE HYDRANT	UIP	USE IN PLACE
FE	FLARED END	UP	UTILITY POLE
FL	FLOWLINE	W	WIDE

INDEX

GENERAL INFORMATION	1
SITE PLAN	2-4
GRADING PLAN	5-7
SANITARY SEWER PROFILES	8-9
STORM SEWER PROFILES	10-13
DRAINAGE AREA MAP	14-16
WATER PLAN	17
CONSTRUCTION DETAILS	18-20

GENERAL INFORMATION

Design By: D.A.L.

Drawn By: C.W.C., J.L.F.

Checked By: T.J.M.

B-5948

02-08-00