

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, 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.

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.

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.

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. See approved grading plan set for location of devices.

A Geotechnical Engineer shall be employed by the owner and be on site during grading operations. All soils test shall be verified by the Geotechnical Engineer concurrent with the grading and backfilling operations. Grading shall comply with recommendations in the soils report by Brucker Earth Engineering and Testing, Inc. dated May 1999.

The Contractor shall notify the Soil 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.

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 fence.

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.

The grading Contractor shall perform a complete grading and compaction operation as shown on plans, stated in these notes, or reasonably implied therefrom, 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 plans.

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-190 compaction test A.S.T.M. D-1557.

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

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

A sediment control plan that includes monitored and maintained sediment basins and/or straw bales shall be implemented as soon as possible. No grading 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 silt 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.

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 be used as fill. None of this material shall be placed in proposed public right-of-way locations or on any 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 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 performed 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 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 operation continue when the temperature is such as to permit the layer under placement to freeze.

Fill and backfill shall 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.

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 plan.

All sanitary sewer manholes shall be waterproofed on 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.

Maintain access to existing residential driveways and streets.

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.

All filled places, including trench backfills, under buildings, proposed storm and sanitary sewer lines and/or paved areas, shall be compacted to at least 90 percent of the maximum density as determined by the "Modified AASHTO T-190 Compaction Test," A.S.T.M. D-1557, unless otherwise required by the inspecting soils engineer or soils report for this project.

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.

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 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 a vertical distance of 2 1/2 feet.

P.V.C. gravity sanitary sewer pipe sizes 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 structure.

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 or 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.

Maintenance of the sanitary sewer mains and storm sewers shall be the responsibility of the City of O'Fallon, MO, upon acceptance by the city for these sewers.

REVEGETATIVE TABLE

VEGETATIVE ESTABLISHMENT
For Urban Development Sites

APPENDIX A

Minimum 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)

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.

SOILS ENGINEER NOTES

These plans have been reviewed by Brucker Earth Engineering and Testing, Inc. for their compliance regarding geotechnical recommendations relative to site development. Based on this review and available subsurface information, it is our opinion that the site may be constructed in accordance with the plans, good construction practices, and the recommendations given in our Geotechnical Report of May, 1999.

We have not prepared any part of these plans and my seal on these plans is intended only to confirm my personal review and approval of the site grading plan as it relates to the stability of earth slopes.

Brucker Earth Engineering and Testing, Inc. must be involved during the construction phase of this project in order to determine if subsurface conditions are as anticipated from the field exploration data, that our recommendations relative to site grading are implemented, and that other geotechnical aspects of this site development are performed in accordance with these plans.

BRUCKER EARTH ENGINEERING AND TESTING, INC.



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 HIGH WATER OR DITCH
—	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
—	AIR RELIEF VALVE
—	AIR RELIEF VALVE & C.O.

REVISIONS

SHEET NO.	DATE	DESCRIPTION	REVISIONS
1	X		
2	X		
3	X		
4	X		
5	X		
6	X		
7	X		
8	X		
9	X		
10	X		
11	X		
12	X		
13	X		
14	X		
15	X		
16	X		
17	X		
18	X		
19	X		
20	X		

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BENCH MARKS

U.S.G.S. BENCH MARK

DESCRIBED BY NATIONAL GEOGRAPHIC SURVEY 1949
AT O'FALLON, ST. CHARLES COUNTY, ON THE WABASH RAILROAD,
ONE BLOCK EAST OF THE STATION, IN THE SOUTHWEST CORNER
OF THE ST. MARY INSTITUTE YARD, 40 FEET EAST OF THE CENTERLINE
OF A STREET CROSSING, AND 45 FEET NORTH OF THE CENTERLINE
OF THE MAIN TRACK. A STANDARD DISK STAMPED "F 149 1935" AND
SET IN THE TOP OF A CONCRETE POST PROJECTING 6 INCHES ABOVE
GROUND. ELEVATION 542.80

PROJECT INFORMATION

PREPARED FOR:

WALDEN POND, L.L.C.

2528 LEMAY FERRY
ST. LOUIS, MO. 63125
PHONE: (314) 892-4666

PREPARED BY:

VOLZ INCORPORATED

5933 SOUTH HIGHWAY 94, SUITE 201
ST. CHARLES, MISSOURI 63304
PHONE: (636) 939-5155 FAX: (636) 939-5138

WUNNENBERG'S MAP:

PAGE 38, GRID QQ-16

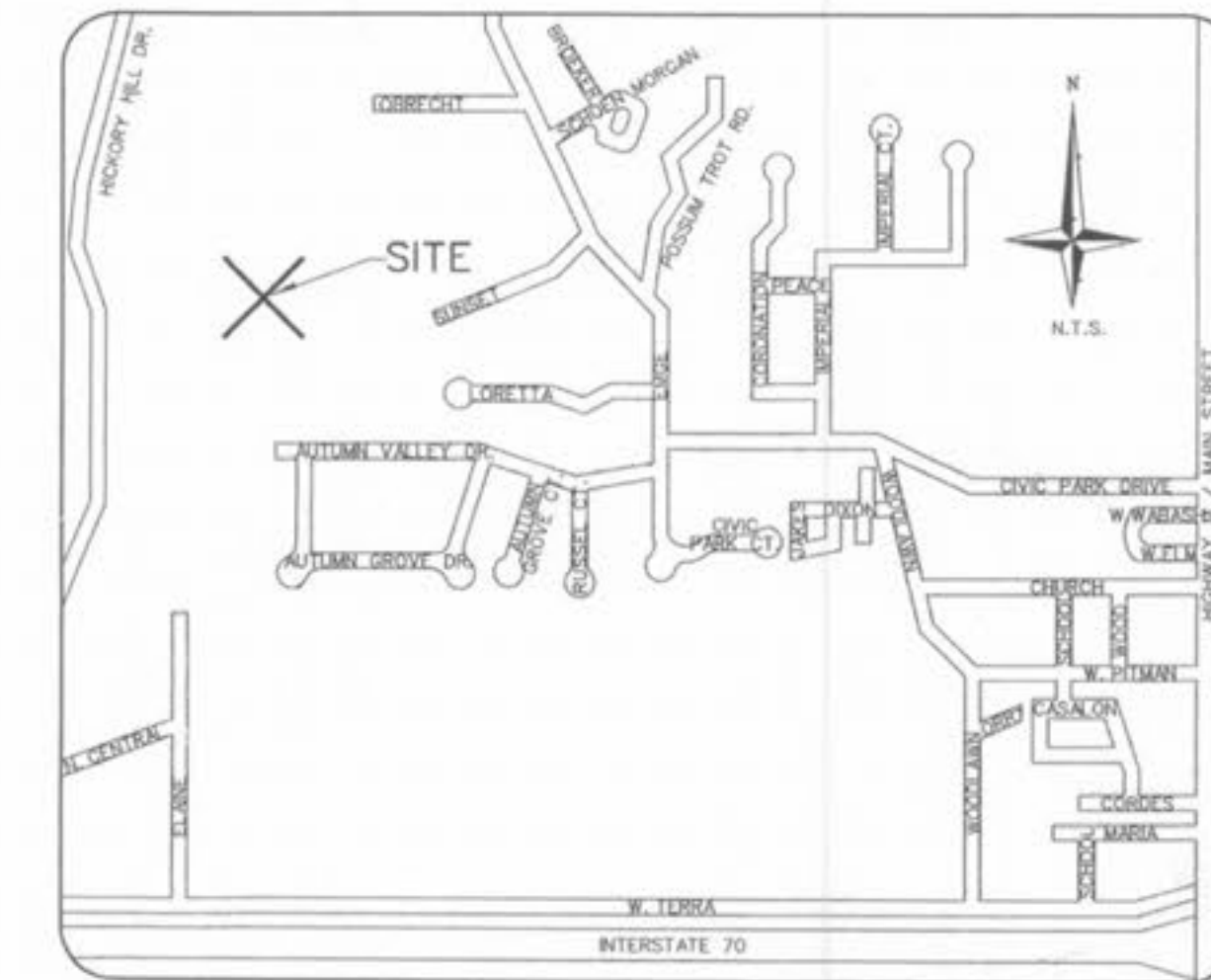
ZIP CODE:

63366

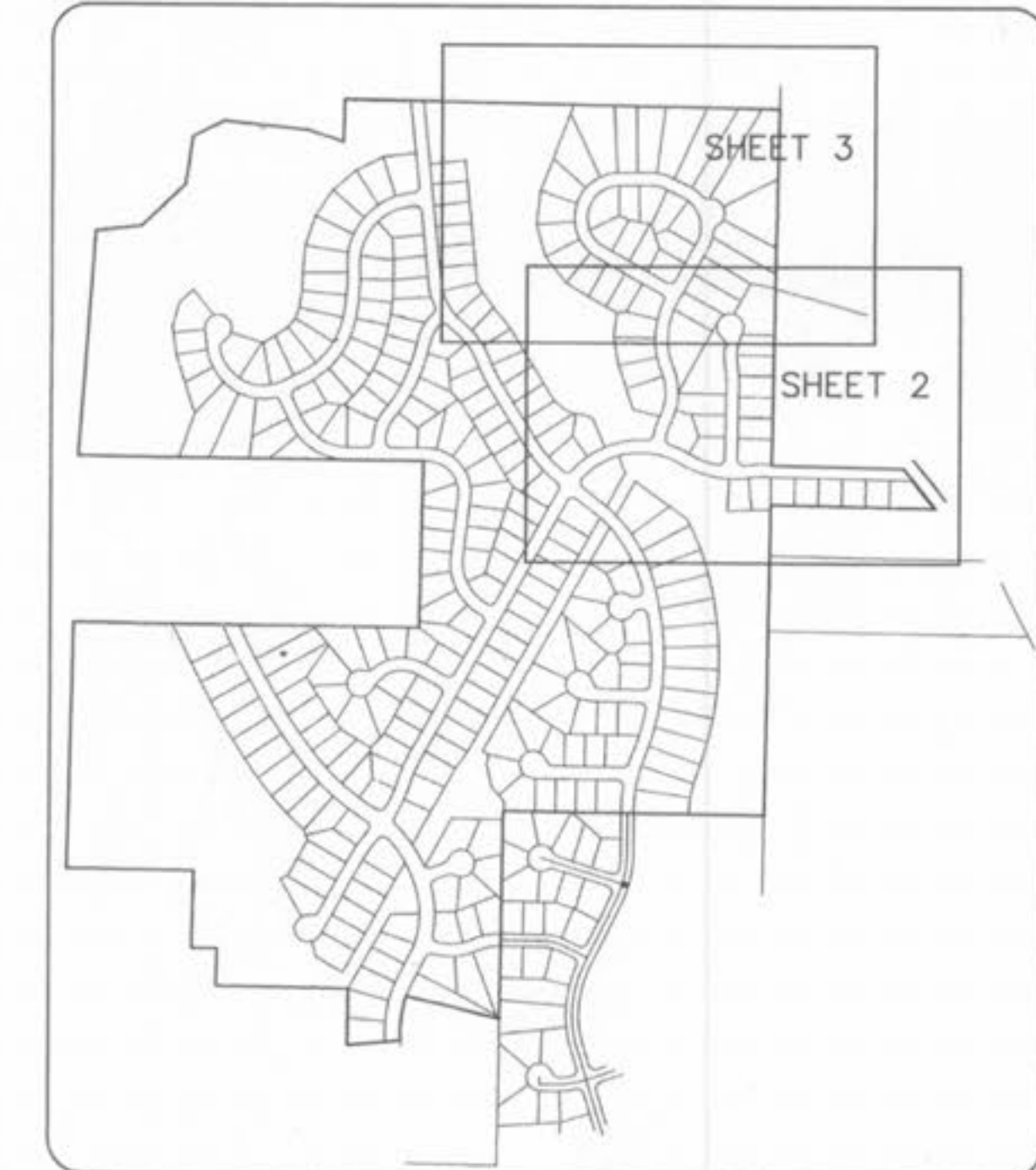
MUNICIPALITY:

O'FALLON, MISSOURI

LOCATION MAP



SHEET INDEX



WALDEN POND, L.L.C.
2528 LEMAY FERRY RD.
ST. LOUIS, MO. 63125

VOLZ



THE VILLAGES AT WALDEN POND

GENERAL INFORMATION
Design By: C.L.
Drawn By: C.L.
Checked By:
B-5973
12-22-99
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