CONSTRUCTION NOTES

GENERAL

1. Gas, water and other underground utilities shall not conflict with the depth or horizontal location of existing and proposed sanitary and storm sewers including house laterals.
2. Underground utilities have been plotted from available information and, therefore, their location must 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 grading or construction of improvements. Conflicts shall be reported to the owner immediately.
3. Polyvinyl chloride (PVC) shall conform to the requirements of ASTM D-3034 Standard Specifications for the PSM Polyvinyl Chloride (PVC) Sewer Pipe and Fittings, SDR35.
4. Easements shall be provided for storm sewers, sanitary sewers and all utilities on the record plat. See record plat for location and size of easements. This does not apply to house laterals.
5. No areas shall be cleared without permission of the owner.
6. All manhole and catch basin 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." In normal "face stakes fall in line with sewer construction the Engineer will set these stakes on a double offset. It shall be the responsibility of the sewer contractor to preserve all "face stakes from destruction.
7. The contractor shall be responsible for notification and coordination with all utility companies.
8. The contractor shall notify the engineer immediately concerning any discrepancies in the plans.
9. This tract is served by
   a. Union Electric of St. Charles
   b. Laclede Gas Company
   c. GTE Telephone Company
   d. TCI Cable Company
   e. Water - City of O'Fallon
   f. Sanitary Sewer - City of O'Fallon
10. All disposal of materials removed from the site shall be done in accordance with all State, County, And Local regulations.
11. This site lies within the boundary of F.E.M.A. PANEL NO. 29183C0240 E dated Aug. 2, 1996 showing that the entire property is zoned "X" (areas outside of the 500 year flood plain.)
12. Phase I contains 124 Lots
    Phase II contains 88 Lots
    Phase III contains 65 Lots
    Phase IV contains 95 Lots
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GRADING

1. All filled places in paved State, County or City roads, (Highways) shall be compacted to 95% of maximum density as determined by the "Standard Proctor Test AASHO T-99", (ASTMD-698) unless otherwise specified by local governing authority specifications. All tests shall be verified by a City Representative. Contractor shall notify City of O'Fallon to conduct testing of fills in right-of-ways.
2. Earth subgrade for paved areas must be compacted to 90% of maximum dry density as determined by a "Modified Proctor Test", AASTM D-1557) and must be inspected and approved by a City Representative, before paving may commence.
3. All grades shall be within Ø.2' more or less of those shown on the grading plan.
4. No slope shall be greater than 3:1 (3' horizontal - 1' vertical) and shall be either sodded or seeded and mulched.
5. Proposed elevations shown are to finished grades and read to top of pavement, or dirt as applies.
6. All elevations shown are to U.S.G.S. Datum.
7. Topographic survey information provided by Walker & Associates with horizontal control established by Site Development Engineering, Inc.
8. No area shall be cleared without permission of the developer.
9. Prior to grading operations, siltation control devices shall be installed.
10. Developer shall be responsible to maintain all siltation control devices during construction.
11. Additional siltation control devices may be required as directed by the City of O'Fallon.
12. All fills and backfills shall be made of selected earth materials free from broken masonry, rock, frozen earth, rubbish, organic materials and debris, in accordance with the geotechnical report and as directed by the soils engineer.
13. Grading contractor shall keep existing roadways clean of mud and debris at all times.
14. All siltation control devices shall be inspected and necessary corrections made within 24 hours of any rain storm resulting in one-half inch of rain or more.
15. Prior to any grading operation in the vicinity of the sinkhole, the earth in the bottom of the depression will be excavated to expose the fissures in the bedrock. The length of fissures will vary but must include all unfilled fissures or voids with dimensions greater than Ø.5" which are not filled with highly plastic clay. The fissures or voids will be exposed until clean, sound, unfractured bedrock in its natural attitude is encountered for a distance of at least 4' beyond the outside edge of all of the fissures or openings.
    The natural rock will be cleaned of all loose soil and rock, and the fissures will be hand-packed with either quarry-run rock of sufficient size to prevent entry of this rock into the fissures or filled with concrete. If concrete is used, smaller rock may be placed in the bottom of the fissure to reduce the amount of concrete used. The concrete, however, shall extend at least 1' below the top of the rock into the fissure, 1' above the solid rock ledge, and at least 2' beyond the outside edge of the fissure.
    The fill placed over the granular filter or on the concrete may consist of granular material or an earth fill compacted to 90% of the maximum density as determined by the Modified Proctor Compaction Test (ASTM D 1557). Observation of the placement of this fill will be continuously provided by the geotechnical engineer, who will take sufficient density tests to assure compliance with the specifications and who will submit a soil compaction test summary upon completion of the grading operation.

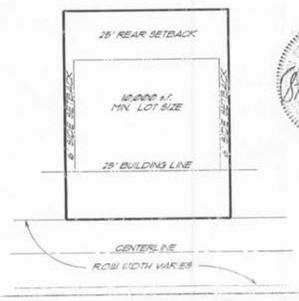
SANITARY SEWERS

1. All sanitary sewer trench backfills to be water jetted and compacted granular backfill shall be used under pavement areas. This is to be done in the presence of a City of O'Fallon, Mo. representative.
2. The minimum vertical distance from the low point of the basement to the flowline of a sanitary sewer at the corresponding house connection shall not be less than the diameter of the sanitary sewer plus a vertical distance not less than two and one-half feet (2 1/2').
3. All sanitary sewers shall meet all specifications and installation requirements of the City of O'Fallon, Mo.
4. All PVC sanitary sewer pipe to be SDR35 or equal with crushed stone bedding uniformly graded between 1" and 1/4" size. This bedding shall extend from 6" below the pipe to 12" above the top of the pipe from the springline.
5. Sanitary sewer trench backfill under pavement areas shall be full-depth compacted granular material.
6. All sanitary sewer laterals in excess of 100 feet in length shall have a cleanout installed at 100' intervals.
7. All existing sewers that are to be removed in right-of-ways or beneath foundations shall be removed and trench filled with compacted granular material.
8. Where a proposed sewer is to be constructed between houses, The contractor shall make certain that house footings do not bear on proposed sewer. This portion of house shall be paired or bear on materials below the sewer elevation.
9. All manhole tops and flowlines built without elevations furnished by the engineer, or not built to engineers design, shall be the responsibility of the sewer contractor.
10. All inside drop manholes to be 48" diameter.
11. Proposed sanitary sewers to be connected to existing sewers are as follows
    MH 286 between EX MH 5 & EX MH 6,
    MH 297 between EX MH 5 & EX MH 6,
    MH 301 between EX MH 5 & EX MH 7,
    & line into EX MH 10.
12. Existing sewers to be used in place shall be connected by a manhole. Connections shall be grouted and backfilled with granular material.
13. All sewer crossings with the sanitary sewer above the storm sewer shall be compacted with granular fill to meet 95% of maximum density as determined by the Standard Proctor Test AASHTO T-99 and shall be water jetted.

LEGEND

ATG	Adjust to Grade
BM	Benchmark
C.M.P.	Corrugated Metal Pipe
C.O.	Clean Out
	Flared End Section
GT	Grated Trough
G.I.	Grated Inlet
G.M.	Gas Meter
G.V.	Gas Valve
U.P. W/Guy Wire	Utility Pole w/Guy Wire
L.S.	Light Standard
RCP	Reinforced Concrete Pipe
U.P.	Utility Pole
W.M.	Water Meter
W.V.	Water Valve
G	Gas Line
OE	Overhead Electric
OU	Overhead Utilities
T	Telephone Line
T.B.A.	To be Abandoned
T.B.R.	To be Removed
T.B.R.&R.	To be Removed & Replaced
FF	Finished Floor Elevation
BF	Basement Floor Elevation
UE	Underground Electric
UT	Underground Telephone Line
W	Water Line
U.I.P.	Use in Place
(TYP.)	Typical
500	Existing Contour
500	Proposed Contour
	Test Hole
Eas't.	Easement
	Fire Hydrant
	Existing Storm Sewer Structure
	Proposed Storm Sewer Structure
	Proposed Storm Catch Basin
	Proposed Storm Area Inlet
	Proposed Manhole
	Existing Sanitary Sewer Structure
	Proposed Sanitary Sewer Structure
	Proposed Storm Sewer Pipe
	Proposed Sanitary Sewer Pipe
	Proposed Street Name Sign
	Existing Sewer Line
	Proposed Sanitary Sewer Lateral
	Street Creep
	Street Light

TYPICAL LOT
NO SCALE



BENCHMARK

Site Bench Mark - Elev. 533.45

Railroad spike Ø.5Ø" high in the South face of utility pole Bryan Road, first pole North of the Southeast corner of l... formerly of Bryan Valley Partnership.

GEOTECHNICAL

BRUCKER EARTH ENGINEERING AND TESTING, INC. AND THE UNDER... HAVE NOT PREPARED ANY PART OF THE PLANS SHOWN ON THESE... THE SEAL OF THE UNDERSIGNED PROFESSIONAL ENGINEER HAS BE... AT THE REQUEST OF NOTHUM HOMES AND IS A PROFESSIONAL OPI... INDICATE THAT THE UNDERSIGNED HAS REVIEWED "SUNSET RIDGE E... PLANS AND THAT, IN MY OPINION, THE GRADING AS SHOWN ON THE ... IN ACCORDANCE WITH THE GEOTECHNICAL REPORT FOR THE PROJE... ROADS AND FOUNDATIONS MAY BE SUPPORTED ON APPROVED NATI... SOIL, APPROVED ENGINEERED FILL, OR BEDROCK. SLOPES MAY BE ... RUCTED AS SHOWN ON THE GRADING PLANS.

THE ABOVE OPINION IS BASED ON DATA FROM THE GEOTECHNICAL RE... WHICH IS BASED ON WIDELY SPACED EXPLORATIONS AND PRESUMES T... CONSTRUCTION AND ENGINEERING OBSERVATIONS WILL BE COMPLETED... RECOMMENDED IN THE GEOTECHNICAL REPORT. CONDITIONS MAY VAR... FROM THOSE ENCOUNTERED IN THE EXPLORATIONS OR CAN CHANGE DUE... CONSTRUCTION ACTIVITIES OR WEATHER CONDITIONS. THEREFORE, THE... UNDERSIGNED MUST BE INVOLVED DURING THE CONSTRUCTION PHASE OF... THIS PROJECT TO DETERMINE THAT THE SUBSURFACE CONDITIONS ARE AS... ANTICIPATED FROM THE BORING DATA AND THE RECOMMENDATIONS... RELATIVE TO THE CONSTRUCTION ARE IMPLEMENTED. IT IS THE CONTRACT... RESPONSIBILITY TO NOTIFY THE ENGINEER SUFFICIENTLY IN ADVANCE SO T... OBSERVATIONS CAN BE MADE AT THE PROPER TIME. CONSTRUCTION METHO... AND IMPLEMENTATION OF THE GRADING PLANS SHALL BE LEFT TO THE CON... ACTOR WITH VERIFICATION BY THE GEOTECHNICAL ENGINEER REQUIRED IN... WRITING. BRUCKER EARTH ENGINEERING AND TESTING, INC. AND THE UNDER... SIGNED HAVE NO RESPONSIBILITY FOR SERVICES PROVIDED BY OTHERS... THESE SERVICES BY OTHERS INCLUDE BUT ARE NOT LIMITED TO ESTABLISH... MENT OF GRADES, SEWER PLANS OR CONSTRUCTION, DESIGN OR CONST... RUCTION OF RAILROAD TIE RETAINING WALLS, DRAINAGE, BOUNDARY AND... TOPOGRAPHIC SURVEYS, STRUCTURAL, ELECTRICAL, WATER OR GAS COMPL... ONENTS, AND OTHER ENGINEERING DOCUMENTS OR INSTRUMENTS RELATING... TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THIS PROJECT.

WILLIAM DANIEL SMITH P-24617

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WATER SERVICE

1. Water lines, valves, sleeves, meters and etc. shall meet all specifications and installation requirements of the local governing authority. There shall be a minimum of 18" vertical & 10' horizontal separation between all water mains and sanitary sewers.
2. All ductile iron pipe for water mains shall conform to Specification ANSI/AWWA C151/A21.51. The ductile iron fittings shall conform to specifications ANSI/AWWA C110/A21.10. All rubber gasket joints for water ductile iron pressure pipe fittings shall conform to Specification ANSI/AWWA C111/A21.11
3. All water hydrants and valves shall be cast from and installed in accordance with plans and details. All water hydrants shall be Mueller Centurions or equivalent.
4. All PVC water pipe shall have a minimum pressure rating of PR-200 or SDR-21.
5. All water mains, valves, hydrants, connections and appurtenances shall conform to the City of O'Fallon specifications for the installation of water mains.

PAVING

1. All streets shall be concrete and must meet the specifications and installation requirements of the City of O'Fallon, Mo.
2. Barricades will consist of three standard 12"x36" red and white striped scotchlite hazard markers mounted on two pound "U" channel sign post, with bottom of marker seven feet above pavement surface.
3. The expansion joint between the driveway and garage floor shall be a minimum of 1" and full depth of slab.
4. Expansion joints in the driveway approaches area shall be 1" at the back of curb.
5. All construction within the right of way of Bryan Road shall be done in accordance with the latest plans and specifications of the City of O'Fallon.
6. The contractor shall provide adequate and proper traffic control when working within the right-of-way of Sunview Drive, Sunburst Drive, and Bryan Road.
7. All fill areas with right-of-ways shall be compacted from the bottom of the fill up, compacted fill to meet 90% maximum density as determined by the Modified AASHTO T-180 Compaction Test or 95% of maximum density as determined by the Standard Proctor Test AASHTO T-99. All tests shall be verified by the geotechnical engineer concurrent with grading and backfilling operations.
8. All intersections shall meet city of O'Fallon sight distance triangle requirements.

STORM SEWERS

1. All storm pipe shall be ASTMC-76, Class III, unless noted otherwise on the plans.
2. All standard catch basin inlets to have front of inlet 2 feet behind curb.
3. All storm sewers shall meet all specifications and installation requirements of the City of O'Fallon, Mo.
4. All storm sewer trench backfills to be water jetted.
5. Storm sewer trench backfill under pavement areas shall be full-depth compacted granular material.
6. Where a proposed sewer is to be constructed between houses, contractor shall make certain that house footings do not bear on proposed sewer. This portion of house shall be paired or bear on materials below the sewer elevation.
7. All storm sewer pipe within the right-of-way shall be 15" reinforced concrete pipe or better.
8. All manhole and inlet tops and flowlines built without elvations furnished by the engineer, or not built to engineers design, shall be the responsibility of the sewer contractor.

STEVEN D. JOY E-20332

SITE DEVELOPMENT ENGINEERING, INC.

4400 SOUTH LINDBERGH BLVD. – SUITE 5, ST. LOUIS, MISSOURI 6...

SUNSET RIDGE EST...

DATE : 4-10-96 | JOB NO. : 95-541 | DRA... SCA...

DESIGN : JOY

KEY SHEET

REV. : 4-24-96 per CITY OF O'FALLON
8-30-96 per CITY OF O'FALLON
10-23-96 per CITY OF O'FALLON

SHEET : 2