



**GENERAL NOTES:**

- Underground utilities have been plotted from available information and therefore locations shall be considered approximate only. The verifications 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 improvements.
- Gas, water and other underground utilities shall not conflict with the depth or horizontal location of existing or proposed sanitary and storm sewers, including building laterals.
- All existing site improvements disturbed, damaged or destroyed shall be repaired or replaced to closely match pre construction conditions.
- All filled places under proposed storm and sanitary sewer, proposed roads, and/or paved areas shall be compacted to 90% of 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 fill placed in proposed roads shall be compacted from the bottom of the fill up. All tests shall be verified by a soils engineer concurrent with grading and back filling operations.
- The contractor shall prevent all storm, surface water, mud and construction debris from entering the existing sanitary sewer system.
- All sanitary sewer flowlines and tops built without elevations furnished by the engineer will be the responsibility of the sewer contractor.
- Easements shall be provided for all public sanitary sewers, storm sewers and utilities on the record plat. See record plat (if required) for location and size of easement.
- All construction and materials shall conform to the current construction standards of the City of O'Fallon and Duckett Creek Sanitary District.
- The City of O'Fallon and Duckett Creek Sanitary District shall be notified at least 48 hours prior to construction for coordination and inspection.
- All sanitary sewer building connections have been designed so that the minimum vertical distances from the low point of the basement to the flow line of a sanitary sewer at the corresponding building connection is not less than the diameter of the pipe plus the vertical distance of 2-1/2 feet. (unless otherwise noted)
- All sanitary sewer manholes shall be waterproofed on the exterior in accordance Missouri Dept. Of Natural Resources specifications 10 CSR-8.120(7)(E).
- All PVC sanitary sewer pipe is to be 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 back fill over pipe shall consist of same size "clean" or "minus" stone from springline of pipe to 6 inches above the top pipe. (Note: All P.V.C. Force Main shall be C-900, Class 200 P.V.C.)
- All sanitary and storm sewer trench back fills shall be water jetted. Granular back fill will be used under pavement areas.
- All pipes shall have positive drainage through manholes. No flat base structures are allowed.
- Brick shall not be used on sanitary sewer manholes nor shall brick be used in the construction of storm sewer structures.
- All PVC 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. (Note: All P.V.C. Force Main shall be C-900, Class 200 P.V.C.)
- All sanitary and storm sewers shall meet all specifications and installation requirements of the local governing authority.
- Storm sewers 18 inch diameter and smaller shall be A.S.T.M. C-14 unless otherwise shown on the plans.
- Storm sewers 21 inch diameter and larger shall be A.S.T.M. C-76, Class III minimum, unless otherwise shown on the plans.
- All storm sewer pipe in the right-of-way shall be reinforced concrete pipe (A.S.T.M. C-76, Class III minimum).
- All storm sewer pipe shall be "O-ring" pipe. Joints shall be gasketed O-ring type.
- All water lines shall be laid at least 10 feet horizontally from any sanitary 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 18 inches 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 water lines shall be C-900 Class 200 P.V.C..
- Any permits, easements, or approvals to work on public or private properties or roadways are the responsibility of the developer.
- All sanitary sewer laterals shall be a minimum of 6 inches in diameter.
- Maintenance of the sewers designated as "public" shall be the responsibility of the Duckett Creek Sanitary Sewer District upon dedication of the sewers to the district.
- All sign post and backs and bracket arms shall be painted black using Carboline Rustbond Penetrating Sealer SG and Carboline 133 HB paint (or equivalent as approved by City and MoDOT). Signs designating street name shall be on the opposite side of the street from traffic control signs.
- There shall be no obstruction, i.e. planting, bushes, trees, signs, light standards, mailboxes, etc. within six (6) feet of any fire hydrant, and/or fire department connection to an automatic sprinkler system.
- All paving to be in accordance with St. Charles County standards and specifications except as modified by the City of O'Fallon ordinances.
- 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.
- "Type N" Lock-Type Cover and Locking Device (Lock-Lug) shall be used where lock-type covers are required.

CALL BEFORE YOU DIG!  
1-800-DIG-RITE  
AND MoDOT  
(314) 340-4100

**A SET OF CONSTRUCTION PLANS FOR  
KNAUST BUSINESS PARK  
PART OF LOT 1 OF KEATON CROSSING  
A TRACT OF LAND BEING PART OF  
LOT 15 OF "JOHN D. COALTERS HOWELL PRAIRIE TRACT",  
IN U.S. SURVEY 1669, TOWNSHIP 46 NORTH,  
RANGE 3 EAST OF THE FIFTH PRINCIPAL MERIDIAN,  
ST. CHARLES COUNTY, MISSOURI**

**PRINCIPALS & STANDARDS**

- All excavations, grading, or filling shall have a finished grade not to exceed a 3:1 slope (53%). Steeper grades may be approved by the designated official if the excavation is through rock or the excavation or the fill is adequately protected (a designed head wall or toe wall may be required). Retaining walls that exceed a height of four (4) feet shall require the construction of safety guards as identified in the appropriate section(s) of the adopted BOCA Codes and must be approved by the City Building Department. Permanent safety guards will be constructed in accordance with the appropriate section(s) of the adopted BOCA Codes.
- Sediment and erosion control plans for sites that exceed 20,000 square feet of grading shall provide for sediment or debris basins, silt traps or filters, staked straw bales or other approved measures to remove sediment from run-off waters. Temporary siltation control measures shall be maintained until vegetative cover is established at a sufficient density to provide erosion control on the site.
- Where natural vegetation is removed during grading, vegetation shall be re-established in such a density as to prevent erosion. Permanent type grasses shall be established as soon as possible during the next seeding period after grading has been completed.
- When grading operations are completed or suspended for more than 30 days permanent grass must be established at sufficient density to provide erosion control on the site. Between permanent grass seeding periods, temporary cover shall be provided.

**VEGETATIVE ESTABLISHMENT  
FOR Urban Development Sites  
APPENDIX A**

<b>Seeding Rates:</b>	
Permanent:	
Tall Fescue	30 lbs./ac.
Smooth Brome	20 lbs./ac.
Combined Fescue	15 lbs./ac. and Brome @ 10 lbs./ac.
<b>Temporary:</b>	
Wheat or Rye	150 lbs./ac. (3.5 lbs. per square foot)
Oats	120 lbs./ac. (2.75 lbs. per square foot)
<b>Seeding Periods:</b>	
Fescue or Brome	March 1 to June 1
	August 1 to October 1
Wheat or Rye	March 15 to November 1
Oats	March 15 to September 15
<b>Mulch Rates:</b> 100 lbs. per 1,000 sq. feet (4,356 lbs. per acre)	
<b>Fertilizer Rates:</b>	
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.	

**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 back filling 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.
- Any existing trash and debris currently on this property must be removed and disposed of off-site.
- 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 unusable 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 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.
- All siltation control devices shall be inspected by the contractor after any rain of 1/2" or more with any appreciable accumulation of mud to be removed and siltation measures repaired where necessary.
- No slope shall be steeper than 3(Horizontal):1(Vertical). All slopes shall be sodded or seeded and mulched.
- All filled places under proposed storm and sanitary sewer, proposed roads and/or paved areas shall be compacted to 90% of 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 filled places in proposed roads shall be compacted from the bottom of the fill up. All test shall be verified by a soils engineer concurrent with the grading and backfilling operations. "Ensure the moisture content of the soil in filled areas is to correspond to the compactive effort as determined by the Standard or Modified Proctor Test. Optimum moisture content shall be determined using the same test that was used for compaction. Soil compaction curves shall be submitted to the City of O'Fallon prior to the placement of fill. Proof rolling may be required to verify the soil stability at the discretion of the City of O'Fallon
- Measured as a percent of the maximum dry density as determined by Standard Proctor Test (ASTM-D-698). Moisture content must be within 2 percent below or 4 percent above optimum moisture content if fill is deeper than 10 feet.
- Any contaminated soil encountered during excavation shall be hauled and placed as directed by the owners environmental engineering representative.
- Developer must supply City construction inspectors with soil reports prior to or during site soil testing.
- The Contractor shall assume complete responsibility for controlling all siltation and erosion of the project area. The Contractor shall use whatever means necessary to control erosion of the project area. The Contractor shall use whatever means necessary to control erosion and siltation including, but not limited to, staked straw bales and/or fabric fences (possible methods are detailed in the plan). Control shall commence with grading and be maintained throughout the project until acceptance of the work by the Owner and/or the City of O'Fallon and/or MoDOT. The Contractor's responsibilities include all design and implementation as required to prevent erosion and the depositing of silt. The Owner and/or the City of O'Fallon and/or MoDOT may at their option direct the Contractor in his methods as deemed fit to protect property and improvements. Any depositing of silts or mud on new or existing pavement or in new or existing storm sewers or swales shall be removed after each rain and affected areas cleaned to the satisfaction of the Owner and/or the City of O'Fallon and/or MoDOT.

**GRADING QUANTITIES:**  
**2,050 C.Y. CUT** (INCLUDES SUBGRADE)  
**135 C.Y. FILL** (INCLUDES 15% SHRINKAGE)  
**1,915 C.Y. EXCESS**

THE ABOVE GRADING QUANTITY IS APPROXIMATE ONLY, NOT FOR BIDDING PURPOSES. CONTRACTOR SHALL VERIFY QUANTITIES PRIOR TO CONSTRUCTION.

**LANDSCAPE LEGEND**

QTY. (4) ~ INDICATES PROPOSED TREES (2 to 2.5 inch caliper)

QTY. (16) ~ INDICATES PROPOSED ORNAMENTAL SHRUB (spirea, forsythia, barberries, privets, lilacs)

\*\* LANDSCAPING AS DEPICTED IS SUBJECT TO FINAL \*\* DESIGN BY A QUALIFIED LANDSCAPE DESIGNER

**STANDARD SYMBOLS & ABBREVIATIONS**

TREE OR BUSH	⊙
LIGHT POLE	⊕
SANITARY SEWER & MANHOLE	⊕
STORM SEWER & INLET	⊕
MAILBOX	⊕
ELECTRIC LINE	—E—
GAS LINE	—G—
WATER LINE	—W—
TELEPHONE LINE	—T—
CABLE TV LINE	—CATV—
OVERHEAD WIRE	—OHW—
UTILITY POLE	⊕
UTILITY POLE W/ DOWN GUY	⊕
FIRE HYDRANT	⊕
WATER VALVE	⊕
WATER METER	⊕
GAS VALVE	⊕
ROAD SIGN	⊕
TELEPHONE PEDESTAL	⊕
FENCE	—x—

**DEVELOPMENT NOTES:**

- Area of tract: 2.78 Total Acres
- Area of improvements: 0.4049 Acres
- Current Zoning: C-0 (City of O'Fallon)
- Proposed Use: General Office
- Area of Building: 12,357 sq.ft.
- Required building & parking setbacks:  
Front yard: 25 feet  
Side yard: 10 feet  
Rear yard: 35 feet  
Parking: 10 feet along lot perimeter
- Parking Requirements & Provisions:  
Total building area = 27,870 sq. ft.  
Usable building area = 27,500 sq. ft. (98%)  
1 space/300 sq. ft.  
Office space 27,500 sq. ft./300 sq. ft. = 91 spaces  
Total Parking Required: 91 spaces  
Total Parking Provided: 91 spaces (including 5 handicap spaces)
- Site Requirements:  
All filled places under proposed parking spaces:  
9/15 = 6.07 = 7.0 spaces required (total)  
Min: 4.0 spaces provided at each building.
- Landscaping Requirements:  
Interior Landscaping Requirements:  
91 spaces x 270 = 24,570 sq. ft.  
24,570 sq. ft. x 0.05 (5%) = 1,474 s.f.  
Total Interior Landscaping Required: 1,474 s.f.  
Total Exterior Landscaping Provided: 1,523.11 s.f.
- This property is served by the following utilities:  
Duckett Creek Sanitary Sewer District 636-441-1244  
AmerenUE Company 1-800-852-7583  
Loledo Gas Company 314-658-5418  
Missouri American Water Company 314-658-7324  
Southwestern Bell Telephone Company 636-948-1111  
Cottleville Fire Protection District 636-447-6655
- Flood Note:  
According to the Flood Insurance Rate Map of the City of O'Fallon, (Community Panel Number 29183 C 0430 E dated August 2, 1998) this property lies within Zone X. Zone X is defined as an area outside the 500 year floodplain.
- Site Coverage Calculations: (Entire lot)  
Building = 27,870 sq. ft. (23%)  
Total Pavement = 36,843 sq. ft. (30%)  
Total Green Space = 56,900 sq. ft. (47%)
- Existing detention basin was designed to accommodate additional run-off from this development.
- No additional site lighting to be provided. Site lighting to remain as with previous development and approved photometric plan.
- All new utilities will be located underground.
- All new mechanical units shall be rooftop and screened per city requirements. See Architecture plans.
- Existing trash enclosure to be used by this development
- No signs are proposed with this development. Any new sign will requirement a separate approval through the Planning Department.
- When electric service is established all transformers shall be screened from view except for access points on transformer.
- Sidewalk, curb ramps, ramp and accessible parking spaces shall be constructed accordance with the current approved "Americans with Disabilities Act Accessibility Guidelines" (ADAAG) along with the required grades, construction materials, specifications and signage. If any conflict occurs between the above information and the plans, the ADAAG guidelines shall take precedence and the contractor prior to any construction shall notify the Project Engineer.

**REFERENCE BENCHMARK**

BENCHMARK RM 57 ELEVATION 548.01 "CHISELED SQUARE" ON SOUTHWEST END SOUTH HEADWALL OF CULVERT LOCATED AT JUNCTION OF U.S. HIGHWAY 40 AND COUNTRY HIGHWAY K. FEMA MAP # 2918300430 E. PANEL 430

**SITE BENCHMARK**

ELEVATION 560.07 CHISELED SQUARE IN CENTER OF TELEPHONE CABLE PEDESTAL 75' WEST OF CENTERLINE OF HIGHWAY K AND 75' SOUTH OF CENTERLINE OF GRAVEL ROAD ACCESSING SITE.

**APPROVED**

**SHEET INDEX**

1	COVER
2	SITE PLAN
3	GRADING PLAN
4	DRAINAGE AREA MAP
5	PROFILES/DETAILS

PREPARED FOR:  
**JAMES B KNAUST  
P.O. BOX 383  
WENTZVILLE, MISSOURI 63385  
(636) 332-5192**

DECLARATION OF RESPONSIBILITY  
I hereby certify that the information contained herein is true and correct to the best of my knowledge and belief and that I am a duly licensed Professional Engineer in the State of Missouri.

Copyright 2004  
Box Engineering Company, Inc.  
All Rights Reserved.

**REVISIONS**

5-7-04	CITY COMMENTS
5-25-04	CITY COMMENTS

**ENGINEERING SURVEYING**

10638B CON.DWG  
FILE NAME

DRB  
DRAWN

LDW CLH  
DESIGNED CHECKED

1/26/04  
DATE

99-10638B  
PROJECT NUMBER

1 OF 5  
SHEET OF

10638B CON.DWG  
FILE NAME

DRB  
DRAWN

LDW CLH  
DESIGNED CHECKED

City of O'Fallon file #: 00-27.14

Const. Inspector