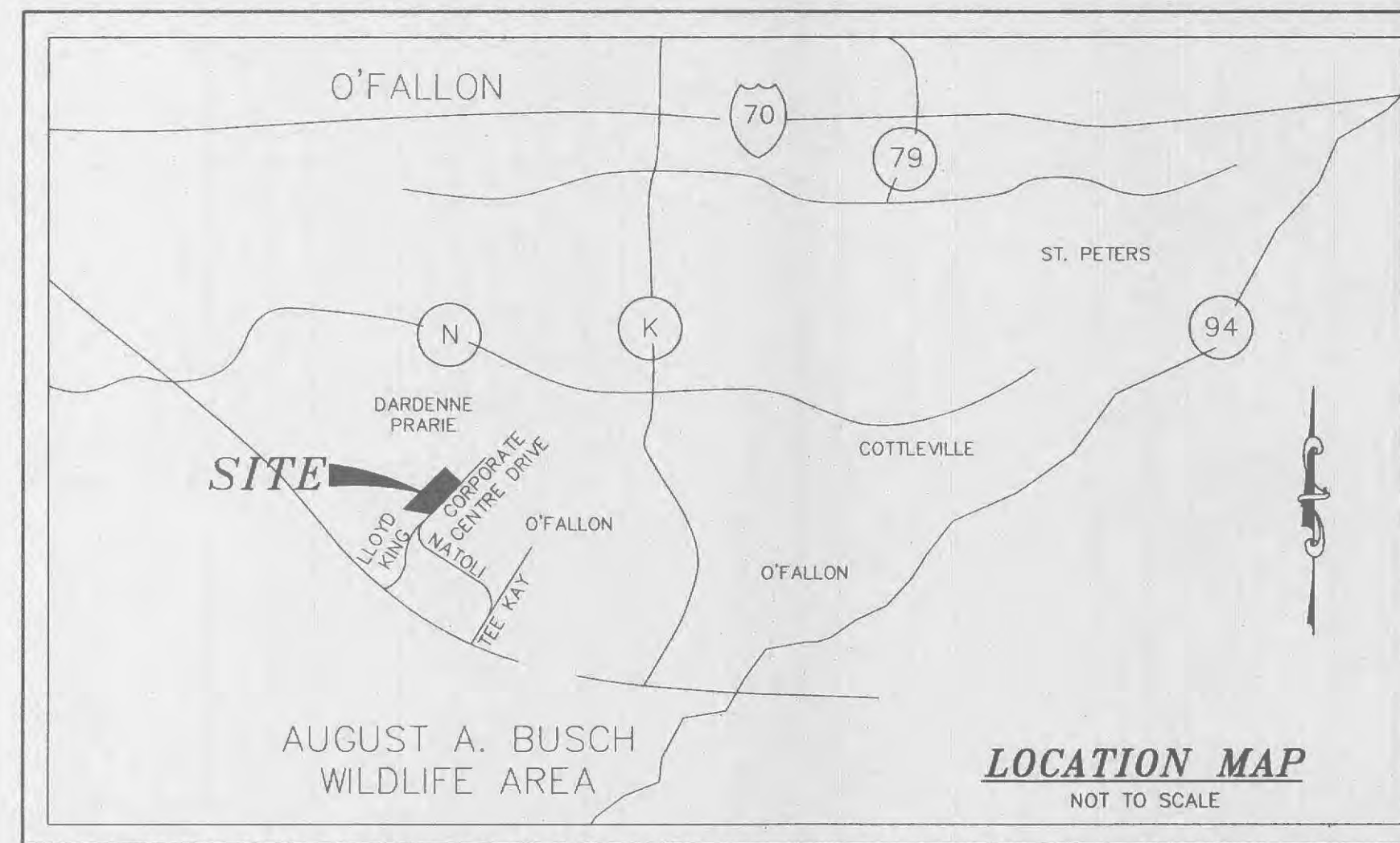


**GRADING NOTES**

- 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 developer shall also supply the City construction inspector with the soil report(s) prior to or during site soil testing.
- 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.
- All filled places, including trench backfills, under buildings, proposed storm and sanitary sewer lines and/or paved areas, shall be compacted to 90% of maximum density as determined by the "Modified A.A.S.H.T.O. T-180 Compaction Test," (A.S.T.M.-D-1557), or 95% maximum density as determined by the Standard Proctor Test A.A.S.H.T.O. T-99. All filled places within public roadways shall be compacted from the bottom of the fill up to 90% maximum density as determined by the Modified A.A.S.H.T.O. T-180 Compaction Test or 95% of maximum density as determined by the Standard Proctor Test A.A.S.H.T.O. T-99, Method "C" (A.S.T.M.-D-698). All test shall be verified by a soils engineer concurrent with grading and backfilling operations.
- 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 systems. All erosion control systems shall be inspected and necessary corrections made within 24 hours of any rain storm resulting in 1/2 inch of rain or more.
- 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.

**A SET OF CONSTRUCTION PLANS FOR  
SYNERGETICS  
A TRACT OF LAND BEING A REPLAT  
OF LOTS 5, 6 & 7 OF  
"JOHN D. COALTERS OLD DARDENNE TRACT"  
IN U.S. SURVEY 1669,  
TOWNSHIP 46 NORTH, RANGE 3 EAST,  
OF THE FIFTH PRINCIPAL MERIDIAN,  
ST. CHARLES COUNTY, MISSOURI**



**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 trench backfills under paved areas shall be granular backfill, and shall be compacted to 90% of the maximum density as determined by the "Modified A.A.S.H.T.O. 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.
- No area shall be cleared without the permission of the Project Engineer.
- The City of O'Fallon and City of O'Fallon Sewer shall be notified 48 hours prior to construction for coordination and inspection.
- All existing site improvements disturbed, damaged or destroyed shall be repaired or replaced to closely match pre-construction conditions.
- All construction and materials shall conform to the current construction standards of the City of O'Fallon.
- Any permits, licenses, easements, or approvals required to work on public or private properties or roadways are the responsibility of the developer.
- No slopes shall exceed 3(H) : 1(V).
- 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 and siltation including, but not limited to, staked straw bales and/or siltation fabric fences (possible methods of control 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.
- Erosion control systems shall not be limited to what is shown on the plan. Whatever means necessary shall be taken to prevent siltation and erosion from entering natural streams and adjacent roadways, properties and ditches.
- Sidewalks, curb ramps, ramp and accessible parking spaces shall be constructed in accordance with the current approved "American 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.
- Lighting values will be reviewed on site prior to the final occupancy inspection. Corrections will need to be made if not in compliance with City standards.
- All sign locations and sizes must be approved separately through the Planning Division.

**LEGEND**

C.I.	CURB INLET	☆	STREET LIGHT
D.C.I.	DOUBLE CURB INLET	— 582 —	EXISTING CONTOUR
A.I.	AREA INLET	— 582 —	PROPOSED CONTOUR
M.H.	MANHOLE	— 582 —	PROPOSED CONTOUR
F.E.	FLARED END SECTION	— 582 —	PROPOSED CONTOUR
E.P.	END PIPE	— 582 —	PROPOSED CONTOUR
C.P.	CONCRETE PIPE	— 582 —	PROPOSED CONTOUR
R.C.P.	REINFORCED CONCRETE PIPE	— 582 —	PROPOSED CONTOUR
C.M.P.	CORRUGATED METAL PIPE	— 582 —	PROPOSED CONTOUR
C.I.P.	CAST IRON PIPE	— 582 —	PROPOSED CONTOUR
P.V.C.	POLY VINYL CHLORIDE (PLASTIC)	— 582 —	PROPOSED CONTOUR
C.O.	CLEAR OUT	— 582 —	PROPOSED CONTOUR
	FIRE HYDRANT	— 582 —	PROPOSED CONTOUR
	STORM SEWER	— 582 —	PROPOSED CONTOUR
	SANITARY SEWER	— 582 —	PROPOSED CONTOUR

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

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)

Seeding Periods:

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

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.



**CALL BEFORE  
YOU DIG!  
1-800-DIG-RITE**

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 (A.S.T.M.-D-1557).

Moisture content must be within 2 percent below or 4 percent above optimum moisture content if fill is deeper than 10 feet.

**DEVELOPMENT NOTES**

- Area of Tract: 5.13 Acres
- Existing Zoning: HTCD High Tech Corridor District
- Proposed Use: Office/Light Manufacturing
- Area of Proposed Buildings: 33,280 sq.ft.
- The required height and building setbacks are as follows:  
Minimum Front Yard: 30 feet  
Minimum Side Yard: 20 feet  
Minimum Rear Yard: 35 feet  
Maximum Height of Building: 30 feet
- Site is served by:  
Duckett Creek Sanitary Sewer District 636-441-1244  
AmerenUE Company 636-639-8311  
St. Charles Gas Company 636-946-8937  
Public Water District #2 636-561-3737  
Verizon Telephone Company 636-332-7658  
Fort Zumwalt School District 636-272-6620  
Cottleville Fire Protection District 636-447-6655
- According to the Flood Insurance Rate Map of the City of O'Fallon, (Community Panel number 290316 0430 E dated August 2, 1996) this property lies within zone X. Zone X is defined as an area of minimal flood hazard.
- Parking Required:  
Office = 1 space/300 sq. ft.  
= 11,831.77 sq. ft./300 = 39.44 spaces required  
Manufacturing = 1 space/400 sq. ft. + 1 space/employee  
= 21,448.23 sq. ft./400 = 53.62 spaces  
1 per employee = 32  
Total Parking Required: 125 spaces  
Total Parking Provided: 134 spaces
- Landscape Required:  
134 (sq.) x 270 = 36,180 S.F.  
36,180 sq. ft. x 0.06 (%) = 2,170.80  
Total Interior Landscape Required: 2,170.80 S.F.  
Total Interior Landscape Provided: 5,109.65 S.F.  
72,395.45 S.F. / 3,000 S.F. = 24.13 ~ 24  
Total Open Landscape Required: 24 Trees  
Total Open Landscape Provided: 24 Trees  
270.72 L.F. / 40 L.F. = 6.76 ~ 7  
Total Street Trees Required: 7 Trees  
Total Street Trees Provided: 7 Trees
- Site Coverage Calculations:  
Building = 33,280 sq.ft.  
Pavement = 73,751.30 sq.ft.  
Green Space = 16,633.25 sq.ft.
- Site Detention required by the City of O'Fallon's detention requirements is being met by the existing detention facility constructed when the over all subdivision was constructed.

**U.S.G.S. BENCHMARK**

REFERENCE BENCHMARK — DNR GRS MONUMENT SC-13 ELEV. 499.37 "STANDARD TABLET" STAMPED DNR SC-13 1990 LOCATED ON THE NORTH SIDE OF HWY 40 APPROXIMATELY 1 MILE SOUTHEAST OF HWY D (WINHAVEN BLVD.) 5005 WEST OF DARDENNE CREEK, 304' NORTH OF THE CENTERLINE OF THE WESTBOUND LANE. SITE BENCHMARK ELEV.=544.09 CROSS AT C/L — C/L OF CORPORATE CENTRE DRIVE AND NATOLI DRIVE.

**PRINCIPALS & STANDARDS**

- All excavations, grading, or filling shall have a finished grade not to exceed a 3:1 slope (33%). 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.
- All finished grades (areas not to be disturbed by future improvement) in excess of 20% slopes (5:1) shall be mulched and tacked at the rate of 100 pounds per 1,000 square feet when seeded.
- Provisions shall be made to accommodate the increased runoff caused by changed soils and surface conditions during and after grading. Unvegetated open channels shall be designed so that gradients result in velocities of 2 fps (feet per second) or less. Open channels with velocities more than 2 fps and less than 5 fps shall be established in permanent vegetation by use of commercial erosion control blankets or lined with rock riprap or concrete or other suitable materials. Detention basins, diversions or any other appropriate structures shall be constructed to prevent velocities above 5 fps.
  - The adjoining ground to development sites (lots) shall be provided with protection from accelerated and increased surface water, silt from erosion, and any other consequence of erosion. Run-off water from developed areas (parking lots, paved sites and buildings) above the area to be developed shall be directed to diversions, detention basins, concrete gutters and/or underground outlet systems. Sufficiently anchored straw bales may be temporarily substituted.
  - Development along natural watercourses shall have residential lot lines, commercial or industrial improvements, parking areas or driveways set back a minimum of 25 feet from the top of the existing stream bank. The watercourse shall be maintained and made the responsibility of the subdivision trustees or in the case of a site plan by the property owner. Permanent vegetation should be left intact. Variations will include designed stream bank erosion control measures. FEMA and U.S. Army Corps of Engineers guidelines shall be followed where applicable regarding site development areas designated as flood plains and wetlands.
  - All lots shall be seeded and mulched or sodded before an occupancy permit shall be issued except that a temporary occupancy permit may be issued by the Building Department in cases of undue hardship because of unfavorable ground conditions.

**APPROVED**  
RECEIVED  
JUN 24 2002  
CITY OF O'FALLON, MO

**SHEET INDEX**

SHEET 1	COVER SHEET
SHEET 2	SITE PLAN
SHEET 3	GRADING PLAN
SHEET 4	LANDSCAPE PLAN
SHEET 5	DRAINAGE AREA MAP
SHEET 6	PROFILE & DETAIL SHEET
SHEET 7	CONSTRUCTION DETAILS

UNITED CONSTRUCTION  
12747 OLIVE BOULEVARD, SUITE 101  
ST. LOUIS, MO 63141  
(314) 434-9690

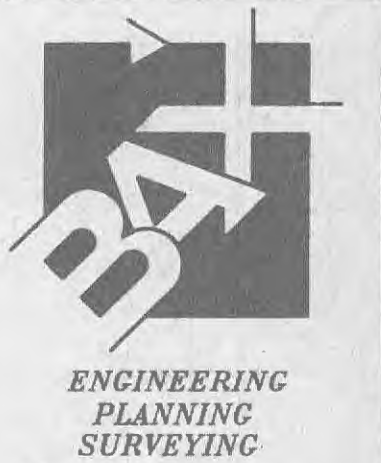
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**REVISIONS**

6-10-02	CITY COMMENTS
6-24-02	LIGHTING REV. I



ENGINEERING  
PLANNING  
SURVEYING  
1052 South Cloverleaf Drive  
St. Peters, MO 63776-6445  
636-928-5552  
FAX 928-1718

5-R-02  
DATE CONTRACTOR  
02: ALREADY  
PRO: WAS THERE  
1: 1179 30AP  
SHE: FILE N  
ALJ  
DRAWN  
ALJ CLH  
DESIGNED CHECKED

Bldg Inspector