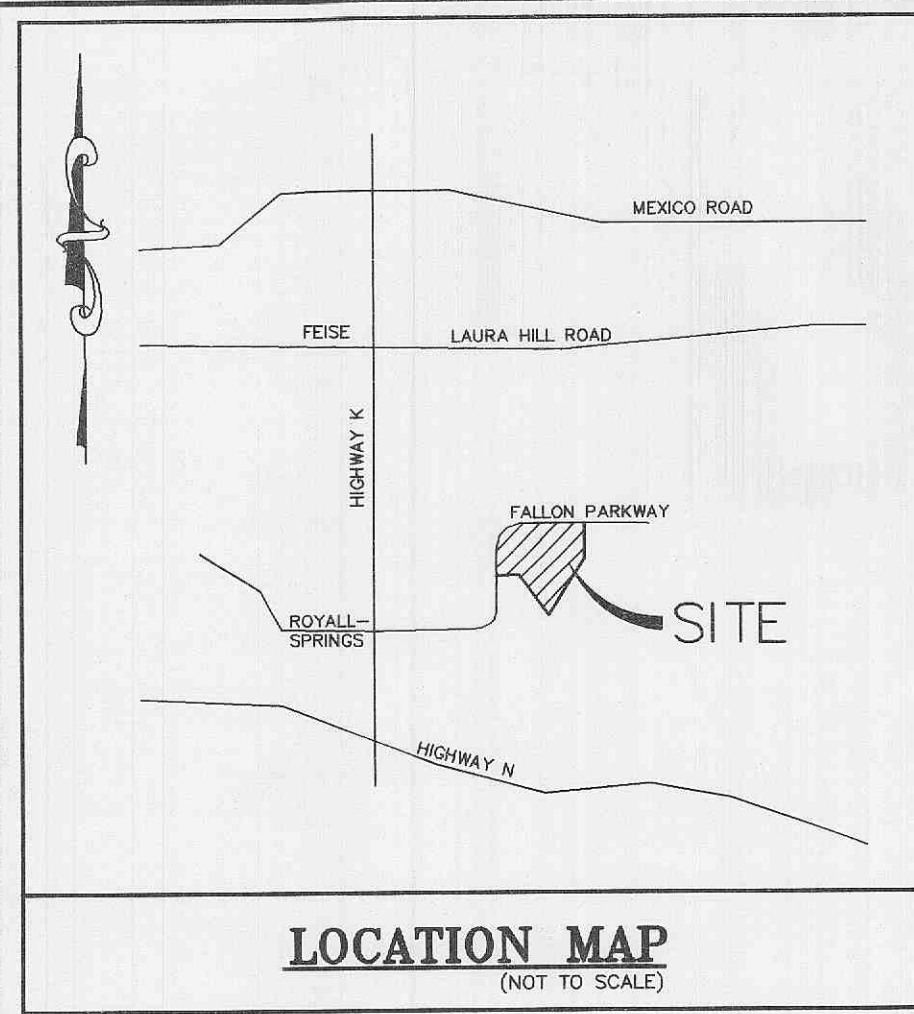


A SET OF CONSTRUCTION PLANS FOR EMGE ELEMENTARY PLANNED ADDITION A TRACT OF LAND BEING PART OF FRACTIONAL SECTION 9, TOWNSHIP 46 NORTH, RANGE 3 EAST OF FIFTH PRINCIPAL MERIDIAN, CITY OF O'FALLON, ST. CHARLES COUNTY, MISSOURI



LOCATION MAP
(NOT TO SCALE)

PRINCIPLES & 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 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. The design to be approved by the Designated Official. Temporary siltation control measures (structural) 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 reestablished 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 according to the City Engineer's recommendations. 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 rip rap or concrete or other suitable materials as approved by the City Engineer. Detention basins, diversions, or 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 with the approval of the City Engineer.
- 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 and shall be approved by the City Engineer, 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 at the minimum rates defined in Appendix A 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.

VEGETATIVE ESTABLISHMENT For Urban Development Sites APPENDIX A

- Seeding Rates:**
- Permanent:**
Tall Fescue - 30 lbs./ac.
Smooth Brome - 20 lbs./ac.
Combined Fescue & 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
Wheat or Rye - August 1 to October 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.

LANDSCAPE LEGEND

- QTY. (2) ~ INDICATES PROPOSED NORWAY MAPLE (ACER PLATANOIDES, 3" Diameter Min., 5' Clear Trunk)
 - QTY. (2) ~ INDICATES PROPOSED ASH TREE (3" Diameter Min., 5' Clear Trunk)
 - QTY. (1) ~ INDICATES PROPOSED REDBUD (CIRGIS SPP. 3" Diameter Min., 5' Clear Trunk)
 - QTY. (6) ~ INDICATES PROPOSED WHITE PINE (6' Height Min.)
- ***ALL PLANTINGS BY OWNER***

GENERAL NOTES:

- Underground utilities have been plotted from available information and these 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 fill, including places under proposed storm and sanitary sewer lines and paved areas within and off the road right-of-way shall be compacted to 90% of maximum density as determined by the "Standard Proctor Test (ASTM-D-698). All tests shall be verified by a Soils Engineer concurrent with grading and back filling operations. The compacted fill shall be free of rutting and shall be non-yielding and non-pumping during proof rolling and compaction. All trench backfills in paved areas shall be granular fill.
- 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 (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.
- The City of O'Fallon shall be notified at least 48 hours prior to start of 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 flowline 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 some 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 backfills 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.
- All PVC sanitary sewer pipe shall meet the following standards, A.S.T.M. D-3034 SDR-35 with water compression joint A.S.T.M. D-3226. An approved 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 II 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.
- 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..
- The grading yardage shown on these drawings is an approximation only, and not for bidding purposes. The contractor shall verify quantities prior to construction.
- All sanitary sewer laterals shall be a minimum of 6 inches in diameter.
- All sewer construction and materials to be in accordance with the Metropolitan St. Louis Sewer District Standard Construction Specifications for Sewers and Drainage Facilities, 2000.
- Maintenance of the sewers designated as "public" shall be the responsibility of the Metropolitan St. Louis Sewer District upon dedication of the sewers to the district.
- 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 Dardenne Prairie and/or MODOT. The Contractor's responsibilities include oil design and implementation as required to prevent erosion and the depositing of silt. The Owner and/or the City of Dardenne Prairie and/or MODOT may at their option direct the Contractor in his methods as deemed fit to protect property and improvements. Any depositing of silt 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 Dardenne Prairie and/or MODOT.
- All paving to be in accordance with St. Charles County standards and specifications except as modified by the City of O'Fallon ordinances.
- Ensure 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. (Ensure at least one 8' wide handicap access aisle is provided and curb ramps do no project into handicap access aisle.)
- Brick shall not be used in the construction of storm sewer structures.
- Ensure graded areas that are to remain bare for over 2 weeks are seeded and mulched. (DNR requirement)
- Ensure 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. (Ensure at least one 8' wide handicap access aisle is provided and curb ramps do no project into handicap access aisle.)

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 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.
- 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 siltling 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 unsuitable material shall be properly disposed of off-site. Topsoil and grass in the fill areas shall be thoroughly discing 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 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 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 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.
- Fill and back fill shall be compacted to the criteria specified in the following table:

CATEGORY	MINIMUM PERCENT COMPACTION %
Fill in building areas below footings	95 %
Fill under slabs, walks, and pavement	95 %
Fill other than building areas	90 %
Natural sub grade	90 %
Pavement sub grade	90 %
Pavement base course	90 %

- 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.
 - 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 is 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. All test shall be verified by a soils engineer concurrent with grading and backfilling operations. Ensure the moisture content of the soil in fill areas is to correspond to the compactive effort as defined 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 soil stability at the discretion of the City of O'Fallon.



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STANDARD SYMBOLS & ABBREVIATIONS

TREE OR BUSH	
LIGHT POLE	
SANITARY SEWER & MANHOLE	
STORM SEWER & INLET	
MAILBOX	
ELECTRIC LINE	
GAS LINE	
WATER LINE	
TELEPHONE LINE	
CABLE TV LINE	
OVERHEAD WIRE	
UTILITY POLE	
UTILITY POLE W/ DOWN GUY	
FIRE HYDRANT	
WATER VALVE	
WATER METER	
GAS VALVE	
ROAD SIGN	
TELEPHONE PEDESTAL	
FENCE	

DEVELOPMENT NOTES:

- Area of tract: 13.63 Acres
- Current Zoning: R-1 Single-Family Residential
- Proposed Use: Planned Elementary School Addition
- Area of Building: 24,146 sq.ft.
- Required building & parking setbacks:
Front yard.....40 feet
Side yard.....12 feet
Rear yard.....40 feet
- Owner:
Ft. Zumwalt School District
110 Virgil
O'Fallon, MO 63366
(636) 272-6620
- Parking Requirements & Provisions:
Elementary School:
Two parking spaces per each classroom
34 classrooms x 2 parking spaces=68 spaces required
186 parking spaces provided with 9 handicap spaces
- Parking Landscape requirement:
186 spaces x 270 x 6'x = 3,013 sq.ft. landscaping provided = 393,803 sq.ft.
- This property is served by the following utilities:
Duckett Creek Sanitary District
Ameren UE Electric Company
Laclede Gas
St. Charles County Public Water District No. 2
Centurytel Telephone Company
Fort Zumwalt School District
O'Fallon Fire Protection District
- Flood Note:
Flood Plain exists on this site per F.I.R.M. #29183 C 0239E, dated September 6, 2002
Flood elevation 507.00.
- Topographic information is per Bax Engineering.
- Site coverage calculations (after full buildout):
Building=64,837sqft.=11%
Pavement=139,931sqft.=23%
Green space=393,803sqft.=66%
- All rooftop vents shall be jointed to match the roof.
- Roof drains shall tie into storm system as depicted on plumbing drawing.

REFERENCE BENCHMARK

R.M. #74 - ELEV.=493.07 (U.S.G.S. DATUM)
CHISEL SQUARE ON TOP OF EAST CONCRETE HEADWALL
OF BIRCH HILLS ROAD BRIDGE OVER TRIBUTARY NO. 2
(APPROXIMATELY 500 FEET SOUTH OF EISENHOWER DRIVE)

SITE BENCHMARK

SITE BENCHMARK ELEV = 503.96
NORTH RIM OF MANHOLE NEAR SOUTHERN MOST CORNER OF SUBJECT PROPERTY
74± WEST AND 67± NORTH OF SOUTHERNMOST PROPERTY CORNER

SHEET INDEX

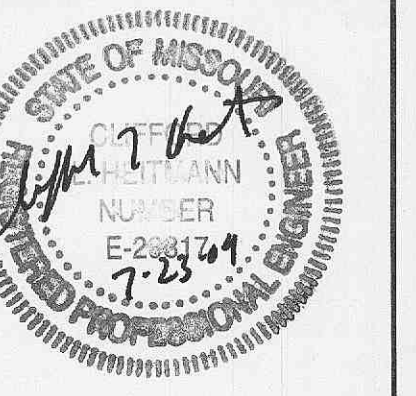
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| SHEET 1 | COVER SHEET |
| SHEET 2 | SITE/GRADING PLAN |
| SHEET 3 | PROFILES/DETAILS |

8/5/04 JTK
APPROVED

O'FALLON FILE # 4501.04.01

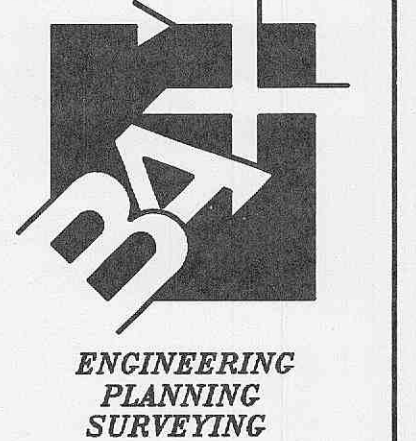
PREPARED FOR: FORT ZUMWALT SCHOOL DISTRICT
110 VIRGIL STREET
O'FALLON, MO 63366
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REVISIONS	
03-09-04	Per City Comments
03-09-04	Permit Issue
04-09-04	Per City Comments
RECEIVED	
JUL 23 2004	
ENGINEERING DEPARTMENT	



ENGINEERING PLANNING SURVEYING
1052 South Cloverleaf Drive
St. Peters, MO. 63376-6445
636-928-5552
FAX 928-1718

02-06-04	DATE
96-8791HC	PROJECT NUMBER
1 OF 3	SHEET OF
8791HCCON.DWG	FILE NAME
DRB	DRB
DRAWN	DRAWN
KTK	CLH
DESIGNED	CHECKED

Bldg. Inspector