

**GBA**  
 GEORGE BUTLER ASSOCIATES, INC.  
 Engineers / Architects / Landscape Architects / Planners  
 Kansas City, Mo. / Lenexa, Ks. / O'Fallon, Mo. / Ames, Ia. / Oklahoma City, Ok.

DATE: July 1987  
 DESIGN BY: FLK/JG  
 DRAWN BY:  
 PROJECT NO.: 87-4857  
 SHEET NO.: 3  
 TOTAL SHEETS: 12

**ROYAL OAKS PHASE #2 SOUTH SECTION GRADING PLAN**  
 PREPARED FOR MR. EDWARD C. KREUTZ

REVISIONS: BY DATE



Property N/E of Fort Zumwalt School District  
 City of O'Fallon R-1 P.U.D. Zoning

**CURVE DATA CHART**

No.	Delta	Radius	Arc	Tangent
1	41°34'26"	225.00'	163.26'	85.41'
2	41°42'06"	183.27'	133.39'	69.80'
3	76°13'55"	160.00'	212.88'	125.53'
4	05°54'02"	1940.33'	199.82'	100.00'
5	03°04'40"	3722.30'	199.95'	100.00'
6	62°50'31"	50.00'	54.84'	30.55'
7	167°14'06"	25.00'	72.97'	223.49'
8	62°50'31"	50.00'	54.84'	30.55'

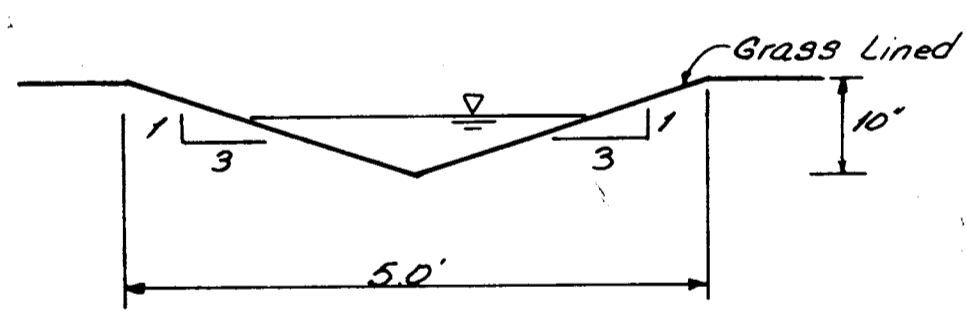
See Sheet 2 of 12 for Detention Basin Calculations.  
 25 Year H.W. Elev. = 529.30

Note: See Sheet 10 of 12 for construction detail of concrete ditch within detention basin.

**Setback Requirements:**  
 Front Yard - 25'  
 Rear Yard - 25'  
 Side Yard - 6'

Note to Contractor - Inlet 108 shall be installed by Saw Cutting the Existing Roadway Pavement and to the Nearest Full Joint. Dowel Bars 5/8" in Diameter, 18" Long shall be installed in Drilled Holes 12" on Center. Holes shall be filled w/Non-Shrink Grout. Only one pavement slab shall be disturbed.

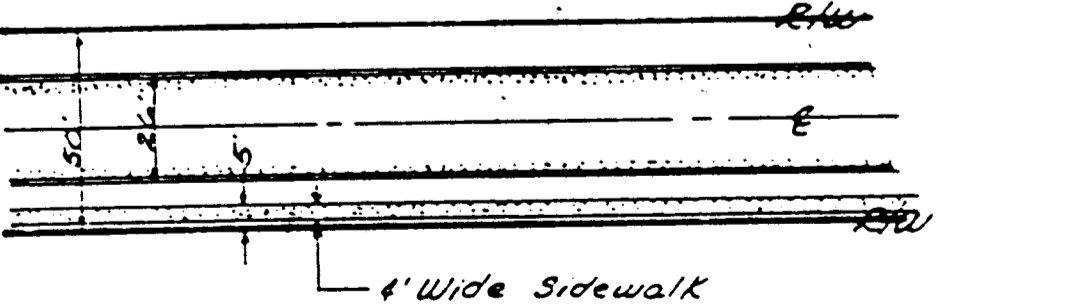
Note: Swale at rear of Lots 6&7 will have a  $\bar{x}$  grade of 1.0% toward AI 105. Swale at rear of Lots 8&9 will have a  $\bar{x}$  grade of 4.0% toward AI 105. Swale at rear of Lots 10&11 will have a  $\bar{x}$  grade of 4.0% toward FE 106.



Swale Detail n.t.s.

**Swale (Rear Lots 6&7)**  
 $Q = 4.42$  c.f.s.  $V = 2.4$  f.p.s.  
 $n = 0.025$  (grass)  
 $S = 0.01$  ft./ft.  
 $A = 3h^2$   
 $P = 2h^{1/3}$   
 $Q = 2.19$  c.f.s.  
 $h = 0.55'$

**Swale (Rear Lots 8&9, 9&10)**  
 $Q = 4.42$  c.f.s.  $V = 4.0$  f.p.s.  
 $n = 0.025$  (grass)  
 $S = 0.04$  ft./ft.  
 $A = 3h^2$   
 $P = 2h^{1/3}$   
 $Q = 1.81$  c.f.s.  
 $h = 0.39'$



TYPICAL ROADWAY DETAIL 1"=50'

**NOTE:**  
 Existing underground (U/G), overhead (O.H.) utilities and drainage structures have been plotted from available information and therefore, their locations must be considered approximate only. It is the responsibility of the individual Contractors to notify the utility companies before actual construction.

"Plat One Royal Oaks Addition"  
 City of O'Fallon R-1 P.U.D. Zoning

**Legend**

Description	Proposed
Contour	---
Creek Flowline	---
Storm Sewer	---
Sanitary Sewer	---
Manholes	○
Flared End	▽
Curb Inlet	□
Trees	⊙
Fence	---
Telephone & Cable TV Pedestal	□
Buried TV Cable	---
Buried Gas Line	---
Overhead Electric Lines	---
Power Poles	○
U.N.O.	Unless Noted Otherwise
Esm't	Easement
C.H.P.	Corrugated Metal Pipe
R.C.P.	Reinforced Concrete Pipe
DUSK TO DAWN LIGHTING	⊗

**Earthwork Computations**

Cut Volume: 9,442 cubic yards  
 Fill Volume: 6,578 cubic yards  
 Bid yardage: 9,442 cubic yards  
 Haul yardage: 2,864 cubic yards

Note: All excess earth shall be disposed of onsite at the sewage lagoon.