



ISSUE DATE - REMARKS

1	7/25/05	- Submitted to city for review.
2	6/25/05	- Revised per city's review.
3	7/29/05	- Revised per city's review.

The responsibility for professional engineering liability on this project is hereby assumed by the engineer. The engineer shall not be held liable for any errors, omissions, or delays in the performance of the project and shall not be held liable for any damages or claims against the project and shall not be held liable for any damages or claims against the project and shall not be held liable for any damages or claims against the project.

PREPARED BY:
LIBERTY ENGINEERING, L.L.C.
 P.O. Box 2 - Colleville, MO 63338 Phone: (636) 244-5333
 RESIDENTIAL - COMMERCIAL - MUNICIPAL

PREPARED FOR:
KAPLAN DEVELOPMENT, LLC
 P.O. BOX 340
 ST. PETERS, MO 63376
 (636) 346-6971

PROJECT:
WABASH WOODS PHASE ONE DRAINAGE PLAN

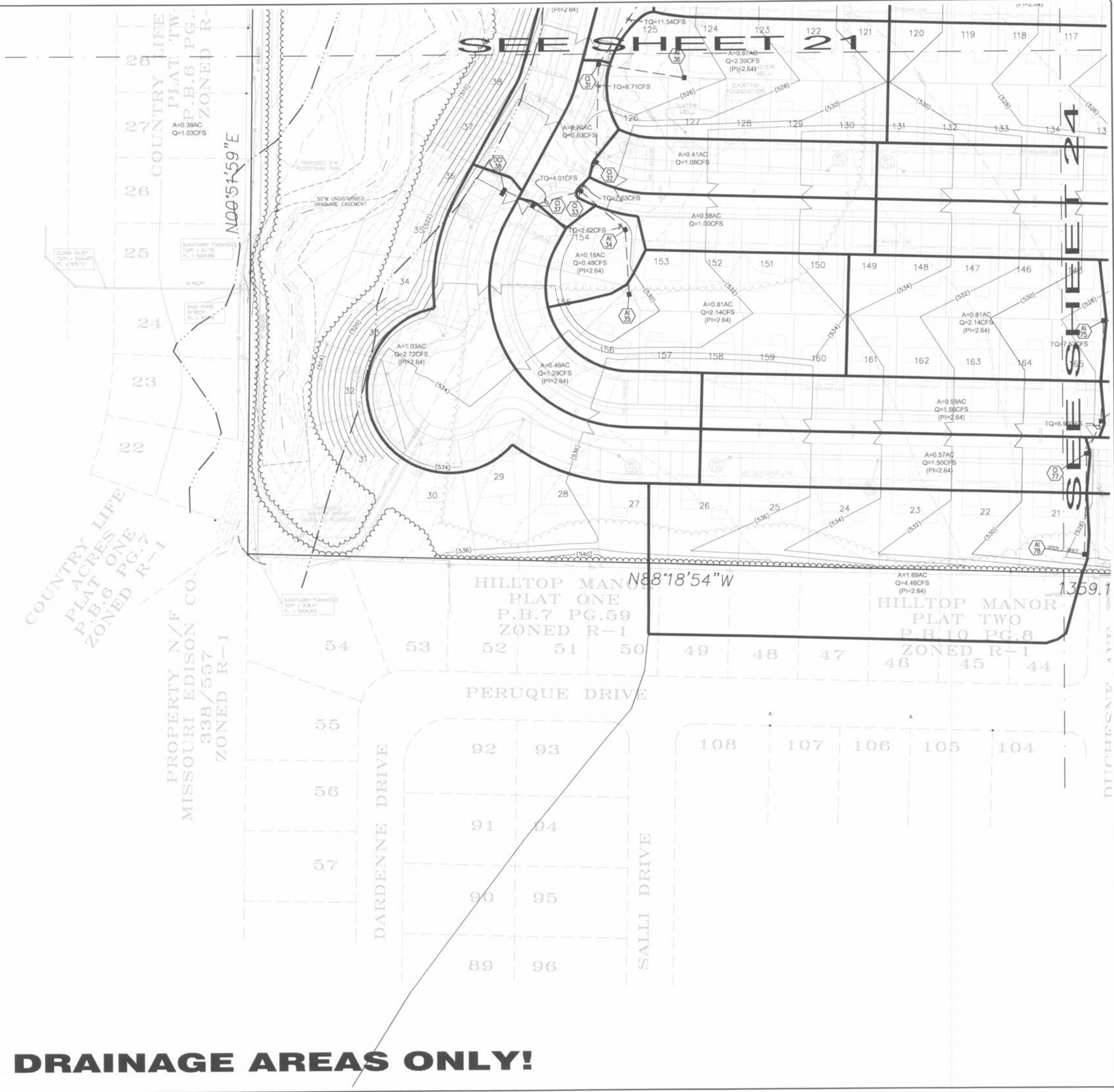
PROJECT NO:
04021-00

DESIGNED BY:

DRAWN BY:

CHECKED BY:

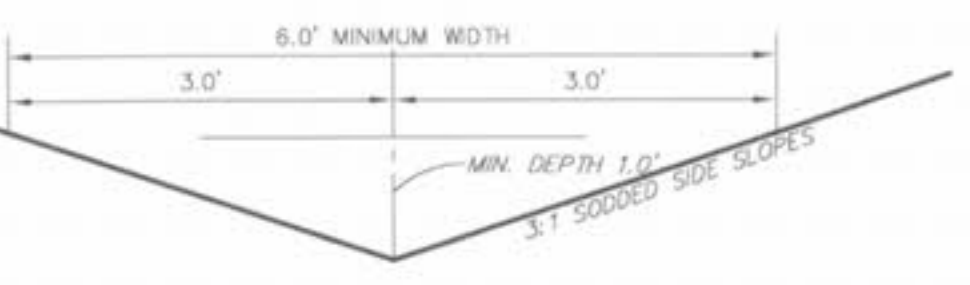
SHEET NO. OF
23 31



TYPICAL YARD SWALE

Maximum Discharge (Q) = 4.00 cfs
 Maximum Velocity (V) = 4.00 ft/sec
 N = 0.030 (grass)
 Maximum side slopes = 3 (horizontal) : 1 (vertical)

Longitudinal Slope (%)	Discharge (cfs)	Velocity (ft/sec)	Depth (ft)
0.5	1.80481682	0.83852289	
1.0	2.4572734	0.736618511	
2.0	3.118668934	0.648843926	
3.0	3.71000035	0.599490821	
4.0	3.51071886	0.54088802	
5.0	2.51206592	0.457535601	
6.0	1.91099329	0.399060698	
7.0	1.516488	0.35491209	
8.0	1.2422656	0.321613971	
9.0	1.04021299	0.294422173	
10.0	0.888149422	0.242052296	



Design Run-off Factors:

Run-off factors based upon zoning and use for the fifteen (15) year design storm frequency are as follows.

Predeveloped Conditions	1.87
Single-family (10,000 sq. ft. or less)	2.64
Commercial & Industrial	3.85

THIS SHEET FOR DRAINAGE AREAS ONLY!