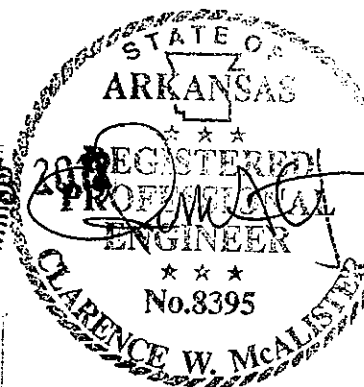
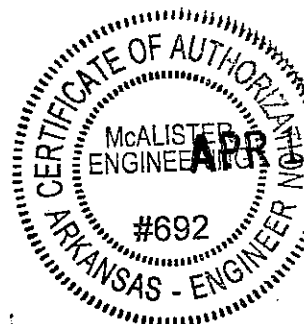


DRAINAGE REPORT
FOR
SITE DEVELOPMENT PLAN

SOUTHBEND SUBDIVISION
PROPERTY LYING NORTH
OF VINEY SLOUGH DITCH TRIBUTARY
APT DRIVE & HARRISBURG ROAD
JONESBORO, ARKANSAS

March 12, 2012

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McAlister Engineering



Velocity 1.3402 fps
Computed Shallow flow time> 15.4948 min

Total Time of Concentration> 41.7054 min

Pond and Swamp Areas 0.0000 % of Area

Computed Results:

Initial abstraction, Ia 0.3810 in
Ia/P 0.1000
Unit peak discharge, qu 442.8952 csm/in
Runoff, Q 2.2657 in
Pond and swamp adjustment, Fp ... 1.0000
Peak discharge, qp 47.4606 cfs

Graphical Peak Discharge method

Given Input Data:

Description Southbend Post-2 Year
Rainfall distribution Type II
Frequency 2 years
Rainfall, P (24-hours) 3.8800 in
Drainage area 30.2700 ac
Runoff curve number, CN 83
Time of concentration, Tc 26.2377 min

Sheet Flow

Description
Manning's n 0.2400
Flow Length 56.0000 ft
Two Yr, 24 hr Rainfall 3.8800 in
Land Slope 0.0050 ft/ft
Computed Sheet flow time> 14.1894 min

Shallow Concentrated Flow

Description
Surface Paved
Flow Length 626.0000 ft
Watercourse Slope 0.0050 ft/ft
Velocity 1.4374 fps
Computed Shallow flow time> 7.2584 min

Channel Flow

Description
Flow Area 215.9000 ft²
Wetted Perimeter 56.4400 ft
Flow Length 1650.0000 ft
Channel Slope 0.0050 ft/ft
Manning's n 0.0200
Hydraulic radius 3.8253 ft
Velocity 12.8504 fps
Computed Channel flow time> 2.1400 min

Sheet Flow

Description
Manning's n 0.0110
Flow Length 150.0000 ft
Two Yr, 24 hr Rainfall 3.8800 in

Computed Results:

Initial abstraction, Ia	0.4096 in
Ia/P	0.1000
Unit peak discharge, qu	566.2782 csm/in
Runoff, Q	3.0207 in
Pond and swamp adjustment, Fp ...	1.0000
Peak discharge, qp	80.9041 cfs

Basin Output

Pond Name	
Distribution Type	Type II
Frequency Type	5 years
Area	30.2700 ac
Peak Inflow	80.9041 cfs
Peak Outflow	64.7232 cfs
Runoff	3.0207 in
Runoff Volume	331894.0626 ft3
Storage Volume	58397.5389 ft3
Maximum Storage Elevation	0.0000 ft

Graphical Peak Discharge method

Given Input Data:

Description	Southbend Pre-10 Year
Rainfall distribution	Type II
Frequency	10 years
Rainfall, P (24-hours)	5.5800 in
Drainage area	30.2700 ac
Runoff curve number, CN	84
Time of concentration, Tc	41.7054 min
Pond and Swamp Areas	0.0000 % of Area

Computed Results:

Initial abstraction, Ia	0.3810 in
Ia/P	0.1000
Unit peak discharge, qu	442.8952 csm/in
Runoff, Q	3.8050 in
Pond and swamp adjustment, Fp ...	1.0000
Peak discharge, qp	79.7058 cfs

Graphical Peak Discharge method

Given Input Data:

Description	Southbend Post-10 Year
Rainfall distribution	Type II
Frequency	10 years
Rainfall, P (24-hours)	5.5800 in
Drainage area	30.2700 ac
Runoff curve number, CN	83
Time of concentration, Tc	26.2377 min
Pond and Swamp Areas	0.0000 % of Area

Computed Results:

Initial abstraction, Ia	0.4096 in
Ia/P	0.1000
Unit peak discharge, qu	566.2782 csm/in
Runoff, Q	3.7033 in
Pond and swamp adjustment, Fp ...	1.0000
Peak discharge, qp	99.1868 cfs

Runoff Volume	485343.0142 ft3
Storage Volume	85397.1888 ft3
Maximum Storage Elevation	0.0000 ft

Graphical Peak Discharge method

Given Input Data:

Description	Southbend Pre-50 Year
Rainfall distribution	Type II
Frequency	50 years
Rainfall, P (24-hours)	6.9900 in
Drainage area	30.2700 ac
Runoff curve number, CN	84
Time of concentration, Tc	41.7054 min
Pond and Swamp Areas	0.0000 % of Area

Computed Results:

Initial abstraction, Ia	0.3810 in
Ia/P	0.1000
Unit peak discharge, qu	442.8952 csm/in
Runoff, Q	5.1304 in
Pond and swamp adjustment, Fp ...	1.0000
Peak discharge, qp	107.4700 cfs

Graphical Peak Discharge method

Given Input Data:

Description	Southbend Post-50 Year
Rainfall distribution	Type II
Frequency	50 years
Rainfall, P (24-hours)	6.9900 in
Drainage area	30.2700 ac
Runoff curve number, CN	83
Time of concentration, Tc	26.2377 min
Pond and Swamp Areas	0.0000 % of Area

Computed Results:

Initial abstraction, Ia	0.4096 in
Ia/P	0.1000
Unit peak discharge, qu	566.2782 csm/in
Runoff, Q	5.0184 in
Pond and swamp adjustment, Fp ...	1.0000
Peak discharge, qp	134.4076 cfs

Basin Output

Pond Name	
Distribution Type	Type II
Frequency Type	50 years
Area	30.2700 ac
Peak Inflow	134.4076 cfs
Peak Outflow	107.4700 cfs
Runoff	5.0184 in
Runoff Volume	551387.8121 ft3
Storage Volume	97098.2080 ft3
Maximum Storage Elevation	0.0000 ft

Graphical Peak Discharge method

Given Input Data:

Peak Inflow 152.4336 cfs
 Peak Outflow 121.6556 cfs
 Runoff 5.6914 in
 Runoff Volume 625332.4952 ft3
 Storage Volume 110445.6871 ft3
 Maximum Storage Elevation 0.0000 ft

AVERAGE CONTOUR AREA METHOD (COMMON AREA 1)

CONTOUR	AREA (sf)	AVERAGE (sf)	CONTOUR INTERVAL (ft)	TOTAL (cf)
255.00	10476			
		11113	1	11113
256.00	11749			
		12416	1	12416
257.00	13083			
		16806	1	16806
258.00	20528			
TOTAL				40335

AVERAGE CONTOUR AREA METHOD (COMMON AREA 2)

CONTOUR	AREA (sf)	AVERAGE (sf)	CONTOUR INTERVAL (ft)	TOTAL (cf)
250.00	16804			
		17592	1	17592
251.00	18380			
		19201	1	19201
252.00	20022			
		20876	1	20876
253.00	21729			
		22616	1	22616
254.00	23503			
		24423	1	24423
255.00	25342			
		26295	1	26295
256.00	27247			
		28233	1	28233
257.00	29218			
		30237	1	30237
258.00	31255			
		32307	1	32307
259.00	33358			
		34442	1	34442
260.00	35526			
TOTAL				256222