

SOIL TYPE: B FROM SEDGWICK COUNTY SOIL SURVEY

FOR ROADS: VEDS:
C₂ = .52
C₁₀₀ = .67

FOR BACK YARDS:
C₂ = .25
C₁₀₀ = .41

I_e

Area A

76' OVERLAND LAWN FLOW @ .28 ft/s = 4.52 min
300' SHALLOW GUTTER FLOW @ .77 ft/s = 6.49 min
512' FULL GUTTER FLOW @ 1.5 ft/s = 3.47 min
14.48 min
USE 15 min

Area B

62' OVERLAND LAWN FLOW @ .28 ft/s = 3.69 min
300' SHALLOW GUTTER FLOW @ .77 ft/s = 6.49 min
1038' FULL GUTTER FLOW @ 1.5 ft/s = 11.53 min
21.72 min
USE 21 min

Area C

300' OVERLAND LAWN FLOW @ .28 ft/s = 17.26 min
507' GRASSSED WATERWAY @ 1.12 ft/s = 7.54 min
25.40 min
USE 25 min

Area D

300' OVERLAND LAWN FLOW @ .28 ft/s = 17.26 min
110' GRASSSED WATERWAY @ 1.12 ft/s = 1.64 min
300' SHALLOW GUTTER FLOW @ .77 ft/s = 6.49 min
152' FULL GUTTER FLOW @ 1.5 ft/s = 1.47 min
27.46 min
USE 27 min

Area E T_c = 15 by inspection

Area F
75' OVERLAND LAWN FLOW @ .28 ft/s = 4.46 min
300' SHALLOW GUTTER FLOW @ .77 ft/s = 6.49 min
245' FULL GUTTER FLOW @ 1.5 ft/s = 3.72 min
13.67 min
USE 15 min

Area G

300' OVERLAND LAWN FLOW @ .28 ft/s = 17.26 min
190' GRASSSED WATERWAY @ 1.12 ft/s = 2.08 min
19.99 min
USE 19 min

Area H

300' OVERLAND LAWN FLOW @ .28 ft/s = 17.26 min
123' GRASSSED WATERWAY @ 1.12 ft/s = 1.90 min
19.76 min
USE 19 min

Area I

62' OVERLAND LAWN FLOW @ .28 ft/s = 3.69 min
300' SHALLOW GUTTER FLOW @ .77 ft/s = 6.49 min
200' FULL GUTTER FLOW @ 1.5 ft/s = 2.24 min
12.4 min
USE 15 min

INLET ROUTING

Area A Q₂ = 3.43 cfs Q₁₀₀ = 3.50 cfs

INLET ①
L = 10' INLET SUMP @ 20 cfs

Area B Q₂ = 15.38 cfs Q₁₀₀ = 33.90

INLETS ② & ③
2 L = 10' INLETS @ 5 cfs @ 10 cfs
Q₂ = 13.90

Area C Q₂ = 2.19 cfs Q₁₀₀ = 7.14 cfs

INLET ④ DEEP INLET CAP = 13.49 cfs

Area D Q₂ = 8.00 cfs Q₁₀₀ = 22.60 cfs

INLET ⑤ L = 10' S = .35%
Q₂ = 8.00 cfs Q₁ = 2.00 cfs
Q₂ = 6.00 cfs Q₈ = 17.00 cfs

Area E Q₂ = 1.05 cfs Q₁₀₀ = 3.32 cfs

INLET ⑥ L = 10' S = .35%
Q₂ = 1.05 cfs Q₁ = 4.428 cfs
Q₂ = 1.82 cfs Q₈ = 39.20 cfs

Area F Q₂ = 1.81 cfs Q₁₀₀ = 5.71

INLET ⑦ L = 5' INLET @ 13 cfs = 22 cfs

Area G Q₂ = 2.90 cfs Q₁₀₀ = 7.29 cfs

INLET ⑧ DEEP INLET CAP = 18.5 cfs = 25 cfs

Area H Q₂ = 2.86 cfs Q₁₀₀ = 7.21 cfs

INLET ⑨ DEEP INLET CAP = 13.5 cfs = 22 cfs

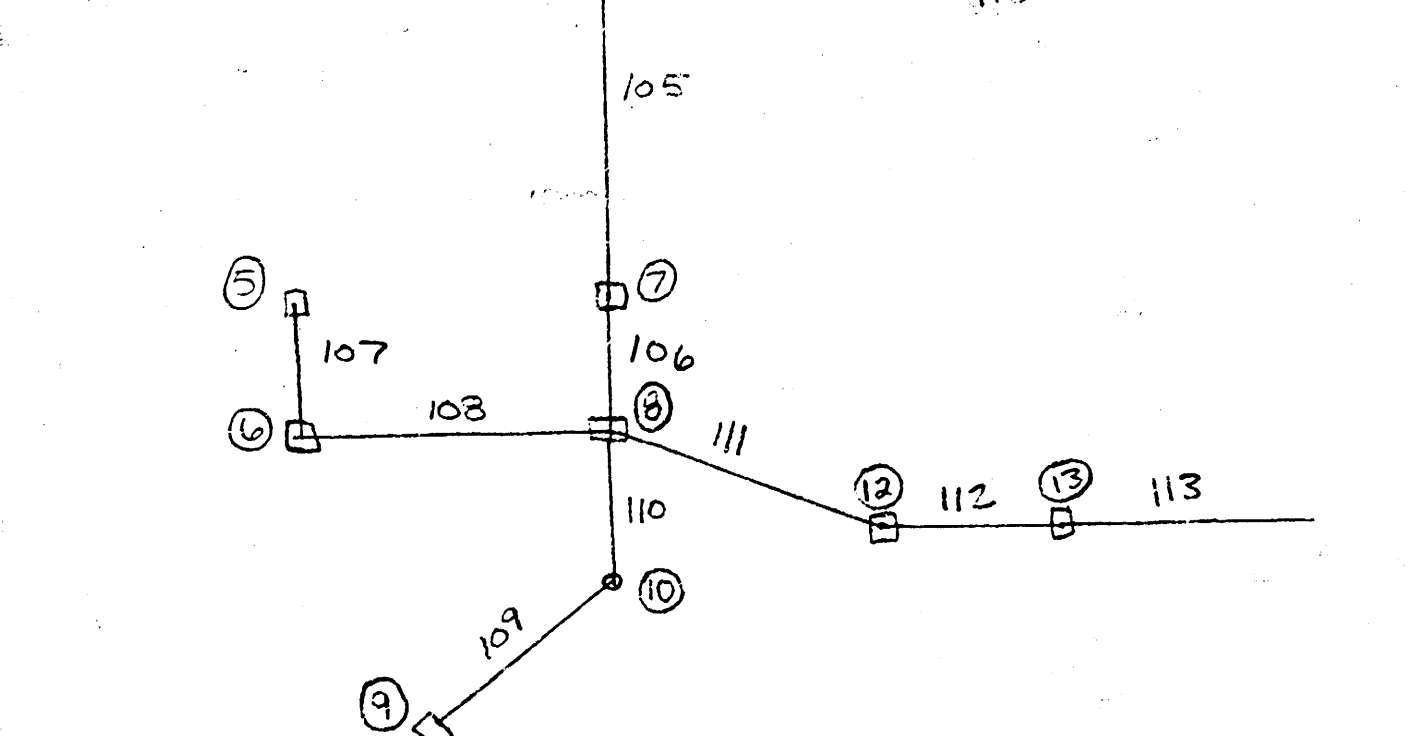
Area I Q₂ = 5.47 cfs Q₁₀₀ = 14.79 cfs

INLET ⑩ L = 10' INLET @ 12 cfs = 24 cfs

Q₂ = 24 cfs Q₈ (EAST) = 30.05 cfs

PIPE SIZES

PIPE SIZE	Q ₂	Q ₈	Q ₁₀₀
101	8.5 cfs	15"	
102	7.10 cfs	18"	
103	12.10 cfs	24"	
104	17.10 cfs	30"	
105	24.37 cfs	30"	
106	26.88 cfs	30"	
107	1.3 cfs	15"	
108	3.6 cfs	15"	
109	5.71 cfs	18"	
110	13.00 cfs	24"	
111	45.89 cfs	36"	
112	57.91 cfs	42"	
113	67.99 cfs	42"	



Sheet

SHELLY'S ORCHARD
SOIL TYPE: B

8/7/97

2-year Design Storm

	Area (ac.)	Tc	i	c	Q
A	1.720421	15	3.83	0.52	3.43
B	7.918596	21	3.25	0.52	13.38
C	2.957866	25	2.96	0.25	2.19
D	5.419037	27	2.84	0.52	8.00
E	1.097773	15	3.83	0.25	1.05
F	1.889933	15	3.83	0.25	1.81
G	1.627943	19	3.42	0.52	2.90
H	1.610331	19	3.42	0.52	2.86
I	2.995718	15	3.83	0.52	5.97

100-year Design Storm

	Area (ac.)	Tc	i	c	Q
A	1.720421	15	7.37	0.67	8.50
B	7.918596	21	6.39	0.67	33.90
C	2.957866	25	5.90	0.41	7.16
D	5.419037	27	5.69	0.67	20.66
E	1.097773	15	7.37	0.41	3.32
F	1.889933	15	7.37	0.41	5.71
G	1.627943	19	6.68	0.67	7.29
H	1.610331	19	6.68	0.67	7.21
I	2.995718	15	7.37	0.67	14.79

REGRADE MAIZE ROAD
DITCH FROM RITA NORTH
TO DRAINAGE CHANNEL

INSTALL 24" CMP

A = 1.10 ac.
C = .67
Q = 5.43 cfs

DITCH TO BE GRADED TO
FLOW TO EXISTING DITCH
ALONG SOUTH LINE OF
SHELLY'S ORCHARD

EXISTING DRAINAGE DEDICATION FILE # 414, PAGE # 43

Pipe	Q (cfs)	Size	Grade
101	8.50	15"	2.65%
102	7.16	18"	0.50%
103	12.16	24"	0.50%
104	17.16	30"	0.50%
105	24.37	30"	0.50%
106	26.68	30"	0.50%
107	1.80	15"	0.50%
108	3.60	15"	0.50%
109	5.71	18"	0.50%
110	13.00	24"	0.50%
111	45.99	36"	0.50%
112	57.99	42"	0.50%
113	69.99	42"	0.50%

Area	Acres	10'	12'	1100'	c2'	c100'	Q2'	Q100'
A	1.72	15	3.83	7.37	0.52	0.67	3.43	8.50
B	7.92	21	3.25	6.39	0.52	0.67	13.38	33.90
C	2.96	25	2.96	5.80	0.25	0.41	2.19	7.16
D	5.42	27	2.84	5.69	0.52	0.67	8.00	20.66
E	1.10	15	3.83	7.37	0.25	0.41	1.05	3.32
F	1.89	15	3.83	7.37	0.25	0.41	1.81	5.71
G	1.63	19	3.42	6.68	0.52	0.67	2.90	7.29
H	1.61	19	3.42	6.68	0.52	0.67	2.86	7.21
I	3.00	15	3.83	7.37	0.52	0.67	5.97	14.79

DRAINAGE SWALE TO DRAIN
TO EXISTING POND EAST
OF PRAIRIE WOODS

SCALE: 1" = 100'



DRAINAGE PLAN
SHELLY'S ORCHARD
WICHITA, KANSAS

SRB SAVOY, RUGGLES & BOHM, P.A.
ENGINEERING & SURVEYING

DATE: Aug. 18, 1997

