

SOIL TYPE: B FROM SEDGWICK COUNTY SOIL SURVEY

FOR ROADS: V.E.D.S.
C₂ = .52
C₁₀₀ = .67FOR BACK YARDS:
C₂ = .25
C₁₀₀ = .41T_c

Area A

76' OVERLAND LAWN FLOW @ .28 ft/s = 4.52 min
300' SHALLOW GUTTER FLOW @ .77 ft/s = 6.49 min
312' 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 = 17.86 min
300' GRASSSED WATERWAY @ 1.12 ft/s = 7.54 min
25.40 min
USE 25 min

Area D

300' OVERLAND LAWN FLOW @ .28 ft/s = 17.86 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 minArea E T_c = 15 by inspectionArea F
76' 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
14.67 min
USE 15 min

Area G

300' OVERLAND LAWN FLOW @ .28 ft/s = 17.86 min
190' GRASSSED WATERWAY @ 1.12 ft/s = 2.08 min
19.94 min
USE 19 min

Area H

300' OVERLAND LAWN FLOW @ .28 ft/s = 17.86 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
12.42 min
USE 15 min

INLET ROUTING

Area A Q₂ = 3.43 cfs Q₁₀₀ = 3.50 cfsINLET ①
L = 10' INLET SUMP @ 20 cfsArea B Q₂ = 15.38 cfs Q₁₀₀ = 33.90INLETS ② & ③
2 L = 10' INLETS @ 5 cfs @ 10 cfs
Q₂ = 13.90 Q₁₀₀ = 23.90Area C Q₂ = 2.19 cfs Q₁₀₀ = 7.14 cfs

INLET ④ DROP INLET cap = 13.49 cfs

Area D Q₂ = 8.00 cfs Q₁₀₀ = 22.60 cfsINLET ⑤ L = 10' S = .35%
Q₂ = 8.00 cfs Q₁₀₀ = 22.60 cfs
Q₁ = 2.00 cfs Q₁ = 3.6 cfs
Q₂ = 6.00 cfs Q₂ = 17.00 cfsArea E Q₂ = 1.05 cfs Q₁₀₀ = 3.32 cfsINLET ⑥ L = 10' S = .35%
Q₂ = 1.05 cfs Q₁₀₀ = 3.32 cfs
Q₁ = 7.05 cfs Q₁ = 44.28 cfs
Q₂ = 1.82 cfs Q₂ = 5.02 cfs
Q₃ = 5.23 cfs Q₃ = 37.20 cfsArea 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 DROP INLET cap = 18.5 cfs = 25 cfs

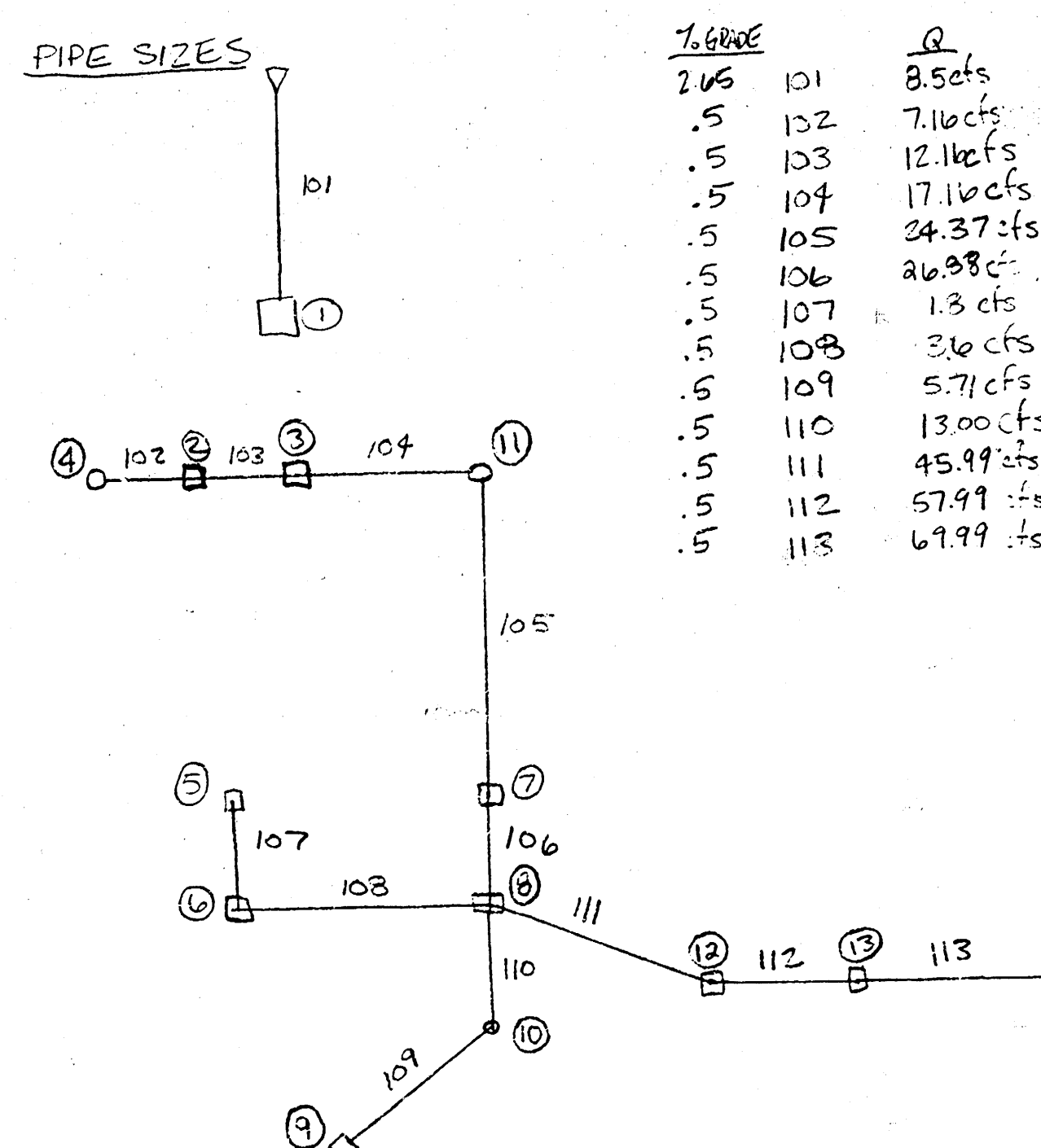
Area H Q₂ = 2.86 cfs Q₁₀₀ = 7.21 cfs

INLET ⑨ DROP INLET cap = 13.5 cfs = 22 cfs

Area I Q₂ = 5.47 cfs Q₁₀₀ = 14.79 cfsINLET ⑩ L = 10' INLET @ 12 cfs = 24 cfs
Q₁ = 11.20 cfs Q₁ = 54.05 cfs
Q₂ = 24 cfs Q₂ (EAST) = 30.05 cfs

PIPE SIZES

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

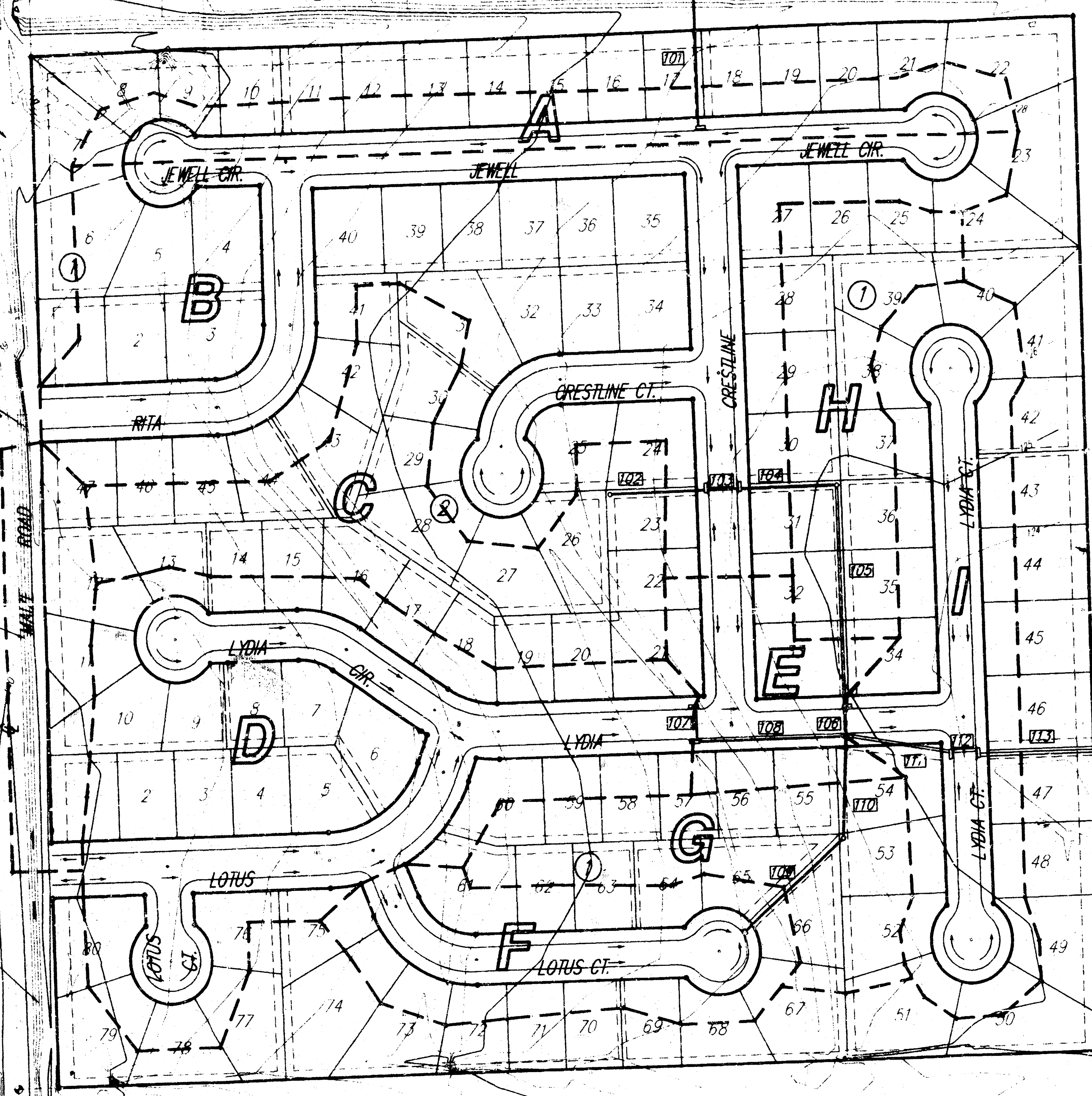
REGRADE MAIZE ROAD
DITCH FROM RITA NORTH
TO DRAINAGE CHANNEL

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



DRAINAGE SWALE TO DRAIN
TO EXISTING POND EAST
OF PRAIRIE WOODS

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

SCALE: 1" = 100'



DRAINAGE PLAN
SHELLY'S ORCHARD
WICHITA, KANSAS

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

DATE: Aug 18, 1997

