1/

Mobile Manor South 2nd Addition Drainage

KWL
2-19-98

Basin Areas

Area 1 = 35527 ft²
Area 2 = 37491 ft²
Area 3 = 187018 ft²
Area 4 = 79510 ft²
Area 5 = 301327 ft²
Area 6 = 99238 ft²
Area 7 = 1502852 ft²
Area 8 = 150364 ft²

Basin Runoff Coefficients (100 year)

Area 1, C = 0.93 (99/100% impervious)
Area 2, C = 0.93 (99/100 % impervious)
Area 3, C = 0.93 (99/100 % impervious)
Area 4, C = 0.67 (50% impervious)
Area 5, C = 0.67 (50% impervous)
Area 6, C = 0.37 (0% impervous)
Area 7, C = 0.61 (40% impervious)
Area 8, C = 0.86 (% storage basin)

2/

Areas discharging offsite

Area 1

Q = c I A (rational formula)

C_5 = 0.87
C_{100} = 0.93
I_5 = 4.56"/hr
I_{100} = 7.37"/hr
Q_5 = 0.87 (0.82^1.11 X 4.56) = 4.4/3.3 cfs
Q_{100} = 0.93 (0.82^1.11 X 7.37) = 7.6/5.6 cfs

A = 43173/35527 = 0.82^1.11 acres

Area 2

C_5 = 0.87
C_{100} = 0.93
I_5 = 4.56"/hr
I_{100} = 7.37"/hr
Q_5 = 0.87 (0.86^1.18 X 4.56) = 4.7/3.4 cfs
Q_{100} = 0.93 (0.86^1.18 X 7.37) = 9.1/6.8 cfs

A = 51495/37491 = 1.18/0.86 acres

Area 4

C_5 = 0.52
C_{100} = 0.67
I_5 = 4.56"/hr
I_{100} = 7.37"/hr
Q_5 = 0.52(1.83)(4.56) = 4.4 cfs
Q_{100} = 0.67 (7.37)(1.83) = 9.0 cfs

A = 79510 = 1.83 acres

3/

Areas Retained on-site

Use 100 year design storm I = 7.80"

KWL

Runoff Volumes

Area 3, V = C(AXI) = 0.93(187018)(7.80/12) = 113,052 ft³

Area 5, V = 0.67(301327)(7.80/12) = 131,228 ft³

Area 6, V = 0.37(99238)(7.8/12) = 23,867 ft³

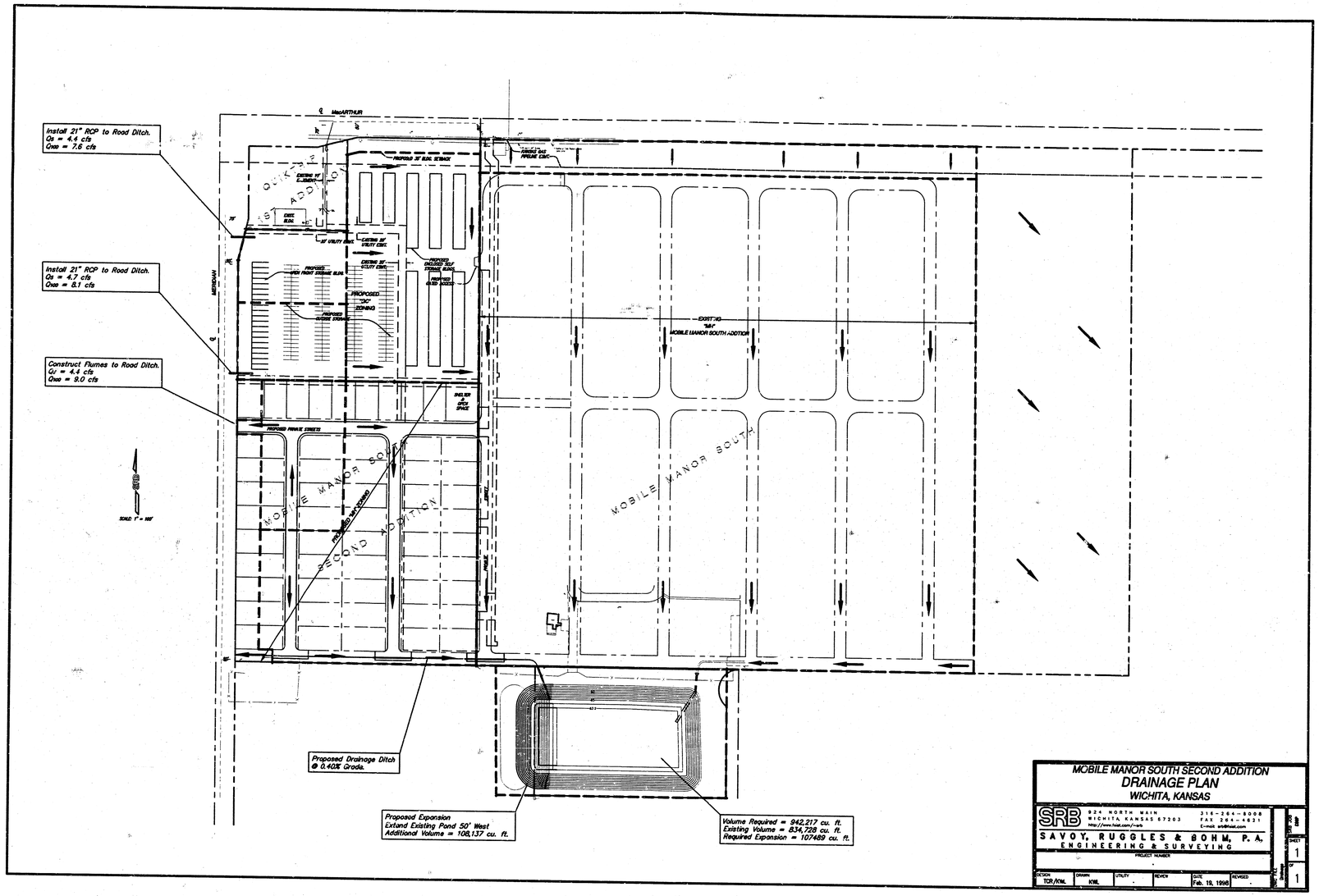
Area 7, V = 0.61(1502852)(7.8/12) = 595,881 ft³

Area 8, V = 0.86(150364)(7.8/12) = 78,109 ft³

Volume Retained = 113,052 + 131,228 + 23,867 + 595,881 + 78109
Volume = 942,217 ft³ required

Existing Pond Volume = 834,728 ft³
107,489 additional volume required

Pond Section Volume 2350.5 ft³/ft
L = 107489/2350.5 = 45.7 ft additional pond length



MOBILE MANOR SOUTH SECOND ADDITION

DRAINAGE PLAN

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

PROJECT NUMBER

DESIGN	DRAWN	UTILITY	REVIEW	DATE	REVISED
TCP/KML	KML	-	-	Feb. 19, 1998	-

SHEET 1 OF 1 SHEETS
Drawing 1 of 1