

Drainage Plan

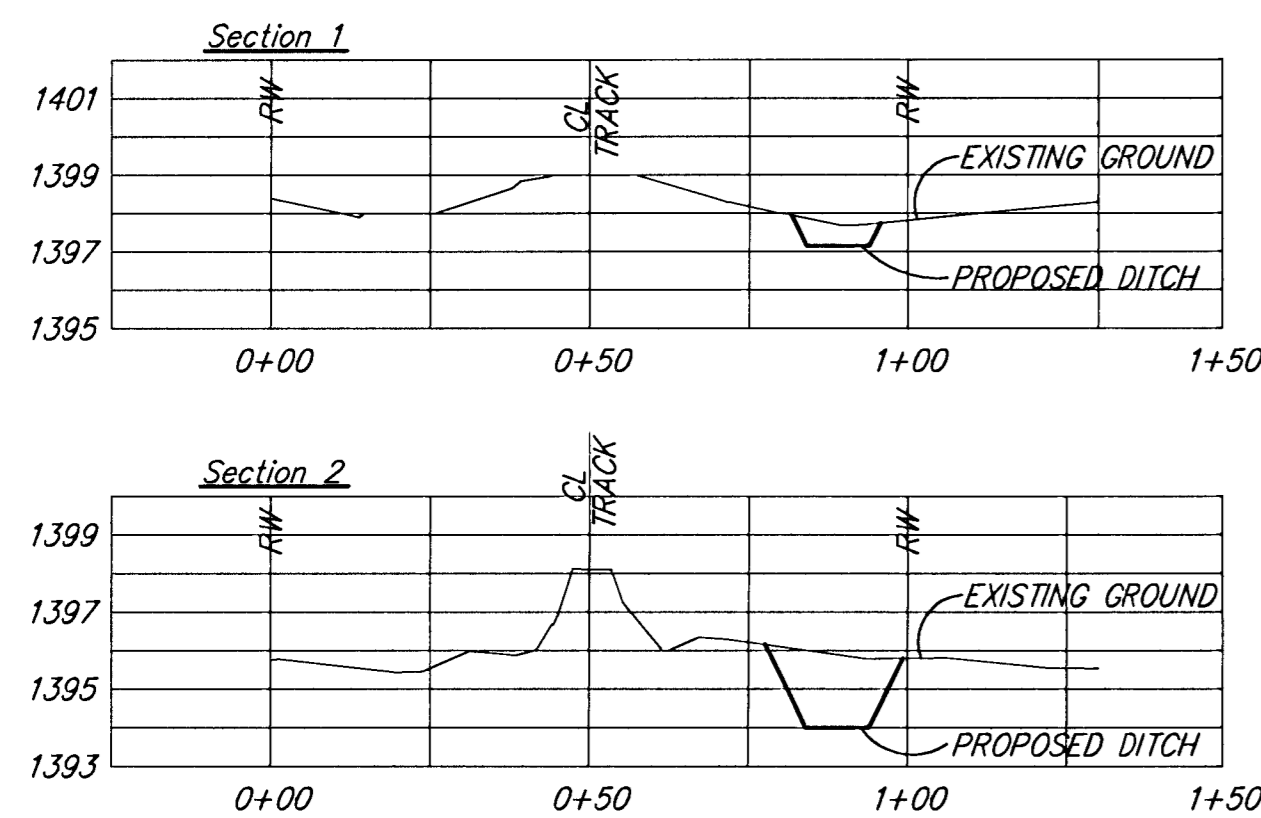
THE PINES AT SAWMILL CREEK

A replat of part of Sawmill Creek Addition,

RUNOFF AT UPSTREAM END OF CHANNEL
 $Q_{100} = cIA = 0.61 \times 5.14 \text{ in./hr} \times 11.4 \text{ acres} = 38.4 \text{ cfs}$
 $Q_{30} = cIA = 0.51 \times 4.71 \text{ in./hr} \times 11.4 \text{ acres} = 27.4 \text{ cfs}$
DEPTH OF FLOW
 $D_{100} = 12.2"$
 $D_{30} = 10.1"$

AREA A
 $T_c = 15 \text{ min.}, \text{ Soil Type D}$
 Existing
 $Q_2 = cIA = 0.26 \times 3.80 \times 1.12 = 1.1 \text{ cfs}$
 $Q_{100} = cIA = 0.61 \times 7.37 \times 1.12 = 5.0 \text{ cfs}$
 Proposed
 $Q_2 = cIA = 0.62 \times 3.80 \times 1.12 = 2.6 \text{ cfs}$
 $Q_{100} = cIA = 0.82 \times 7.37 \times 1.12 = 6.8 \text{ cfs}$

AREA B
 $T_c = 15 \text{ min.}, \text{ Soil Type D}$
 Existing
 $Q_2 = cIA = 0.26 \times 3.80 \times 6.55 = 6.5 \text{ cfs}$
 $Q_{100} = cIA = 0.61 \times 7.37 \times 6.55 = 29.4 \text{ cfs}$
 Proposed
 $Q_2 = cIA = 0.62 \times 3.80 \times 6.55 = 29.4 \text{ cfs}$
 $Q_{100} = cIA = 0.82 \times 7.37 \times 6.55 = 39.6 \text{ cfs}$



RUNOFF AT DOWNSTREAM END OF CHANNEL
 $Q_{100} = cIA = 0.65 \times 5.14 \text{ in./hr} \times 14.1 \text{ acres} = 47.1 \text{ cfs}$
 $Q_{30} = cIA = 0.56 \times 4.71 \text{ in./hr} \times 14.1 \text{ acres} = 37.2 \text{ cfs}$
DEPTH OF FLOW
 $D_{100} = 13.7"$
 $D_{30} = 12.0"$

PLACE 18 S.Y. LIGHT STONE RIP RAP. (TYP)

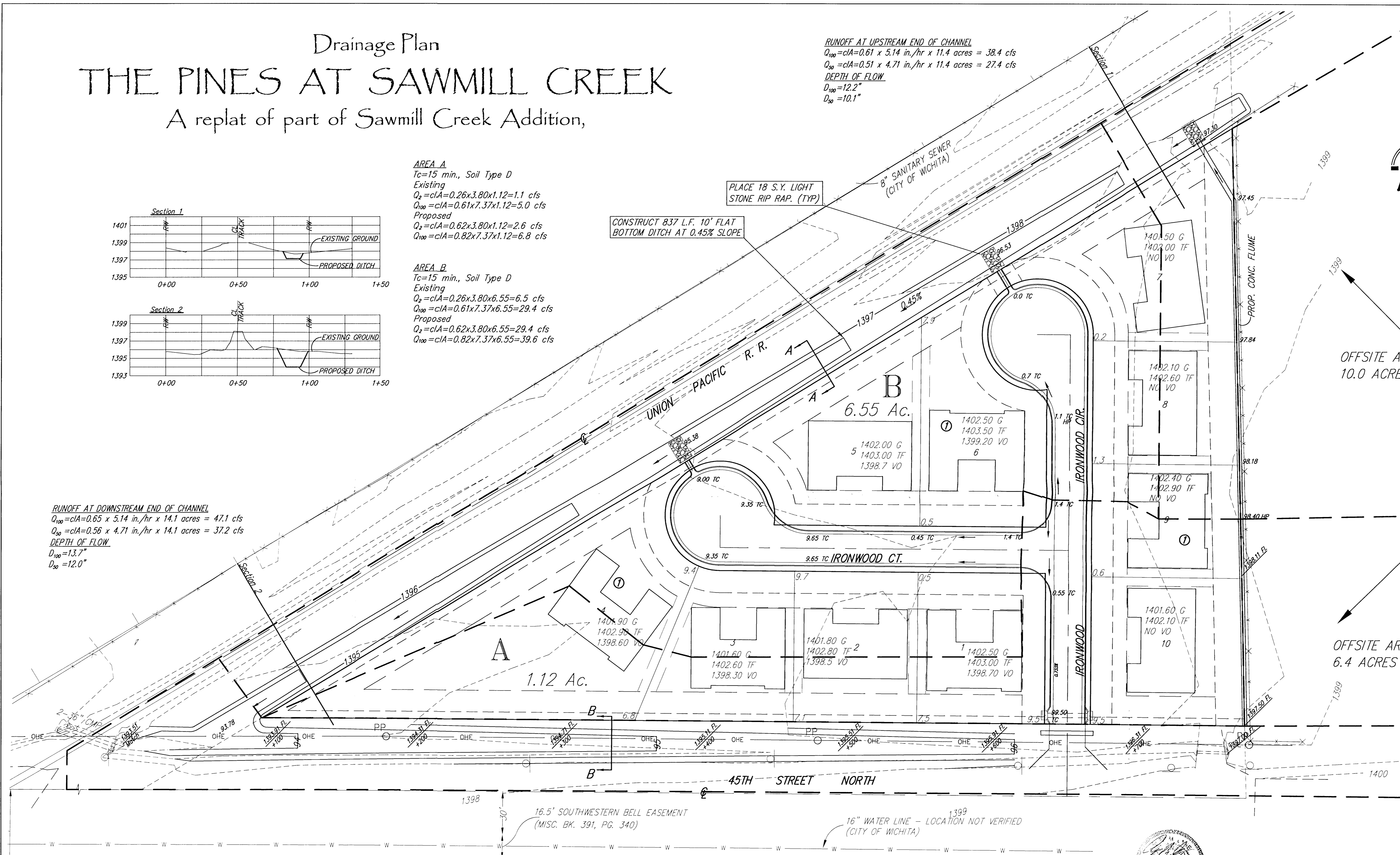
CONSTRUCT 837 L.F. 10' FLAT BOTTOM DITCH AT 0.45% SLOPE



1" = 30'

OFFSITE AREA
10.0 ACRES

OFFSITE AREA
6.4 ACRES



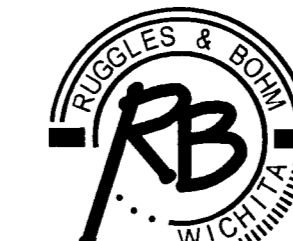
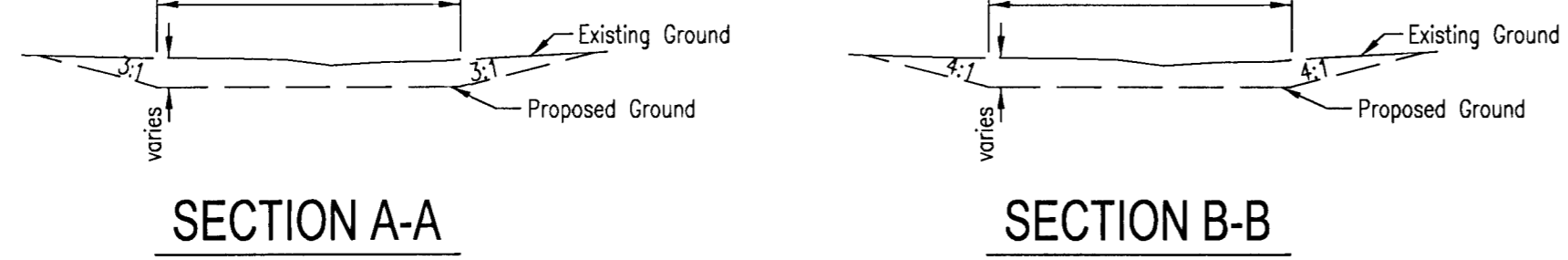
45TH STREET NORTH

16.5' SOUTHWESTERN BELL EASEMENT (MISC. BK. 391, PG. 340)

16" WATER LINE - LOCATION NOT VERIFIED (CITY OF WICHITA)

NOTE: DETENTION FOR THIS PROJECT HAS BEEN PREVIOUSLY PROVIDED FOR IN SAWMILL CREEK, A RESIDENTIAL SUBDIVISION.

RUNOFF AT CULVERT
 $Q_{100} = cIA = 0.67 \times 5.14 \text{ in./hr} \times 24.4 \text{ acres} = 84.0 \text{ cfs}$
 $Q_{30} = cIA = 0.58 \times 4.71 \text{ in./hr} \times 24.4 \text{ acres} = 66.7 \text{ cfs}$
 $HW_{100} \text{ Elev.} = 1397.35$
 $HW_{30} \text{ Elev.} = 1396.71$
 Top of Rail Elev. = 1398.10



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