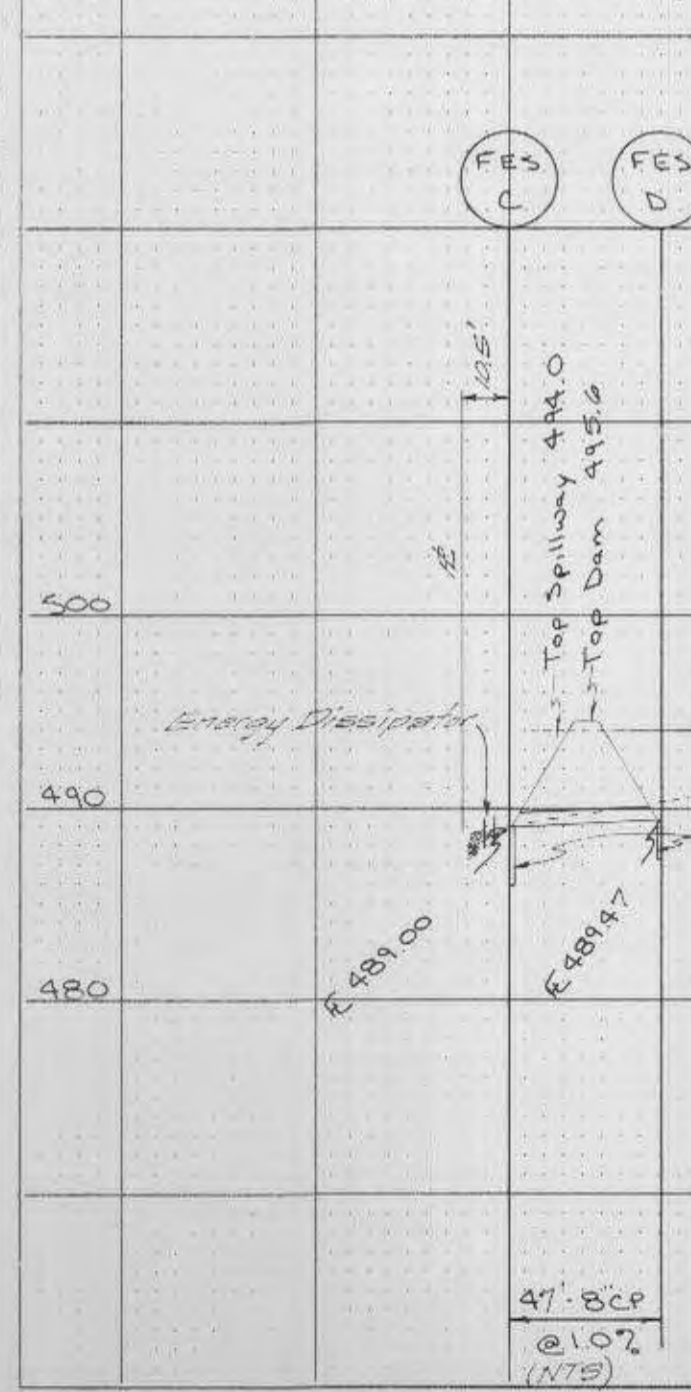
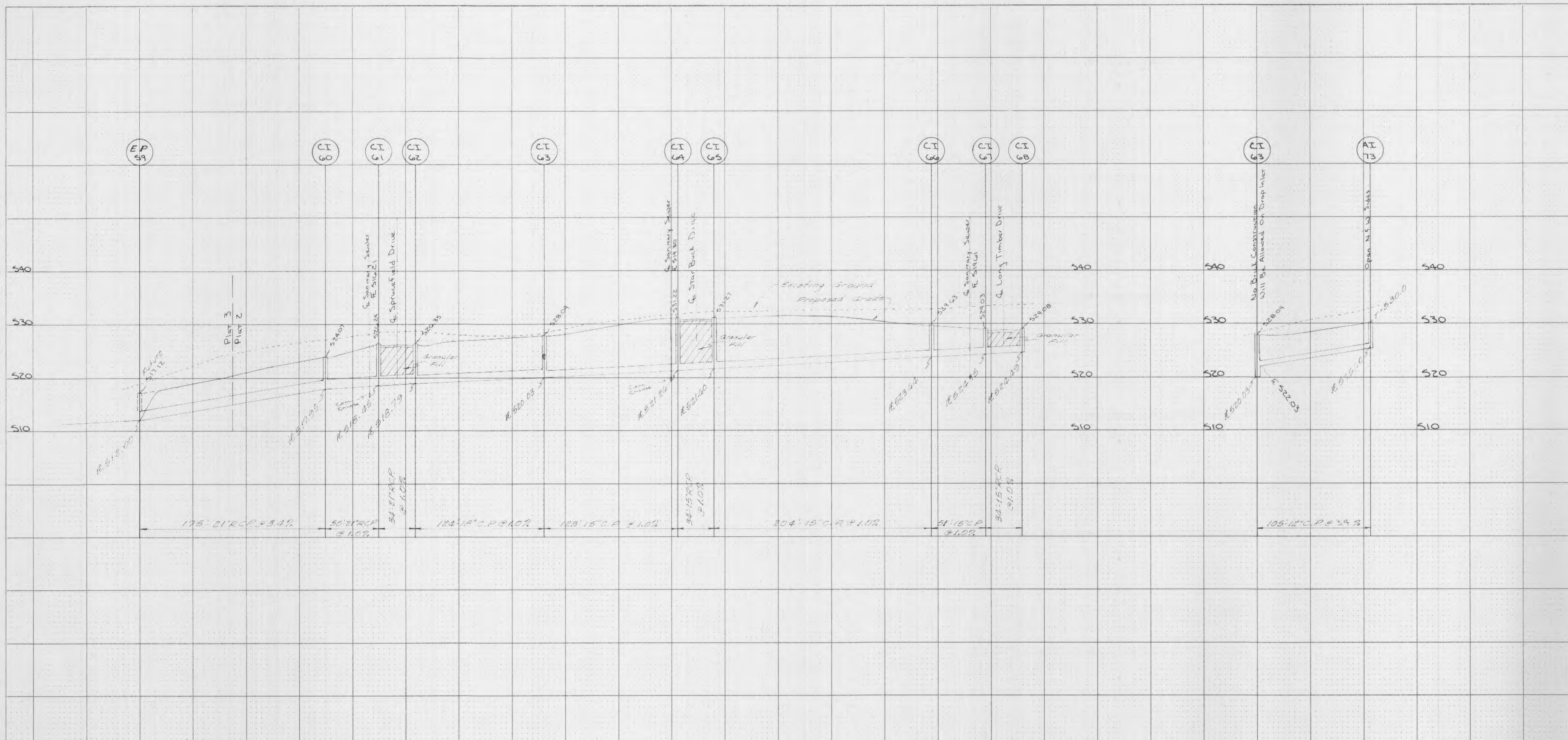


WHEATFIELD
PLAT TWO
STORM SEWER PROFILES
FEB. 1985 84-067

Scale
Vert. 1" = 10'
Hori. 1" = 50'

FINAL SURVEY
NO. _____
DATE _____

ORIGINAL SURVEY
NO. _____
DATE _____



DETENTION CALCULATIONS

Developed Q to Pond: 14.18 x 2.4 = 34.02 cfs
 Undeveloped Q to Pond: 2.42 x 1.7 = 4.11 cfs
 Differential Runoff: 29.91 cfs

Storage Required: 29.91 x 1800 (30 min.) = 53,838 cu. ft.

Detention Pond (Dry)

Overflow Calculations

Capacity of 18" opening as an orifice

$Q = C_d \sqrt{2gh}$
 $Q = 0.6 \times 0.349 \times \sqrt{2(32.2)(4.27)}$
 $Q = 0.21 \times \sqrt{274.39}$
 $Q = 3.47 \text{ cfs}$

Constant: $C = 0.6$
 Area: $A = 0.349$
 Gravity: $g = 32.2$
 Head: $h = 4.27$

Quantity to Pond: 34.02 cfs
 Overflow of 18" opening: 3.47 cfs
 Differential: 30.55 cfs

$30.55 \times 1800 (30 \text{ min.}) = 54,990 \text{ cu. ft.}$

Storage of Pond at 494.00 = 67,768 cu. ft.

Spillway

Area = 9.5
 WP = 24.05

$S^{1/2} = 0.10$
 $R^{2/3} = \frac{9.5}{24.05} = 0.40$
 $R^{2/3} = .543$

$S = 1.0$
 $Q = A \times 1.486 \times R^{2/3} \times S^{1/2}$
 $Q = 9.5 \times 66.04 \times .543 \times .1$
 $Q = 34.07 \text{ cfs}$

