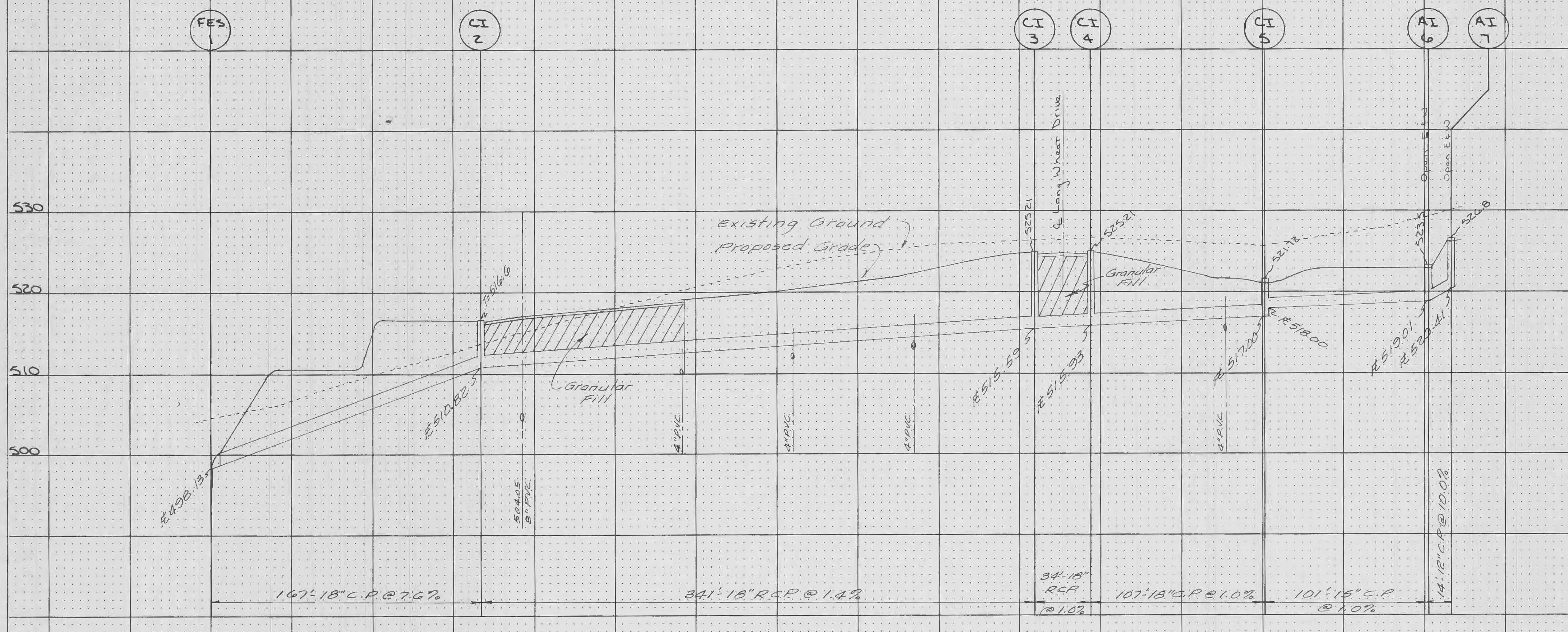
WHEATFIELD
PLAT ONE
STORM SEWER PROFILE

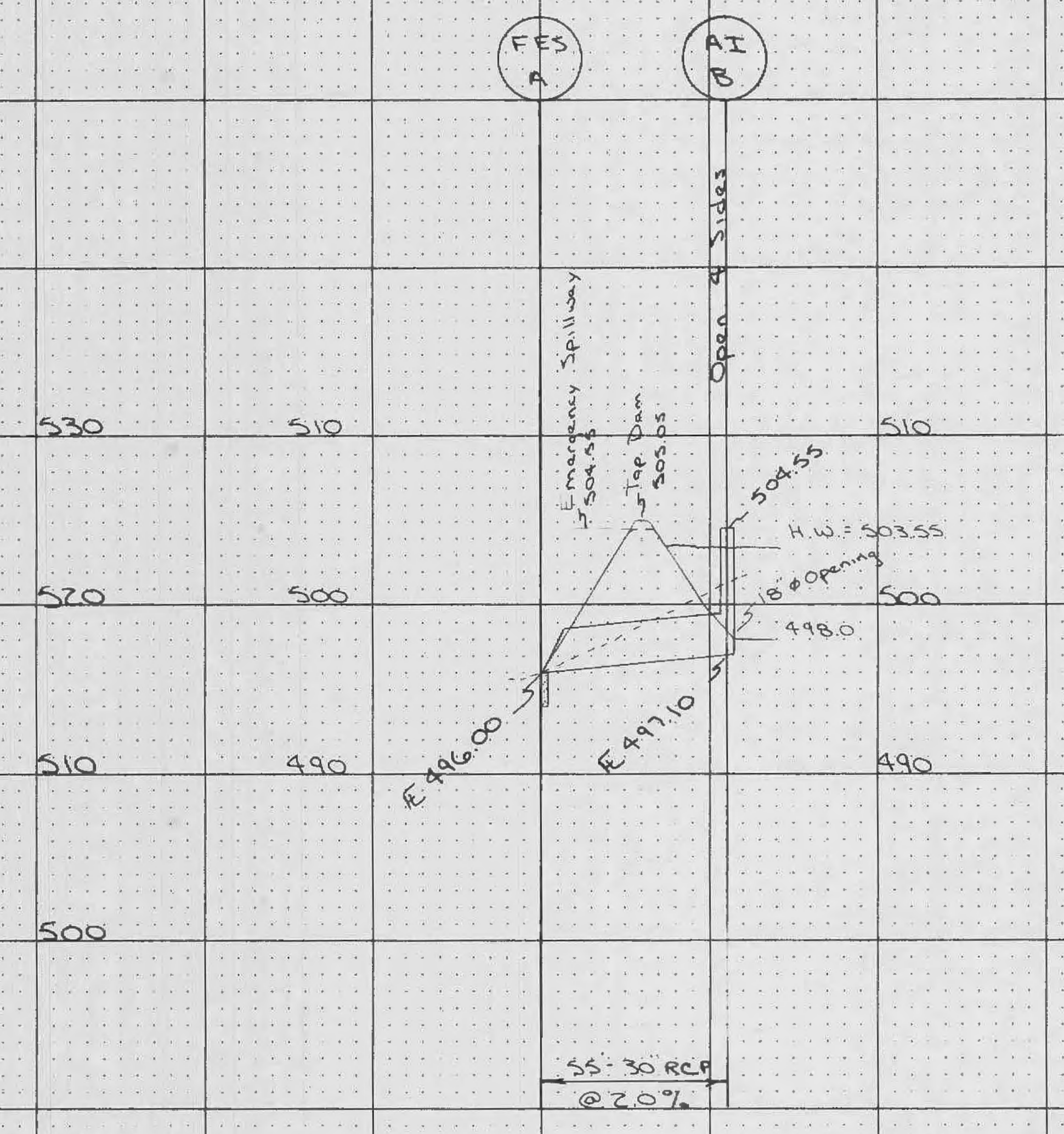
FEB. 1985 84-067

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

FINAL SURVEY | SURVEYED | PLOTTED | TEMPLATE | AREAS | AREAS CHECKED | NOTE BOOK | NO. | BY | DATE

ORIGINAL SURVEY | SURVEYED | PLOTTED | TEMPLATE | AREAS | AREAS CHECKED | NOTE BOOK | NO. | BY | DATE





DETENTION CALCULATIONS

Developed Q to Pond: 23.39 x 2.4 = 56.14 cfs
Undeveloped Q to Pond: 13.61 x 1.7 = 23.14 cfs
Differential Runoff: 33.00 cfs

Storage Required: 33.00 x 1800 (30 min.) = 59,400 cu. ft.

Detention Pond (Dry)

Overflow Calculations
Capacity of 18" opening as an orifice

$Q = Ca\sqrt{2gh}$
$Q = 0.6 \times 1.767 \times \sqrt{2(32.2)4.80}$
$Q = 1.06 \times \sqrt{309.12}$
$Q = 18.63$ cfs

Constant: C = 0.6
Area: A = 1.767
Gravity: g = 32.2
Head: h = 4.80

Quantity to Pond: 56.14 cfs
Overflow of 18" opening: 18.63 cfs
Differential: 37.51 cfs

37.51 x 1800 (30 min) = 67,518 cu. ft.

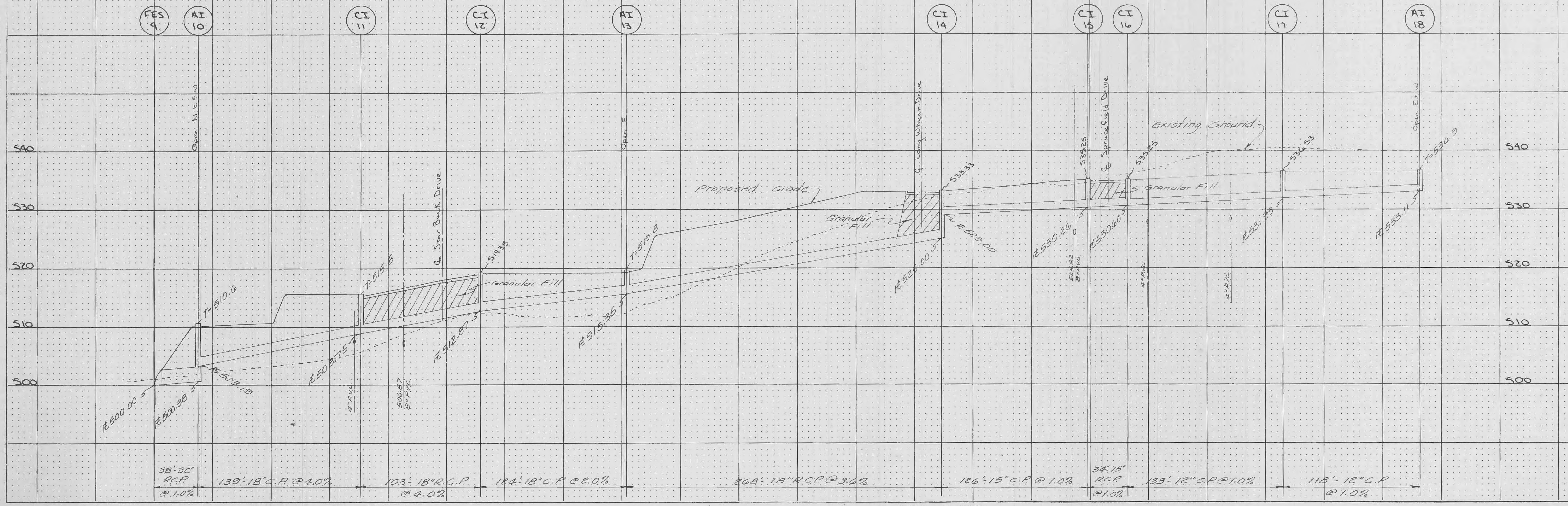
Storage of Pond at 503.55 = 68,213 cu. ft.

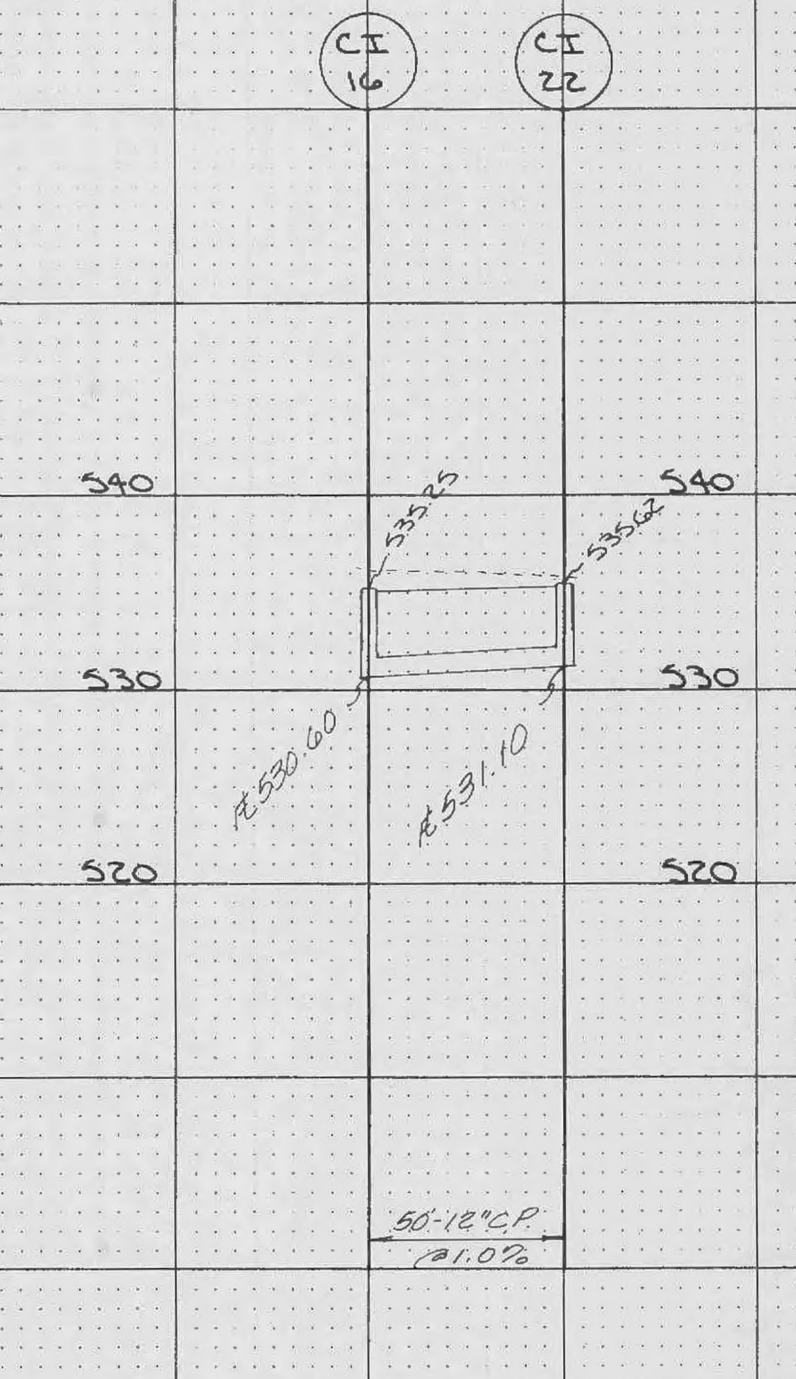
Spillway

Area = 15.0
S = 1.0
WP = 35.05

$S^{1/2} = 0.01$
$R = \frac{15}{35.05} = .43 \quad R^{2/3} = 0.57$

$Q = A \times \frac{1.486}{0.0225} \times R^{2/3} \times S^{1/2}$
$Q = 15.0 \times 66.04 \times 0.57 \times 0.1$
$Q = 56.46$ cfs





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HIGHWAY FEDERAL AID SHEET
PLATE 3-FULL CROSS SECTION-LINE & DOT
TELEDYNE
PRINTED IN U.S.A.