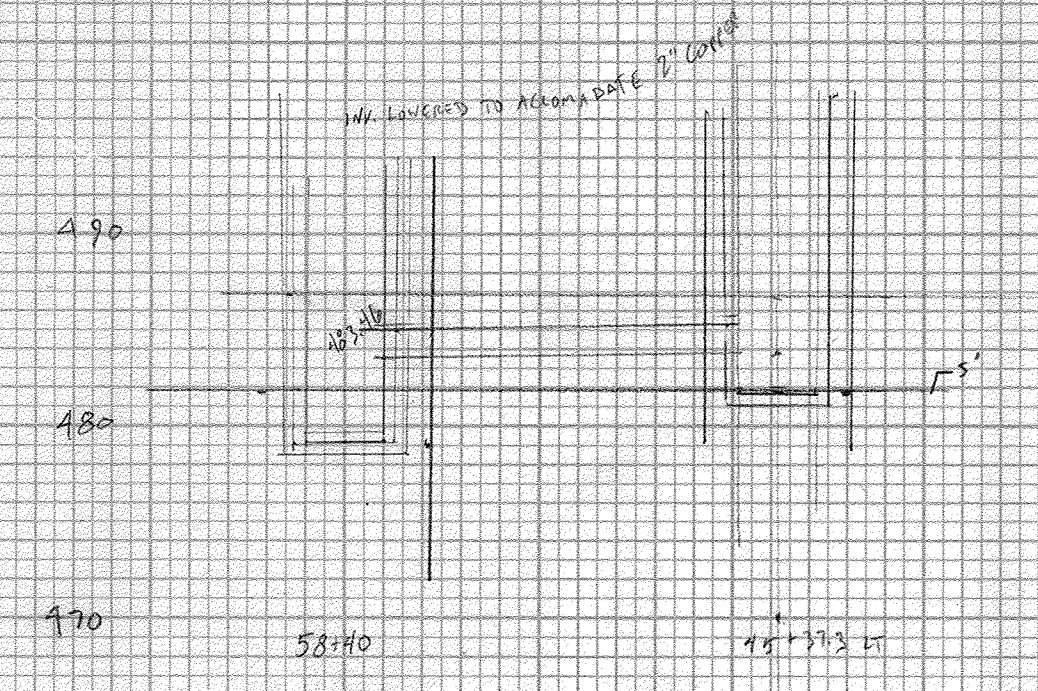


DR 90 (ADJ. VENT. SCA. 45.573 LT = US 5 SCA 58+10)

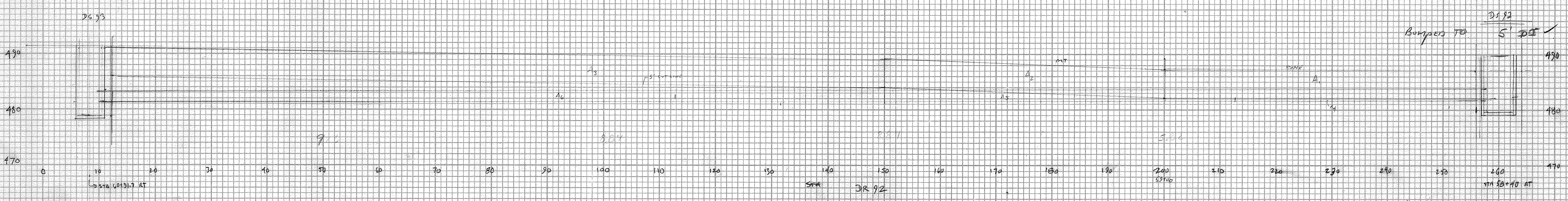


PIPE 50' 45' DIA TRENCH EXCAVATION
 $A_1 = \frac{3.14 \times 20^2 \times 14.11}{2} = 154.98 \text{ cu yd}$
 $\frac{154.98}{27} = 5.75 \text{ cu yd}$
 5.75 cu yd

DR 90 TRENCH EXC. 45' (4' DIA)
 $\pi \times (1.5)^2 \times 45 = 163.14 = 6.05 \text{ cu yd}$
 $\pi \times (1.5)^2 \times 45 = 163.14 \text{ cu yd}$
 5' DIA
 $\frac{163.14}{27} = 6.04 \text{ cu yd}$
 6.05 cu yd

GRAVEL BASE FILL
 $3.75' \times 14.11' = 53.11 \text{ sq ft}$
 $3.6' \times 0.8' \times 14.11' = 40.75 \text{ cu yd}$
 $\frac{40.75}{27} = 1.51 \text{ cu yd}$
 $\frac{40.75}{27} = 1.51 \text{ cu yd}$
 1.27 cu yd

UPH 1/24/08
 TBG 1/24/08



DR 92
 PIPE T.E. 45' DIA
 $A_1 = 5' \times 55.9' \times 4.5' = 1213.03$
 $A_2 = 5' \times 30.1' \times 4.5' = 675.75$
 $A_3 = 5' \times 13.8' \times 4.5' = 310.5$
 PIPE T.E. 25'
 $A_4 = 1.5' \times (0.5 \times 0.4) \times 55.9' \times 4.5' = 151.78 \text{ cu yd}$
 $A_5 = 1.5' \times (0.5 \times 0.5) \times 50.1' \times 4.5' = 162.17 \text{ cu yd}$
 $A_6 = 1.5' \times (0.5 \times 0.4) \times 28.8' \times 4.5' = 83.35 \text{ cu yd}$
 TOTAL = 866.62 cu yd / 27 = 32.095 cu yd
 SEE CALCS ATTACHED

24' DEEP USED = 247.5'
 STATION 92 T.E. 45' DIA
 $\pi \times (1.5)^2 \times 45 = 163.14 \text{ cu yd}$
 $\frac{163.14}{27} = 6.04 \text{ cu yd}$
 GRAVEL BASE FILL
 $4.5' \times 14.11' = 63.49 \text{ sq ft}$
 $4.5' \times 0.8' \times 14.11' = 50.79 \text{ cu yd}$
 $\frac{50.79}{27} = 1.88 \text{ cu yd}$
 $\frac{50.79}{27} = 1.88 \text{ cu yd}$
 TOTAL = 163.14 + 50.79 = 213.93 cu yd
 $\frac{213.93}{27} = 7.92 \text{ cu yd}$
 15.98 cu yd

FM EXIST DI @ 58+10 AT = 6.5' x 4' x 4' (EX 09.0507 BW)
 $S.F. = (2.63 \times 4 \times 4) / 27 = 1.56 \text{ cu yd}$
 $T.R. = (6.5 \times 2.63) \times 4 / 27 = 2.29 \text{ cu yd}$
 TRENCH EXC. = 324.23 + 12.82 = 337.05 cu yd
 103.06/09/10
 1200 1/00/11

UPH 1/29/08

G.B. TBG 1/24/08
 UPH 1/25/08

ORIGINAL SURVEY NOTE BOOK NO. DATE

FINAL SURVEY NOTE BOOK NO. DATE