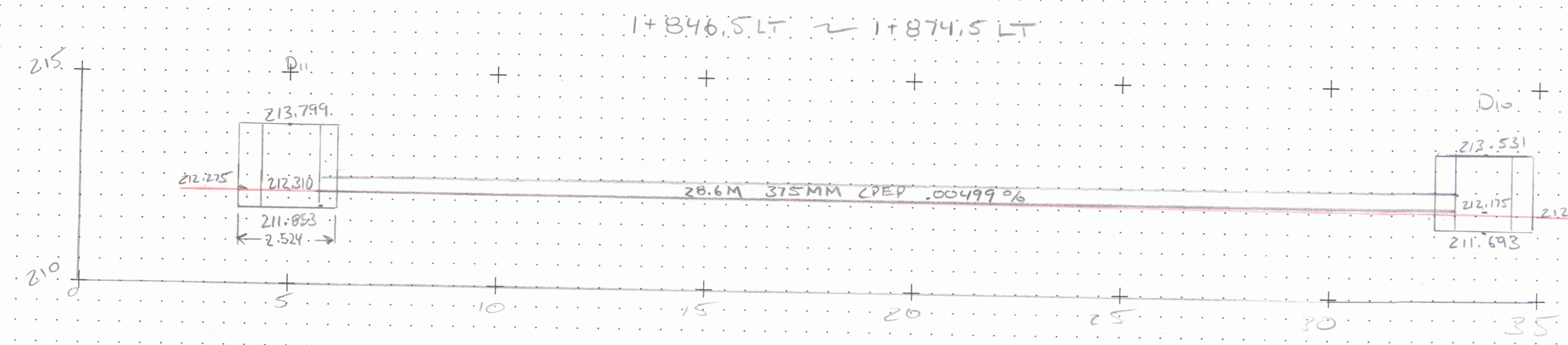


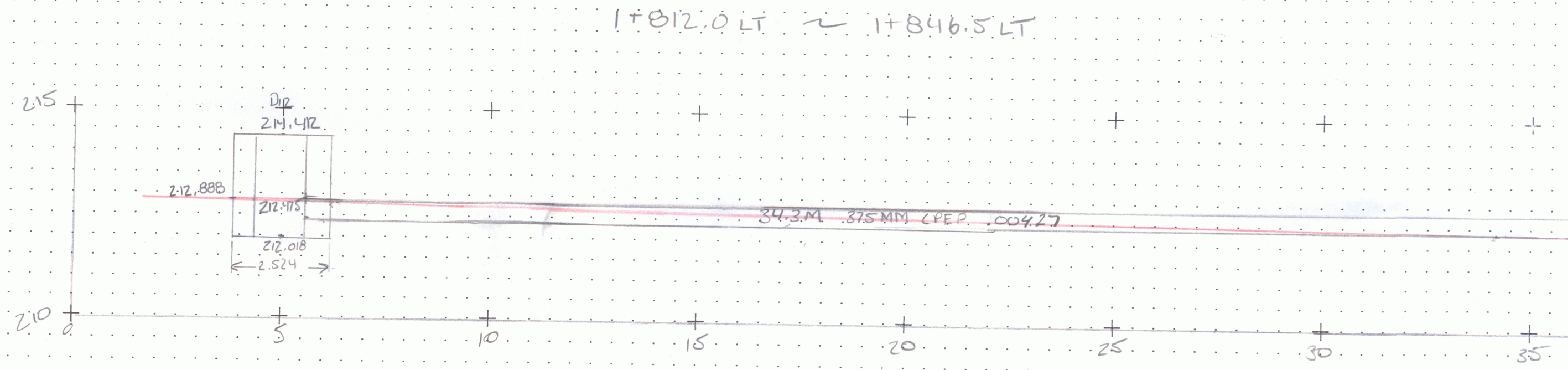
Trench Earth for DI<sub>10</sub>  
 $V = \pi (1.262)^2 \times 1.524 = 7.625 \text{ CM}$   
 $\geq V = \pi (1.262)^2 \times 3.14 \times 1.5 = 2.356 \text{ CM}$   
**9.981 CM**

Granular Backfill  
 $V = 27.476 \times 1.457 \times .762 = 30.505 \text{ CM}$   
 $V_{\text{pipe}} = 27.476 \times \pi (.229)^2 = 4.527 \text{ CM}$   
**25.978 CM**



Trench Earth for DI<sub>11</sub>  
 $V = \pi (1.262)^2 \times 1.524 = 7.625 \text{ CM}$   
 $\geq V = \pi (1.262)^2 \times 4.22 \times 1.5 = 3.167 \text{ CM}$   
**10.792 CM**

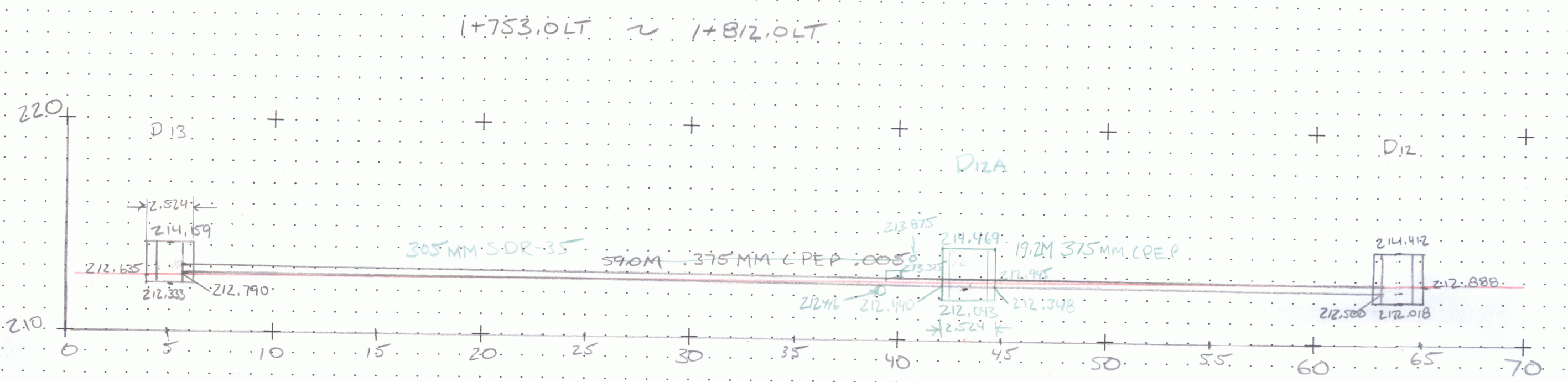
Granular Backfill  
 $V = 27.076 \times 1.457 \times .762 = 30.061 \text{ CM}$   
 $V_{\text{pipe}} = \pi (.229)^2 \times 27.076 = 4.481 \text{ CM}$   
**25.600 CM**



Trench Earth for Pipe  
 $V = 26.076 \times 1.457 \times 4.423 = 54.064 \text{ CM}$

Trench Earth for DI<sub>12</sub>  
 $V = \pi (1.262)^2 \times 1.524 = 7.625 \text{ CM}$   
 $\geq V = \pi (1.262)^2 \times .870 \times 1.5 = 6.529 \text{ CM}$   
**14.154 CM**

Granular Backfill  
 $V = 32.776 \times .762 \times 1.457 = 36.289 \text{ CM}$   
 $V_{\text{pipe}} = \pi (.229)^2 \times 32.776 = 5.400 \text{ CM}$   
**30.989 CM**

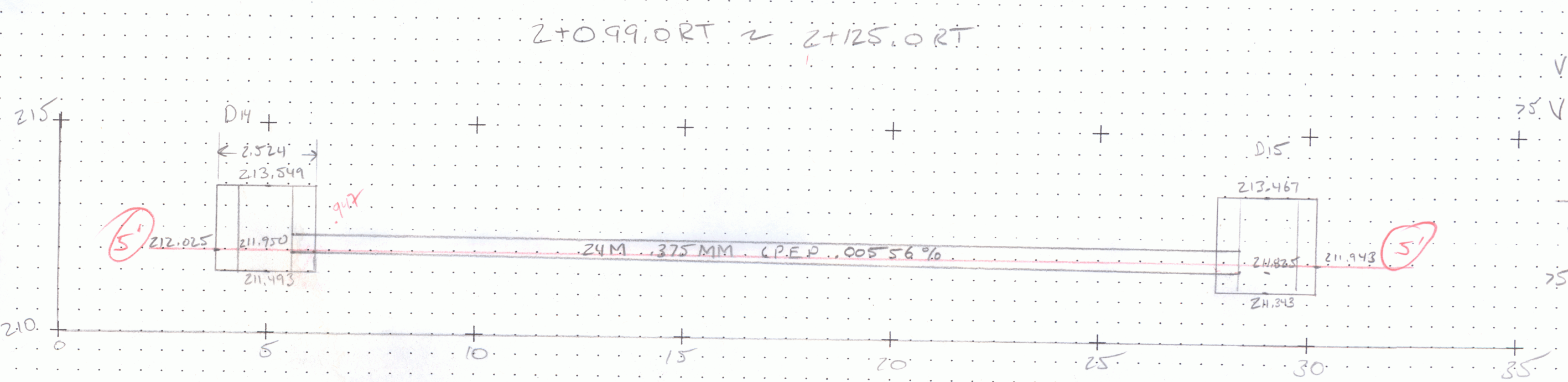


Trench Earth for DI<sub>13</sub>  
 $V = \pi (1.262)^2 \times 1.524 = 7.625 \text{ CM}$   
 $\geq V = \pi (1.262)^2 \times 3.024 \times 1.5 = 2.266 \text{ CM}$   
**9.891 CM**

Granular Backfill  
 $V = 57.476 \times .762 \times 1.457 = 63.812 \text{ CM}$   
 $V_{\text{pipe}} = 57.476 \times \pi (.229)^2 = 9.469 \text{ CM}$   
**54.343 CM**

Trench Earth for Pipe  
 $V = 56.476 \times 1.457 \times 1.524 = 119.799 \text{ CM}$   
 $\geq V = 25.005 \times 1.457 \times 1.94 \times 1.5 = 14.840 \text{ CM}$   
**135.639 CM**

Trench Earth for DI<sub>13a</sub>  
 $V = \pi (1.262)^2 \times 1.524 = 7.625 \text{ CM}$   
 $\geq V = \pi (1.262)^2 \times .902 \times 1.5 = 6.770 \text{ CM}$   
**14.395 CM**



Trench Earth for DI<sub>14</sub>  
 $V = \pi (1.262)^2 \times 1.524 = 7.625 \text{ CM}$   
 $\geq V = \pi (1.262)^2 \times .532 \times 1.5 = 3.992 \text{ CM}$   
**11.617 CM**

Granular Backfill  
 $V = 22.476 \times 1.457 \times .762 = 24.954 \text{ CM}$   
 $V_{\text{pipe}} = \pi (.229)^2 \times 22.476 = 3.703 \text{ CM}$   
**21.251 CM**

Trench Earth for Pipe  
 $V = 21.476 \times 1.457 \times 1.524 = 47.687 \text{ CM}$   
 $\geq V = 21.476 \times 1.457 \times .097 \times 1.5 = 4.553 \text{ CM}$   
**52.240 CM**

6/9/08 JDM  
 7/23/08