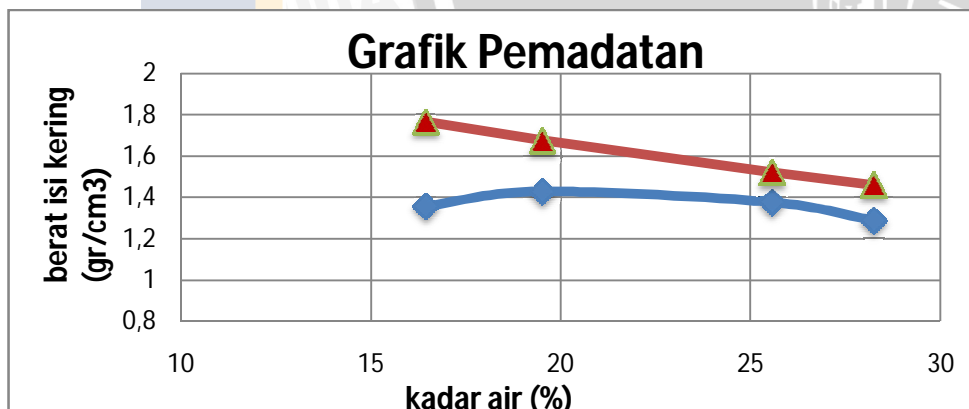


LAMPIRAN PENGUJIAN PADA CAMPURAN TANAH ASLI+5% FLY ASH

Uji Pemadatan

| Uji Pemadatan              |    |          |        |          |          |          |          |          |          |          |          |          |          |
|----------------------------|----|----------|--------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Diameter cetakan           | =  | 15,5 cm  |        |          |          |          |          |          |          |          |          |          |          |
| Tinggi cetakan             | =  | 12,5 cm  |        |          |          |          |          |          |          |          |          |          |          |
| kadar air                  |    |          |        |          |          |          |          |          |          |          |          |          |          |
| penambahan air             | ml | -6       |        |          | -3       |          |          | 3        |          |          | 6        |          |          |
|                            |    | atas     | tengah | bawah    | atas     | tengah   | bawah    | atas     | tengah   | bawah    | atas     | tengah   | bawah    |
| berat cawan                | gr | 5,6      | 5,6    | 4        | 5,6      | 5,7      | 5,9      | 4,2      | 4,2      | 5,7      | 5,6      | 5,8      | 5,5      |
| berat tanah basah + cawan  | gr | 12       | 14     | 12,7     | 16       | 11,4     | 14,5     | 10       | 14       | 11       | 14,1     | 13,1     | 14,1     |
| berat tanah kering + cawan | gr | 11,1     | 13,6   | 10,8     | 15,4     | 10,1     | 12,9     | 9,4      | 12       | 9,5      | 12,5     | 11       | 12,6     |
| berat air (Ww)             | gr | 0,9      | 0,4    | 1,9      | 0,6      | 1,3      | 1,6      | 0,6      | 2        | 1,5      | 1,6      | 2,1      | 1,5      |
| berat tanah kering (Ws)    | gr | 5,5      | 8      | 6,8      | 9,8      | 4,4      | 7        | 5,2      | 7,8      | 3,8      | 6,9      | 5,2      | 7,1      |
| kadar air                  | %  | 16,36364 | 5      | 27,94118 | 6,122449 | 29,54545 | 22,85714 | 11,53846 | 25,64103 | 39,47368 | 23,18841 | 40,38462 | 21,12676 |
| kadar air rata-rata        | %  | 16,43494 |        |          | 19,50835 |          |          | 25,55106 |          |          | 28,23326 |          |          |



| berat isi                          |        |          |          |          |          |
|------------------------------------|--------|----------|----------|----------|----------|
| penambahan air                     | ml     | -6       | -3       | 3        | 6        |
| berat cetakan                      | gr     | 4650     | 4350     | 4640     | 4650     |
| berat tanah basah + cetakan        | gr     | 8380     | 8380     | 8720     | 8550     |
| berat tanah basah                  | gr     | 3730     | 4030     | 4080     | 3900     |
| isi cetakan                        | cm3    | 2359,598 | 2359,598 | 2359,598 | 2359,598 |
| berat isi basah (yw)               | gr/cm3 | 1,580778 | 1,707918 | 1,729108 | 1,652824 |
| berat isi kering (yd)              | gr/cm3 | 1,357649 | 1,42912  | 1,377215 | 1,28892  |
| zero air void                      |        |          |          |          |          |
| penambahan air                     | ml     | -6       | -3       | 3        | 6        |
| kadar air (w)                      | %      | 16,43494 | 19,50835 | 25,55106 | 28,23326 |
| GS                                 | gr/cm3 | 2,489    | 2,489    | 2,489    | 2,489    |
| berat jenis air ( yw )             | gr/cm3 | 1        | 1        | 1        | 1        |
| berat jenis zero air void ( yzav ) | gr/cm3 | 1,766419 | 1,675459 | 1,521425 | 1,461774 |

Pengujian CBR(Unsoaked dan Soaked)

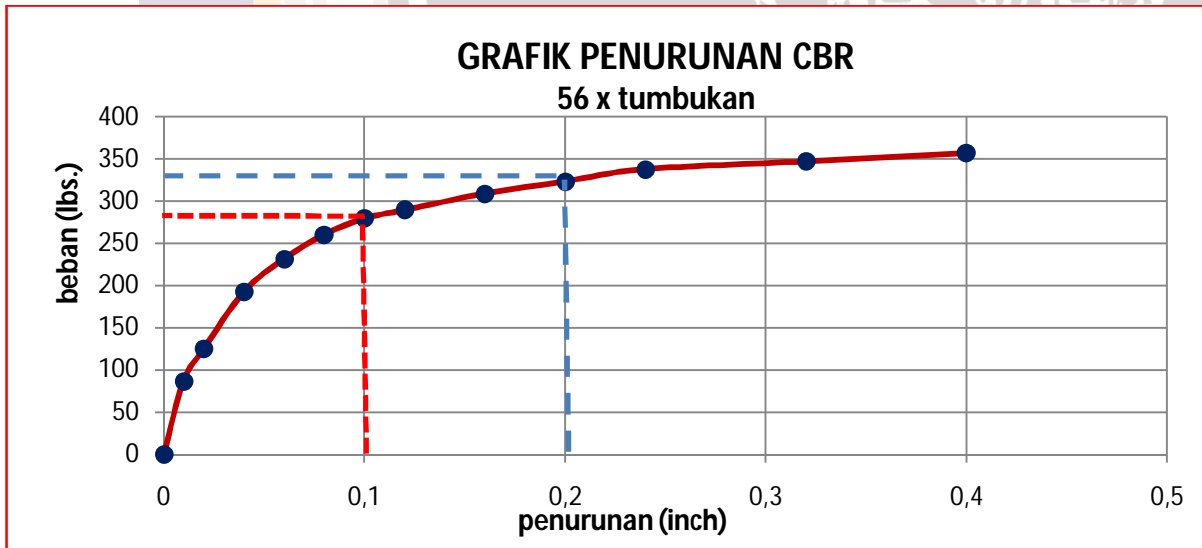
CBR Unsoaked(-6%)

| kadar air                 |        |           |           |           |
|---------------------------|--------|-----------|-----------|-----------|
| keterangan                | satuan | atas      | tengah    | bawah     |
| berat cawan               | gr     | 5,6       | 5,6       | 4         |
| berat tanah basah + cawa  | gr     | 14,1      | 16,1      | 11,7      |
| berat tanah kering + cawa | gr     | 11,1      | 13,6      | 10,8      |
| berat air (Ww)            | gr     | 3         | 2,5       | 0,9       |
| berat tanah kering (Ws)   | gr     | 5,5       | 8         | 6,8       |
| kadar air                 | %      | 54,545455 | 31,250000 | 13,235294 |
| kadar air rata-rata       | %      | 33,010250 |           |           |

| berat isi                    |        |          |
|------------------------------|--------|----------|
| berat isi yang dikehendaki = |        | gr/cc    |
| keterangan                   | satuan | nilai    |
| berat tanah + cetakan        | gr     | 8800     |
| berat cetakan                | gr     | 4560     |
| berat tanah basah            | gr     | 4240     |
| isi cetakan                  | cm3    | 2208,584 |
| berat isi basah (yw)         | gr/cm3 | 1,919782 |
| berat isi kering (yd)        | gr/cm3 | 1,443334 |

| penetrasi                 |                  |                        |             | CBR value        |            |               |
|---------------------------|------------------|------------------------|-------------|------------------|------------|---------------|
| calibration factor = 9,65 |                  |                        |             |                  |            |               |
| Penetrasi (mm)            | Penetrasi (inch) | Pembacaan Proving Ring | Beban (lbs) | Penetration Dial | Load (lbs) | CBR Value (%) |
| 0                         | 0                | 0                      | 0           | 0.1 "            | 279,8500   | 9,328         |
| 0,25                      | 0,01             | 9                      | 86,85       | 0.2 "            | 323,275    | 7,184         |
| 0,5                       | 0,02             | 13                     | 125,45      |                  |            |               |
| 1                         | 0,04             | 20                     | 193         |                  |            |               |
| 1,5                       | 0,06             | 24                     | 231,6       |                  |            |               |
| 2                         | 0,08             | 27                     | 260,55      |                  |            |               |
| 2,5                       | 0,1              | 29                     | 279,85      |                  |            |               |
| 3                         | 0,12             | 30                     | 289,5       |                  |            |               |
| 4                         | 0,16             | 32                     | 308,8       |                  |            |               |
| 5                         | 0,2              | 33,5                   | 323,275     |                  |            |               |
| 6                         | 0,24             | 35                     | 337,75      |                  |            |               |
| 8                         | 0,32             | 36                     | 347,4       |                  |            |               |
| 10                        | 0,4              | 37                     | 357,05      |                  |            |               |



CBR Soaked -6%

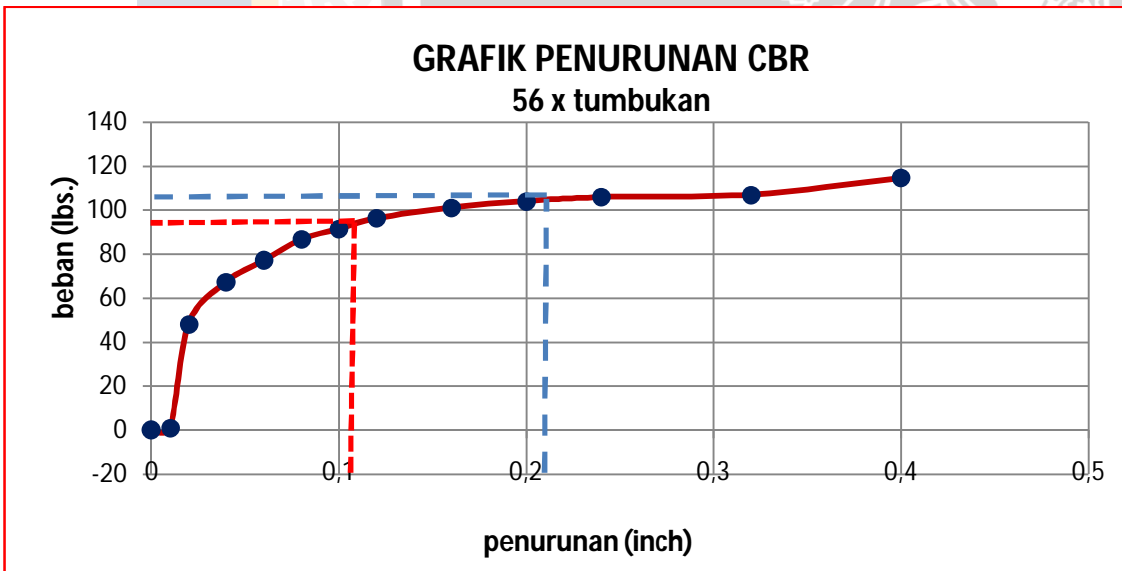
| kadar air                 |        |           |           |           |
|---------------------------|--------|-----------|-----------|-----------|
| keterangan                | satuan | atas      | tengah    | bawah     |
| berat cawan               | gr     | 4,4       | 5,8       | 6,1       |
| berat tanah basah + cawa  | gr     | 13,1      | 13,8      | 11,9      |
| berat tanah kering + cawa | gr     | 10,4      | 11,5      | 10,3      |
| berat air (Ww)            | gr     | 2,7       | 2,3       | 1,6       |
| berat tanah kering (Ws)   | gr     | 6         | 5,7       | 4,2       |
| kadar air                 | %      | 45,000000 | 40,350877 | 38,095238 |
| kadar air rata-rata       | %      |           | 41,148705 |           |

| berat isi                    |        |          |
|------------------------------|--------|----------|
| berat isi yang dikehendaki = | gr/cc  |          |
| keterangan                   | satuan | nilai    |
| berat tanah + cetakan        | gr     | 8720     |
| berat cetakan                | gr     | 4560     |
| berat tanah basah            | gr     | 4160     |
| isi cetakan                  | cm3    | 2208,584 |
| berat isi basah (yw)         | gr/cm3 | 1,883560 |
| berat isi kering (yd)        | gr/cm3 | 1,334451 |

| penetrasi                 |                  |                        |             | CBR value        |            |               |
|---------------------------|------------------|------------------------|-------------|------------------|------------|---------------|
| calibration factor = 9,65 |                  |                        |             |                  |            |               |
| Penetrasi (mm)            | Penetrasi (inch) | Pembacaan Proving Ring | Beban (lbs) | Penetration Dial | Load (lbs) | CBR Value (%) |
| 0                         | 0                | 0                      | 0           | 0.1 "            | 91,6750    | 3,056         |
| 0,25                      | 0,01             | 0,1                    | 0,965       | 0.2 "            | 104,22     | 2,316         |
| 0,5                       | 0,02             | 5                      | 48,25       |                  |            |               |
| 1                         | 0,04             | 7                      | 67,55       |                  |            |               |
| 1,5                       | 0,06             | 8                      | 77,2        |                  |            |               |
| 2                         | 0,08             | 9                      | 86,85       |                  |            |               |
| 2,5                       | 0,1              | 9,5                    | 91,675      |                  |            |               |
| 3                         | 0,12             | 10                     | 96,5        |                  |            |               |
| 4                         | 0,16             | 10,5                   | 101,325     |                  |            |               |
| 5                         | 0,2              | 10,8                   | 104,22      |                  |            |               |
| 6                         | 0,24             | 11                     | 106,15      |                  |            |               |
| 8                         | 0,32             | 11,1                   | 107,115     |                  |            |               |
| 10                        | 0,4              | 11,9                   | 114,835     |                  |            |               |

| Penetration Dial | Load (lbs) | CBR Value (%) |
|------------------|------------|---------------|
| 0.1 "            | 98,0000    | 3,267         |
| 0.2 "            | 107        | 2,378         |



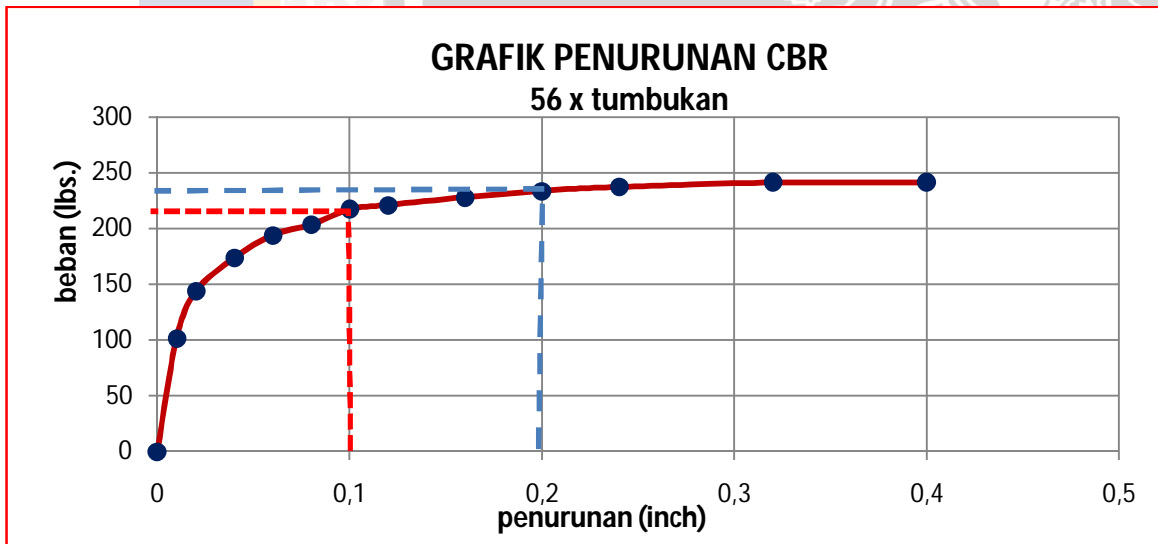
CBR Unsoaked – 3%

| kadar air                 |        |           |           |           |
|---------------------------|--------|-----------|-----------|-----------|
| keterangan                | satuan | atas      | tengah    | bawah     |
| berat cawan               | gr     | 5,6       | 5,7       | 5,9       |
| berat tanah basah + cawa  | gr     | 17,2      | 11,5      | 16,3      |
| berat tanah kering + cawa | gr     | 15,4      | 10,1      | 12,9      |
| berat air (Ww)            | gr     | 1,8       | 1,4       | 3,4       |
| berat tanah kering (Ws)   | gr     | 9,8       | 4,4       | 7         |
| kadar air                 | %      | 18,367347 | 31,818182 | 48,571429 |
| kadar air rata-rata       | %      |           | 32,918986 |           |

| berat isi                    |        |          |
|------------------------------|--------|----------|
| berat isi yang dikehendaki = | gr/cc  |          |
| keterangan                   | satuan | nilai    |
| berat tanah + cetakan        | gr     | 8800     |
| berat cetakan                | gr     | 4560     |
| berat tanah basah            | gr     | 4240     |
| isi cetakan                  | cm3    | 2208,584 |
| berat isi basah (yw)         | gr/cm3 | 1,919782 |
| berat isi kering (yd)        | gr/cm3 | 1,444325 |

| penetrasi                 |                  |                        |             | CBR value        |            |               |
|---------------------------|------------------|------------------------|-------------|------------------|------------|---------------|
| calibration factor = 9,65 |                  |                        |             |                  |            |               |
| Penetrasi (mm)            | Penetrasi (inch) | Pembacaan Proving Ring | Beban (lbs) | Penetration Dial | Load (lbs) | CBR Value (%) |
| 0                         | 0                | 0                      | 0           | 0.1 "            | 217,1250   | 7,238         |
| 0,25                      | 0,01             | 10,5                   | 101,325     | 0.2 "            | 233,53     | 5,190         |
| 0,5                       | 0,02             | 14,9                   | 143,785     |                  |            |               |
| 1                         | 0,04             | 18                     | 173,7       |                  |            |               |
| 1,5                       | 0,06             | 20,1                   | 193,965     |                  |            |               |
| 2                         | 0,08             | 21,1                   | 203,615     |                  |            |               |
| 2,5                       | 0,1              | 22,5                   | 217,125     |                  |            |               |
| 3                         | 0,12             | 22,9                   | 220,985     |                  |            |               |
| 4                         | 0,16             | 23,6                   | 227,74      |                  |            |               |
| 5                         | 0,2              | 24,2                   | 233,53      |                  |            |               |
| 6                         | 0,24             | 24,6                   | 237,39      |                  |            |               |
| 8                         | 0,32             | 25                     | 241,25      |                  |            |               |
| 10                        | 0,4              | 25                     | 241,25      |                  |            |               |



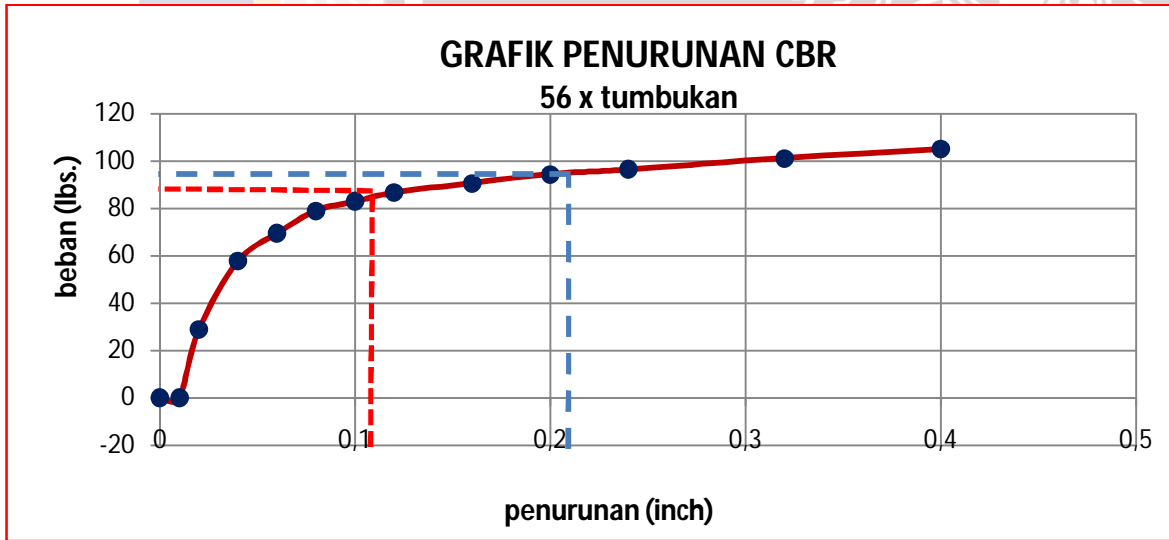
CBR Soaked -3 %

| kadar air                 |        |           |           |           |
|---------------------------|--------|-----------|-----------|-----------|
| keterangan                | satuan | atas      | tengah    | bawah     |
| berat cawan               | gr     | 5,7       | 4,3       | 5,6       |
| berat tanah basah + cawa  | gr     | 12,8      | 12,3      | 12,1      |
| berat tanah kering + cawa | gr     | 10,7      | 10        | 10,2      |
| berat air (Ww)            | gr     | 2,1       | 2,3       | 1,9       |
| berat tanah kering (Ws)   | gr     | 5         | 5,7       | 4,6       |
| kadar air                 | %      | 42,000000 | 40,350877 | 41,304348 |
| kadar air rata-rata       | %      |           | 41,218408 |           |

| berat isi                    |        |          |
|------------------------------|--------|----------|
| berat isi yang dikehendaki = | gr/cc  |          |
| keterangan                   | satuan | nilai    |
| berat tanah + cetakan        | gr     | 8720     |
| berat cetakan                | gr     | 4560     |
| berat tanah basah            | gr     | 4160     |
| isi cetakan                  | cm3    | 2208,584 |
| berat isi basah (yw)         | gr/cm3 | 1,883560 |
| berat isi kering (yd)        | gr/cm3 | 1,333792 |

| penetrasi                 |                  |                        |             | CBR value        |            |               |
|---------------------------|------------------|------------------------|-------------|------------------|------------|---------------|
| calibration factor = 9,65 |                  |                        |             |                  |            |               |
| Penetrasi (mm)            | Penetrasi (inch) | Pembacaan Proving Ring | Beban (lbs) | Penetration Dial | Load (lbs) | CBR Value (%) |
| 0                         | 0                | 0                      | 0           |                  |            |               |
| 0,25                      | 0,01             | 0                      | 0           | 0.1 "            | 82,9900    | 2,766         |
| 0,5                       | 0,02             | 3                      | 28,95       | 0.2 "            | 94,57      | 2,102         |
| 1                         | 0,04             | 6                      | 57,9        |                  |            |               |
| 1,5                       | 0,06             | 7,2                    | 69,48       |                  |            |               |
| 2                         | 0,08             | 8,2                    | 79,13       |                  |            |               |
| 2,5                       | 0,1              | 8,6                    | 82,99       |                  |            |               |
| 3                         | 0,12             | 9                      | 86,85       |                  |            |               |
| 4                         | 0,16             | 9,4                    | 90,71       |                  |            |               |
| 5                         | 0,2              | 9,8                    | 94,57       |                  |            |               |
| 6                         | 0,24             | 10                     | 96,5        |                  |            |               |
| 8                         | 0,32             | 10,5                   | 101,325     |                  |            |               |
| 10                        | 0,4              | 10,9                   | 105,185     |                  |            |               |



| Penetration Dial | Load (lbs) | CBR Value (%) |
|------------------|------------|---------------|
| 0.1 "            | 84,0000    | 2,800         |
| 0.2 "            | 99         | 2,200         |

CBR Unsoaked +3%

kadar air

| keterangan                 | satuan | atas      | tengah    | bawah     |
|----------------------------|--------|-----------|-----------|-----------|
| berat cawan                | gr     | 4,2       | 4,2       | 5,7       |
| berat tanah basah + cawan  | gr     | 11,5      | 15,1      | 10,9      |
| berat tanah kering + cawan | gr     | 9,4       | 12        | 9,5       |
| berat air (Ww)             | gr     | 2,1       | 3,1       | 1,4       |
| berat tanah kering (Ws)    | gr     | 5,2       | 7,8       | 3,8       |
| kadar air                  | %      | 40,384615 | 39,743590 | 36,842105 |
| kadar air rata-rata        | %      | 38,990103 |           |           |

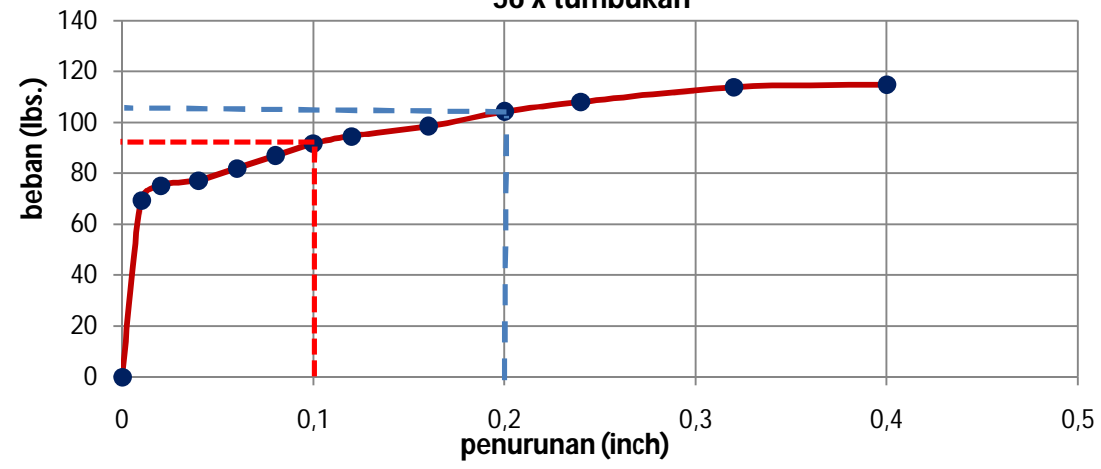
berat isi

berat isi yang dikehendaki = gr/cc

| keterangan            | satuan             | nilai    |
|-----------------------|--------------------|----------|
| berat tanah + cetakan | gr                 | 8800     |
| berat cetakan         | gr                 | 4560     |
| berat tanah basah     | gr                 | 4240     |
| isi cetakan           | cm <sup>3</sup>    | 2208,584 |
| berat isi basah (yw)  | gr/cm <sup>3</sup> | 1,919782 |
| berat isi kering (vd) | gr/cm <sup>3</sup> | 1,381237 |

| penetrasi                 |                  |                        |             | CBR value        |            |               |
|---------------------------|------------------|------------------------|-------------|------------------|------------|---------------|
| calibration factor = 9,65 |                  |                        |             |                  |            |               |
| Penetrasi (mm)            | Penetrasi (inch) | Pembacaan Proving Ring | Beban (lbs) | Penetration Dial | Load (lbs) | CBR Value (%) |
| 0                         | 0                | 0                      | 0           | 0.1 "            | 91,6750    | 3,056         |
| 0,25                      | 0,01             | 7,2                    | 69,48       | 0.2 "            | 104,22     | 2,316         |
| 0,5                       | 0,02             | 7,8                    | 75,27       |                  |            |               |
| 1                         | 0,04             | 8                      | 77,2        |                  |            |               |
| 1,5                       | 0,06             | 8,5                    | 82,025      |                  |            |               |
| 2                         | 0,08             | 9                      | 86,85       |                  |            |               |
| 2,5                       | 0,1              | 9,5                    | 91,675      |                  |            |               |
| 3                         | 0,12             | 9,8                    | 94,57       |                  |            |               |
| 4                         | 0,16             | 10,2                   | 98,43       |                  |            |               |
| 5                         | 0,2              | 10,8                   | 104,22      |                  |            |               |
| 6                         | 0,24             | 11,2                   | 108,08      |                  |            |               |
| 8                         | 0,32             | 11,8                   | 113,87      |                  |            |               |
| 10                        | 0,4              | 11,9                   | 114,835     |                  |            |               |

GRAFIK PENURUNAN CBR  
56 x tumbukan



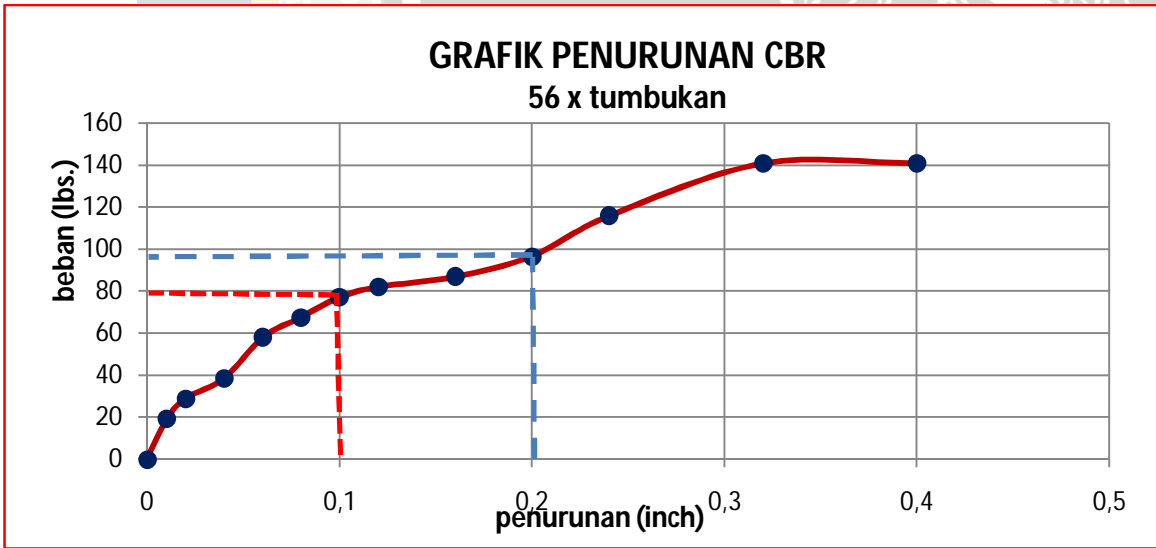
CBR Soaked + 3%

| kadar air                 |        |           |           |           |
|---------------------------|--------|-----------|-----------|-----------|
| keterangan                | satuan | atas      | tengah    | bawah     |
| berat cawan               | gr     | 4,1       | 4,3       | 5,8       |
| berat tanah basah + cawa  | gr     | 8,4       | 12,5      | 8,2       |
| berat tanah kering + cawa | gr     | 7         | 10,2      | 7,5       |
| berat air (Ww)            | gr     | 1,4       | 2,3       | 0,7       |
| berat tanah kering (Ws)   | gr     | 2,9       | 5,9       | 1,7       |
| kadar air                 | %      | 48,275862 | 38,983051 | 41,176471 |
| kadar air rata-rata       | %      |           | 42,811795 |           |

| berat isi                    |        |          |
|------------------------------|--------|----------|
| berat isi yang dikehendaki = | gr/cc  |          |
| keterangan                   | satuan | nilai    |
| berat tanah + cetakan        | gr     | 8720     |
| berat cetakan                | gr     | 4560     |
| berat tanah basah            | gr     | 4160     |
| isi cetakan                  | cm3    | 2208,584 |
| berat isi basah (yw)         | gr/cm3 | 1,883560 |
| berat isi kering (yd)        | gr/cm3 | 1,318911 |

| penetrasi                 |                  |                        |             | CBR value        |            |               |
|---------------------------|------------------|------------------------|-------------|------------------|------------|---------------|
| calibration factor = 9,65 |                  |                        |             |                  |            |               |
| Penetrasi (mm)            | Penetrasi (inch) | Pembacaan Proving Ring | Beban (lbs) | Penetration Dial | Load (lbs) | CBR Value (%) |
| 0                         | 0                | 0                      | 0           | 0.1 "            | 77,2000    | 2,573         |
| 0,25                      | 0,01             | 2                      | 19,3        | 0.2 "            | 96,5       | 2,144         |
| 0,5                       | 0,02             | 3                      | 28,95       |                  |            |               |
| 1                         | 0,04             | 4                      | 38,6        |                  |            |               |
| 1,5                       | 0,06             | 6                      | 57,9        |                  |            |               |
| 2                         | 0,08             | 7                      | 67,55       |                  |            |               |
| 2,5                       | 0,1              | 8                      | 77,2        |                  |            |               |
| 3                         | 0,12             | 8,5                    | 82,025      |                  |            |               |
| 4                         | 0,16             | 9                      | 86,85       |                  |            |               |
| 5                         | 0,2              | 10                     | 96,5        |                  |            |               |
| 6                         | 0,24             | 12                     | 115,8       |                  |            |               |
| 8                         | 0,32             | 14,6                   | 140,89      |                  |            |               |
| 10                        | 0,4              | 14,6                   | 140,89      |                  |            |               |



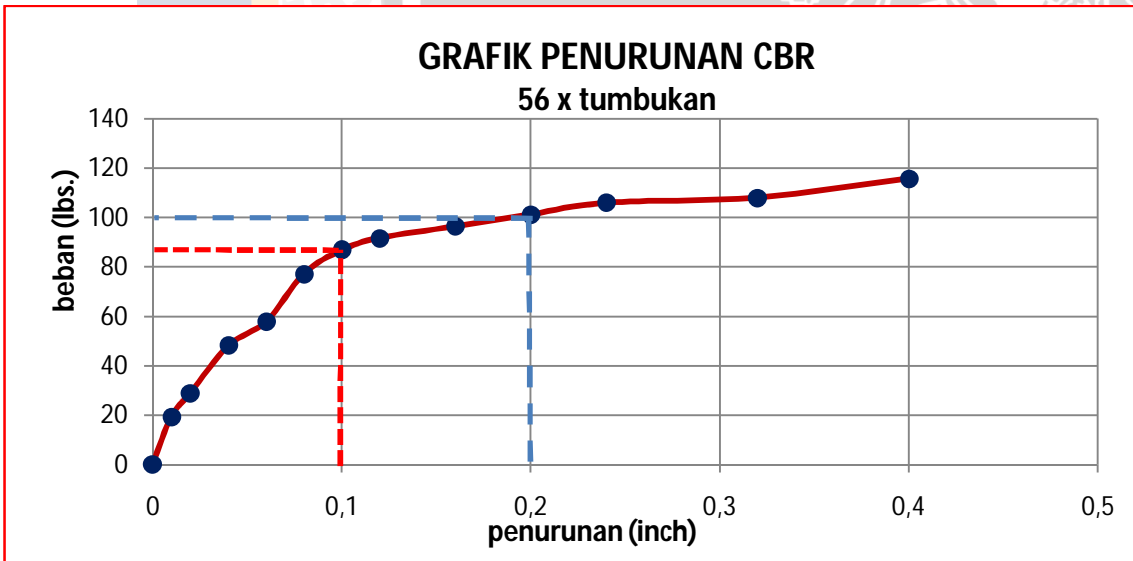
CBR Unsoaked +6%

| kadar air                 |        |           |           |           |
|---------------------------|--------|-----------|-----------|-----------|
| keterangan                | satuan | atas      | tengah    | bawah     |
| berat cawan               | gr     | 5,6       | 5,8       | 5,5       |
| berat tanah basah + cawa  | gr     | 15,6      | 13,6      | 15,7      |
| berat tanah kering + cawa | gr     | 12,5      | 11        | 12,6      |
| berat air (Ww)            | gr     | 3,1       | 2,6       | 3,1       |
| berat tanah kering (Ws)   | gr     | 6,9       | 5,2       | 7,1       |
| kadar air                 | %      | 44,927536 | 50,000000 | 43,661972 |
| kadar air rata-rata       | %      |           | 46,196503 |           |

| berat isi                    |        |          |
|------------------------------|--------|----------|
| berat isi yang dikehendaki = | gr/cc  |          |
| keterangan                   | satuan | nilai    |
| berat tanah + cetakan        | gr     | 8800     |
| berat cetakan                | gr     | 4560     |
| berat tanah basah            | gr     | 4240     |
| isi cetakan                  | cm3    | 2208,584 |
| berat isi basah (yw)         | gr/cm3 | 1,919782 |
| berat isi kering (yd)        | gr/cm3 | 1,313152 |

| penetrasi                 |                  |                        |             |  | CBR value        |            |               |
|---------------------------|------------------|------------------------|-------------|--|------------------|------------|---------------|
| calibration factor = 9,65 |                  |                        |             |  |                  |            |               |
| Penetrasi (mm)            | Penetrasi (inch) | Pembacaan Proving Ring | Beban (lbs) |  | Penetration Dial | Load (lbs) | CBR Value (%) |
| 0                         | 0                | 0                      | 0           |  | 0.1 "            | 86,8500    | 2,895         |
| 0,25                      | 0,01             | 2                      | 19,3        |  | 0.2 "            | 101,325    | 2,252         |
| 0,5                       | 0,02             | 3                      | 28,95       |  |                  |            |               |
| 1                         | 0,04             | 5                      | 48,25       |  |                  |            |               |
| 1,5                       | 0,06             | 6                      | 57,9        |  |                  |            |               |
| 2                         | 0,08             | 8                      | 77,2        |  |                  |            |               |
| 2,5                       | 0,1              | 9                      | 86,85       |  |                  |            |               |
| 3                         | 0,12             | 9,5                    | 91,675      |  |                  |            |               |
| 4                         | 0,16             | 10                     | 96,5        |  |                  |            |               |
| 5                         | 0,2              | 10,5                   | 101,325     |  |                  |            |               |
| 6                         | 0,24             | 11                     | 106,15      |  |                  |            |               |
| 8                         | 0,32             | 11,2                   | 108,08      |  |                  |            |               |
| 10                        | 0,4              | 12                     | 115,8       |  |                  |            |               |





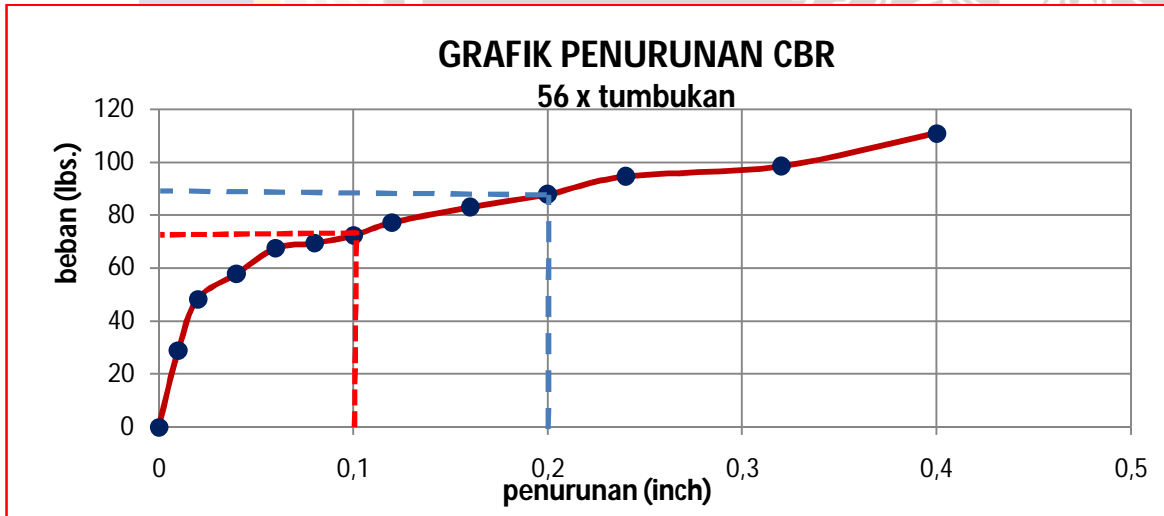
CBR Soaked +6%

| kadar air                 |        |           |           |           |
|---------------------------|--------|-----------|-----------|-----------|
| keterangan                | satuan | atas      | tengah    | bawah     |
| berat cawan               | gr     | 5,9       | 4,3       | 5,6       |
| berat tanah basah + cawa  | gr     | 12,1      | 13,5      | 13        |
| berat tanah kering + cawa | gr     | 10,1      | 10,7      | 10,7      |
| berat air (Ww)            | gr     | 2         | 2,8       | 2,3       |
| berat tanah kering (Ws)   | gr     | 4,2       | 6,4       | 5,1       |
| kadar air                 | %      | 47,619048 | 43,750000 | 45,098039 |
| kadar air rata-rata       | %      |           | 45,489029 |           |

| berat isi                    |                    |          |
|------------------------------|--------------------|----------|
| berat isi yang dikehendaki = | gr/cc              |          |
| keterangan                   | satuan             | nilai    |
| berat tanah + cetakan        | gr                 | 8720     |
| berat cetakan                | gr                 | 4560     |
| berat tanah basah            | gr                 | 4160     |
| isi cetakan                  | cm <sup>3</sup>    | 2208,584 |
| berat isi basah (yw)         | gr/cm <sup>3</sup> | 1,883560 |
| berat isi kering (yd)        | gr/cm <sup>3</sup> | 1,294640 |

| penetrasi                 |                  |                        |             | CBR value        |            |               |
|---------------------------|------------------|------------------------|-------------|------------------|------------|---------------|
| calibration factor = 9,65 |                  |                        |             |                  |            |               |
| Penetrasi (mm)            | Penetrasi (inch) | Pembacaan Proving Ring | Beban (lbs) | Penetration Dial | Load (lbs) | CBR Value (%) |
| 0                         | 0                | 0                      | 0           |                  |            |               |
| 0,25                      | 0,01             | 3                      | 28,95       | 0,1 "            | 72,3750    | 2,413         |
| 0,5                       | 0,02             | 5                      | 48,25       | 0,2 "            | 87,815     | 1,951         |
| 1                         | 0,04             | 6                      | 57,9        |                  |            |               |
| 1,5                       | 0,06             | 7                      | 67,55       |                  |            |               |
| 2                         | 0,08             | 7,2                    | 69,48       |                  |            |               |
| 2,5                       | 0,1              | 7,5                    | 72,375      |                  |            |               |
| 3                         | 0,12             | 8                      | 77,2        |                  |            |               |
| 4                         | 0,16             | 8,6                    | 82,99       |                  |            |               |
| 5                         | 0,2              | 9,1                    | 87,815      |                  |            |               |
| 6                         | 0,24             | 9,8                    | 94,57       |                  |            |               |
| 8                         | 0,32             | 10,2                   | 98,43       |                  |            |               |
| 10                        | 0,4              | 11,5                   | 110,975     |                  |            |               |



Uji Swelling

|                         | -6%   | -3%  | 3%    | 6%   |
|-------------------------|-------|------|-------|------|
| waktu                   |       |      |       |      |
| 5                       | 23    | 7    | 5     | 3    |
| 10                      | 37    | 10   | 8     | 5    |
| 15                      | 53    | 15   | 13    | 9    |
| 20                      | 64    | 18   | 16    | 12   |
| 25                      | 79    | 20   | 18    | 17   |
| 30                      | 84    | 22   | 21    | 19   |
| 35                      | 93    | 25   | 23    | 21   |
| 40                      | 102   | 56   | 49    | 45   |
| 45                      | 110   | 94   | 89    | 76   |
| 50                      | 117   | 115  | 105   | 96   |
| 55                      | 122,5 | 145  | 120   | 110  |
| 60                      | 130   | 175  | 128   | 115  |
| 90                      | 173   | 254  | 164   | 156  |
| 120                     | 200   | 275  | 195   | 185  |
| 150                     | 345   | 290  | 330   | 295  |
| 180                     | 350   | 320  | 345   | 320  |
| 210                     | 370   | 340  | 365   | 345  |
| 240                     | 390   | 350  | 386   | 375  |
| 420                     | 415   | 455  | 405   | 396  |
| 600                     | 424   | 464  | 415   | 406  |
| 780                     | 433   | 475  | 425   | 416  |
| 960                     | 445   | 487  | 430   | 425  |
| 1140                    | 452   | 495  | 445   | 436  |
| 1320                    | 463   | 505  | 452   | 442  |
| 1500                    | 472   | 514  | 564   | 558  |
| 1680                    | 483   | 526  | 478   | 457  |
| 2040                    | 492   | 537  | 482   | 475  |
| 2400                    | 504   | 543  | 494   | 487  |
| 2760                    | 512   | 552  | 505   | 492  |
| 3120                    | 532   | 560  | 514   | 505  |
|                         |       |      |       |      |
| nilai akhir dikali 0,01 | 5,32  | 5,6  | 5,14  | 5,05 |
|                         | 4,256 | 4,48 | 4,112 | 4,04 |

