

CALCULATED AND DRAWN BY TBG 1/30/08

DR 29
 PIPE T.E. < 5'
 AREA (FROM CADD) = 13.55 SF * 3.75' = 50.81 CF/27 = 1.88 CY
 DS 29
 STRUCTURE T.E. < 5'
 $5' * \text{PI} (3.42')^2 = 183.73 \text{ CF/27} = 6.80 \text{ CY}$
 STRUCTURE T.E. > 5'
 $1.5 [(2.28' + 0.25') / 2] * \text{PI} (3.42')^2 = 69.72 \text{ CF/27} = 2.58 \text{ CY}$
 TOT = 9.38 CY
 DR 29 GRANULAR BACKFILL
 $(3.75' * .88' * 16.0') - [(\text{PI} (.88')^2 / 2) * 16.0'] = 33.34 \text{ CF/27} = 1.23 \text{ CY}$

TOTAL TRGWH BL 1126 cy

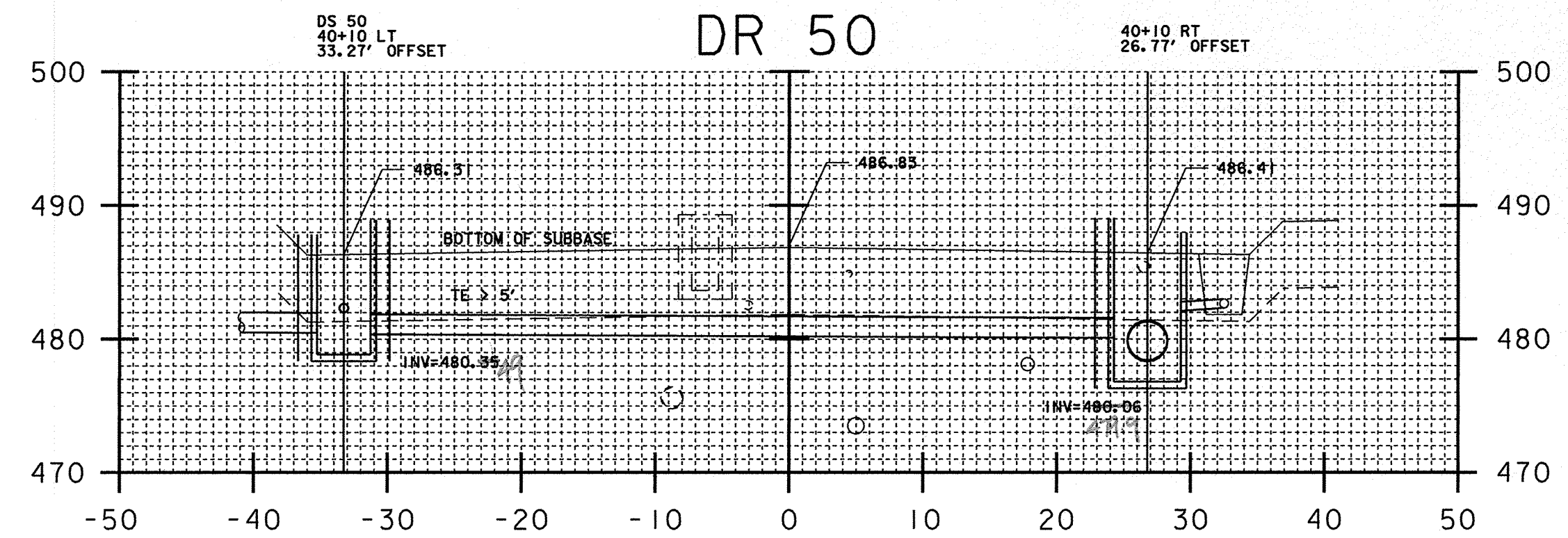
| DR#29 | ITEM | QTY | DATE |
|-------|----------|-------|----------|
| | 601.2615 | 18 LF | 10/30/08 |
| | 204.20 | 9.38 | " |
| | 204.30 | 1.23 | " |
| | 604.20 | .75 | " |

CPH 02/25/08

DR 30
 PIPE T.E. < 5'
 AREA (FROM CADD) = 96.36 SF * 3.75' = 361.35 CF/27 = 13.38 CY
 DS 30
 STRUCTURE T.E. < 5'
 $(2.03 + 1.99 + 1.34 + 1.83 + 1.84) / 5 * \text{PI} (3.42')^2 = 66.36 \text{ CF/27} = 2.46 \text{ CY}$
 DR 30 GRANULAR BACKFILL
 $(3.75' * .88' * 55.4') - [(\text{PI} (.88')^2 / 2) * 55.4'] = 115.43 \text{ CF/27} = 4.28 \text{ CY}$

15.84

CPH 02/25/08

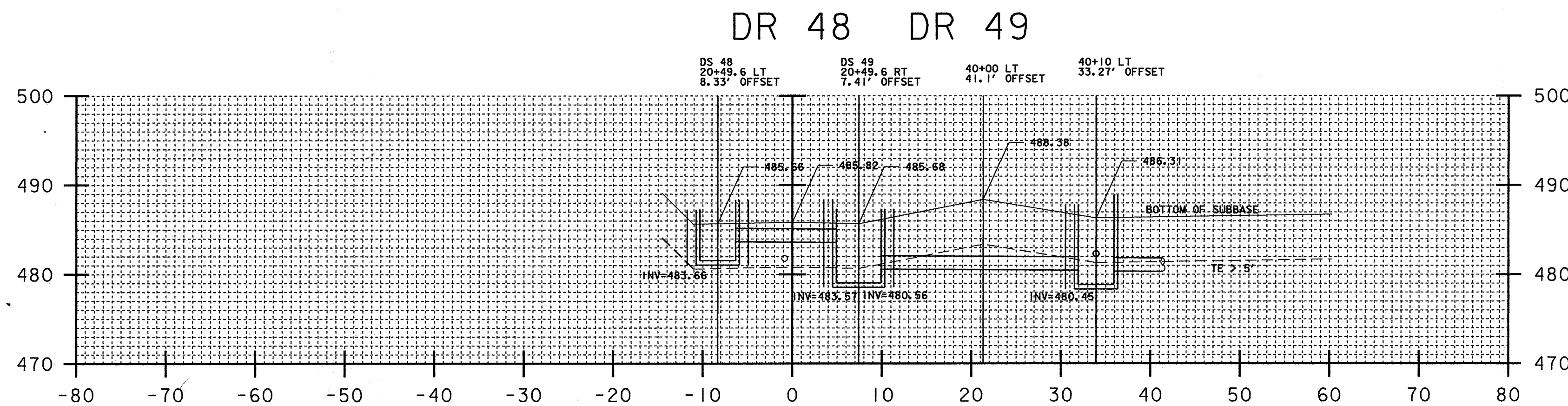


CALCULATED AND DRAWN BY TBG 1/30/08

DR 50
 PIPE T.E. < 5'
 AREA (FROM CADD) = 263.58 SF * 3.75' = 988.43 CF/27 = 36.61 CY
 PIPE T.E. > 5'
 AREA (FROM CADD) = 1.5 (74.49 SF * 3.75') = 419.01 CF/27 = 15.52 CY
 REMOVE EXIST
 S.R. = (10.32 SF * 4') / 27 = 1.53 CY
 T.R. = (15.01 SF * 4') / 27 = 2.22 CY
 TOT = 48.38 CY
 DS 50
 STRUCTURE T.E. < 5'
 $5' * \text{PI} (3.42')^2 = 183.73 \text{ CF/27} = 6.80 \text{ CY}$
 STRUCTURE T.E. > 5'
 $1.5 [(3.62' + 2.92' + 3.01') / 3] * \text{PI} (3.42')^2 = 175.46 \text{ CF/27} = 6.50 \text{ CY}$
 TOT = 13.30 CY
 DR 50 GRANULAR BACKFILL
 $(3.75' * .88' * 54.7') - [(\text{PI} (.88')^2 / 2) * 54.7'] = 113.97 \text{ CF/27} = 4.22 \text{ CY}$

FIELD MEASURE 3.3x3.6x4.5 10/31/07
 S.R. 3.3x3.6x2.83x1/27 = 1.16 cy
 T.R. 3.3x3.6x1.87x1/27 = .82 cy
 BL 2/25/08

CPH 02/25/08



CALCULATED AND DRAWN BY TBG 1/30/08

DR 48
 PIPE T.E. < 5'
 AREA (FROM CADD) = 18.22 SF * 3.75' = 68.33 CF/27 = 2.53 CY
 DS 48
 STRUCTURE T.E. < 5'
 $(5' + 4.54' + 4.66') / 3 * \text{PI} (3.42')^2 = 173.93 \text{ CF/27} = 6.44 \text{ CY}$
 DR 48 GRANULAR BACKFILL
 $(3.75' * .88' * 9.41') - [(\text{PI} (.88')^2 / 2) * 9.41'] = 19.61 \text{ CF/27} = 0.73 \text{ CY}$

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CALCULATED AND DRAWN BY TBG 1/30/08

DR 49
 PIPE T.E. < 5'
 AREA (FROM CADD) = 95.95 SF * 3.75' = 359.81 CF/27 = 13.33 CY
 PIPE T.E. > 5'
 AREA (FROM CADD) = 1.5 (38.21 SF * 3.75') = 214.93 CF/27 = 7.96 CY
 TOT = 21.29 CY
 DS 49
 STRUCTURE T.E. < 5'
 $5' * \text{PI} (4.00')^2 = 251.33 \text{ CF/27} = 9.31 \text{ CY}$
 STRUCTURE T.E. > 5'
 $1.5 [(2.19' + 2.12' + 2.88') / 3] * \text{PI} (4.00')^2 = 180.70 \text{ CF/27} = 6.69 \text{ CY}$
 TOT = 16.00 CY
 DR 49 GRANULAR BACKFILL
 $(3.75' * .88' * 21.2') - [(\text{PI} (.88')^2 / 2) * 21.2'] = 44.17 \text{ CF/27} = 1.64 \text{ CY}$

CPH 02/25/08

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|-----------------------------|-------------------------|
| PROJECT NAME: HARTFORD | PLOT DATE: 01-FEB-2008 |
| PROJECT NUMBER: RS 0113(40) | DRAWN BY: E. ATKINS |
| FILE NAME: ****FILENAME*** | CHECKED BY: K. ISHIKURA |
| PROJECT LEADER: KEN UPMAL | SHEET 220 OF 239 |
| DESIGNED BY: K. ISHIKURA | |
| E. ATKINS | |

SHEET # 13