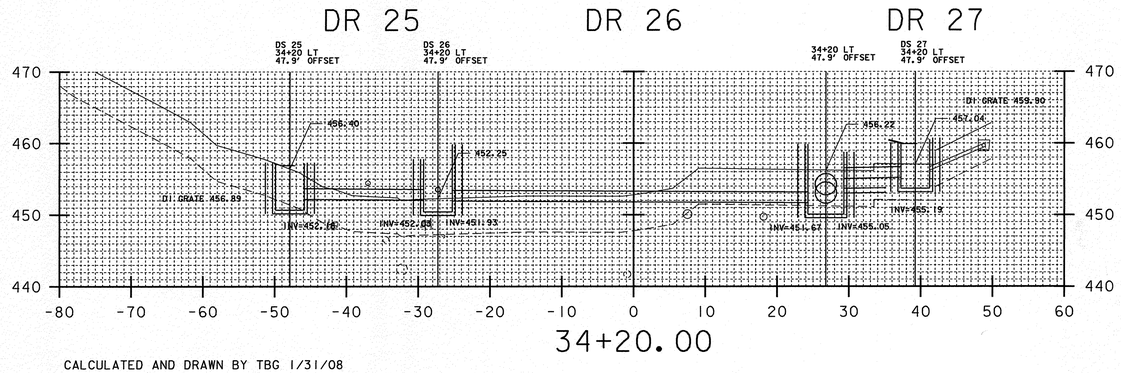
DR 25	PAID	
601.2615	16LF	10/30/08 RJT
204.20	9.38cy	10/30/08
204.30	1.22	
604.20	.75	

DR 26	ITEM	PAID	DATE
18" CPEP	601.2615	20LF	10/1/08 RJT
T.E.	204.20	14.4 CY	10/1/08
GRAN BKFL	204.30	1.1 CY	10/1/08
	601.2615	32LF	10/29/08 RJT
	204.20	3.14CY	"
	204.30	2.86CY	"
	604.20	.75 EA	

DR 27	ITEM	PAID	DATE
18" CPEP	601.2615	8LF	10/7/08
T.E	204.20	6.79cy	"
GRAN BKFL	204.30	.55	"
4'DI	604.20	.75	"



CALCULATED AND DRAWN BY TBG 1/31/08

DR 25

PIPE T.E. < 5'
AREA (FROM CADD) = 9.81 SF * 3.75'=36.79 CF/27 = 1.36 CY

DS 25

STRUCTURE T.E. < 5'
(5'+4.5')/2 * PI(3.42')² = 174.54 CF/27 = 6.46 CY

STRUCTURE T.E. > 5'
1.5[((2.53' + 0.00')/2) * PI(3.42')²] = ~~20.39~~ 69.73 CF/27 = ~~0.76~~ 2.58 CY
TOT= 7.22 CY

DR 25 GRANULAR BACKFILL
(3.75' * .88' * 15.8')-[((PI(.88')²/2) * 15.8')]= 32.92 CF/27 = 1.22 CY

10.80 CY CAB 02/25/10

CPH 02/25/08

DR 26

PIPE T.E. < 5'
AREA (FROM CADD) = 101.11 SF * 3.75'=379.16 CF/27 = 14.04 CY

DS 26

STRUCTURE T.E. < 5'
(2.20'+2.42')/2 * PI(3.42')² = 84.88 CF/27 = 3.14 CY

DR 25 GRANULAR BACKFILL
(3.75' * .88' * 48.7')-[((PI(.88')²/2) * 48.7')]= 101.47 CF/27 = 3.76 CY

17.18 CY

CPH 02/25/08

DR 27

PIPE T.E. < 5'
AREA (FROM CADD) = 7.51 SF * 3.75'=28.16 CF/27 = 1.04 CY

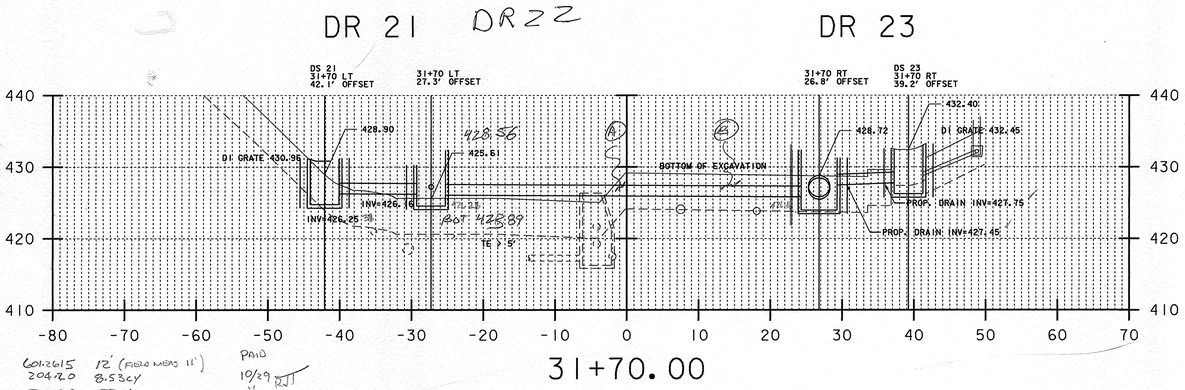
DS 26

STRUCTURE T.E. < 5'
(3.89'+3.79'+5')/3 * PI(3.42') = 155.31 CF/27 = 5.75 CY

DR 25 GRANULAR BACKFILL
(3.75' * .88' * 7.1')-[((PI(.88')²/2) * 7.1')]= 14.79 CF/27 = 0.55 CY

23.43

CPH 02/25/08



DR #21 601.2615 12" (FIELD MEAS 11') PAID 10/29 RJT
204.20 8.53CY " "
204.30 .77CY " "
604.20 .75 " "

CALCULATED AND DRAWN BY TBG 1/31/08

DR 21

PIPE T.E. < 5'
AREA (FROM CADD) = 1.63 SF * 3.75'=6.11 CF/27 = 0.23 CY

DS 21

STRUCTURE T.E. < 5'
(5'+2.7')/2 * PI(3.42')² = 141.47 CF/27 = 5.24 CY

STRUCTURE T.E. > 5'
1.5[((3.00' + 0.00')/2) * PI(3.42')²] = 82.68 CF/27 = 3.06 CY
TOT= 8.30 CY

DR 21 GRANULAR BACKFILL
(3.75' * .88' * 10.0')-[((PI(.88')²/2) * 10.0')]= 20.84 CF/27 = 0.77 CY

CPH 02/25/08

CALCULATED AND DRAWN BY TBG 1/31/08

DR 23

PIPE T.E. < 5'
AREA (FROM CADD) = 7.46 SF * 3.75'=27.98 CF/27 = 1.04 CY

DS 23

STRUCTURE T.E. < 5'
5' * PI(3.42')² = 183.73 CF/27 = 6.80 CY

STRUCTURE T.E. > 5'
1.5[((1.82' + 1.65 + 2.')/3) * PI(3.42')²] = ~~109.13~~ 100.72 CF/27 = ~~4.04~~ 3.71 CY
TOT= ~~10.84~~ 10.51 CY

DR 23 GRANULAR BACKFILL
(3.75' * .88' * 7.1')-[((PI(.88')²/2) * 7.1')]= 14.79 CF/27 = 0.55 CY

11.55 CY CAB 02/24/10

BL 9/16/08

CPH 02/25/08

.75 3.75 1.61SF

.75x3.75 - (3.14 x .375²/2) x 19' ÷ 27 =
2.81 - 1.20
1.61 x 19 ÷ 27 = 1.1CY

1.1 ÷ 19 = .0579 CY/LF
.0579 x 30 = 1.74

DR 22	ITEM	PAID	DATE
18" CPEP	601.2615	20LF	10/1/08 RJT
(PIPE) GRAN BKF	204.30	1.1CY	10/1/08 RJT
TRENCH EARTH	204.20	9.9CY	10/1/08 RJT
	601.2615	30LF	10/28 VI
	204.30	1.74	10/28 VI
	604.20	.75EA	10/28 "

425.8
423.89
1.91

0.6

DR 22
CPH
2/28/08

STRUCTURE (± 6H) 1.91/(P.I · 3.42²) = 70.15/27 = 2.60 CY

T.E PIPE AREA
(A) 3 · 3.3 / 2 x 3.75 /27 = .69 CY
(B) (3.33 + 2.87/2) x 3.75 x 23'/27 = 9.9 CY
10.59 CY
13.19 CY CAB 02/24/10

GRAN BKFL
(3.75 x 0.88 x 49') - (π(0.88²/4) x 49) / 27
= 3.78 CY

SHEET # 10

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