ITEM DETAIL AND DRAINAGE SHEET

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAINAGE STRUCTURES

LABEL	STA.	STA.	POSITION	TYPE IN/OUT	DITCH IN	DITCH OUT	PIPE ARCH S IN	PIPE ARCH R IN	PIPE ARCH L FT	PIPE D IN	PIPE L FT	ALLOWABLE OPTIONS PCCSP TH	CAAP TH	RCP CL	CPEP TH	CPEP SL	~~PCCSP~~ ~~FI~~ ~~TH~~	PIPE ELBOW NO-DEG	ES EA	CB	PRECO	DEPTH CB/MH	CONC CL B CY	REIN STEEL LBS	CB/DI GRATE TYPE	CHAN ELEV	CRM CY	TR EXCAV EARTH CY	TR EXCAV ROCK CY	COMM EXC CY	~~UNC CHAN EXC~~ CY	STRUC EXCAV CY	GRAN BKF STRUC CY	GRAN BORR CY	EROS MATT SY	STONE FILL CY	STONE FILL TYPE	MRKR POSTS LT	MRKR POSTS RT	MANHOLE COVER
EXISTING DRAINAGE																	RELAY													SOLID										
																	PIPE													ROCK										
6	22+52	22+47	RT-LT	DI/DI						UKN	12																~~2.9~~ 0	~~7.1~~ 0										
33	40+12		LT	DI/SWR						UKN	UKN																	3.5										
37	42+58		LT	DI/SWR						UKN	UKN																6.6	3.4										
40	44+80		LT	DI/SMH						8	25																	1.9										
45	46+65	46+17	RT-LT	DI/DI						UKN	68																5.8	3.5										
46A	47+19	47+43	RT-RT	DI/DI						12	20																6.1	5.4										
47	48+79		LT	DI/SWR						UKN	UKN																	1.9										
53	50+44	50+58	RT-RT	CB/DI						UKN	18																6.6	3.5										
55	50+59	50+60	RT-RT	DI/DI						UKN	10																	1.9										
58	54+83	40+40	RT-RT	UKN/DI						UKN	UKN																	3.1										
59	56+61	57+16	LT-RT	DI/DI						18	60																6.7	5.0										
60	57+17		RT	DI/UKN						UKN	UKN																1.2	2.7										
61	57+16	58+40	RT-RT	DI/DI						18	120																20.4	10.0										
62	58+40	60+92	RT-RT	DI/DI						18	250																69.9	20.8										
64	60+92	61+00	RT-LT	DI/OL						18	70																15.9	7.2										
PROPOSED DRAINAGE																																							
(1) 12.0	~~19+80.0~~	19+30.5	RT-RT	CB/OL	X	X				54	48	0.109	0.135						1	1		14.2			STEEL	345.0	57.2	~~35.0~~				(161) ~~148.0~~	~~19.3~~	38.3				2		(1)
STONE DITCH	~~20+09.0~~	19+80.0	RT-RT	HW/CB	X	X													-				15.6 ~~15~~	667 ~~630~~		346.0		36.2		352.4 ~~466~~			4.4		128.7 ~~275~~	II				
(2) 45.0	~~20+68.3~~	20+09.0	RT-RT	MH/HW		X	18			48	~~56~~ 54	0.109	0.105						-			14.0				346.0	105.4	~~186.4~~	105.9				~~19.8~~	3.5				1	(2)
(3) 18.0	~~20+73.2~~	20+68.3	RT-DI	DI/MH						18	~~8~~	62			III		X		-								72.2	~~2.4~~	72.2				~~1.2~~	12.7					(3)
(4) 77.6	~~76.8~~ 21+	20+68.3	RT-RT	CB/MH						48	~~104~~ 120.6	0.109	0.105						1			11.3			D		480.1	~~301.3~~	13.39		4.85		~~34.7~~	83.3					(4)
(5)	~~76.8~~ 21+63.1	21+	LT-RT	CB/CB			77.6			18	~~78~~ 60.5	77			III		X		1		6.8			D		38.1	~~43.0~~	2.07		2.16		~~10.0~~	21.0					(5)
(6)	22+46.1	~~76.8~~ 21+	RT-RT	CB/CB			77.6			48	~~66~~	0.109	0.105						1			10.1			D		118.6	~~103.5~~	5.81		4.85		~~22.4~~	26.5					(6)
(7)	22+47.0	22+46.1	LT-LT	CB/CB						18	~~14~~	18			III		X		-								7.5	~~3.6~~					~~1.9~~	4.0					(7)
(8)	22+46.1	22+46.1	LT-RT	CB/CB						18	60				III		X		1			6.7			D		20.4	~~24.7~~	0.81		2.15		~~8.4~~	10.7					(8)
(9) 52	22+~~50~~.0	22+46.1	RT-RT	CB/CB						18	11				III		X		1			5.8			D		9.8	~~8.3~~	3.56				~~2.2~~	10.6					(9)
(10)	24+20.0	22+46.1	RT-RT	CB/CB						36	~~170~~	172			III		X		1			11.7			E		177.2	~~196.4~~	3.88		3.24		~~41.6~~	26.8					(10)
(11)	24+20.0	24+20.0	LT-RT	CB/CB						18	~~60~~	95.3			III		X	20	1			6.7			E		50.8	~~25.0~~					~~8.4~~	9.0					(11)
(12)	25+22.2	24+20.0	RT-RT	CB/CB						36	~~100~~	98	0.075						1			15.9			E		269.2	~~191.5~~	11.86				~~24.8~~	14.7					(12)
										36	19						X																					
(13)	25+21.6	25+22.2	RT-RT	DI/CB						18	~~14~~	16			III		X		-								12.6	~~7.4~~					~~1.9~~	2.1			1		(13)
(14)	26+70.0	25+22.2	RT-RT	CB/CB						36	144		0.075						1			8.8			E		117.5	~~117.7~~					~~35.4~~	21.8					(14)
(15)	26+70.0	26+70.0	LT-RT	CB/CB						18	~~50~~	51			III		X		1			6.6			E		17.2	~~18.8~~					~~7.1~~	3.7					(15)
(16)	29+20.0	26+70.0	RT-RT	CB/CB						36	~~244~~	246	0.075						1			8.8			E		201.0	~~194.1~~					~~58.3~~	37.4					(16)
(17)	29+20.0	29+20.0	LT-LT	CB/CB	X					18	~~14~~	10			III		X		1			6.0			B X2		10.6	~~12.3~~					~~2.9~~	0.62			1		(17)
(18)	29+20.0	29+20.0	LT-RT	CB/CB						18	50				III		X		1			7.5			E		12.1	~~25.5~~					~~7.1~~	3.76					(18)
(19)	29+50.0	29+20.0	RT-RT	CB/CB	X					18	34				III		X		1			6.2			B X2		27.0	~~15.3~~					~~5.5~~	2.6			1		(19)
(20)	31+70.0	29+20.0	RT-RT	CB/CB						36	~~244~~	246	0.075						1			8.4			E		169.9	~~184.1~~					~~58.3~~	42.94					(20)
(21)	31+70.0	31+70.0	LT-LT	CB/CB	X					18	~~10~~	12			III		X		1			6.1			B		8.8	~~10.8~~					~~2.0~~	0.77	39.93	II	1		(21)
(22)	31+70.0	31+70.0	LT-RT	CB/CB						18	50				III		X		1			7.8			E		13.2	~~27.7~~					~~7.1~~	3.8					(22)
(23)	31+70.0	31+70.0	RT-RT	CB/CB	X					18	8				III		X		1			6.2			B		11.6	~~6.2~~					~~1.7~~	0.55			1		(23)
(24)	34+20.0	31+70.0	RT-RT	CB/CB						36	245		0.075						1			9.8			E		200.3	~~206.8~~					~~59.8~~	37.18					(24)
(25)	34+20.0	34+20.0	LT-LT	CB/CB	X					18	16				III		X		1			6.2			B		10.4	~~18.2~~					~~2.7~~	1.22			1		(25)
(26)	34+20.0	34+20.0	LT-RT	CB/CB						18	~~50~~	52			III		X		1			9.4			E		17.2	~~40.4~~					~~7.1~~	3.76					(26)
(27)	34+20.0	34+20.0	RT-RT	CB/CB	X					18	8				III		X		1			6.2			B		6.8	~~6.3~~					~~1.7~~	0.55			1		(27)
(28)	36+27.4	34+20.0	RT-RT	CB/CB						36	204		0.075						1			9.8			E		200.1	~~183.9~~					~~49.7~~	30.94					(28)
(29)	36+27.4	36+27.4	LT-LT	CB/CB	X					18	18				III		X		1			6.2			B		11.3	~~19.8~~					~~3.0~~	1.23			1		(29)
(30)	36+27.4	36+27.4	LT-RT	CB/CB						18	~~56~~	58			III		X		1			9.6			E		15.8	~~45.7~~					~~7.9~~	4.28					(30)
																		1-8' Ø																				
																		6-6' Ø																				
																		5-5' Ø	← 1-5' Ø WITH OUTSIDE DROP																			
										18	609				III		X	14-4' Ø	4-5' Ø CB																			
										36	170				III		X																			1-8' Ø		
TOTALS										36	1181		0.075						1	26			15	630	9-B 5-D 13-E	2404.2	80.9	466		148.0	522.3		275	II	4	6	1	
										48	226	0.109	0.105																									
										54	48	0.109	0.135																											

GUARD RAIL

REMARKS	STA.	STA.	LT.	RT.	END TREATMENT
• REFER TO DRAINAGE LAYOUT SHEETS FOR REMOVAL OR ABANDONMENT REQUIREMENT		REMOVE AND RESET GUARDRAIL			
FOR EXISTING PIPES. QUANTITY OF PIPE REMOVAL IS INCLUDED IN TRENCH EXCAVATION OF ROCK WHERE APPLICABLE	20+30 RT	20+45 RT		25'	
REMOVE ENTIRE STRUCTURE. BACKFILL WITH APPROVED MATERIAL REMOVED WITH NEW DS #9					
REMOVE ENTIRE STRUCTURE. BACKFILL WITH APPROVED MATERIAL		NEW GUARDRAIL			
REMOVE STRUCTURE TO 24" BELOW SUBGRADE. BACKFILL WITH APPROVED MATERIAL	37+08 LT	37+26.8 LT	18.8'		TERMINAL CONNECTOR
REMOVE STRUCTURE TO 24" BELOW SUBGRADE. BACKFILL WITH APPROVED MATERIAL					TO BARRIER
REMOVE STRUCTURE TO 24" BELOW SUBGRADE. BACKFILL WITH APPROVED MATERIAL	37+26.8 LT	37+38.0 LT	-		MANUFACTURED
REMOVE STRUCTURE TO 24" BELOW SUBGRADE. BACKFILL WITH APPROVED MATERIAL					TERMINAL
REMOVE STRUCTURE TO 24" BELOW SUBGRADE. BACKFILL WITH APPROVED MATERIAL					
REMOVE STRUCTURE TO 24" BELOW SUBGRADE. BACKFILL WITH APPROVED MATERIAL					
REMOVE STRUCTURE TO 24" BELOW SUBGRADE. BACKFILL WITH APPROVED MATERIAL					
REMOVE ENTIRE STRUCTURE. BACKFILL WITH APPROVED MATERIAL					
REMOVE STRUCTURE TO 24" BELOW SUBGRADE. BACKFILL WITH APPROVED MATERIAL					
REMOVE ENTIRE STRUCTURE. BACKFILL WITH APPROVED MATERIAL					
REMOVE ENTIRE STRUCTURE. BACKFILL WITH APPROVED MATERIAL					
(1) 8' DIA. PRC CB (DOUBLE STEEL GRATE, SEE STD. D-11)					
CONSTRUCT STONE LINED DITCH AND HEADWALL (SEE STORMWATER OUTFALL PLAN AND DETAILS)					
(2) 8' DIA. PRC MANHOLE - C.I.P. HEADWALL (1 MANHOLE COVER)					
(3) EXIST. DI. - 8' DIA. PRC MANHOLE (SEE STORMWATER OUTFALL PLAN AND DETAILS)					
(4) 6' DIA. PRC CB - 8' DIA. PRC MANHOLE (1 GRATE FOR D.I.)					
(5) 4' DIA. PRC CB - 6' DIA. PRC CB (1 GRATE EACH)					
(6) 6' DIA. PRC CB - 6' DIA. PRC CB (1 GRATE EACH)	TOTALS				
(7) EXIST. DI - 4' DIA. PRC CB (1 GRATE @ 22+46.11 LT)					
(8) 4' DIA. PRC CB - 6' DIA. PRC CB (1 GRATE EACH)					
(9) 4' DIA. PRC CB - 6' DIA. PRC CB (1 GRATE EACH), REM. EXIST.					
(10) 5' DIA. PRC CB - 6' DIA. PRC CB (1 GRATE EACH)					
(11) 4' DIA. PRC CB - 5' DIA. PRC CB (1 GRATE EACH)					
(12) 5' DIA. PRC CB W/ DROP - 5' DIA. PRC CB (1 GRATE EACH),					
REM. EXIST. DI@ 25+22 RT, CONSTRUCT DROP STRUCTURE (2)	24+24	25+18	U	RT	
@ 25+22.2 RT (SEE TYPICAL DRAINAGE DETAILS) (4)	25+00	26+41.5	U	LT	
(13) EXIST DI. - 5' DIA. PRC CB W/ DROP (1 GRATE EACH), (5)	26+41.5	29+01.5	U	LT	
ADJUST EXIST. DI@ 25+21.6 RT, CONSTRUCT DROP STRUCTURE (7)	25+26	26+74	U	RT	
@ 25+22.2 RT (SEE TYPICAL DRAINAGE DETAILS) (9)	26+74	29+~~75~~ 20	U	RT	
(14) 5' DIA. PRC CB - 5' DIA. PRC CB W/ DROP (1 GRATE EACH) (12)	29+35	31+~~65~~ 50	U	LT	
CONSTRUCT DROP STRUCTURE @ 25+22.2 RT (SEE TYPICAL DRAINAGE DETAILS) (14)	30+29	31+70	U	RT	
(15) 4' DIA. PRC CB - 5' DIA. PRC CB (1 GRATE EACH) (15)	31+70	34+20	U	RT	
(16) 5' DIA. PRC CB - 5' DIA. PRC CB (1 GRATE EACH) (16)	34+20	36+13	U	RT	
(17) 6' DIA. PRC CB - 4' DIA. PRC CB (2 GRATES & 1 GRATE) (18)	30+00	31+~~75~~ 68	U	RT	
(18) 4' DIA. PRC CB - 5' DIA. PRC CB (1 GRATE EACH)	TOTAL 6"	UNDERDRAIN (MOD.)			
(19) 6' DIA. PRC CB - 5' DIA. PRC CB (2 GRATES & 1 GRATE)	TOTAL 8"	UNDERDRAIN (MOD.)			
(20) ~~5'~~ 6' DIA. PRC CB - 5' DIA. PRC CB (1 GRATE EACH)					
(21) 4' DIA. PRC CB - 4' DIA. PRC CB (1 GRATE EACH)					
(22) 4' DIA. PRC CB - 5' DIA. PRC CB (1 GRATE EACH) (1)	24+20	24+24	C	RT	
(23) 4' DIA. PRC CB - 5' DIA. PRC CB (1 GRATE EACH) (3)	24+20	25+00	C U	LT	
(24) ~~5'~~ 6' DIA. PRC CB - 5' DIA. PRC CB (1 GRATE EACH) (6)	25+22	25+26	C	RT	
(25) 4' DIA. PRC CB - 4' DIA. PRC CB (1 GRATE EACH) (8)	26+70	26+74	C	RT	
(26) 4' DIA. PRC CB - 5' DIA. PRC CB (1 GRATE EACH) (10)	29+50	30+00	C	RT	
(27) 4' DIA. PRC CB - 5' DIA. PRC CB (1 GRATE EACH) (11)	29+20	29+35	C	LT	
(28) 5' DIA. PRC CB - ~~5'~~ 6' DIA. PRC CB (1 GRATE EACH) (13)	30+13	30+29	C	RT	
(29) 4' DIA. PRC CB - 4' DIA. PRC CB (1 GRATE EACH) (17)	31+70	31+70	C	RT	
(30) 4' DIA. PRC CB - 5' DIA. PRC CB (1 GRATE EACH) (19)	34+20	34+20	C	RT	
(20)	31+70	31+75	C	RT	
TOTAL 6" CARRIER PIPE (MOD.)					
TOTAL 8" CARRIER PIPE (MOD.)					
TOTAL 12" CARRIER PIPE (MOD.) FOR RISERS					

DI'S UNDERDRAIN

STA.	STA.	TYPE	POS.	D	L	TRENCH E	TRENCH R	GRAN BKF	12" RISER LEN.	FB	MKR PST
24+24	25+18	U	RT	8	94	~~37.3~~	55.6		~~8~~ 0	1	1
25+00	26+41.5	U	LT	8	142	~~71.2~~	109.3		~~8~~ 6	1	1
26+41.5	29+01.5	U	LT	6	262	-			~~10~~ 8	1	1
25+26	26+74	U	RT	8	148	~~52.0~~	83.2		~~8~~ 0	~~1~~	~~1~~
26+74	29+~~75~~ 20	U	RT	8	~~298~~ 232	~~106.7~~	114.6		~~8~~ 5	1	1
29+35	31+~~65~~ 50	U	LT	8	~~233~~ 232	~~92.9~~	68.9		~~6~~ 5	1	1
30+29	31+70	U	RT	6	138	-		INCLUDED	6	1	1
31+70	34+20	U	RT	6	248	-		WITH VE	6	1	1
34+20	36+13	U	RT	6	192	-		WALL	6	1	1
30+00	31+~~75~~ 68	U	RT	8	~~172~~ 168	~~60.9~~	97.9		~~8~~ 0	~~1~~	~~1~~
TOTAL 6"	UNDERDRAIN (MOD.)				840	-			72	10	10
TOTAL 8"	UNDERDRAIN (MOD.)				1087	421.0					
24+20	24+24	C	RT	8	6	~~2.4~~	3.0		~~8~~ 5	1	1
24+20	25+00	~~C~~ U	LT	8	78	~~27.1~~	40.5		~~8~~ 5	1	1
25+22	25+26	C	RT	8	6	~~2.4~~	1.7		~~8~~ 6	1	1
26+70	26+74	C	RT	8	6	~~1.8~~	2.2		5	1	1
29+50	30+00	C	RT	8	48	~~17.3~~	21.2		~~8~~	~~1~~	~~1~~
29+20	29+35	C	LT	8	14	~~5.6~~	3.2		~~6~~	~~1~~	~~1~~
30+13	30+29	C	RT	6	20	8.0		INCLUDED	6	1	1
31+70	31+70	C	RT	6	8	2.4		WITH VE	-		
34+20	34+20	C	RT	6	8	3.2		WALL	-		
31+70	31+75	C	RT	8	8	~~2.4~~	3.0		-		
TOTAL 6"	CARRIER PIPE (MOD.)				36	13.6			44	6	6
TOTAL 8"	CARRIER PIPE (MOD.)				166	59.0					
TOTAL 12"	CARRIER PIPE (MOD.) FOR RISERS								116		
TOTALS											

PROJECT NAME: HARTFORD
PROJECT NUMBER: RS 0113(40)

FILE NAME: z86c027qty.DGN
PROJECT LEADER: KEN UPMAL
DESIGNED BY: E. ATKINS

PLOT DATE: 1/31/2007
DRAWN BY: A. DUMITRU
CHECKED BY: E. ATKINS
SHEET 12 OF 239