Initials	Date
AJK	8-4-2010
AJK	8-14-12
ajk	10-16-13

	Watomiegy	**County**
Project No.	SSY-88(004)	
JP #	09988(14)	

U.S. 39 over West Clear Watmigy River

Hydraulic Summary

Total Drainage Area =	7.85	sq. mi
Controlled Drainage Area =	6.29	sq. mi
Effective Drainage Area =	1.56	sq. mi

Existing Structure:
C/L Station

A)30'-50'-30' I-BM Spans B) 50' Slab Span C) 45'-60'-45' TIII PCB Spans D) 3-10'x5' RCB

A) 193+96.64 B) 195+45.56 C) 196+78.12 D) 197+89.25

L = 342.87 ft

$Q_{OT} \approx Yr_{freq}$ = 56

Low Bm Elev = A) 663.79 B) 663.58 C) 662.45 D) 662.45 ft

Low Bm Sta = A) 193+41.58 B) 195+45.56 C) 197+53.12 D) 197+89.25

$Rdwy_{OT}$ Elev = 664.48 ft

$Rdwy_{OT}$ Sta = 205+24.26

NBIS # 01254 ***NBIS #*** 04587 ***NBIS #*** 08965

Proposed Structure:
C/L Station

A)3-80' Type III PC Beams B) 30' Slab Span C) 35'-55'-35' TII PCB Spans D) Remove

A) 194+00 B) 195+32.84 C) 196+78.12 D) 197+89.25

20' ft offset to the West

L = 395 ft

$Q_{OT} \approx Yr_{freq}$ = 50

Low Bm Elev = A) 661.20 B) 663.58 C) 662.45 D) NA ft

Low Bm Sta = A) 192+80 B) 195+32.84 C) 197+40.62 D) NA

$Rdwy_{OT}$ Elev = 660.76 ft

$Rdwy_{OT}$ Sta = 184+48

Detour Structure:
C/L Station

A)3-30' CGMP's C)4-24" CGMP's

A) 192+95.64 C) 196+48.82

50' ft offset to the West

Slope = 0.003 ft/ft

$Q_{OT} \approx Yr_{freq}$ = A)2 C)2

Inlet Elev = A)648.35 C)642.24 ft

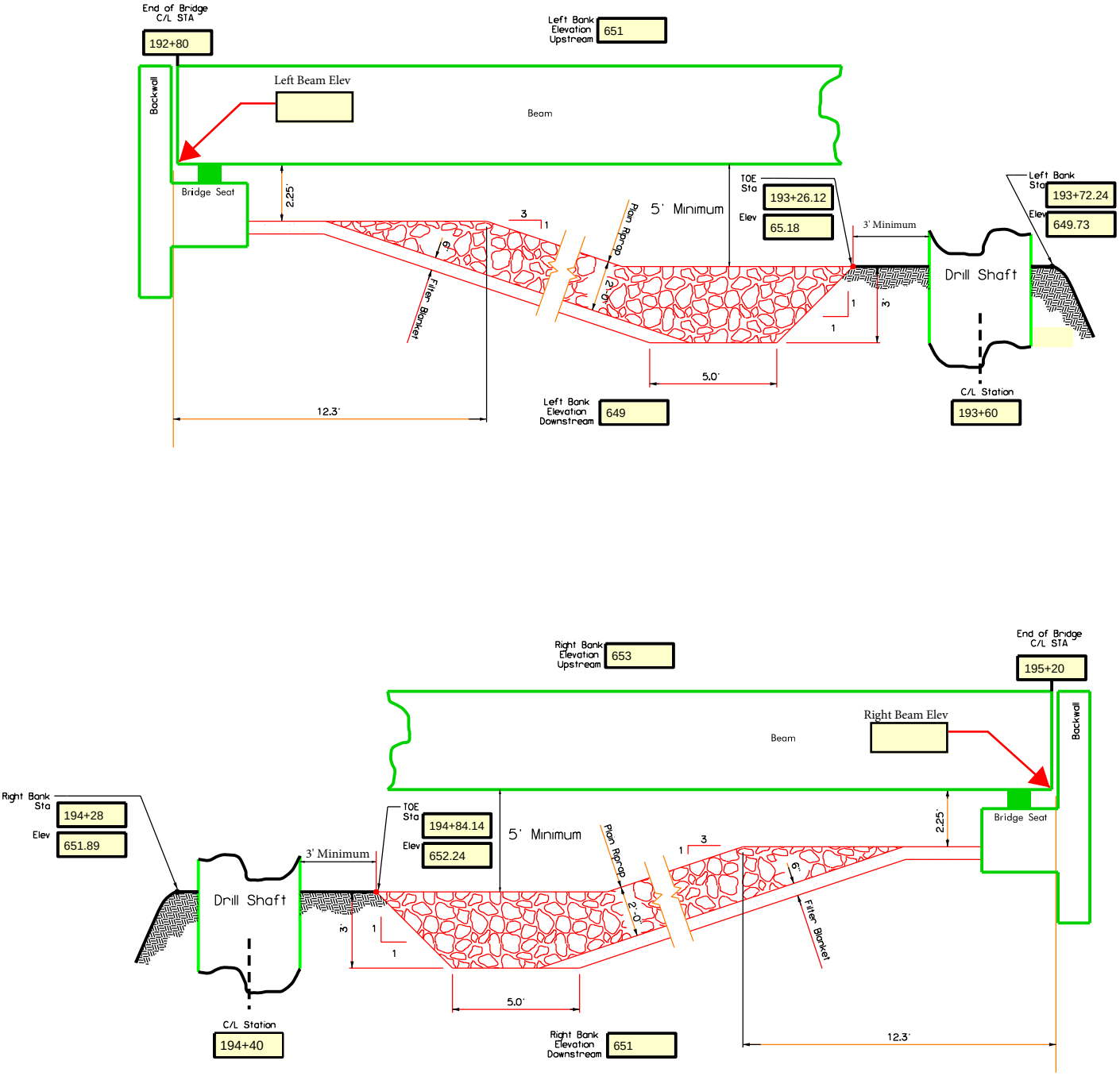
$Detour_{OT}$ Elev = 656.78 ft

$Detour_{OT}$ Sta = 1256+53

Freq.	Q (cfs) Total	CHW (ft)		Main	Overflow #1	Overflow # 2	Overflow #3
2	469659	656.29	Q(bridge)	358659	59426	51574	NA
			V(bridge)	5.21	4.35	4.24	NA
5	476541	657.89	Q(bridge)	360485	62482	53574	NA
			V(bridge)	5.32	4.56	4.21	NA
10	482532	658.16	Q(bridge)	363842	62942	55748	NA
			V(bridge)	5.44	4.98	4.61	NA
25	495853	658.80	Q(bridge)	372856	64123	58874	NA
			V(bridge)	6.55	5.99	4.23	NA
50	504832	660.80	Q(bridge)	380482	65874	58476	NA
			V(bridge)	7.58	6.00	6.07	NA
100	519429	661.97	Q(bridge)	385698	67286	62538	NA
			V(bridge)	8.94	6.24	6.78	NA
OT or 500 =Yrfreq 50	504653	660.76	Q(bridge)	383482	66278	54893	NA
			V(bridge)	8.26	6.11	6.58	NA
Detour OT =Yrfreq 2	469659	4661.85	Q(bridge)	288489	NA	181170	NA
			V(bridge)	5.21	NA	4.24	NA
		Contraction Scour (ft)	Q100	15.25	13.48	9.46	NA
			Q OT or Q 500	14.25	12.85	8.14	NA
		Pier Scour (ft)	Q100	9.25	4.23	3.76	NA
			Q OT or Q 500	9.10	3.76	3.53	NA
		Total Scour (ft)	Q100	24.50	17.71	13.22	NA
			Q OT or Q 500	23.35	16.61	11.67	NA

Notes:

Hydraulic Design is in compliance with "Federal-Aid Policy Guide 23 CFR 650, Subpart A"



If the bridge is skewed, then fill out htis sheet twice with the bridge details from each side of the centerline on each shee.