



**RAMP CLOSURE APPROACH  
WARNING SIGN PLAN**

NOT TO SCALE

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**NOTES:**

1. LOCATE THE END OF THE TEMPORARY TRAFFIC BARRIER SO THAT THE EXISTING STEEL BEAM GUARDRAIL CAN BE BOLTED TO THE END OF THE BARRIER. IF IT IS NOT POSSIBLE TO FASTEN THE BARRIER TO THE EXISTING ROADWAY GUARDRAIL, AN ENERGY ABSORPTION ATTENUATOR SHALL BE LOCATED AT THE END OF THE BARRIER. COST OF ATTACHING TEMPORARY TRAFFIC BARRIER TO THE STEEL BEAM GUARDRAIL AND COSTS FOR DISMANTLING BARRIER CONNECTION AND RESTORING EXISTING BARRIER TO ORIGINAL CONFIGURATION WILL BE INCIDENTAL TO ITEM 621.90. ANY DAMAGED EXISTING STEEL BEAM GUARDRAIL CAUSED BY CONNECTING IT TO THE BARRIER SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
2. ALL SIGN ITEMS FOR RAMP CLOSURE INCLUDING INSTALLING, REMOVING AND COVERING SIGNS SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR ITEM 641.10, TRAFFIC CONTROL (I-89 - BRIDGE NO. 42N)

**LEGEND**

- FLOW OF TRAFFIC
- RETROREFLECTIVE PLASTIC DRUM
- PORTABLE ARROW BOARD
- TYPE III BARRICADE
- WORK AREA
- ENERGY ABSORPTION ATTENUATOR
- TRUCK-MOUNTED ATTENUATOR
- PORTABLE CHANGEABLE MESSAGE SIGN

POSTED SPEED (MPH)	TAPER LENGTHS (FT)		TANGENT W=12 FT (L/2)	BARRIER FLARE RATE (MINIMUM)	MINIMUM BUFFER SPACE LENGTH (FT)	MAXIMUM CHANNELIZING DEVICE SPACING (FT)	
	SHOULDER W=10 FT (L/3)	MERGING 12 FT LANE (L)				TAPER (S)	TANGENT (2S)
≤40	90	320	160	1:9	305	40	80
45	150	540	270	1:9	360	45	90
50	170	600	300	1:11	425	50	100
55	185	660	330	1:13	495	55	110
60	200	720	360	1:13	570	60	120
65	215	780	390	1:13	645	65	130

TAPER RATES ARE DETERMINED USING THE FOLLOWING EQUATION:  
 $L = WS$  FOR POSTED SPEEDS OF 45 MPH OR GREATER  
 $L = WS^2/60$  FOR POSTED SPEEDS OF 40 MPH OR LESS  
 L = MINIMUM LENGTH OF TAPER  
 W = WIDTH OF OFFSET IN FEET, (TYPICAL)  
 S = POSTED SPEED IN MPH



PROJECT NAME: MONTPELIER  
 PROJECT NUMBER: IM MEMB(23)  
 FILE NAME: ...08\_detour\_plan\_3.ptf PLOT DATE: 5/24/2010  
 PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING  
 DESIGNED BY: G. GOYETTE CHECKED BY: G. GOYETTE  
**RAMP CLOSURE DETAILS** SHEET 37 OF 63