STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROPOSED IMPROVEMENT
INTERSTATE SYSTEM
PAVEMENT MARKING

DESCRIPTION OF WORK:

PAVEMENT MARKING, INCLUDING APPLICATION OF CENTERLINE, EDGE LINES, GORE MARKINGS, AND INCLUDES DASHED AND DOTTED LINES AT ACCELERATION AND DECELERATION LANES STOP BARS, LETTERS OR SYMBOLS AND CROSSWALK MARKING W/DIAGONAL LINES ON RAMPS.

INDEX OF SHEETS

1	TITLE SHEET
2	QUANTITY SHEET
3	SUMMARY OF INTERCHANGE TREATMENT
4	INTERSTATE TYPICAL PAVEMENT MARKINGS
5	INTERSTATE TYPICAL PAVEMENT MARKINGS
6	RAMP AND GORE TRAFFIC CONTROL PLAN

STANDARDS

E-100	CONSTRUCTION APPROACH SIGNS	01-06-97
E-101	CONSTRUCTION SIGN DETAILS	03-10-97
E-102	CONSTRUCTION SIGN DETAILS	08-08-95
E-102A	CONSTRUCTION SIGN DETAILS	08-08-95
E-103	MAINLINE TRAFFIC CONTROL DIVIDED HIGHWAY ONE LANE CLOSED	08-08-95
E-106	TRAFFIC CONTROL MISCELLANEOUS DETAILS	08-08-95
E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS	08-08-95
E-107A	BREAKAWAY BARRICADE DETAILS	08-08-95
E-112	TRAFFIC CONTROL FOR TYPICAL MOVING MAINTENANCE OPERATIONS	01-23-97
E-191	PAVEMENT MARKING DETAILS	08-18-95

PROJECT LOCATIONS:

130.256 MILES INTERSTATE 89 FROM NEW HAMPSHIRE BORDER TO CANADIAN BORDER
177.432 MILES INTERSTATE 91 FROM MASSACHUSETTS BORDER TO CANADIAN BORDER
1.488 MILES INTERSTATE 189 FROM INTERSTATE 89 TO US 7

NOTE: AREAS DESIGNATED BELOW
WILL NOT BE PAINTED WITH THIS PROJECT:

I- 89

NB MM 53.0 ~ MM 79.00 (YELLOW EDGE LINE)
NB MM 91.88 ~ MM 98.00
NB MM 106.6 ~ MM 106.8 (CENTERLINE AND WHITE EDGE LINE
NB MM 106.8 ~ MM 111.2
SB MM 36.85 ~ MM 53.00
SB MM 53.00 ~ MM 79.00 (YELLOW EDGE LINE)
SB MM 79.00 ~ MM 86.96
SB MM 91.88 ~ MM 98.00
SB MM 106.83 ~ MM 111.0
FOR RAMP TREATMENTS, SEE SHEET 3 OF 6

I- 91

NB MM 0.00 ~ MM 11.913
NB MM 73.59 ~ MM 92.48
NB MM 127.85 ~ MM 137.18
NB MM 177.32 ~ MM 177.432 (YELLOW EDGE LINE)
SB MM 0.00 ~ MM 11.913
SB MM 76.45 ~ MM 98.44
SB MM 110.43 ~ MM 137.19
FOR RAMP TREATMENTS, SEE SHEET 3 OF 6

RECORD PLANS

CONTRACTOR: HI-WAY SAFETY SYSTEMS HANOVER, MA
RESIDENT ENGINEER: FRED REED
CONSTRUCTION BEGAN: JULY 7, 1999
CONSTRUCTION COMPLETED: _____
RECORD PLANS BY: CONSTRUCTION FINALS

I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.

BY: [signature] For Fred Reed, RESIDENT ENGINEER
DATE: 01/22/01

NOTE: ANY FURTHER INFORMATION CONCERNING FINAL QUANTITIES, AMOUNTS OR OTHER DETAILS RELATIVE TO THIS PROJECT MAY BE FOUND ON MICROFILM IN CENTRAL FILES.

TRAFFIC DATA

1998	VARIES
1999	VARIES
2000	VARIES
DESIGN SPEED = 70 MPH	

NOT TO SCALE
pave/misc/contract.dgn

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE CHIEF ENGINEER.
CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 1990, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON MARCH 15, 1990 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

pave/misc/mark001

SUBMITTED BY ORDER OF THE STATE TRANSPORTATION BOARD
APPROVED _____ DATE _____
DIRECTOR OF PROJECT DEVELOPMENT

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED _____ DATE _____
DIVISION ADMINISTRATOR

PROJECT STATEWIDE INTERSTATE PAVEMENT MARKING CONTRACT IMG MARK (199)

SHEET 1 OF 6 SHEETS

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QUANTITY SHEET

STATE OF VERMONT
AGENCY OF TRANSPORTATION

MAINLINE I-89	RAMPS I-89	MAINLINE I-91	RAMPS I-91	MAINLINE I-93	RAMPS I-93	MAINLINE I-189	RAMPS I-189	QUANTITIES GRAND TOTAL	UNIT	ITEMS	ITEM NO.	ROUNDING
								1	HR	POWER BROOM RENTAL (NABI)	608.30	EST.
								400	HR	TRUCK MOUNTED ATTENUATOR	608.45	EST.
	30		35		0		10	65	HR	UNIFORM TRAFFIC OFFICERS	630.10	EST.
	20		20		0		5	45	HR	FLAGGERS	630.15	EST.
								1	LS	MOBILIZATION	635.10	EST.
								1	LS	TRAFFIC CONTROL	641.10	EST.
								2	EA	PORTABLE ARROW BOARDS	641.16	EST.
1,386,535	73,686	1,676,308	109,168		0	18,232	1,947	3,266,000	LF	6" WHITE LINE	646.214	79
921,524	62,971	1,340,455	215,825		0	14,826	1,754	2,632,600	LF	6" YELLOW LINE	646.215	97
0	34,205	0	49,343		0		478	84,100	LF	12" WHITE LINE	646.24	74
0	1064		1257					2400	LF	24'' STOP BARS	646.26	79
0	472	0	664		0		22	1,160	EA	LETTER OR SYMBOL	646.30	2
0	1,693	0			0			1,700	LF	12''DURABLE WHITE LINE	646.44	7
0	241		94					340	LF	24'' DURABLE STOP BARS	646.46	5
	164		88					260	LF	DURABLE LETTER OR SYMBOL	646.50	8
0	416		50		0			500	SF	REMOVAL OF EXISTING PAVT. MARKINGS	646.82	EST.

SUMMARY OF ESTIMATED QUANTITIES

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

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pave/misc/mark002.i

SURVEYED BY _____ DATE _____
DRAWN BY _____ DATE _____
SQUAD LEADER _____
DESIGN FILE NO. /TRAF/PGJ/CONTRACT.DGN
IPARM FILE M397QUAN.I DATE PLOTTED 03-JUL-2001
PROJ. NAME STATEWIDE INTERSTATE PAVEMENT
PROJ. NO. MARKING CONTRACT IMG MARK (199)
SHEET 2 OF 6 SHEETS

FILE NAME: /TRAF/PGJ/CONTRACT.DGN IPARM NAME: M397QUAN.I

SUMMARY BY INTERCHANGE OF LETTERS, SYMBOLS & STOP BAR MATERIALS

ROUTE	EXIT	EDGE LINES	LETTERS SYMBOLS	STOP BARS	REMOVAL
I-89	1	TP	TP	TP	
	2	TP	TP	TP	
	3	P	P	P	
	4	P	T	T	
	5 NB	P	T	T	
	5 SB	NONE	T	T	
	6 NB ONLY	P	T	T	
	6 SB NONE	P			
	7 NB	P	NONE	NONE	
	7 SB	NONE			
	8 NB	P	NONE	NONE	
	8 SB	NONE	NONE	NONE	
	9	NONE	T	T	
	10 NB	NONE	T	T	X
	10 SB	NONE	P	P	
	11	P	P	P	
	12 NB	P	T	T	
	12 SB	NONE	T	T	
	13	P	P	P	
	14 NOT TO BE DONE UNDER THIS PROJECT				
	15	P	P	P	
	16	P	T	P	
	17	P	P	P	
	18	P	P	P	
	19	P	P	P	
	20	P	P	P	
	21	P	P	P	
	22	P	P	P	
BORDER STA		P	P	P	

I-91	1		T	T	
	2		T	T	
	3		T	T	
	WEIGH STA	P	NONE	NONE	
	WEIGH STA	P	NONE	NONE	
	REST AREA NB	P	P	P	
	REST AREA SB	P	NONE	NONE	
	4	P	P	P	
	5	P	P	P	
	6	P	P	P	
	REST AREA NB	P	P	P	
	REST AREA SB	P			
	7	P	P	P	
	8	P	P	P	
	9	P	P	P	
	REST AREA NB	P	P	NONE	
	REST AREA SB	P	P	NONE	
	10	P	P	P	
	11 SB	P	P	P	
	11 NB	P	P	T	
	12	P	P	P	
	13 NB NOT TO BE DONE UNDER THIS PROJECT				
	13 SB	P	P	P	
	14 NB NOT TO BE DONE UNDER THIS PROJECT				
	15 NOT TO BE DONE UNDER THIS PROJECT				
	16 NB	P	P	P	
	16 SB	NONE	P	P	
	REST AREA NB	P	-	-	
	REST AREA SB	-	-	-	
	17	P	P	P	X

ROUTE	EXIT	EDGE LINES	LETTERS SYMBOLS	STOP BARS	REMOVAL
I-91	18 NB&SB ON	P	P	P	
	18 SB OFF	NONE	P	P	
	19	NONE			
	20	NONE	T	T	
	21	NONE	P	P	
	22	NONE			
	23 SB&NB ON	P	P	P	
	23 NB OFF	P	-	-	
	24	P	P	P	X
	RST AREA SB	P	P	P	
	SCNC TURNOUT	P	NONE	NONE	
	SCNC TURNOUT	P	NONE	NONE	
	25	P	P	P	
	26	P	P	P	
	RST AREA NB	P	P	-	
	RST AREA SB	P	P	-	
	27	P	P	P	
	28	P	P	P	
	RST AREA NB	P	-	-	
	29	P	P	P	
	BRDR STA	P	P	P	
I-93 NOT TO BE DONE WITH THIS PROJ.					
I-189	1	P	P	P	

LEGEND

T= TO BE PAINTED WITH DURABLE
P= TO BE PAINTED
TP= TO BE PAINTED OVER OLD DURABLE

DATUM
VERTICAL _____
HORIZONTAL _____

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PROJECT: INTERSTATE PAVING MARKING CONTRACT
PROJECT NO.: _____
DESIGN FILE NAME: /pave/misc/pontrcat.dgn
IPARM FILE NAME: /pave/misc/mark006.i
PLOT DATE: 03-JUL-2001
SURVEYED BY: _____
SURVEY DATE: _____
SQUAD LEADER: _____
DRAWN BY: _____
SHEET: 3 OF 6

INTERSTATE TYPICAL PAVEMENT MARKINGS

PAVEMENT MARKING LINE DETAILS

DOTTED LINE (WHITE)

SOLID LINE (WHITE OR YELLOW)

CHANNELIZING LINE (WHITE)

TYPICAL MAINLINE MARKING PLAN

LEGEND

- 6'' WHITE LINES
- 6'' YELLOW LINES
- 12" CHANNELIZATION LINES
- DIRECTION OF TRAFFIC FLOW

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pave/misc/contract.dgn

PROJECT	STATEWIDE INTERSTATE PAVEMENT MARKING CONTRACT IMG MARK (199)
	SHEET 4 OF 6 SHEETS

FILE NAME: /TRAF/PLL/CONTRACT.DGN PLAN NAME: MSFTTYPLL

APPROVED _____DATE_____

INTERSTATE TYPICAL PAVEMENT MARKINGS

*USE LONGER LENGTH TO EMPHASIZE SITUATIONS WHERE THE CROSSING REQUIRES UNUSUAL CARE SUCH AS HIGH VOLUME MERGE AREAS.

PARALLEL ACCELERATION LANE

WHEN LENGTH OF FULL WIDTH ACCELERATION LANE IS 800 FEET OR LESS, USE 6" WHITE DASHES FOR 1/2 LENGTH OF FULL WIDTH

WHEN LENGTH OF FULL WIDTH ACCELERATION LANE IS GREATER THAN 800 FEET, USE 6" WHITE DASHES LEAVING ONLY THE 400' OPENING PLUS TAPER UNMARKED.

NOTE: EDGE LINES TO BE PAINTED TO THE CONNECTION OF THE EDGE LINE (OR TRAVEL LANE WHERE THERE IS NO EDGE LINE) ON THE CROSS ROAD AT THE RAMP TERMINALS. STOP BARS AND WORD MARKINGS ARE NOT INCLUDED.

PARALLEL DECELERATION LANE

WHEN LENGTH OF FULL WIDTH DECELERATION LANE IS 800 FEET OR LESS, USE 6" WHITE DASHES FOR 1/2 LENGTH OF FULL WIDTH TAPER.

WHEN LENGTH OF FULL WIDTH DECELERATION LANE IS GREATER THAN 800 FEET, USE 6" WHITE DASHED LINE AND 6" WHITE DOTTED LINE FOR ONLY 400' PLUS TAPER.

NOTE

ACTUAL LOCATION OF 12" GORE MARKING TRANSITION CURVE MUST BE OFFSET FROM THE THEORETICAL RAMP EXTENSION LINE TO PROVIDE A VISUALLY SMOOTH RAMP ENTRANCE.

TAPER LENGTH NOTES

1. FOR SPEEDS 45 MPH OR MORE, L = S X W
2. FOR SPEEDS 40 MPH OR LESS, L = W S^2 /60
   S = 85TH PERCENTILE SPEED OR POSTED SPEED LIMIT IN MILES PER HOUR.
   W = OFFSET DISTANCE IN FEET
3. MINIMUM LENGTH OF TAPER = (L) — L = 100 FEET IN URBAN AREA; L = 200 FEET IN RURAL AREAS
4. LENGTH "L" CAN BE EXTENDED AS REQUIRED TO IMPROVE VISIBILITY OR TO PROVIDE A SMOOTHER TRANSITION

** SHORTER TAPERS GIVE A BETTER TARGET VALUE, HOWEVER ALIGNMENT MAY DICTATE A LONGER TAPER. RESIDENT ENGINEER SHALL DETERMINE LENGTH.

TAPERED ACCELERATION LANE

TAPERED DECELERATION LANE

TRANSVERSE LINES SHALL CONSIST OF 12" WHITE LINES SPACED 14'-0" C-C AND SET AT 45° TO MAIN LINE EDGE LINES. THESE MARKINGS SHALL BE USED TO INCREASE VISIBILITY DUE TO DIFFICULT VERTICAL OR HORIZONTAL ALIGNMENT, AS DIRECTED BY THE RESIDENT ENGINEER.

*MATCH EXISTING DIMENSIONS UNLESS NONE ARE PRESENT

AS PER STANDARD E-191

LEGEND

- 6" WHITE LINES
- 6" YELLOW LINES
- 12" CHANNELIZATION LINES
- DIRECTION OF TRAFFIC FLOW

NOTE: DASH PATTERNS WILL BE MODIFIED IN THE FIELD TO OVERLAY EXISTING DASHES WHERE PRESENT.
12" WHITE TRANSVERSE LINES WILL SUPERCEDE 8" WHITE LINES

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PROJECT STATEWIDE INTERSTATE PAVEMENT MARKING CONTRACT IMG MARK (199)

SHEET 5 OF 6 SHEETS

FILE NAME: /TRAF/PGL/CONTRACTDGN PWN NAME: MSTTP2J

RAMP AND GORE TRAFFIC CONTROL PLAN

MAINLINE LANE CLOSURE AT AN EXIT RAMP

THIS DETAIL SHALL BE USED WHEN THE WORK ZONE BEGINS AT THE GORE OR THE MAINLINE LANE CLOSURE DRUM PLACEMENT INTERFERES WITH THE EXIT RAMP.

NOTES:

1. ALL SIGNS SHALL BE PORTABLE.
2. CHANNELIZING DEVICES SHALL BE PLACED AS FOLLOWS:
   TAPERS - DEVICES SHALL BE SPACED A MAXIMUM OF "S" (THE SPEED LIMIT IN FEET) APART.
   TANGENT - DEVICES SHALL BE PLACED 2 X "S" (THE SPEED LIMIT IN FEET) APART.
3. ALL DISTANCES ARE DESIRABLE MINIMUMS, FIELD CONDITIONS SHALL CONTROL THE ACTUAL PLACEMENT.
4. TAPER RATES ARE BASED ON THE POSTED MAINLINE AND EXIT SPEEDS.
5. LANE CLOSURES AND TAPER LENGTHS, L, AS DETAILED ON STANDARD E-103.
6. EXIT SIGN SHALL BE MOUNTED A MINIMUM OF 3' ABOVE THE GROUND AND HIGH ENOUGH TO BE SEEN ABOVE CHANNELIZING DEVICES.
7. ALL SIGNING AND DELINEATION DEVICES, AS DETAILED ON THIS SHEET, AND AS REQUIRED BY THE RESIDENT ENGINEER, SHALL BE PAID UNDER ITEM 641.10 TRAFFIC CONTRL.
8. MAINLINE TRAFFIC CONTROL PLAN SHALL BE TREATED AS A MOBILE OPERATION AND SHALL BE IN CONFORMANCE WITH VAOT STANDARD E-112 TRAFFIC CONTROL FOR TYPICAL MOVING MAINTENANCE OPERATIONS.

MAINLINE LANE CLOSURE AT AN ENTRANCE RAMP

THIS DETAIL SHALL BE USED WHEN THE WORK ZONE BEGINS AT AT THE END OF THE ACCELERATION LANE OR THE MAINLINE LANE CLOSURE DRUM PLACEMENT INTERFERES WITH THE ON-RAMP TRAFFIC.

IF THE LENGTH OF THE ACCELERATION LANE IS NOT ADEQUATE, THE YIELD SIGN SHALL BE REPLACED WITH A STOP SIGN. IF A STOP SIGN IS USED, IT SHOULD BE ACCOMPANIED BY A STOP BAR.

NOTES:

1. WHEN CONSTRUCTION EQUIPMENT IS WORKING AT OR NEAR EXIT OR ENTRANCE RAMPS, FLAGPERSONS OR UNIFORMED TRAFFIC CONTROL OFFICERS SHOULD BE USED TO ASSIST IN CONTROLLING TRAFFIC.
2. ALL SIGNS SHALL BE PLACED BEFORE ANY WORK BEGINS OR EQUIPMENT IS PUT ON THE ROADWAY. SIGNS SHALL BE COVERED OR REMOVED WHEN NOT APPLICABLE.
3. PORTABLE SIGNS SHALL BE KEPT LEVEL WHEN PLACED ON THE EDGE OF ROADWAY AND ALL VEGETATION THAT INTERFERES WITH VISIBILITY OF THE SIGNS SHALL BE REMOVED. PAYMENT SUBSIDIARY TO OTHER ITEMS.
4. WARNING LIGHTS SHALL NOT BE USED ON CHANNELIZING DEVICES.
5. THE NUMBER OF CHANNELIZING DEVICES, TYPE III BARRICADES AND OTHER TRAFFIC CONTROL DEVICES SHOWN ON THIS SHEET ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE ACTUAL NUMBER REQUIRED ARE TO BE DETERMINED BASED ON INDIVIDUAL DETOUR CONDITIONS (TAPERS, LENGTH OF DETOUR CURVE, ETC.).

POSTED SPEED OR 85TH PERCENTILE M.P.H.	MERGING TAPER 12' LANE	SHOULDER TAPER W=10'	BARRIER TAPER RATE	BUFFER SPACE (MINIMUMS)
40	320'	90'	9 TO 1	160'
45	540'	150'	-	270'
50	600'	170'	11 TO 1	300'
55	660'	190'	-	330'
60	720'	200'	13 TO 1	360'
65	780'	220'	-	390'

LEGEND

- ○ REFL. 28" CONES
- INDICATES TRAFFIC FLOW
- FLASHING ARROW PANEL
- TYPE III BARRICADES
- TYPE III BARRICADES (MOD.)
- (500) - DENOTES DISTANCE FROM BEGIN MERGE TAPER
- ⊠ - TRUCK/TRAILER MOUNTED ATTENUATOR (OPTIONAL)

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PROJECT STATEWIDE INTERSTATE PAVEMENT MARKING CONTRACT IMG MARK (199)

SHEET 6 OF 6 SHEETS

FILE NAME: /TRAF/PGM/CONTRACTDGN PWN NAME: MOSTRAM.I