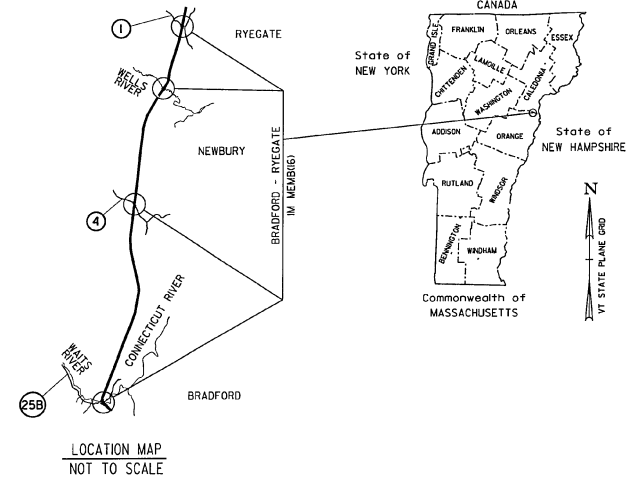


**INDEX OF SHEETS**  
SEE SHEET 2

STATE OF VERMONT  
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT  
BRIDGE PROJECT  
TOWNS OF BRADFORD, NEWBURY, AND RYEGATE  
COUNTIES OF CALEDONIA & ORANGE  
PROJECT IM MEMB(16)



ROUTE NO.: INTERSTATE 91  
BRIDGE NO.: 59S, 60S, 64N&S, 67N, AND 69N

PROJECT DESCRIPTION: THIS PROJECT INVOLVES REMOVING AND REPLACING THE SHEET MEMBRANE WATERPROOFING AND BITUMINOUS CONCRETE PAVEMENT ON THE BRIDGE AND ITS APPROACHES ALONG WITH MINOR RELATED WORK.

PROJECT LOCATION: BRADFORD - BR 59S OVER WAITS RIVER (MM 97.875)  
BRADFORD - BR 60S OVER VT 25B (MM 97.967)  
NEWBURY - BR 64N&S OVER TH NO. 4 (SCOTCH HOLLOW ROAD) (MM 105.879)  
NEWBURY - BR 67N OVER WELLS RIVER (MM 110.617)  
RYEGATE - BR 69N OVER TH NO. 1 (EAST ROAD) (MM 113.101)

LENGTH OF STRUCTURES: BR 59S 270.92'  
BR 60S 160.00'  
BR 64N 98.00'  
BR 64S 128.00'  
BR 67N 333.92'  
BR 69N 92.00'

TOTAL LENGTH OF STRUCTURES: 1082.84'

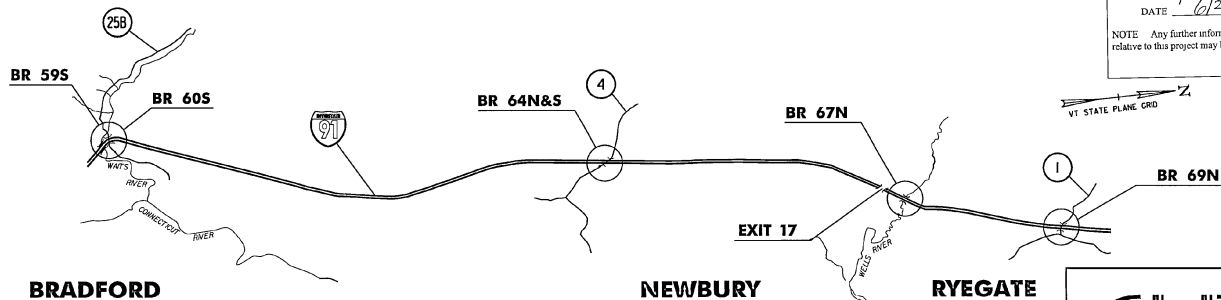
RECORD PLANS	
CONTRACTOR	J. P. SICARD, INC. - BARTON, VT
RESIDENT ENGINEER	CARL FIELDER
CONSTRUCTION BEGAN	JUNE 4, 2009
CONSTRUCTION COMPLETE	AUGUST 20, 2010
RECORD PLANS BY	CARL FIELDER & CRAIG PIERCE
I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN	
BY	<i>Carl Fielder</i> FEE CARL FIELDER, RESIDENT ENGINEER
DATE	6/2/2011
NOTE: Any further information concerning fiscal quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives	

SURVEYED BY : N/A  
SURVEYED DATE : N/A

DATUM  
VERTICAL N/A  
HORIZONTAL N/A

**CONVENTIONAL SYMBOLS**

COUNTY LINE	
TOWN LINE	
LIMITS OF ACCESS	
POINT OF ACCESS	
FENCE LINE	
STONE WALL	
TRAVELED WAY	
RAILROAD	
SURVEY LINE	
CULVERT	
POWER POLE	
TELEPHONE POLE	
TREES	
CONTROL OF ACCESS	
PROPERTY LINE	
R.O.W. TAKING LINE	
SLOPE RIGHTS	
TOP OF CUT	
TOE OF SLOPE	



VT STATE PLANE CRD

RYEGATE



PLANS PREPARED BY:



DIRECTOR OF PROGRAM DEVELOPMENT  
APPROVED: *[Signature]* DATE 2-27-09  
PROJECT MANAGER : SHERWARD FARNSWORTH  
PROJECT NAME : BRADFORD - RYEGATE  
PROJECT NUMBER : IM MEMB(16)  
SHEET 1 OF 61 SHEETS

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE DIRECTOR OF PROGRAM DEVELOPMENT.  
CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JUNE 15, 2006 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

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1. TITLE SHEET
2. INDEX OF SHEETS AND PROJECT NOTES
3. QUANTITY SHEET
4. INTENTIONALLY LEFT BLANK
5. TRAFFIC CONTROL SHEET 1
6. TRAFFIC CONTROL SHEET 2
7. BITUMINOUS CONCRETE REMOVAL PLAN
8. BITUMINOUS CONCRETE DETAILS
9. PAVEMENT JOINT DETAIL
10. INTENTIONALLY LEFT BLANK
- 11.-21. REFERENCE PLANS - BRIDGE 59S
- 22.-35. REFERENCE PLANS - BRIDGE 60S
- 36.-45. REFERENCE PLANS - BRIDGE 64N&S
- 46.-53. REFERENCE PLANS - BRIDGE 67N
- 54.-61. REFERENCE PLANS - BRIDGE 69N

## **VAOT STANDARD SHEETS**

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E-102	06/30/03
E-102A	05/01/04
E-103	03/01/04
E-106	03/01/04
E-107	06/30/03
E-107A	08/08/95
E-110	08/08/95
E-120	08/08/95

## **PROJECT NOTES**

### **GENERAL**

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION, 2006 STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 2002, AND ITS LATEST REVISIONS.
2. ALL WORK AND ANY ASSOCIATED ACTIVITY ON THIS PROJECT SHALL BE PERFORMED WITHIN THE EXISTING RIGHT-OF-WAY LIMITS.
3. ALL COSTS ASSOCIATED WITH PROTECTION OF TRAFFIC DURING REMOVAL OF THE BRIDGE PAVEMENT WILL BE INCIDENTAL TO ITEM 529.10.
4. WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT THE PIERS AND THE UNDERSIDE OF THE DECK. THIS WORK WILL BE PAID FOR UNDER ITEM 514.10, "WATER REPELLENT, SILANE".
5. FOLLOWING THE COMPLETION OF ALL OTHER CONSTRUCTION ACTIVITIES, ALL FABRIC DRAIN TROUGHS, DOWNSPOUTS AND SCUPPERS WITHIN THE LIMITS OF CONSTRUCTION AS SHOWN ON THE BITUMINOUS CONCRETE REMOVAL PLAN, SHALL BE THOROUGHLY FLUSHED BY THE CONTRACTOR. COST FOR FLUSHING THE FABRIC DRAIN TROUGHS, DOWNSPOUTS AND SCUPPERS WILL BE INCIDENTAL TO ALL OTHER ITEMS IN THE CONTRACT.

### **TRAFFIC CONTROL**

6. UNLESS COVERED UNDER INDIVIDUAL PAY ITEMS, ALL COSTS FOR WORK SHOWN ON TRAFFIC CONTROL SHEETS AND FOR TEMPORARY TRAFFIC CONTROL DEVICES INCLUDING TRAFFIC BARRIERS, RETROREFLECTIVE DRUMS, SIGNS, AND SIGN POSTS WILL BE CONSIDERED TO BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR TRAFFIC CONTROL, ITEM 641.10.
7. TRAFFIC SHALL BE ALLOWED TO DRIVE ON THE BARE CONCRETE BRIDGE DECK AFTER THE REMOVAL OF THE BARRIER MEMBRANE, PRIOR TO THE DECK BEING CLEANED AND PREPARED FOR THE NEW SHEET MEMBRANE. ONCE THE CONCRETE BRIDGE DECK IS PREPARED FOR THE NEW SHEET MEMBRANE, NO TRAFFIC SHALL BE ALLOWED ON THE DECK UNTIL THE FIRST LIFT OF BITUMINOUS CONCRETE PAVEMENT IS IN PLACE OVER THE ENTIRE LENGTH OF THE BRIDGE.

### **PAVEMENT REMOVAL NOTES**

8. THE FINAL ONE HALF INCH OF PAVEMENT ON THE CONCRETE BRIDGE DECK AND APPROACH SLABS SHALL BE REMOVED BY LOADER, GRADER OR EQUIPMENT APPROVED BY THE ENGINEER. COLD PLANING TO REMOVE BRIDGE PAVEMENT WILL BE INCIDENTAL TO ITEM 529.10, "REMOVAL OF BRIDGE PAVEMENT".
9. DURING BRIDGE AND APPROACH SLAB PAVEMENT REMOVAL, THE CONTRACTOR SHALL EXERCISE CARE TO INSURE THAT NO DAMAGE OCCURS TO THE EXISTING CONCRETE BRIDGE DECK AND THE EXISTING APPROACH SLABS. ANY DAMAGE TO THE CONCRETE BRIDGE DECK OR APPROACH SLABS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. REPAIRS SHALL BE MADE IN ACCORDANCE WITH SECTION 580.
10. CARE SHALL BE TAKEN TO PROTECT ANY SCUPPERS OR DROP INLETS AT ALL STAGES OF CONSTRUCTION. ANY DAMAGE TO THESE STRUCTURES SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AND AT THE CONTRACTOR'S EXPENSE.

11. AFTER THE REMOVAL OF THE BRIDGE PAVEMENT, THE BARRIER MEMBRANE SHALL BE REMOVED AND THE CONCRETE BRIDGE DECK SHALL BE CLEANED AND PREPARED IN ACCORDANCE WITH SUBSECTION 580.04 AND TO THE SATISFACTION OF THE ENGINEER. REMOVAL OF THE BARRIER MEMBRANE AND THE CLEANING AND PREPARATION OF THE CONCRETE BRIDGE DECK WILL BE PAID FOR UNDER ITEM 580.16, "SURFACE PREPARATION FOR MEMBRANE".
12. ONCE THE BARRIER MEMBRANE IS REMOVED, ANY AREAS ON THE CONCRETE BRIDGE DECK THAT ARE FOUND TO BE UNSOUND SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE ENGINEER SHALL MAKE A DETERMINATION AS TO HOW TO REPAIR THE DETERIORATED PORTION OF THE CONCRETE BRIDGE DECK AND THE LIMITS OF THE REPAIR.
13. UPON THE ENGINEER'S APPROVAL OF THE CONCRETE BRIDGE DECK'S CONDITION, ITEM 519.20, "SHEET MEMBRANE WATERPROOFING, TORCH APPLIED" SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 519.

### **PAVEMENT NOTES**

14. FOLLOWING THE INSTALLATION OF THE NEW SHEET MEMBRANE WATERPROOFING ON THE CONCRETE BRIDGE DECK, THE CONCRETE BRIDGE DECK AND THE AT-GRADE APPROACH SLABS SHALL BE PAVED CURB TO CURB WITH ITEM 406.27, "MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT" IN TWO 1 1/4" LIFTS. THE PAVEMENT SHALL BE TYPE IV FOR BOTH LIFTS, NO EXCEPTIONS.
15. CARE SHALL BE EXERCISED TO SMOOTHLY TRANSITION THE NEW BRIDGE PAVEMENT INTO THE EXISTING PAVEMENT. ANY COLD PLANING NECESSARY FOR SHAPING BRIDGE APPROACHES SHALL BE PAID FOR UNDER ITEM 210.10, "COLD PLANING, BITUMINOUS PAVEMENT".
16. TESTING FOR PAVEMENT DENSITY WILL REQUIRE CORES OF THE PAVEMENT ON THE BRIDGE. THE COST FOR THIS WORK WILL BE INCIDENTAL TO ITEM 406.27, "MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT". ANY DAMAGE TO THE NEW SHEET MEMBRANE CAUSED BY CORING THE PAVEMENT SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AND AT THE CONTRACTOR'S EXPENSE.

PROJECT NAME: BRADFORD - RYEGATE  
PROJECT NUMBER: IM MEMB(16)

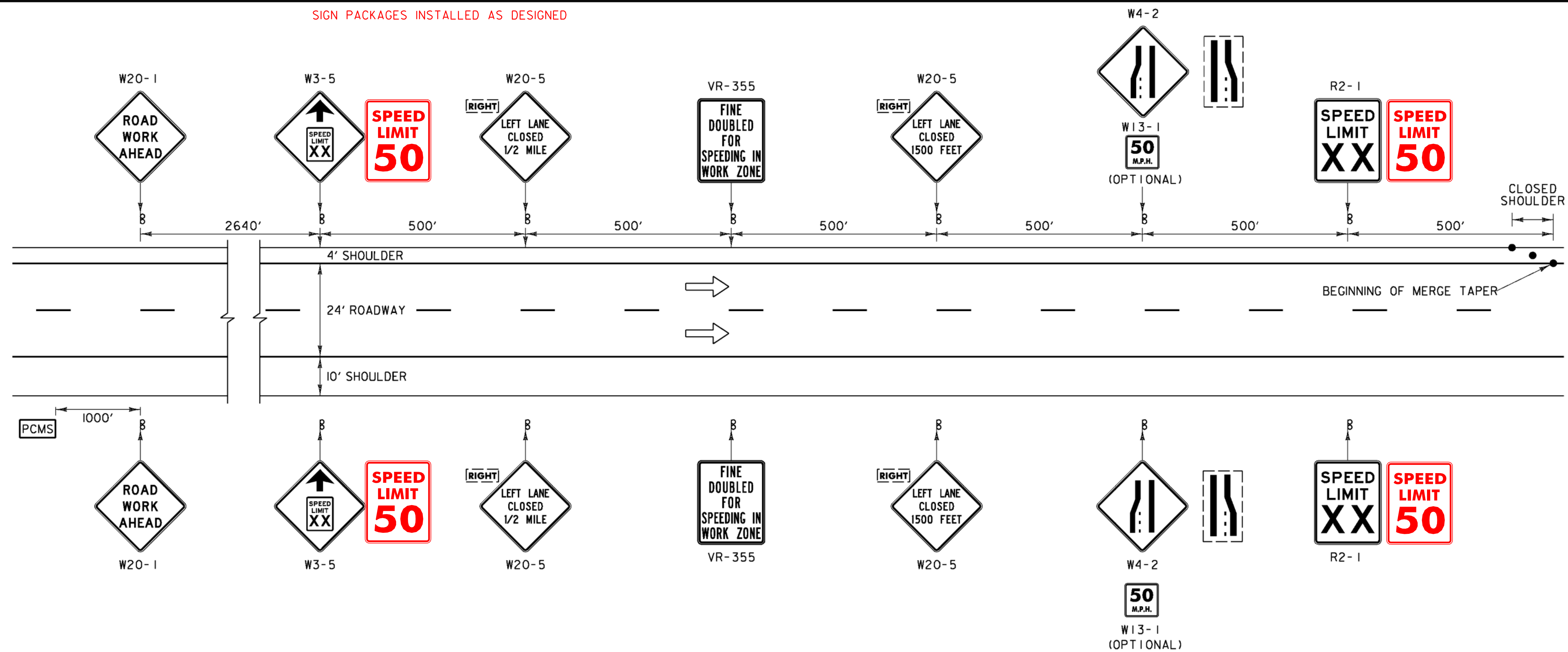
FILE NAME: 02-Br Notes.dgn PLOT DATE: 2/25/2009  
PROJECT LEADER: JPB DRAWN BY: MWS  
DESIGNED BY: SRB CHECKED BY: JPB  
**INDEX OF SHEETS AND PROJECT NOTES** SHEET 2 OF 61

# QUANTITY SHEET 1

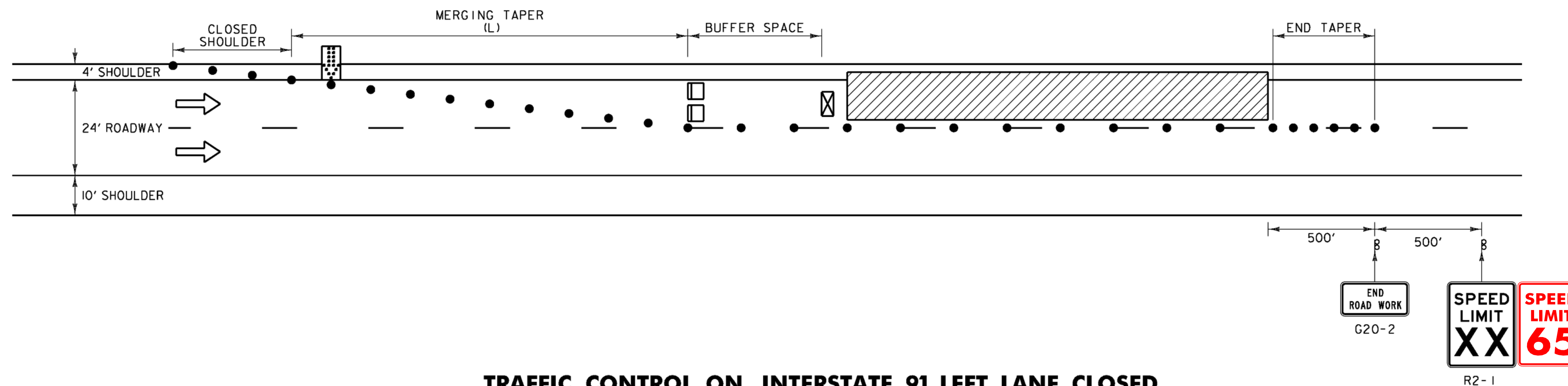
SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
ROADWAY	BRIDGE NO. 59S	BRIDGE NO. 60S	BRIDGE NO. 64S	FULL C.E. ITEMS	BRIDGE NO. 64N	BRIDGE NO. 67N	BRIDGE NO. 69N	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS		
1								1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22						
	438	438	326		245	437	592	2476	NO	SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10						
	4	3	2.3		1.9	4.5	2.1	17.8		CWT	EMULSIFIED ASPHALT	404.65						
	259	191	148		120	298	132	1148	YES	TON	MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT	406.27						
	1	1	1		1	1	1	6		LU	MAT DENSITY PAY ADJUSTMENT (N.A.B.I.)	406.29						
1								1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50						
	23	44	21		25	26	21	160		GAL	WATER REPELLENT, SILANE	514.10						
	80	43	52		52	40	76	343		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10						
	1185	700	522		400	1460	389	4656		SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20						
	1447	962	766		644	1722	389	5930		SY	REMOVAL OF BRIDGE PAVEMENT	529.10						
			10			10		20		SY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS II	580.11						
			4		4	4		12		CY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III	580.12						
	10657	6294	4694		3594	13134	3497	41870		SF	SURFACE PREPARATION FOR MEMBRANE	580.16						
	10	10	10		10	10	10	60		CF	RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE	580.20						
	240	120	180		180	300	120	1140		HR	TRUCK-MOUNTED ATTENUATOR	608.45						
	2		2			2		6		EACH	ENERGY ABSORPTION ATTENUATOR	621.56						
	360	360	360		360	360	360	2160		LF	TEMPORARY TRAFFIC BARRIER	621.90						
	360	360	360		360	360	360	2160		LF	REMOVE AND RESET TEMPORARY TRAFFIC BARRIER	621.95						
	240	120	180		180	300	120	1140		HR	UNIFORMED TRAFFIC OFFICERS	630.10						
		150	150		150		150	600		HR	FLAGGERS	630.15						
				1				1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17						
1								1		LS	MOBILIZATION/DEMobilIZATION	635.11						
	0.5	0.5						1		LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 59S AND 60S)	641.10						
					1			1		LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 64N)	641.10						
			1					1		LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 64S)	641.10						
						1		1		LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 67N)	641.10						
							1	1		LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 69N)	641.10						
	0.5	0.5	1		1	1	1	5		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15						
	0.5	0.5	1		1	1	1	5		EACH	PORTABLE ARROW BOARD	641.16						
	539	400	335		273	618	291	2456		LF	6 INCH WHITE LINE	646.214						
	431	320	268		218	494	233	1964		LF	6 INCH YELLOW LINE	646.215						
	2485	1385	1385		1385	3085	1385	11110		LF	TEMPORARY 6 INCH WHITE LINE, TYPE II TAPE	646.621						
	1385	1385	1385		1385	1385	1385	8310		LF	TEMPORARY 6 INCH YELLOW LINE, TYPE II TAPE	646.631						
						290		290		LF	TEMPORARY 12 INCH WHITE LINE, TYPE II TAPE	646.661						
	11	8	7		6	13	6	51		EACH	LINE STRIPING TARGETS	646.76						
	75	75	75		75	75	75	450		SF	PAVEMENT MARKING MASK	646.86						
1								1		LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50						



SIGN PACKAGES INSTALLED AS DESIGNED



**CONSTRUCTION APPROACH SIGNING ON INTERSTATE 91 LEFT LANE CLOSED**



**TRAFFIC CONTROL ON INTERSTATE 91 LEFT LANE CLOSED**

**TRAFFIC CONTROL NOTES:**

1. THE LEFT LANE CLOSURE IS SHOWN. THE RIGHT LANE APPROACH SIGNING IS SIMILAR. THE RIGHT LANE CLOSURE IS SHOWN ON TRAFFIC CONTROL SHEET 2.
2. THE EXISTING SPEED LIMIT IS 65 MPH. THE SPEED LIMIT WILL BE REDUCED TO 50 MPH IN THE WORK ZONE FOR THIS PROJECT. ANY EXISTING SPEED LIMIT SIGNS WITHIN THE SPEED REDUCTION AREA SHALL BE COMPLETELY COVERED.
3. SIGNS SHALL BE INSTALLED SO AS NOT TO OBSTRUCT EXISTING SIGNS.
4. ALL SIGNS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND THE "STANDARD HIGHWAY SIGNS" BOOK (SHS) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA).
5. SOLID SUBSTRATE CONSTRUCTION SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING "AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) TYPE VII, VIII OR IX REQUIREMENTS, UNLESS OTHERWISE NOTED.
6. ROLL UP SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING ASTM TYPE VI.
7. SIGNS SHALL BE ERECTED BEFORE THE START OF ANY WORK AND SHALL BE COVERED UNTIL WORK COMMENCES, DURING PERIODS OF INACTIVITY OR UPON COMPLETION OF THE WORK. EACH SIGN SHALL BE ERECTED IN A NEAT AND WORKMANLIKE MANNER. SIGNS SHALL BE REMOVED UPON COMPLETION OF THE WORK AT THE DISCRETION OF THE ENGINEER.
8. FIXED SIGNS SHALL BE SET SECURELY IN THE GROUND. THE BOTTOM OF A SIGN SHALL BE AT LEAST SEVEN FEET ABOVE THE EDGE OF PAVEMENT. THE NEAREST EDGE OF A SIGN SHALL BE AT LEAST SIX FEET OUTSIDE THE SHOULDER POINT OR FOUR FEET OUTSIDE GUARDRAIL.
9. PORTABLE SIGNS SHALL BE PLACED ON THE EDGE OF ROADWAY AND A ONE FOOT MINIMUM ABOVE TRAVELED WAY. ALL VEGETATION THAT INTERFERES WITH VISIBILITY OF THE SIGNS SHALL BE REMOVED. WHEN PLACED BEHIND GUARDRAIL, THE BOTTOM OF THE SIGN FACE SHALL BE ABOVE THE TOP OF THE GUARDRAIL.
10. WHERE SIGN INSTALLATIONS ARE NOT PROTECTED BY GUARDRAIL OR OTHER APPROVED TRAFFIC BARRIERS, ALL SIGN STANDS AND POST INSTALLATIONS SHALL BE "NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM" (NCHRP) REPORT 350 COMPLIANT. NO SIGN POSTS SHALL EXTEND OVER THE TOP OF THE SIGN INSTALLED ON SAID POST(S). WHEN ANCHORS ARE INSTALLED STUB SHALL NOT BE GREATER THAN FOUR INCHES ABOVE EXISTING GROUND.
11. THE CONTRACTOR SHALL HAVE SIGNS FOR CLOSURE OF RIGHT AND LEFT LANES ON PROJECT BEFORE WORK COMMENCES.
12. THE NUMBER OF CHANNELIZING DEVICES, TYPE THREE BARRICADE AND OTHER TRAFFIC CONTROL DEVICES SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE ACTUAL NUMBER REQUIRED ARE TO BE DETERMINED BASED ON INDIVIDUAL DETOUR CONDITIONS (TAPERS, SPEED LIMITS, LENGTH OF DETOUR, CURVE, ETC.). WARNING LIGHTS SHALL NOT BE USED ON CHANNELIZING DEVICES.
13. PLACE LAST CHANNELIZING DEVICE 100 FEET BEYOND THE ANTICIPATED WORK ZONE TERMINAL POINT EACH DAY AND THEN START THE END TAPER. THE END TAPER SHALL BE CONSTRUCTED OF 5 ADDITIONAL RETROREFLECTIVE DRUMS SPACED AT 10 FEET ON CENTER.
14. THE ARROW BOARD SHALL BE PLACED ON THE SHOULDER OF THE ROADWAY, OR IF PRACTICAL FURTHER FROM THE TRAVELED LANE AT THE END OF THE SHOULDER TAPER.
15. THE PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE USED AT THE DISCRETION OF THE ENGINEER. THE PCMS SHALL BE USED IN ACCORDANCE WITH SECTION 6F.55 OF THE MUTCD. THE PCMS SHALL READ "LEFT (OR RIGHT) LANE CLOSED AHEAD, PLEASE MERGE EARLY".
16. TRAVEL LANE SHALL BE 12 FEET WIDE.
17. THE CONTRACTOR SHALL REDUCE TRAFFIC TO ONE LANE DURING WORKING HOURS IN ACCORDANCE WITH THIS SHEET. ALL EQUIPMENT SHALL BE MOVED TO A LOCATION OFF PAVED SHOULDERS DURING NON-WORK PERIODS, AND PROTECTED BY BARRELS OR CONES.

**LEGEND**

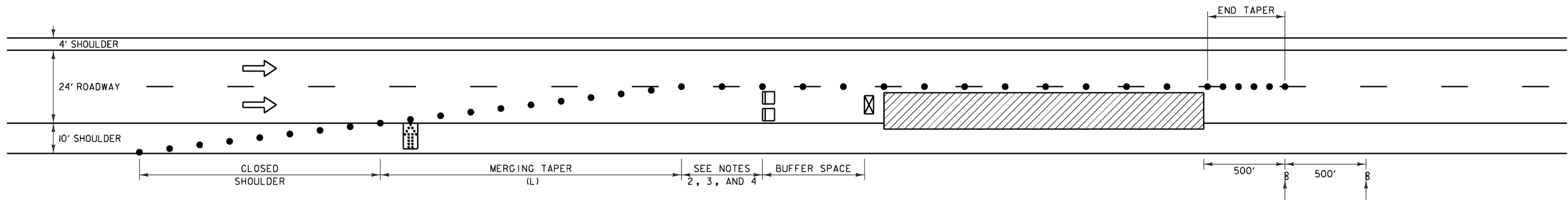
- FLOW OF TRAFFIC
- RETROREFLECTIVE PLASTIC DRUM
- PORTABLE ARROW BOARD
- TYPE III BARRICADE
- WORK AREA
- TRUCK/TRAILER MOUNTED ATTENUATOR
- PORTABLE CHANGEABLE MESSAGE SIGN (SEE NOTE 15)

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

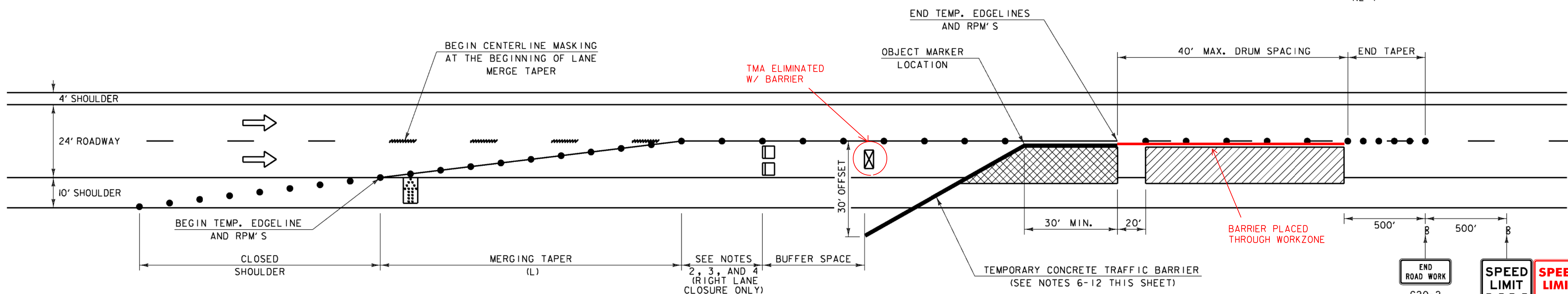
TAPER RATES ARE DETERMINED USING THE FOLLOWING EQUATION:  
 $L = WS$  FOR POSTED SPEEDS OF 45 MPH OR GREATER  
 $L = WS^2/60$  FOR POSTED SPEEDS OF 40 MPH OR LESS

L = MINIMUM LENGTH OF TAPER  
 W = WIDTH OF OFFSET IN FEET. (TYPICAL)  
 S = POSTED SPEED IN MPH

PROJECT NAME: BRADFORD - RYEGATE	PLOT DATE: 2/25/2009
PROJECT NUMBER: IM MEMB(16)	DRAWN BY: MWS
FILE NAME: 05-TCS 1.dgn	DESIGNED BY: SRB
PROJECT LEADER: JPB	CHECKED BY: JPB
TRAFFIC CONTROL SHEET 1	SHEET 5 OF 61



**TRAFFIC CONTROL ON INTERSTATE 91 RIGHT LANE CLOSED**



**TRAFFIC CONTROL ON INTERSTATE 91 RIGHT LANE CLOSED WITH TEMPORARY CONCRETE TRAFFIC BARRIER**

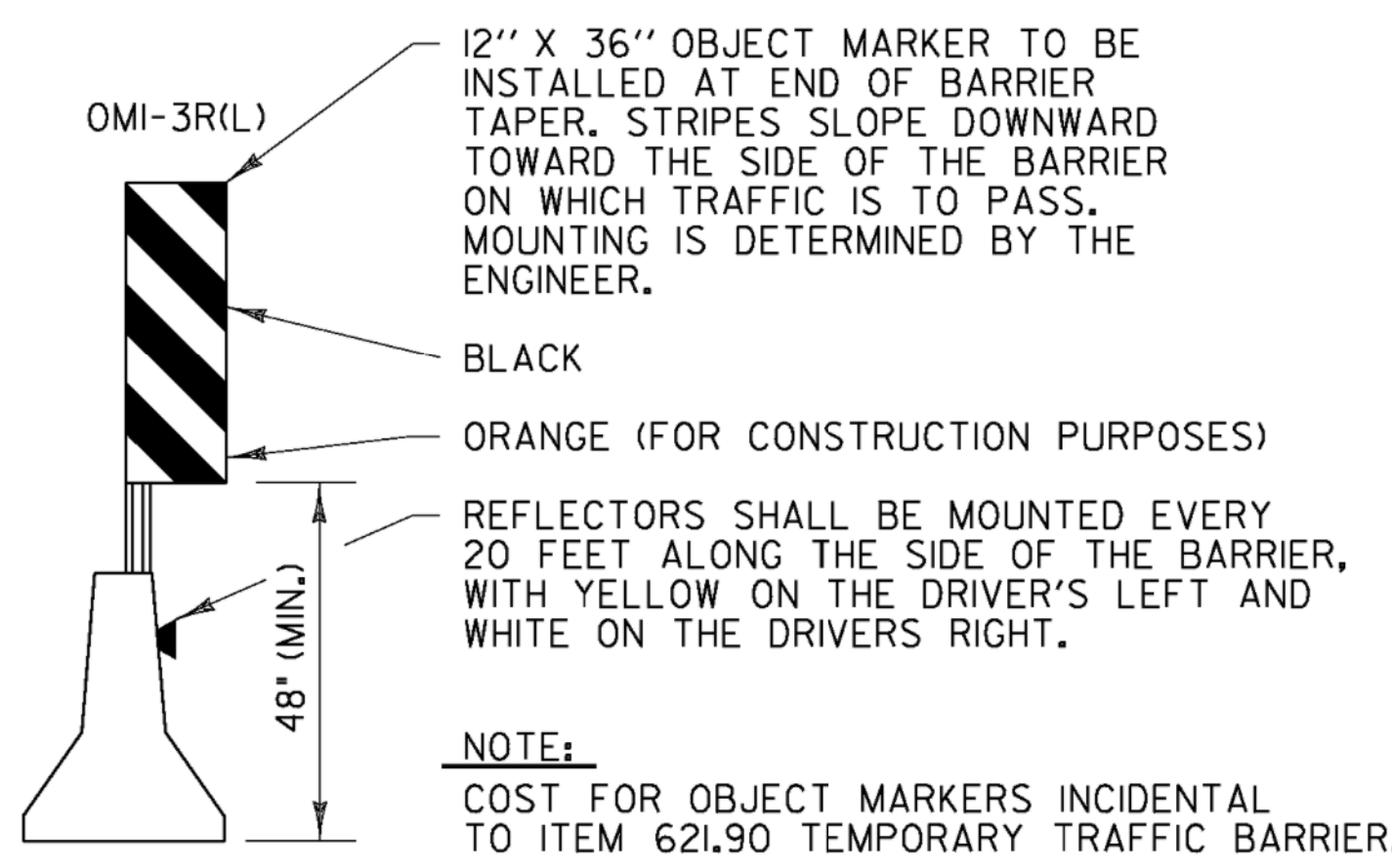
(RIGHT LANE CLOSURE SHOWN, LEFT LANE CLOSURE MIRRORED)

**CONCRETE MEDIAN BARRIER NOTES:**

6. THE EXISTING TRAVEL LANE WIDTH SHOULD BE MAINTAINED IF POSSIBLE.
7. TEMPORARY TAPE EDGELINES SHALL BE APPLIED AND SHALL MAINTAIN A ONE FOOT MINIMUM DISTANCE FROM THE BARRIER WITH TWO FEET BEING DESIRABLE.
8. LINE STRIPING TARGETS (LST'S) SHALL BE PLACED TO THE OUTSIDE OF THE TEMPORARY TAPE AT 20 FOOT SPACING.
9. PROVIDE A MINIMUM TAPER RATE AS SHOWN IN THE TABLE THIS SHEET, WITH A MINIMUM OF 30 FEET OF TANGENT SECTION PRIOR TO THE BEGINNING OF THE WORK ZONE.
10. THE END OF THE BARRIER FACING APPROACHING TRAFFIC SHALL MEET THE FOLLOWING REQUIREMENTS.
  - A. WHEN NO GUARDRAIL IS PRESENT, A 30 FOOT OFFSET SHALL BE USED FROM THE EDGE OF TRAVELLED WAY. IF A 30' OFFSET IS NOT ATTAINABLE, THEN AN ENERGY ABSORPTION ATTENUATOR SHALL BE PROVIDED.
  - B. IF GUARDRAIL IS PRESENT, THEN TEMPORARY CONCRETE TRAFFIC BARRIER SHALL BE CONNECTED TO EXISTING GUARDRAIL (COST INCIDENTAL TO ITEM 621.90 TEMPORARY TRAFFIC BARRIER) (COSTS FOR DISMANTLING BARRIER CONNECTION AND RESTORING EXISTING BARRIER TO ORIGINAL CONFIGURATION SHALL BE INCIDENTAL TO ITEM 621.90 TEMPORARY TRAFFIC BARRIER.)
11. ALL EQUIPMENT SHALL BE PARKED BEHIND TEMPORARY CONCRETE TRAFFIC BARRIERS AT NIGHT AND ON WEEKENDS WHEN NOT IN USE.
12. RETROREFLECTIVE PLASTIC DRUM SPACING SHALL BE 40 FOOT MAX. BETWEEN TEMPORARY CONCRETE TRAFFIC BARRIER AND END OF WORK ZONE.

**TRAFFIC CONTROL NOTES:**

1. DUE TO THE PROXIMITY OF BRIDGES 59S AND 60S, THE TRAFFIC CONTROL FOR THESE BRIDGES WILL BE PAID FOR UNDER ONE TRAFFIC CONTROL ITEM.
2. FOR BRIDGES 59S AND 60S, TRAFFIC CONTROL SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD E-106, "MAINLINE LANE CLOSURE AT AN EXIT RAMP".
3. FOR BRIDGE 67N, TRAFFIC CONTROL SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD E-106, "MAINLINE LANE CLOSURE AT AN ENTRANCE RAMP".
4. FOR BRIDGES 64N, 64S, AND 69N, THE RIGHT LANE CLOSURE SHALL BE AS SHOWN ABOVE WITH ZERO FEET BETWEEN THE MERGING TAPER (L) AND THE BUFFER SPACE.
5. SEE THE TRAFFIC CONTROL NOTES ON THE PREVIOUS SHEET (TRAFFIC CONTROL SHEET 1) FOR ADDITIONAL NOTES AND APPROACH SIGNING FOR THE RIGHT LANE CLOSURE.



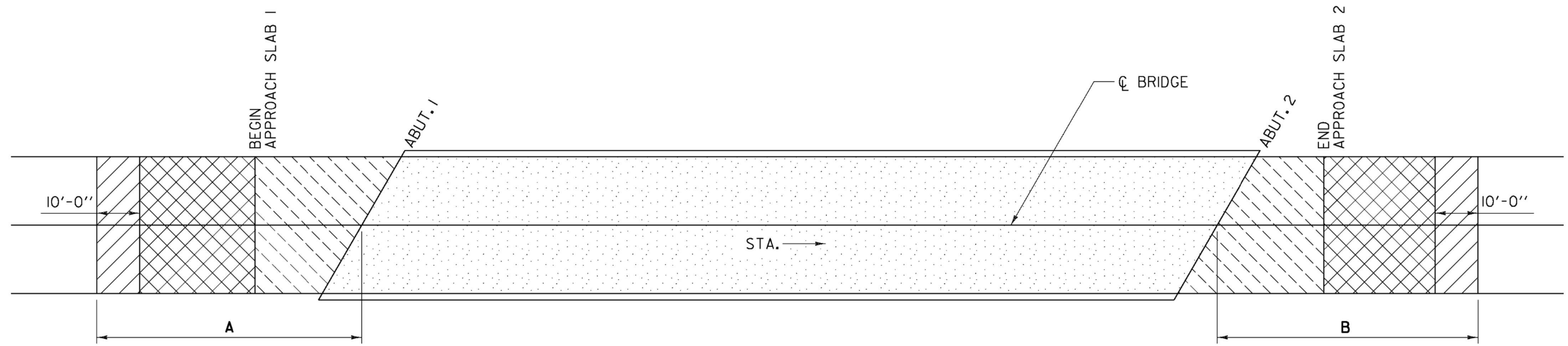
POSTED SPEED (MPH)	TAPER LENGTHS (FT)		TANGENT W=12 FT (L/2)	BARRIER FLARE RATE (MINIMUM)	MINIMUM BUFFER SPACE LENGTH (FT)	MAXIMUM CHANNELIZING DEVICE SPACING (FT)	
	SHOULDER W=10 FT (L/3)	MERGING 12 FT LANE (L)				TAPER (S)	TANGENT (2S)
≤40	90	320	160	1:9	305	40	80
45	150	540	270	1:9	360	45	90
50	170	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

- LEGEND**
- ➔ FLOW OF TRAFFIC
  - RETROREFLECTIVE PLASTIC DRUM
  - ▢ PORTABLE ARROW BOARD
  - ▣ TYPE II BARRICADE
  - ▨ WORK AREA
  - ⊠ TRUCK/TRAILER MOUNTED ATTENUATOR
  - PCMS PORTABLE CHANGEABLE MESSAGE SIGN (SEE NOTE 15 ON TRAFFIC CONTROL SHEET 1)
  - ▤ CONSTRUCTION STAGING/ STORAGE AREA (SEE NOTE 11 THIS SHEET)

PROJECT NAME: BRADFORD - RYEGATE  
 PROJECT NUMBER: IM MEMB(16)  
 FILE NAME: 06-TCS 2.dgn PLOT DATE: 2/25/2009  
 PROJECT LEADER: JPB DRAWN BY: MWS  
 DESIGNED BY: SRB CHECKED BY: JPB  
**TRAFFIC CONTROL SHEET 2** SHEET 6 OF 61

BRIDGE NO.	A(FT)	B(FT)
59S	80.0	80.0
60S	100.0	<del>60.0</del> 100.0
64N	60.0	60.0
64S	80.0	<del>60.0</del> 80.0
67N	80.0	80.0
69N	60.0	80.0



- COLD PLANE - 1 1/4"
- COLD PLANE - 2 1/2"
- COLD PLANE - 2 1/2" ON BRIDGE 69N.  
REMOVE BIT. CONC. PAV'T - TO TOP OF THE APPROACH SLABS FOR BRIDGES 59S, 60S, 64N, 64S, AND 67N.
- REMOVE BIT. CONC. PAV'T - TO THE TOP OF THE CONCRETE BRIDGE DECK AND REMOVE THE BARRIER MEMBRANE.

**NOTE:**

1. COLD PLANE WILL BE PAID FOR UNDER 210.I0.
2. REMOVAL OF THE BIT. CONC. PAV'T. WILL BE PAID FOR UNDER ITEM 529.I0
3. REMOVAL OF THE BARRIER MEMBRANE WILL BE PAID FOR UNDER ITEM 580.I6.

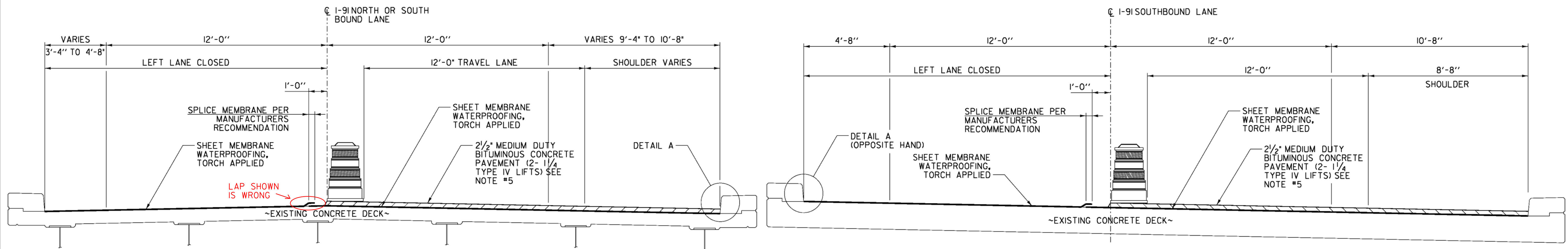
**BITUMINOUS CONCRETE REMOVAL & REPLACEMENT PLAN**

NOT TO SCALE

COLD PLANED +175' BETWEEN BRIDGES 59S & 60S TO ELIMINATE (2) PAVING JOINTS (1 1/4" DEPTH). EL TO EL TO RETAIN RUMBLE STRIPS.

PROJECT NAME: BRADFORD - RYEGATE  
PROJECT NUMBER: IM MEMB(16)

FILE NAME: 08-Conc Remov Plan.dgn PLOT DATE: 2/25/2009  
PROJECT LEADER: JPB DRAWN BY: MWS  
DESIGNED BY: SRB CHECKED BY: JPB  
**BITUMINOUS CONCRETE REMOVAL PLAN** SHEET 7 OF 61



**NOTE:** LEFT LANE CLOSURE AND LEFT SIDE MEMBRANE SPLICE SHOWN. RIGHT LANE CLOSURE AND RIGHT SIDE MEMBRANE SPLICE SIMILAR. CONTRACTOR TO DETERMINE WHICH LANE THE MEMBRANE SPLICE SHALL OCCUR IN UNLESS THE BRIDGE IS SUPERELEVATED. BRIDGES WITH SUPERELEVATION SHALL HAVE THE MEMBRANE PLACED AS SHOWN ON THE MEMBRANE SPLICE DETAIL - SUPERELEVATED.

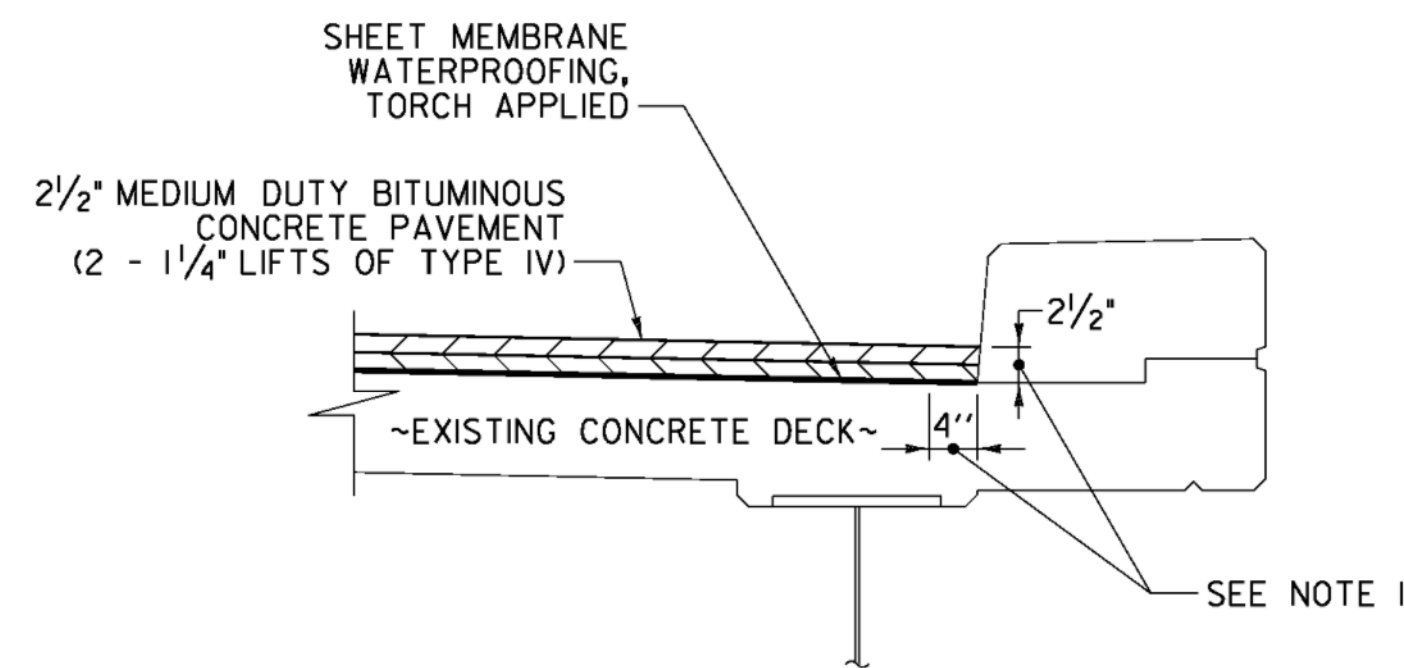
**MEMBRANE SPLICE DETAIL - NORMAL CROWN**

(BRIDGES 64N&S, 67N, & 69N)  
NOT TO SCALE

**NOTE:** LEFT LANE CLOSURE AND LEFT SIDE MEMBRANE SPLICE SHOWN. RIGHT LANE CLOSURE AND RIGHT SIDE MEMBRANE SPLICE SIMILAR. PLACEMENT OF THE MEMBRANE SHALL START AT THE LOWSIDE OF THE BRIDGE. THE SPLICE SHALL BE AS SHOWN ABOVE, WITH THE HIGH SIDE OVERLAPPING THE LOW SIDE.

**MEMBRANE SPLICE DETAIL - SUPERELEVATED**

(BRIDGES 59S & 60S)  
NOT TO SCALE



**DETAIL A**  
NOT TO SCALE

**DETAIL A NOTES:**

- INDICATES AREA ALONG DECK AND UP FACE OF CURB FOR PLACEMENT OF TWO COATS OF POLYURETHANE MEMBRANE.
- POLYURETHANE MEMBRANE AND BLAST CLEANING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR SHEET MEMBRANE WATERPROOFING, TORCH APPLIED.
- SHEET MEMBRANE WATERPROOFING SHALL EXTEND TO FACE OF CURB AS SHOWN.
- IN ADDITION TO THE REQUIREMENTS OF SUBSECTION 519.04, BLAST CLEAN 2 1/2" UP THE FACE OF CURB PRIOR TO PLACING THE MEMBRANE.
- FOR PG BINDER GRADE SEE SECTION 406 OF THE GENERAL SPECIAL PROVISIONS

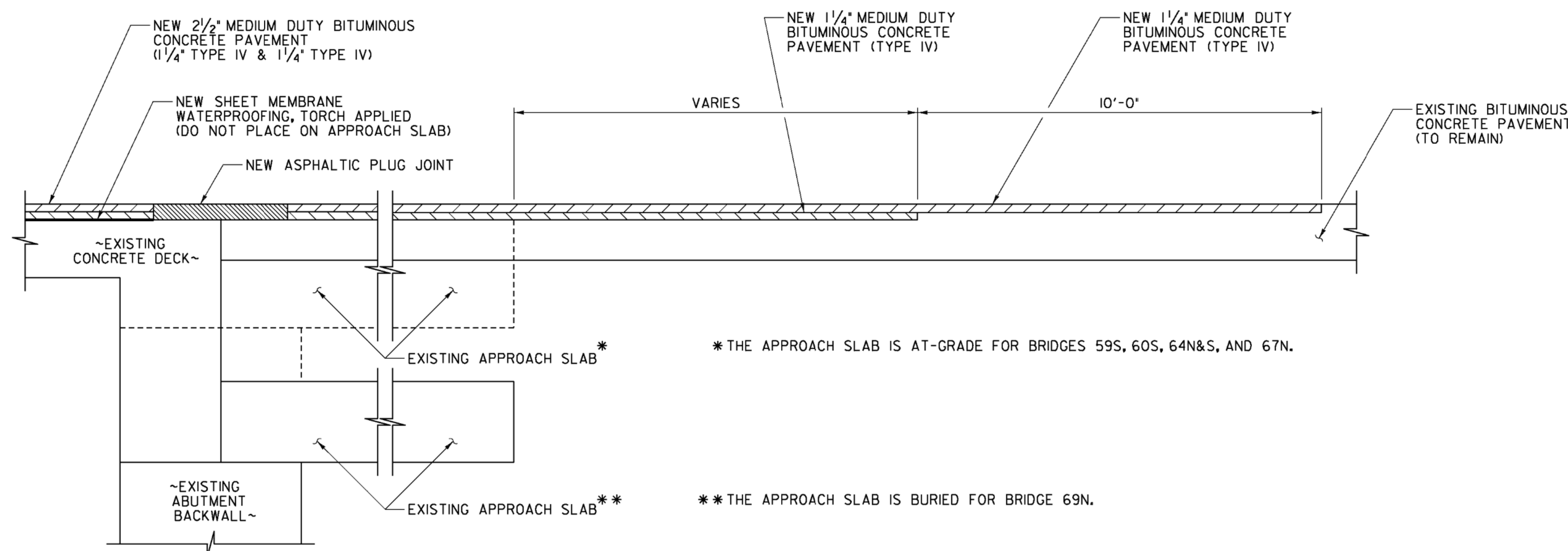
**ASPHALTIC PLUG JOINT REPLACEMENT SCHEDULE**

BRIDGE NO.	ABUT. 1	ABUT. 2
59S	40 FT	40 FT
60S	43 FT	--
64N	52 FT	--
64S	52 FT	--
67N	--	40 FT
* 69N	38 FT	38 FT

\* - BURIED APPROACH SLAB, GALVANIZED STEEL PLATE NOT REQUIRED. (SEE ASPHALTIC PLUG-TYPE JOINT DETAIL ON SHEET 9).

**BRIDGE LENGTH AND WIDTH (CURB TO CURB)**

	WIDTH (CURB TO CURB) (FEET)	LENGTH (FEET)
59S	39.33	270.92
60S	39.33	160.00
64N	36.67	98.00
64S	36.67	128.00
67N	39.33	333.92
69N	38.00	92.00



**TYPICAL APPROACH SECTION**

NOT TO SCALE

\* THE APPROACH SLAB IS AT-GRADE FOR BRIDGES 59S, 60S, 64N&S, AND 67N.

\*\* THE APPROACH SLAB IS BURIED FOR BRIDGE 69N.

PROJECT NAME: BRADFORD - RYEGATE  
PROJECT NUMBER: IM MEMB(16)

FILE NAME: 09-Bit Conc Dets.dgn PLOT DATE: 2/25/2009  
PROJECT LEADER: JPB DRAWN BY: MWS  
DESIGNED BY: SRB CHECKED BY: JPB  
**BITUMINOUS CONCRETE DETAILS** SHEET 8 OF 61























































































