

INDEX OF SHEETS

- 1 TITLE SHEET
- 2 CONVENTIONAL SYMBOLOLOGY - LEGEND
- 3 TYPICAL SHEET
- 4 MICRO-MILLING DETAIL SHEET
- 5 INLAY DETAIL SHEET
- 6-7 PROJECT NOTES AND DETAIL SHEETS
- 8 TYPICAL INTERCHANGE CONSTRUCTION DETAIL
- 9-10 QUANTITY SHEETS
- 11-12 ITEM DETAIL SHEETS
- 13-14 GUARDRAIL REPLACEMENT DETAIL SHEETS
- 15-18 PAVEMENT MARKING DETAIL SHEETS
- 19-26 BRIDGE DETAIL SHEETS
- 27-28 CONSTRUCTION APPROACH SIGNING SHEETS
- 29 CONSTRUCTION APPROACH SIGNING NOTES
- 30 NB ROUGHNESS DATA INFORMATION SHEET
- 31 NB RUTTING DATA INFORMATION SHEET
- 32 SB ROUGHNESS DATA INFORMATION SHEET
- 33 SB RUTTING DATA INFORMATION SHEET
- 34 EROSION MATTING DETAIL

Record Plans

Contractor: PIKE INDUSTRIES, INC.
Resident Engineer: CHRIS BARKER
Construction Began: JULY 24, 2018
Construction Complete: OCTOBER 28, 2019
Record Plans By: CHRIS BARKER & MITCHELL MASON

I hereby certify that all construction required by this set of drawings has been accomplished as indicated herein.

E-SIGNED by Christopher Barker
on 2020-01-06 17:29:31 GMT
BY: _____ Resident Engineer

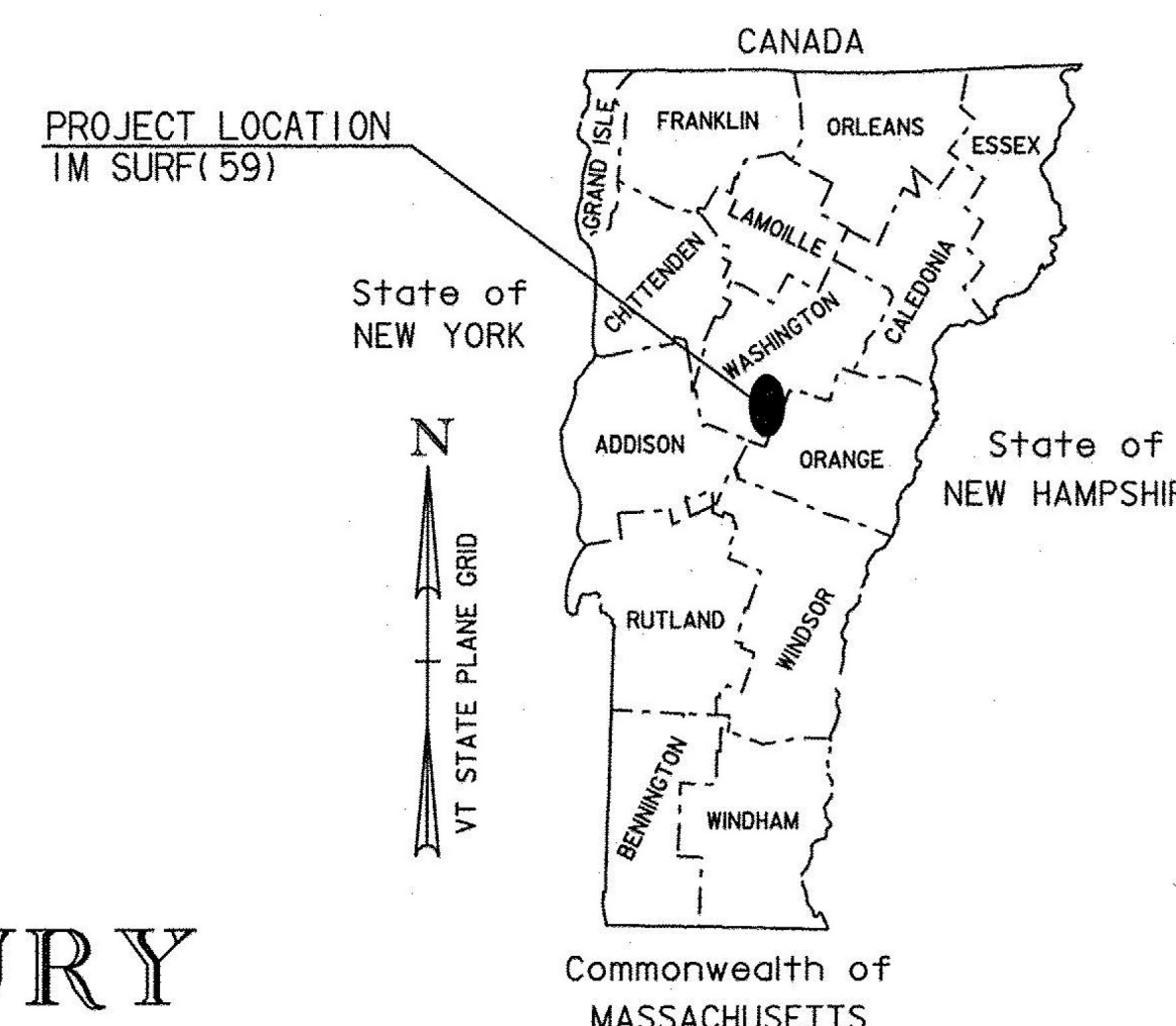
Date: January 06, 2020

NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.

STATE OF VERMONT AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT TOWNS OF MONTPELIER, BERLIN, MIDDLESEX AND WATERBURY COUNTY OF WASHINGTON INTERSTATE ROUTE 89 (PRINCIPAL ARTERIAL - NHS)



DETAIL SHEETS

STRUCTURAL DETAIL SD-516.10 08-29-II

VAOT STANDARDS

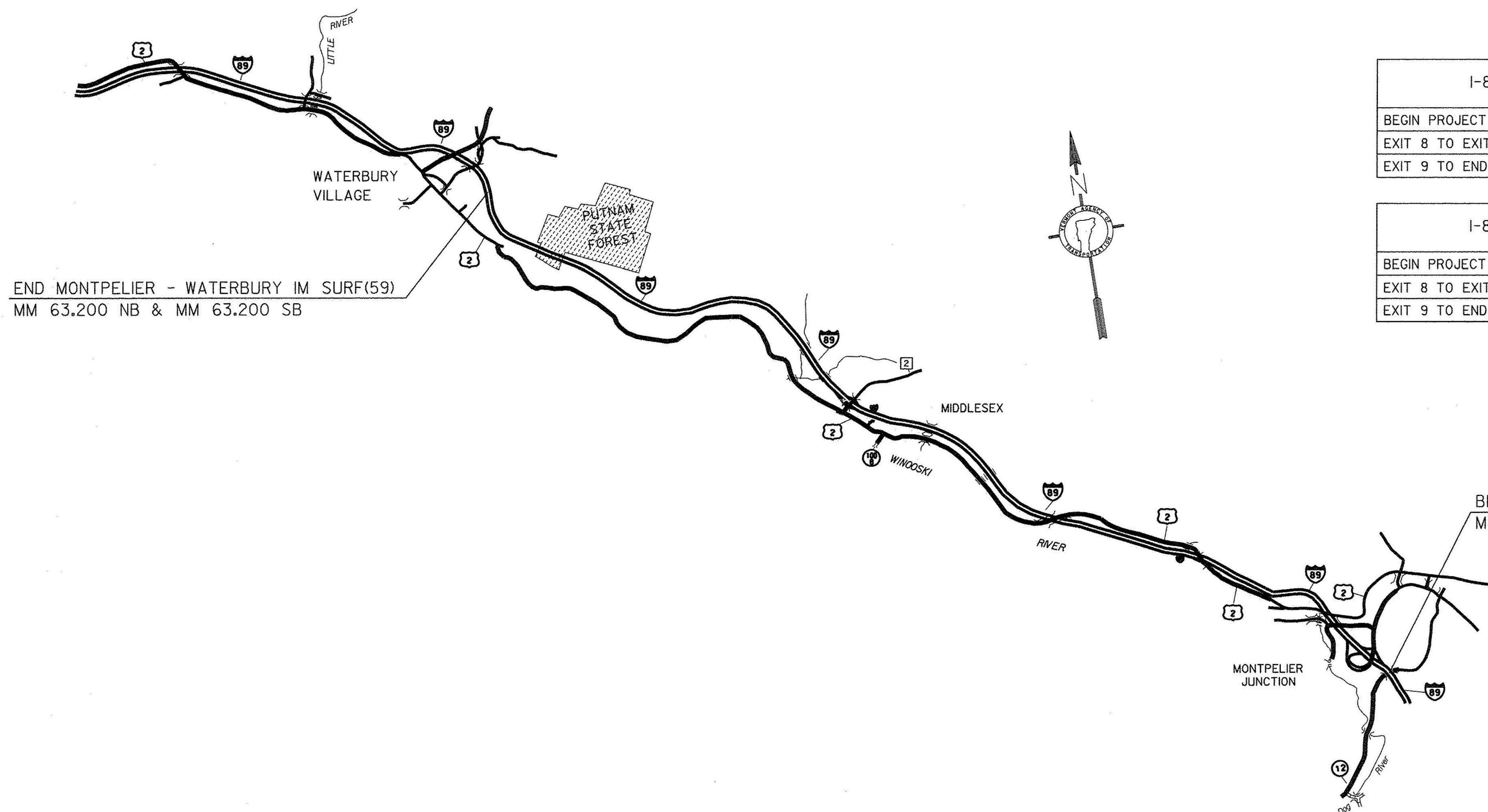
E-191	02-01-99
E-192	10-12-00
E-193	08-18-95
T-1	04-25-16
T-10	08-06-12
T-11	08-06-12
T-12	08-06-12
T-16	08-06-12
T-17	08-06-12
T-22	08-06-12
T-23	08-06-12
T-28	08-06-12
T-29	08-06-12
T-30	08-06-12
T-31	08-06-12
T-33	08-06-12
T-36	08-06-12

BEGINNING IN THE TOWN OF MONTPELIER AT MILE MARKER 52.467 AND EXTENDING NORTHERLY ALONG INTERSTATE ROUTE 89 (NORTHBOUND) FOR A DISTANCE OF 56,670.240 FT (10.733 MILES) TO MILE MARKER 63.200 IN THE TOWN OF WATERBURY, ALSO BEGINNING IN THE TOWN OF MONTPELIER AT MILE MARKER 52.500 AND EXTENDING NORTHERLY ALONG INTERSTATE ROUTE 89 (SOUTHBOUND) FOR A DISTANCE OF 56,496.000 FT (10.700 MILES) TO MILE MARKER 63.200 IN THE TOWN OF WATERBURY

LENGTH OF ROADWAY
LENGTH OF PROJECT

112,747.00 FT
~~113,166.240 FT~~ ~~(21.4330 MILES)~~ 21.3536 MILES NB LENGTH: 56,429.00 FT
~~113,166.240 FT~~ ~~(21.4330 MILES)~~ 21.3536 MILES SB LENGTH: 56,318.00 FT
112,747.00 FT

WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES SURFACE PREPARATION INVOLVING PATCHING, POT HOLE REPAIR, CRACK SEALING, GUARDRAIL, MICRO-MILLING AND OVERLAYING WITH A THIN BITUMINOUS CONCRETE WEARING SURFACE ON THE EXISTING INTERSTATE TYPICAL, PAVEMENT MARKINGS, AND OTHER RELATED HIGHWAY ITEMS.



TRAFFIC DATA

I-89 - NORTHBOUND	ADT		DHV		ESAL'S 2018-2028	ESAL'S 2018-2038
	2018	2028	2018	2028		
BEGIN PROJECT TO EXIT 8	11,600	12,300	1,400	1,500	4,083,000	9,337,000
EXIT 8 TO EXIT 9	12,900	13,700	1,800	1,900	2,345,000	5,423,000
EXIT 9 TO END PROJECT	11,900	12,600	1,500	1,700	3,229,000	7,412,000

I-89 - SOUTHBOUND	ADT		DHV		ESAL'S 2018-2028	ESAL'S 2018-2038
	2018	2028	2018	2028		
BEGIN PROJECT TO VT 346	11,600	12,300	1,500	1,600	3,019,000	6,738,000
EXIT 8 TO EXIT 9	12,900	13,700	1,500	1,600	2,028,000	4,652,000
EXIT 9 TO END PROJECT	11,900	12,600	1,400	1,500	2,940,000	6,662,000

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2014, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

QUALITY ASSURANCE PROGRAM : LEVEL I

SURVEYED BY : N/A

SURVEYED DATE : N/A

DATUM

VERTICAL: N/A

HORIZONTAL: N/A

NOT TO SCALE

DIRECTOR OF PROJECT DELIVERY

APPROVED: *[Signature]* DATE: 2/22/2018

PROJECT MANAGER : MATTHEW BOGACZYK, P.E.

PROJECT NAME : MONTPELIER-WATERBURY

PROJECT NUMBER : IM SURF (59)

SHEET 1 OF 34 SHEETS

GENERAL INFORMATION

SYMBOLGY LEGEND NOTE

THE SYMBOLGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLGY. THE SYMBOLGY IS USED FOR EXISTING & PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROJECT ANNOTATION, AS NOTED ON PROJECT PLAN SHEETS. THIS LEGEND SHEET COVERS THE BASICS. SYMBOLGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

R. O. W. ABBREVIATIONS (CODES) & SYMBOLS

POINT	CODE	DESCRIPTION
	CH	CHANNEL EASEMENT
	CONST	CONSTRUCTION EASEMENT
	CUL	CULVERT EASEMENT
	D&C	DISCONNECT & CONNECT
	DIT	DITCH EASEMENT
	DR	DRAINAGE EASEMENT
	DRIVE	DRIVEWAY EASEMENT
	EC	EROSION CONTROL
	HWY	HIGHWAY EASEMENT
	I&M	INSTALL & MAINTAIN EASEMENT
	LAND	LANDSCAPE EASEMENT
	R&RES	REMOVE & RESET
	R&REP	REMOVE & REPLACE
	SR	SLOPE RIGHT
	UE	UTILITY EASEMENT
	(P)	PERMANENT EASEMENT
	(T)	TEMPORARY EASEMENT
■	BNDNS	BOUND SET
▣	BNDNS	BOUND TO BE SET
●	IPNS	IRON PIN SET
◎	IPNS	IRON PIN TO BE SET
⊠	CALC	EXISTING ROW POINT
○	PROW	PROPOSED ROW POINT
[LENGTH]		LENGTH CARRIED ON NEXT SHEET

COMMON TOPOGRAPHIC POINT SYMBOLS

POINT	CODE	DESCRIPTION
⌘	APL	BOUND APPARENT LOCATION
◻	BM	BENCH MARK
▣	BND	BOUND
▣	CB	CATCH BASIN
⊕	COMB	COMBINATION POLE
▣	DITHR	DROP INLET THROATED DNC
⊕	EL	ELECTRIC POWER POLE
⊙	FPOLE	FLAGPOLE
⊙	GASFIL	GAS FILLER
⊙	GP	GUIDE POST
×	GSO	GAS SHUT OFF
⊙	GUY	GUY POLE
⊙	GUYW	GUY WIRE
×	GV	GATE VALUE
⊗	H	TREE HARDWOOD
△	HCTRL	CONTROL HORIZONTAL
△	HVCTRL	CONTROL HORIZ. & VERTICAL
◇	HYD	HYDRANT
⊙	IP	IRON PIN
⊙	IPIPE	IRON PIPE
⊕	LI	LIGHT - STREET OR YARD
⊕	MB	MAILBOX
○	MH	MANHOLE (MH)
▣	MM	MILE MARKER
⊙	PM	PARKING METER
▣	PMK	PROJECT MARKER
⊙	POST	POST STONE/WOOD
⊕	RRSIG	RAILROAD SIGNAL
⊕	RRSL	RAILROAD SWITCH LEVER
⊗	S	TREE SOFTWOOD
⊙	SAT	SATELLITE DISH
⊗	SHRUB	SHRUB
⊕	SIGN	SIGN
⊕	STUMP	STUMP
⊕	TEL	TELEPHONE POLE
⊙	TIE	TIE
⊕	TSIGN	SIGN W/DOUBLE POST
⊕	VCTRL	CONTROL VERTICAL
⊙	WELL	WELL
×	WSO	WATER SHUT OFF

THESE ARE COMMON VAOT SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

PROPOSED GEOMETRY CODES

CODE	DESCRIPTION
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
CC	CENTER OF CURVE
PT	POINT OF TANGENCY
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
STA	STATION PREFIX
AH	AHEAD STATION SUFFIX
BK	BACK STATION SUFFIX
D	CURVE DEGREE OF (100FT)
R	CURVE RADUIS OF
T	CURVE TANGENT LENGTH
L	CURVE LENGTH OF
E	CURVE EXTERNAL DISTANCE

UTILITY SYMBOLGY

UNDERGROUND UTILITIES

— UT —	.. - - - -	TELEPHONE
— UE —	.. - - - -	ELECTRIC
— UC —	.. - - - -	CABLE (TV)
— UEC —	.. - - - -	ELECTRIC+CABLE
— UET —	.. - - - -	ELECTRIC+TELEPHONE
— UCT —	.. - - - -	CABLE+TELEPHONE
— UECT —	.. - - - -	ELECTRIC+CABLE+TELEP.
— G —	.. - - - -	GAS LINE
— W —	.. - - - -	WATER LINE
— S —	.. - - - -	SANITARY SEWER (SEPTIC)

ABOVE GROUND UTILITIES (AERIAL)

— T —	.. - - - -	TELEPHONE
— E —	.. - - - -	ELECTRIC
— C —	.. - - - -	CABLE (TV)
— EC —	.. - - - -	ELECTRIC+CABLE
— ET —	.. - - - -	ELECTRIC+TELEPHONE
— AER E&T —	.. - - - -	ELECTRIC+TELEPHONE
— CT —	.. - - - -	CABLE+TELEPHONE
— ECT —	.. - - - -	ELECTRIC+CABLE+TELEP.
—	.. - - - -	UTILITY POLE GUY WIRE

PROJECT CONSTRUCTION SYMBOLGY

PROJECT DESIGN & LAYOUT SYMBOLGY

— - - - CZ — - - -	CLEAR ZONE
—————	PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

△ — △ — △ — △	TOP OF CUT SLOPE
○ — ○ — ○ — ○	TOE OF FILL SLOPE
⊗ ⊗ ⊗ ⊗ ⊗ ⊗	STONE FILL
-----	BOTTOM OF DITCH
=====	CULVERT PROPOSED
-----	STRUCTURE SUBSURFACE
PDF — PDF —	PROJECT DEMARCATION FENCE
BF — x — x — BF — x —	BARRIER FENCE
xxxxxxxxxxxxxxxxxxxx	TREE PROTECTION ZONE (TPZ)
//// //// //// ////	STRIPING LINE REMOVAL
~~~~ ~~~~ ~~~~ ~~~~	SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLGY

BOUNDARY LINES

———— TOWN LINE ———	TOWN BOUNDARY LINE
———— COUNTY LINE ———	COUNTY BOUNDARY LINE
———— STATE LINE ———	STATE BOUNDARY LINE
—— / — / —	PROPOSED STATE R.O.W. (LIMITED ACCESS)
—— - - - - —	PROPOSED STATE R.O.W.
—— / — / —	STATE ROW (LIMITED ACCESS)
—— - - - - —	STATE ROW
—— - - - - —	TOWN ROW
— . . . . . —	PERMANENT EASEMENT LINE (P)
— - - - - —	TEMPORARY EASEMENT LINE (T)
— — — — —	SURVEY LINE
+ — + — + —	PROPERTY LINE (P/L)
— P — — — — — P —	PROPERTY LINE (P/L)
△ SR ○ SR △ SR ○	SLOPE RIGHTS
6f — — — — — 6f —	6F PROPERTY BOUNDARY
4f — — — — — 4f —	4F PROPERTY BOUNDARY
HAZ — — — — — HAZ —	HAZARDOUS WASTE

EPSC LAYOUT PLAN SYMBOLGY

EPSC MEASURES

ONNOONNOONNO	FILTER CURTAIN
— — — — —	SILT FENCE
— x — x — x — x —	SILT FENCE WOVEN WIRE
▶ — ▶ — ▶ —	CHECK DAM
■	DISTURBED AREAS REQUIRING RE-VEGETATION
⊗	EROSION MATTING

ENVIRONMENTAL RESOURCES

———	WETLAND BOUNDARY
-----	RIPARIAN BUFFER ZONE
-----	WETLAND BUFFER ZONE
-----	SOIL TYPE BOUNDARY
—— T&E ———	THREATENED & ENDANGERED SPECIES
—— HAZ ——— HAZ ———	HAZARDOUS WASTE AREA
—— AG ———	AGRICULTURAL LAND
—— HABITAT ———	FISH & WILDLIFE HABITAT
—— FLOOD PLAIN ———	FLOOD PLAIN
—— OHW ———	ORDINARY HIGH WATER (OHW)
—— ● ——— ● ——— ● ———	STORM WATER
—— - - - - —	USDA FOREST SERVICE LANDS
—— - . . . - —	WILDLIFE HABITAT SUIT/CONN

ARCHEOLOGICAL & HISTORIC

—— ARCH ———	ARCHEOLOGICAL BOUNDARY
—— HISTORIC DIST ———	HISTORIC DISTRICT BOUNDARY
—— HISTORIC ———	HISTORIC AREA
(H)	HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLGY

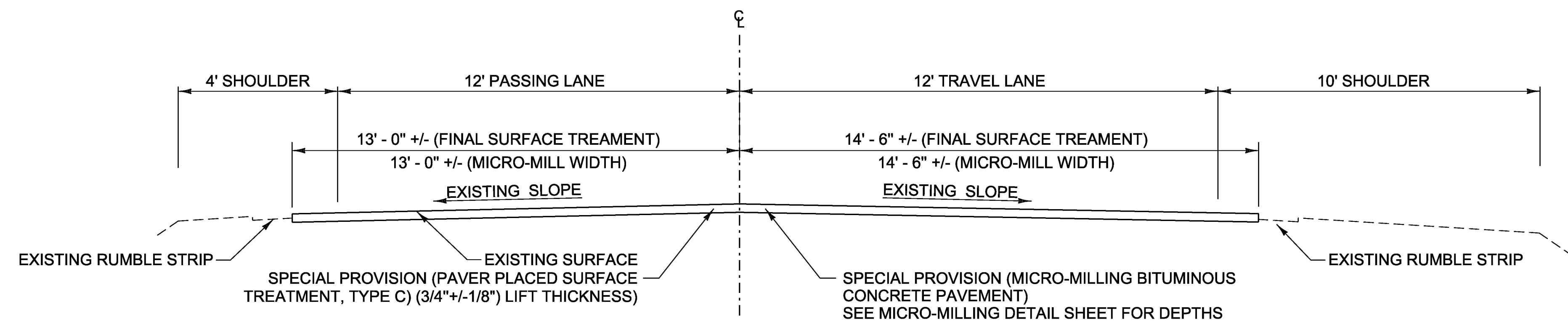
EXISTING FEATURES

-----	ROAD EDGE PAVEMENT
-----	ROAD EDGE GRAVEL
-----	DRIVEWAY EDGE
-----	DITCH
-----	FOUNDATION
x — x — x — x —	FENCE (EXISTING)
□ — □ — □ — □ —	FENCE WOOD POST
○ — ○ — ○ — ○ —	FENCE STEEL POST
~~~~ ~~~~ ~~~~ ~~~~	GARDEN
○ — ○ — ○ — ○ —	ROAD GUARDRAIL
	RAILROAD TRACKS
-----	CULVERT (EXISTING)
oooooooooooooooo	STONE WALL
-----	WALL
~~~~ ~~~~ ~~~~ ~~~~	WOOD LINE
~~~~ ~~~~ ~~~~ ~~~~	BRUSH LINE
~~~~ ~~~~ ~~~~ ~~~~	HEDGE
=====	BODY OF WATER EDGE
=====	LEDGE EXPOSED

PROJECT NAME:	MONTPELIER-WATERBURY
PROJECT NUMBER:	IM SURF(59)
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK
CONVENTIONAL SYMBOLGY - LEGEND	SHEET 2 OF 34

NOT TO SCALE





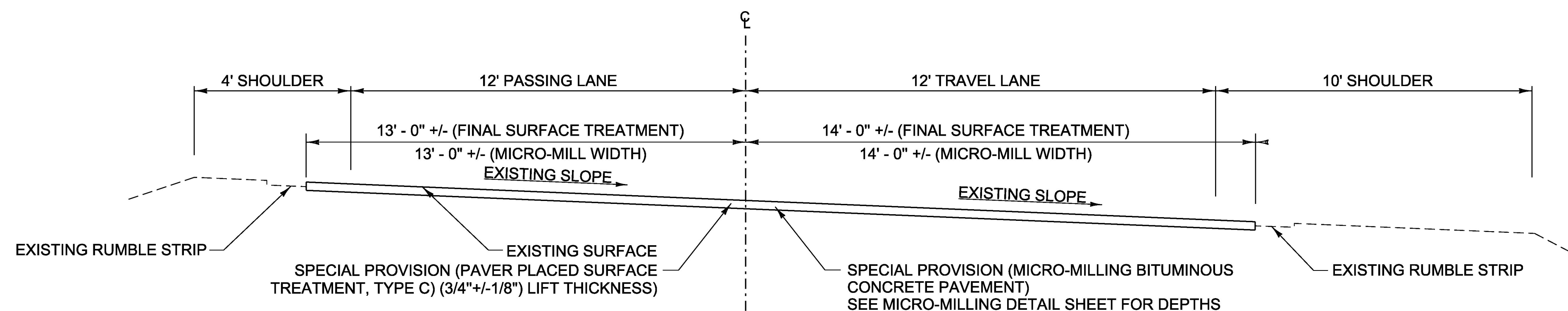
### ROADWAY TYPICAL NORMAL SECTION

I-89 NB MONTPELIER MM 52.467 - WATERBURY MM 63.200  
I-89 SB MONTPELIER MM 52.500 - WATERBURY MM 63.200

NORTHBOUND MM 52.467 TO MM 54.250 MICRO-MILL TRAVEL AND PASSING LANE 3/4".  
*NORTHBOUND MM 54.250 TO MM 55.100 MICRO-MILL TRAVEL LANE 1.0" AND PASSING LANE 3/4".  
NORTHBOUND MM 55.100 TO MM 63.200 MICRO-MILL TRAVEL AND PASSING LANE 3/4".  
SOUTHBOUND MM 52.500 TO MM 54.250 MICRO-MILL TRAVEL AND PASSING LANE 3/4".  
*SOUTHBOUND MM 54.250 TO MM 55.800 MICRO-MILL TRAVEL LANE 1.0" AND PASSING LANE 3/4".  
SOUTHBOUND MM 55.800 TO MM 63.200 MICRO-MILL TRAVEL AND PASSING LANE 3/4".

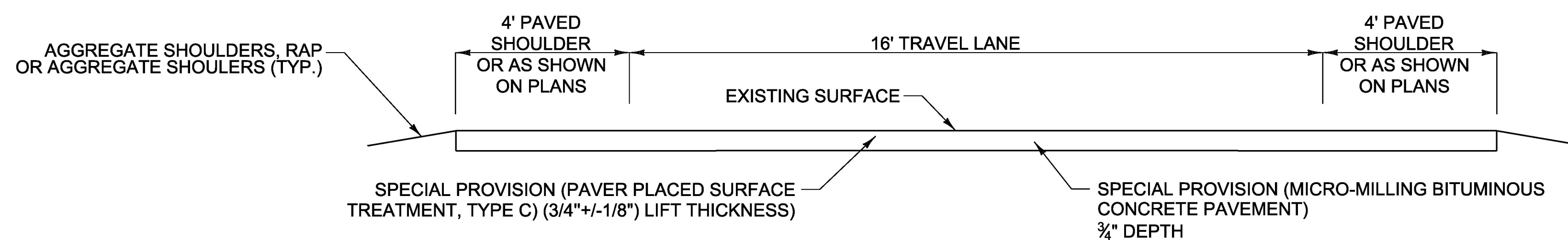
#### NOTES:

- * 2016 DISTRICT MAINTENANCE PROJECT ESTIMATED A ONE INCH COLD PLANE & OVERLAY FROM NB MM 54.250 TO MM 55.100 AND SB MM 54.250 TO MM 55.800 IN THE TRAVEL LANE. THE ENTIRE OVERLAY SHALL BE REMOVED TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR WILL NOT BE COMPENSATED FOR VARIABLE DEPTHS AT THESE LOCATIONS FOR MICRO-MILLING OR PAVER PLACED SURFACE TREATMENT.
- CENTERLINE SHALL HAVE A MINIMUM MICRO-MILL DEPTH OF 3/4".
- MICRO-MILLING FOR BRIDGES SHALL BE 3/4".



### ROADWAY TYPICAL BANKED SECTION

I-89 NB MONTPELIER MM 52.467 - WATERBURY MM 63.200  
I-89 SB MONTPELIER MM 52.500 - WATERBURY MM 63.200

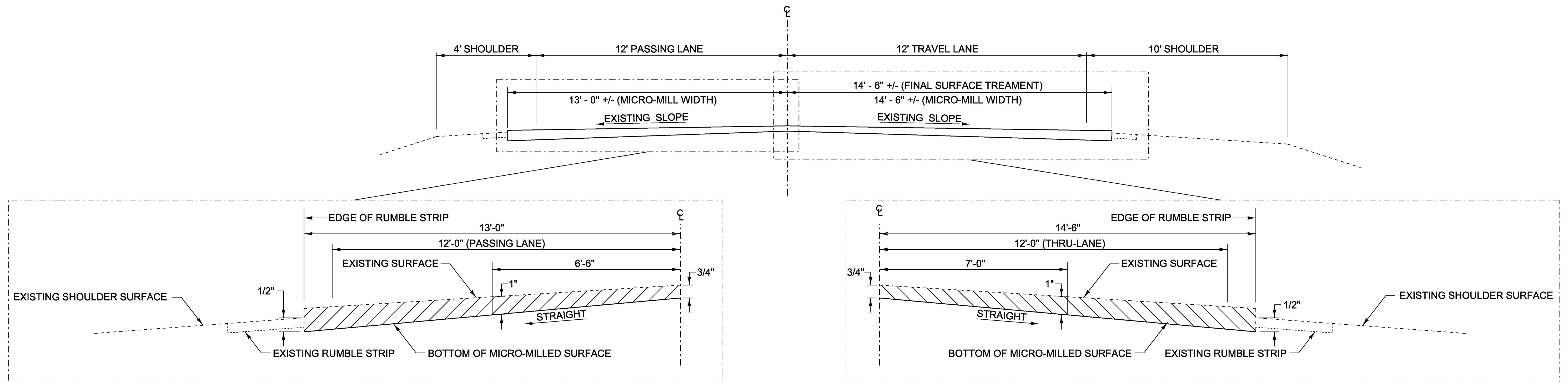


### TYPICAL RAMP SECTION

NOT TO SCALE

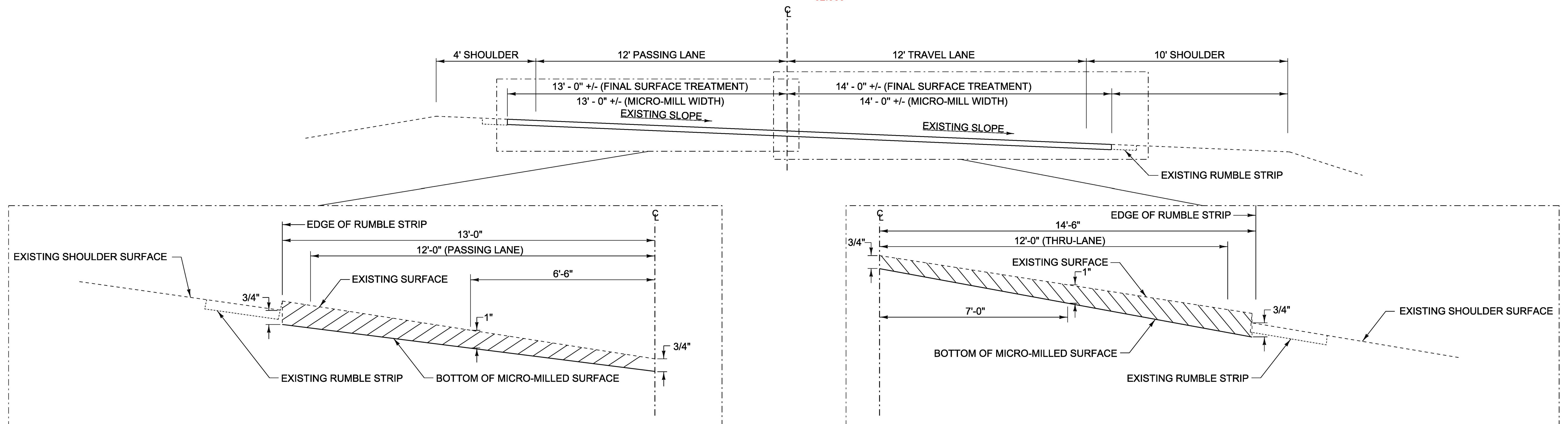
PROJECT NAME:	MONTPELIER-WATERBURY
PROJECT NUMBER:	IM SURF(59)
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK
TYPICAL SHEET	SHEET 3 OF 34





### MICRO-MILLING DETAIL - NORMAL SECTION

I-89 NB MONTPELIER MM 52.467 - WATERBURY MM 63.200  
I-89 SB MONTPELIER MM 52.580 - WATERBURY MM 63.200



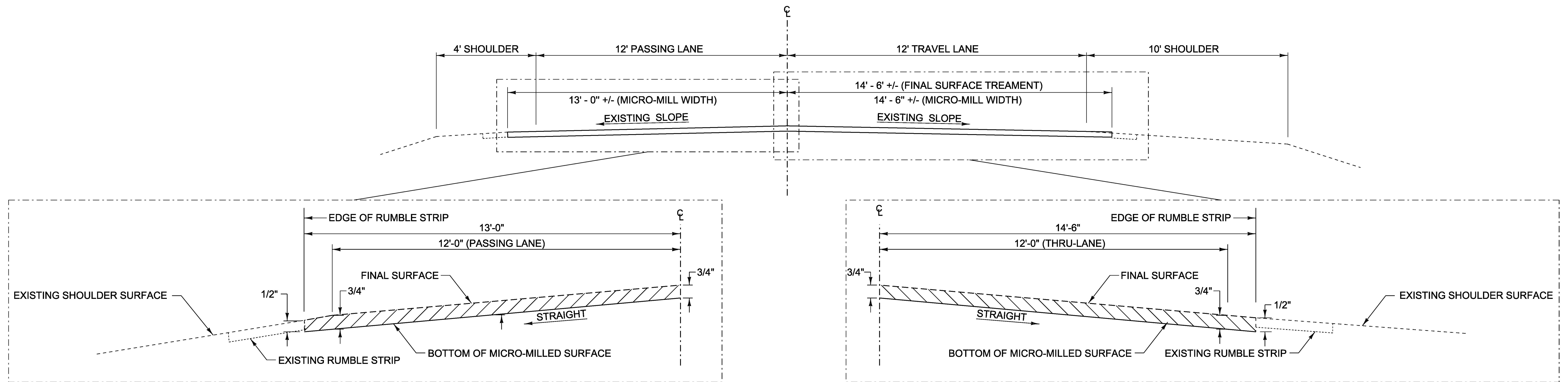
### MICRO-MILLING DETAIL - BANKED SECTION

I-89 NB MONTPELIER MM 52.467 - WATERBURY MM 63.200  
I-89 SB MONTPELIER MM 52.580 - WATERBURY MM 63.200

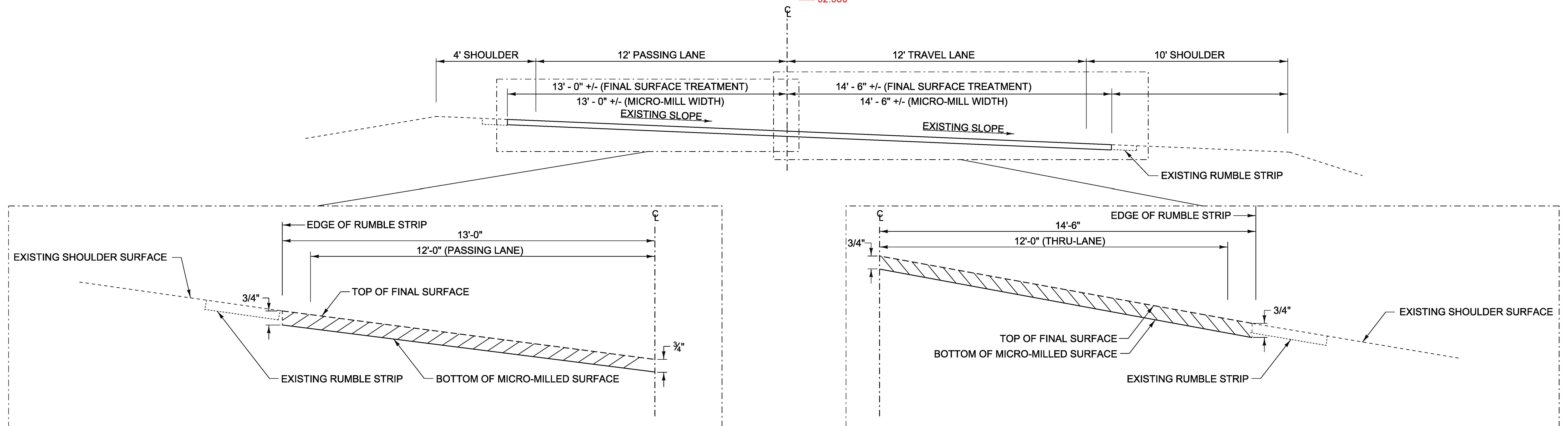
NOT TO SCALE

PROJECT NAME:	MONTPELIER-WATERBURY
PROJECT NUMBER:	IM SURF(59)
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK
MICRO-MILLING DETAIL SHEET	SHEET 4 OF 34





**IN-LAY DETAIL - NORMAL SECTION**  
 I-89 NB MONTPELIER MM 52.467 - WATERBURY MM 63.200  
 I-89 SB MONTPELIER MM 52.580 - WATERBURY MM 63.200



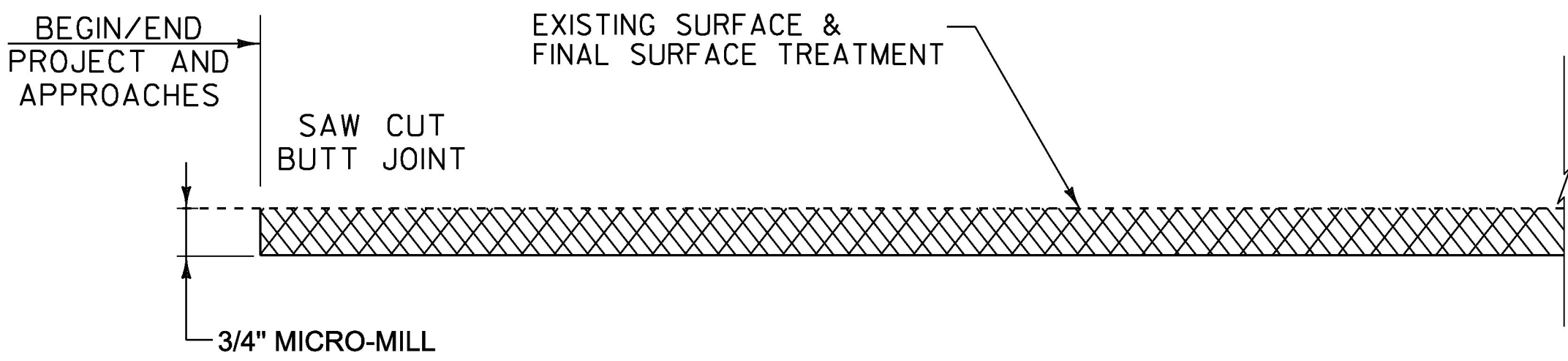
**IN-LAY DETAIL - BANKED SECTION**  
 I-89 NB MONTPELIER MM 52.467 - WATERBURY MM 63.200  
 I-89 SB MONTPELIER MM 52.580 - WATERBURY MM 63.200

**NOT TO SCALE**

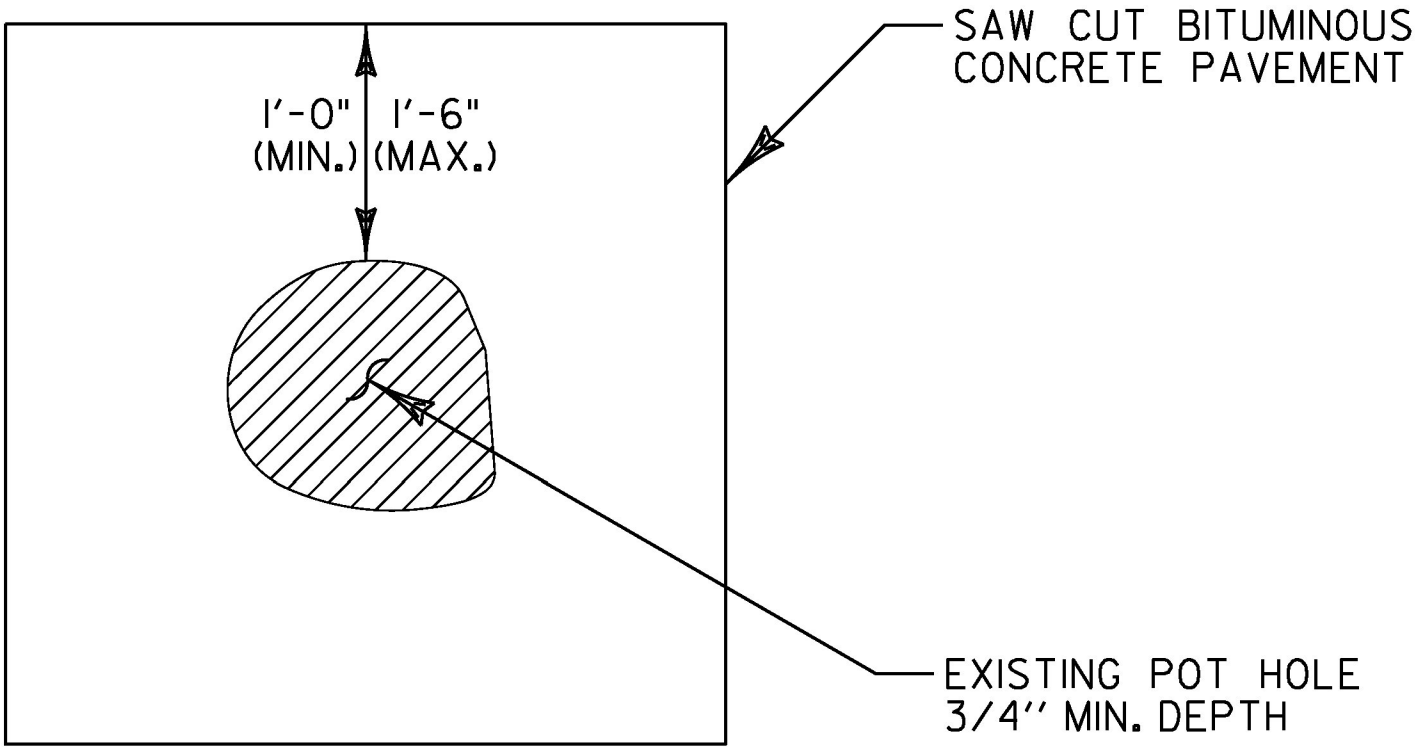
PROJECT NAME: MONTPELIER-WATERBURY	
PROJECT NUMBER: IM SURF(59)	
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK
INLAY DETAIL SHEET	SHEET 5 OF 34



- NOTES:
1. ALL NECESSARY SURFACE PREPARATION INVOLVING PATCHING, POTHOLE REPAIR, AND CRACK-SEALING SHALL BE PERFORMED PRIOR TO APPLICATION OF THE FINAL SURFACE TREATMENT. ALL CRACKS GREATER THAN 0.10" AND UP TO 1.0" IN WIDTH SHALL BE SEALED USING THE "BLOW AND GO" FILL METHOD. ALL COSTS ASSOCIATE WITH THIS WORK SHALL BE PAID FOR UNDER ITEM 417.20, BITUMINOUS CRACK SEALING, "BLOW AND GO" METHOD. THE PATCHING OF ALL CRACKS GREATER THAN 1.0" AND ALL OTHER PATCHING AND POTHOLE REPAIR SHALL BE COMPLETED USING BITUMINOUS CONCRETE PAVEMENT IN ACCORDANCE WITH ITEM 900.680 SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT SURFACE PREPARATION, TYPE I). AN ESTIMATED QUANTITY FOR THIS ITEM HAS BEEN INCLUDED TO COVER ALL COSTS ASSOCIATED WITH THIS WORK.
2. EXISTING SHOULDER PAVEMENT SURFACES BEYOND THE LIMITS OF THE FINAL SURFACE TREATMENT SHALL ALSO RECEIVE CRACK-SEALING AND RELATED PATCHING AND POTHOLE REPAIR TREATMENTS.
3. FOLLOWING COMPLETION OF COLD PLANING, THE MILLED SURFACE FOR ALL BRIDGES TO BE COLD PLANED SHALL ALSO RECEIVE CRACK-SEALING AND RELATED PATCHING AND POTHOLE REPAIR TREATMENTS, AS DIRECTED BY THE ENGINEER.
4. ALL EXISTING PAVEMENT MARKINGS SHALL BE REMOVED PRIOR TO ANY CRACK SEALING BEING PERFORMED AND PRIOR TO APPLYING THE FINAL SURFACE TREATMENT. ALL LANE DELINEATION IS TO BE MAINTAINED DURING CONSTRUCTION BY THE USE OF LINE STRIPING TARGETS OR TEMPORARY PAINT.
5. THERE ARE WEIGH IN MOTION SENSOR IN THE PAVEMENT AT APPROXIMATE MM 57.200 NORTHBOUND AND SOUTHBOUND THAT MAY BE IMPACTED BY CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL CONTACT MARK GERRISH, FIBER OPTIC PROJECT MANAGER, VTRANS OPERATIONS AND MAINTENANCE BUREAU AT 802-461-5570 48 HOURS PRIOR TO BEGINNING ANY WORK IN THIS AREA SO THAT MARK OR HIS REPRESENTATIVE CAN REMOVE THESE SENSORS. INSTALLATION OF NEW SENSORS WILL BE PERFORMED BY OTHERS FOLLOWING COMPLETION OF THE PROJECT.
6. WHEN AN EXTENSIVE PORTION OF THE GUARDRAIL HEIGHT IS ABOVE 29 INCHES OR BELOW 26.5 INCHES IT SHALL BE ADJUSTED TO CONFORM TO THE CURRENT HEIGHT REQUIREMENTS FOR GUARDRAIL. PAYMENT WILL BE MADE UNDER ITEM 621.79 ADJUST HEIGHT OF GUARDRAIL. 3'-7" OF BACKING IS REQUIRED BEHIND THE FACE OF GUARDRAIL WITH SIX FOOT POSTS. PAYMENT WILL BE MADE UNDER ITEM 621.20 STEEL BEAM GUARDRAIL, GALVANIZED.
7. AGGREGATE SHOULDERS OPTION ITEM IS TO BE USED FOR ON AND OFF RAMPS.



**TYPICAL APPROACH AREA DETAIL MAINLINE & RAMPS**



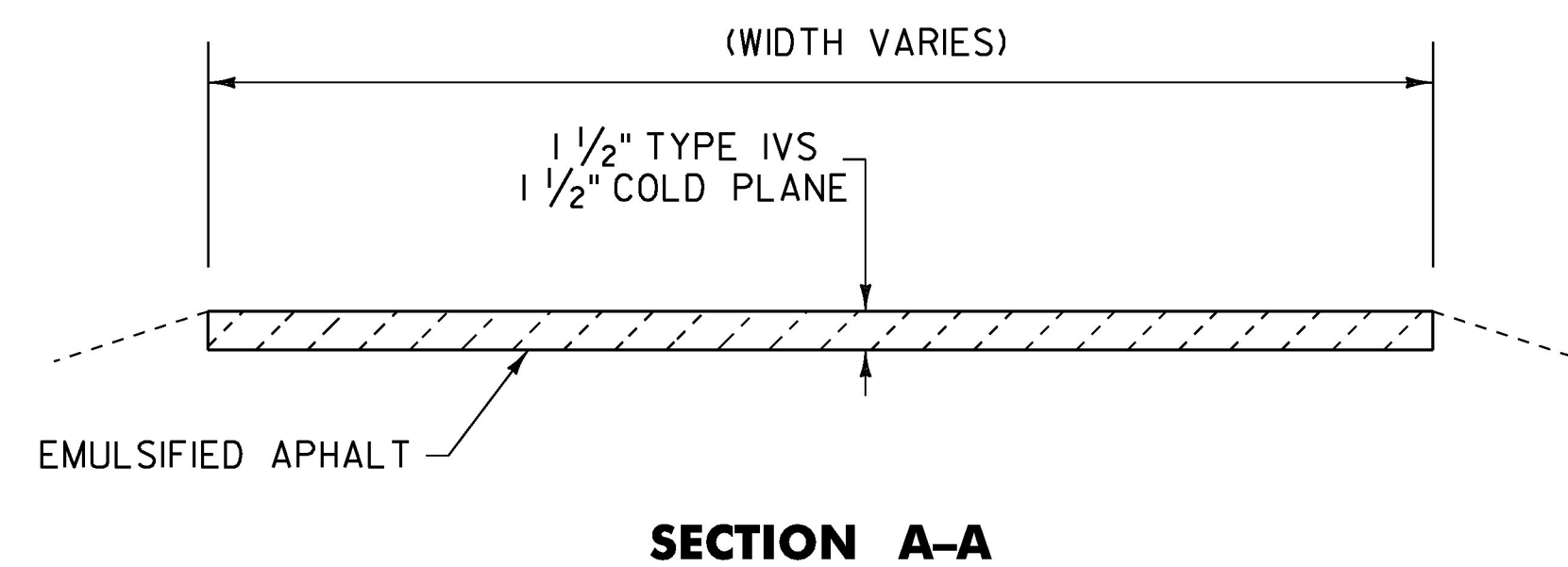
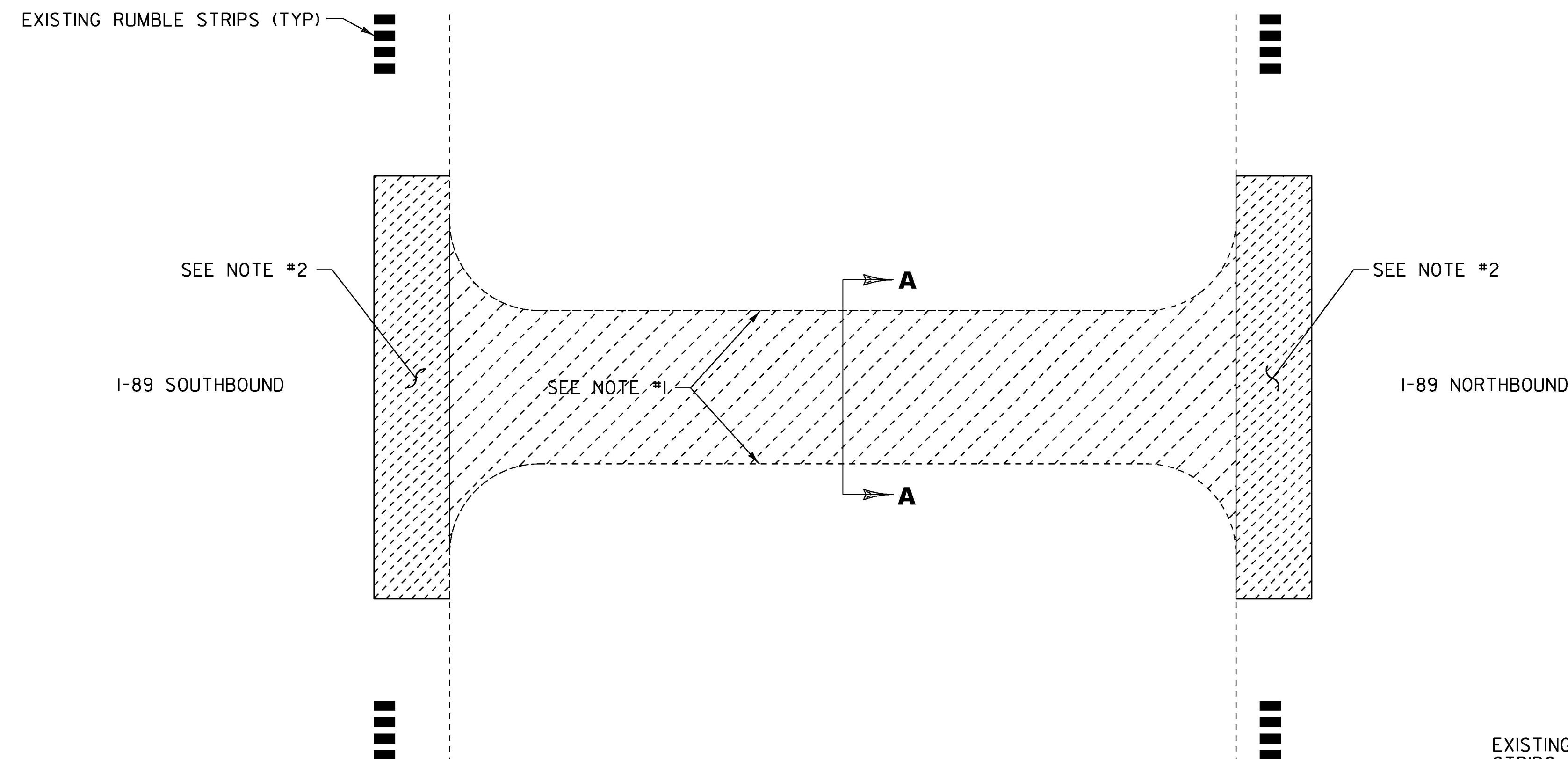
**TYPICAL - POT HOLE REPAIR**

NOTE:  
EMULSIFIED ASPHALT SHALL BE APPLIED AT ALL PATCH INTERFACES AT A RATE OF 0.25 - 0.50 GAL/SY.  
EMULSIFIED ASPHALT SHALL MEET THE REQUIREMENTS OF SECTION 404 AND WILL BE CONSIDERED INCIDENTAL TO SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT SURFACE PREPARATION, TYPE I).

**NOT TO SCALE**

PROJECT NAME:	MONTPELIER-WATERBURY		
PROJECT NUMBER:	IM SURF(59)		
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018		
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS		
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK		
PROJECT NOTES AND DETAIL SHEET 1	SHEET 6	OF	34

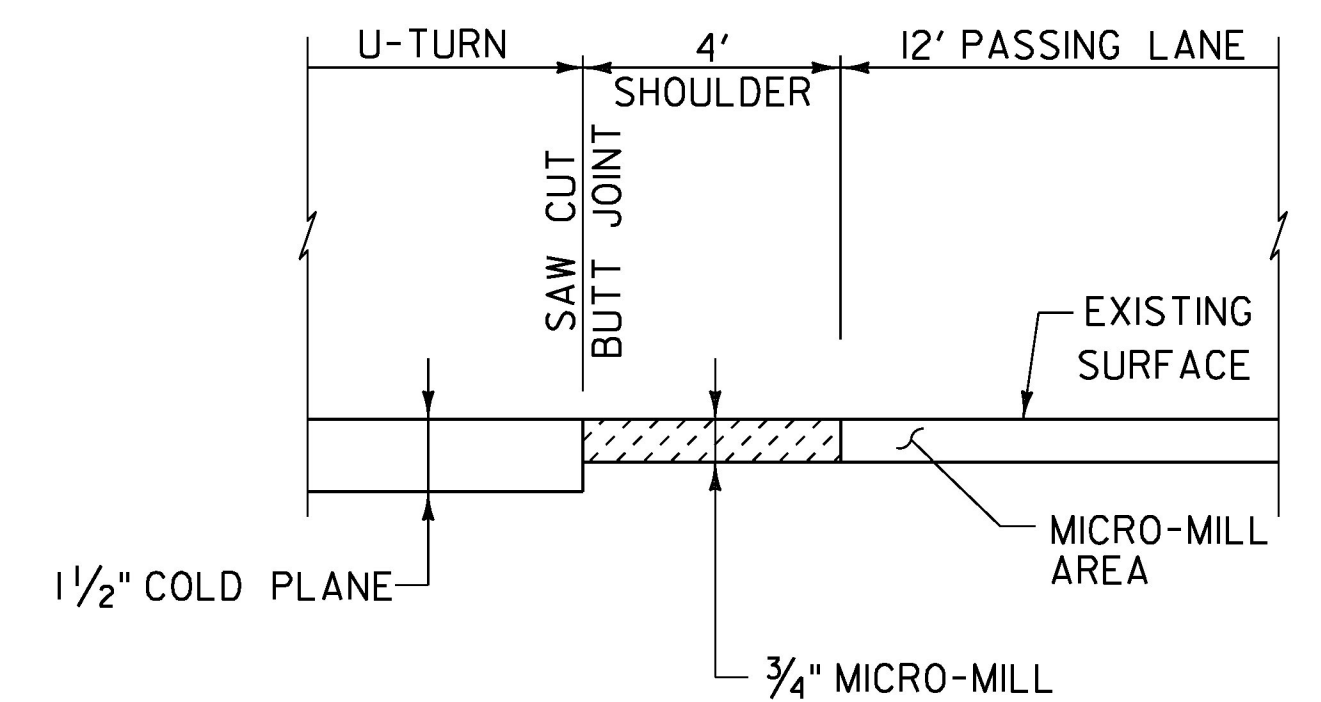
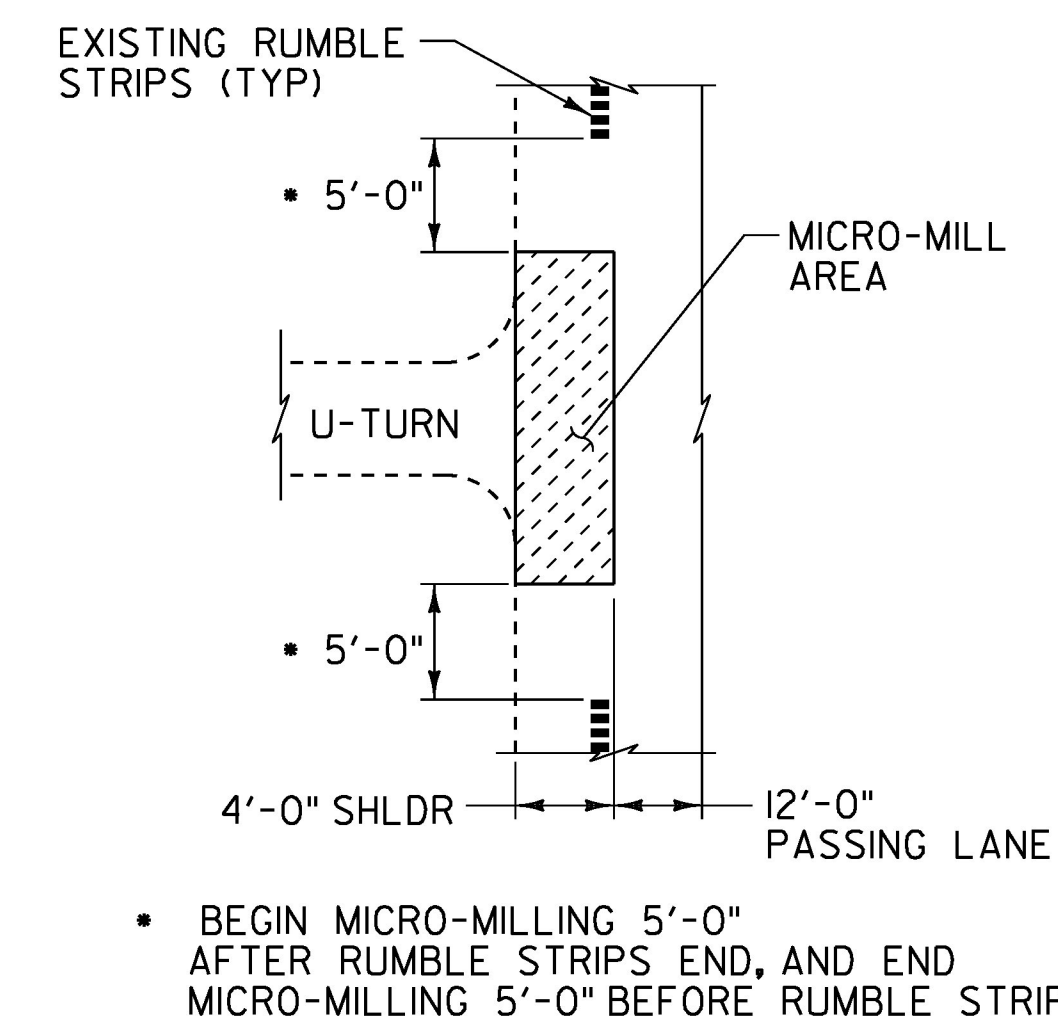




- NOTES:**  
 1. AREA TO BE COLD PLANED AND PAVED AS SHOWN IN SECTION A-A. EMULSIFIED ASPHALT SHALL BE APPLIED AT A RATE OF 0.10 GAL/SY.  
 2. HATCHED AREA REPRESENTS ADDITIONAL MICRO-MILLING AND PAVER PLACED SURFACE TREATMENT. DETAIL IS SHOWN ON THE "MICRO-MILLING SHOULDER DETAIL AT U-TURNS" THIS SHEET.

**U-TURN TREATMENT DETAILS**

MM 53.318  
 MM 54.918  
 MM 56.055  
 MM 57.400  
 MM 58.328  
 MM 59.485  
 MM 61.322  
 MM 62.645



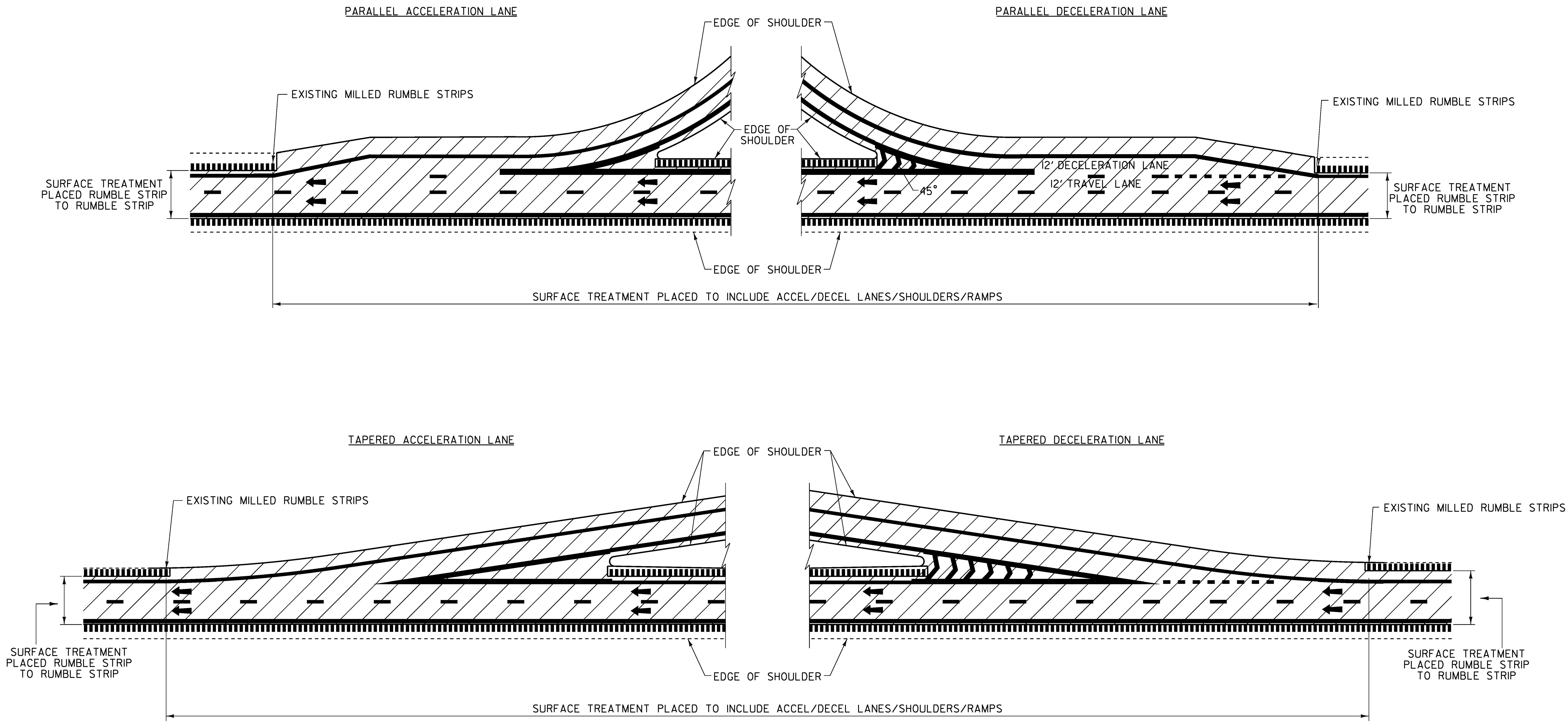
**MICRO-MILLING SHOULDER DETAIL AT U-TURNS**

**NOT TO SCALE**

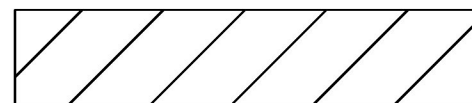
PROJECT NAME:	MONTPELIER-WATERBURY		
PROJECT NUMBER:	IM SURF(59)		
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018		
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS		
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK		
PROJECT NOTES AND DETAIL SHEET 2	SHEET 7	OF	34



TYPICAL INTERCHANGE CONSTRUCTION DETAILS



LEGEND

-  SURFACE TREATMENT
-  DIRECTION OF TRAFFIC FLOW
-  EXISTING MILLED RUMBLE STRIPS

NOTE: LINE STRIPING SHOWN FOR REFERENCE ONLY.

NOT TO SCALE

PROJECT NAME:	MONTPELIER-WATERBURY
PROJECT NUMBER:	IM SURF(59)
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK
TYPICAL INTERCHANGE CONSTRUCT. DETAIL	SHEET 8 OF 34



STATE OF VERMONT AGENCY OF TRANSPORTATION										QUANTITY SHEET 1														
SUMMARY OF ESTIMATED QUANTITIES													TOTALS		DESCRIPTIONS							DETAILED SUMMARY OF QUANTITIES		
											ROADWAY	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND		QUANTITIES	UNIT	ITEMS	
											500			500		CY	EARTH BORROW	203.30	EST				COLD PLANING BITUMINOUS PAVEMENT	
											101000			101000		LF	SHOULDER BERM REMOVAL	203.40	384		528 SY	U-TURNS		
											1			1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22	-		22 SY	ROUNDING		
											550			550		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10	22		550 SY	TOTAL		
																	BEGIN OPTION AA						SUPERPAVE BITUMINOUS CONCRETE PAVEMENT	
											125			125		TON	AGGREGATE SHOULDERS	402.12	26		139 TONS	U-TURNS		
											125			125		TON	AGGREGATE SHOULDERS, RAP	402.13	26		6 TONS	ROUNDING		
																	END OPTION AA				145 TONS	TOTAL		
											10800			10800		CWT	EMULSIFIED ASPHALT (CRS-1P)	404.65	95				EMULSIFIED ASPHALT	
											6			6		CWT	EMULSIFIED ASPHALT	404.65	1.6		4.4 CWT	U-TURNS		
											1			1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50	-		1.6 CWT	ROUNDING		
											62000			62000		LB	BITUMINOUS CRACK SEALING, "BLOW AND GO" METHOD (ASTM D 6690 TYPE II)	417.20	EST		6 CWT	TOTAL		
											145			145		TON	SUPERPAVE BITUMINOUS CONCRETE PAVEMENT	490.30	6				EMULSIFIED ASPHALT (CRS-1P)	
												950		950		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10	30		10,705 CWT	SPECIAL PROVISION (PAVER PLACED SURFACE TREATMENT, TYPE C)(PG 70-28)(SBS POLYMER)(3/4" LT+/-1/8")		
												100		100		CF	RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE	580.20	EST					
											20			20		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25	EST		95 CWT	ROUNDING		
											400			400		HR	POWER BROOM RENTAL, TYPE I	608.30	EST		10,800 CWT	TOTAL		
											600			600		HR	POWER BROOM RENTAL, TYPE II	608.31	EST					
											640			640		HR	TRUCK RENTAL	608.37	EST					
											600			600		HR	TRUCK-MOUNTED ATTENUATOR	608.45	EST					
											400			400		HR	TRUCK-MOUNTED ATTENUATOR, AWW/PV	608.50	EST					
											14580			14580		LF	STEEL BEAM GUARDRAIL, GALVANIZED	621.20	-					
											1			1		EACH	MANUFACTURED TERMINAL SECTION, FLARED	621.50	-					
											13			13		EACH	MANUFACTURED TERMINAL SECTION, TANGENT	621.51	-					
											5			5		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60	-					
											105			105		EACH	REPLACE GUARDRAIL POST ASSEMBLY	621.76	-					
											149			149		EACH	REPLACE GUARDRAIL BEAM UNIT	621.77	-					
											7375			7375		LF	ADJUST HEIGHT OF GUARDRAIL	621.79	EST					
											14667.5			14667.5		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80	-					
											675			675		HR	UNIFORMED TRAFFIC OFFICERS	630.10	EST					
											425			425		HR	FLAGGERS	630.15	EST					
													1	1		LS	FIELD OFFICE, ENGINEERS	631.10	-					
													1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17	-					
													3000	3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26	-					
											1			1		LS	MOBILIZATION/DEMOBILIZATION	635.11	-					
											1			1		LS	TRAFFIC CONTROL	641.10	-					
											6			6		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15	-					
											240800			240800		LF	TEMPORARY 6 INCH WHITE LINE, PAINT	646.622	293					
											122400			122400		LF	TEMPORARY 6 INCH YELLOW LINE, PAINT	646.632	304					
											4000			4000		LF	TEMPORARY 12 INCH WHITE LINE, PAINT	646.662	105					

PROJECT NAME:	MONTPELIER-WATERBURY		
PROJECT NUMBER:	IM SURF(59)		
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018		
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS		
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK		
QUANTITY SHEET 1	SHEET 9 OF 34		



STATE OF VERMONT AGENCY OF TRANSPORTATION													QUANTITY SHEET 2											
SUMMARY OF ESTIMATED QUANTITIES													TOTALS		DESCRIPTIONS							DETAILED SUMMARY OF QUANTITIES		
											ROADWAY	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND		QUANTITIES	UNIT	ITEMS	
											75			75		LF	TEMPORARY 24 INCH STOP BAR, PAINT	646.682	5				SPECIAL PROVISION (MICRO-MILLING BITUMINOUS CONCRETE PAVEMENT)	
											34			34		EACH	TEMPORARY LETTER OR SYMBOL, PAINT	646.692	-					
											45750			45750		EACH	LINE STRIPING TARGETS	646.76	EST		478,446 SY		MAINLINE	
											75			75		LB	SEED	651.15	EST		40,916 SY		BRIDGES	
											75			75		LB	FERTILIZER	651.18	EST		29,693 SY		EXIT 8 RAMPS	
											0.5			0.5		TON	AGRICULTURAL LIMESTONE	651.20	EST		15,068 SY		EXIT 9 RAMPS	
											0.5			0.5		TON	HAY MULCH	651.25	EST		2277 SY		ROUNDING	
											100			100		CY	TOPSOIL	651.35	EST		566,400 SY		TOTAL	
											80			80		SY	TEMPORARY EROSION MATTING	653.20	EST				SPECIAL PROVISION (PAVER PLACED SURFACE TREATMENT, TYPE C)(PG 70-28)(SBS POLYMER)(3/4" LT+/-1/8")	
											158			158		EACH	DELINEATOR WITH STEEL POST	676.10	-		478,446 SY		MAINLINE	
											158			158		EACH	REMOVAL OF EXISTING DELINEATOR	676.12	-		40,916 SY		BRIDGES	
											3535			3535		EACH	REMOVE AND REPLACE REFLECTOR UNIT	676.15	EST		29,693 SY		EXIT 8 RAMPS	
											1			1		LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50	-		15,068 SY		EXIT 9 RAMPS	
																	BEGIN OPTION BB				2277 SY		ROUNDING	
											34			34		EACH	SPECIAL PROVISION (DURABLE LETTER OR SYMBOL, EPOXY)(28 MILS)	900.620	-		566,400 SY		TOTAL	
											34			34		EACH	SPECIAL PROVISION (DURABLE LETTER OR SYMBOL, POLYUREA)(28 MILS)	900.620	-					
																	END OPTION BB							
											25			25		LF	SPECIAL PROVISION (ALUMINUM APPROACH RAILING)	900.640	-					
																	BEGIN OPTION CC							
											4000			4000		LF	SPECIAL PROVISION (DURABLE 12 INCH WHITE LINE, EPOXY)(28 MILS)	900.640	105					
											4000			4000		LF	SPECIAL PROVISION (DURABLE 12 INCH WHITE LINE, POLYUREA)(28 MILS)	900.640	105					
																	END OPTION CC							
																	BEGIN OPTION DD							
											75			75		LF	SPECIAL PROVISION (DURABLE 24 INCH STOP BAR, EPOXY)(28 MILS)	900.640	EST					
											75			75		LF	SPECIAL PROVISION (DURABLE 24 INCH STOP BAR, POLYUREA)(28 MILS)	900.640	EST					
																	END OPTION DD							
																	BEGIN OPTION EE							
											240800			240800		LF	SPECIAL PROVISION (DURABLE 6 INCH WHITE LINE, EPOXY)(28 MILS)	900.640	293					
											240800			240800		LF	SPECIAL PROVISION (DURABLE 6 INCH WHITE LINE, POLYUREA)(28 MILS)	900.640	293					
																	END OPTION EE							
																	BEGIN OPTION FF							
											122400			122400		LF	SPECIAL PROVISION (DURABLE 6 INCH YELLOW LINE, EPOXY)(28 MILS)	900.640	304					
											122400			122400		LF	SPECIAL PROVISION (DURABLE 6 INCH YELLOW LINE, POLYUREA)(28 MILS)	900.640	304					
																	END OPTION FF							
												700		700		SF	SPECIAL PROVISION (ASPHALTIC APPROACH MATERIAL)	900.670	12					
											566400			566400		SY	SPECIAL PROVISION (MICRO-MILLING BITUMINOUS CONCRETE PAVEMENT)	900.675	2277					
											566400			566400		SY	SPECIAL PROVISION (PAVER PLACED SURFACE TREATMENT, TYPE C)(PG 70-28)(SBS POLYMER)(3/4" LT+/-1/8")	900.675	2277					
											150			150		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT SURFACE PREPARATION, TYPE I)	900.680	EST					

PROJECT NAME:	MONTPELIER-WATERBURY		
PROJECT NUMBER:	IM SURF(59)		
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE:	20-MAR-2018	
PROJECT LEADER: M. BOGACZYK	DRAWN BY:	N. PAPPAS	
DESIGNED BY: N. PAPPAS	CHECKED BY:	M. BOGACZYK	
QUANTITY SHEET 2	SHEET	10	OF 34



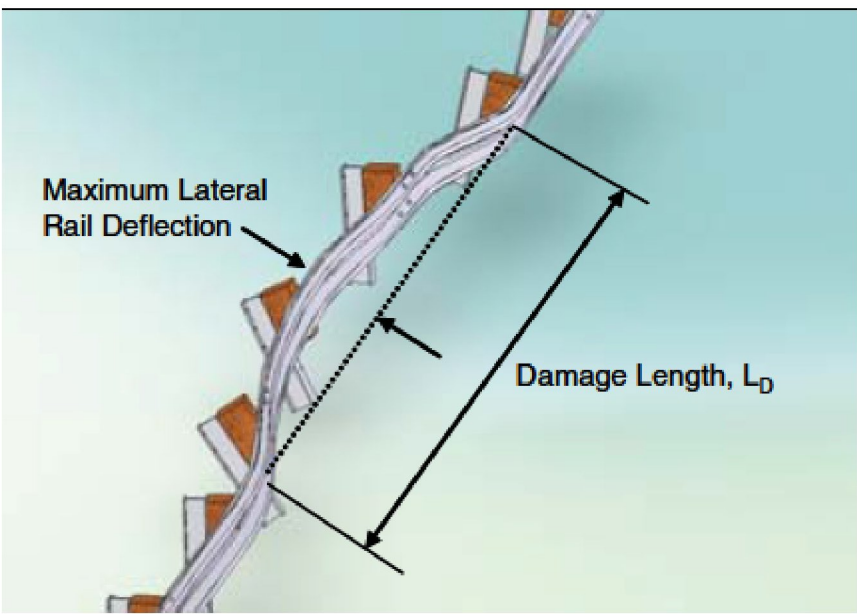
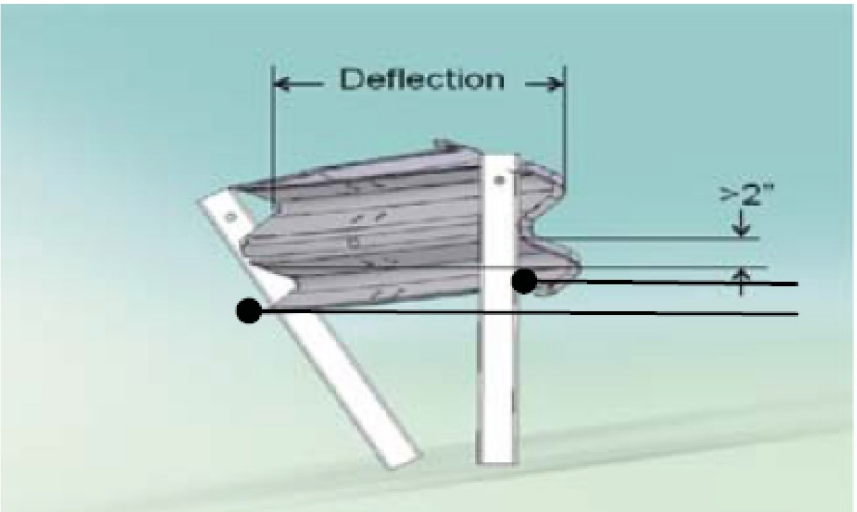
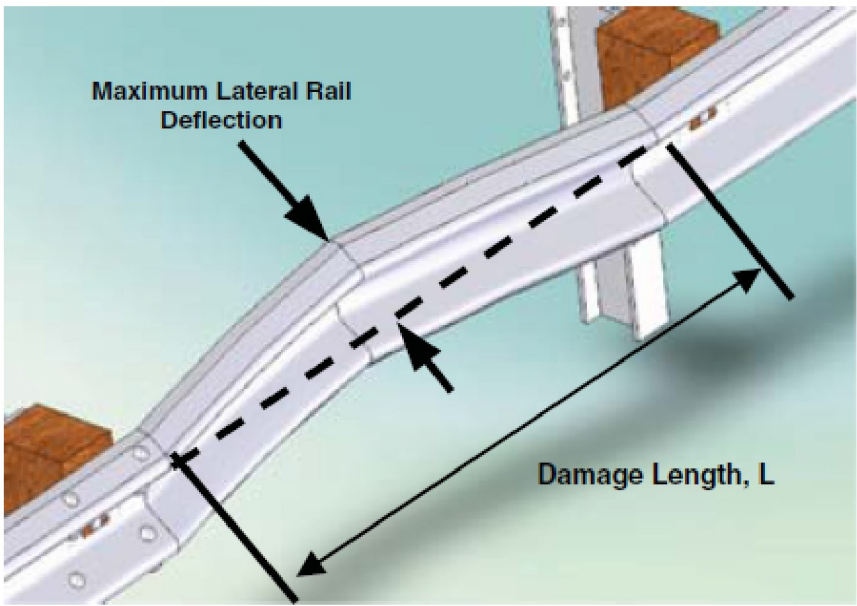
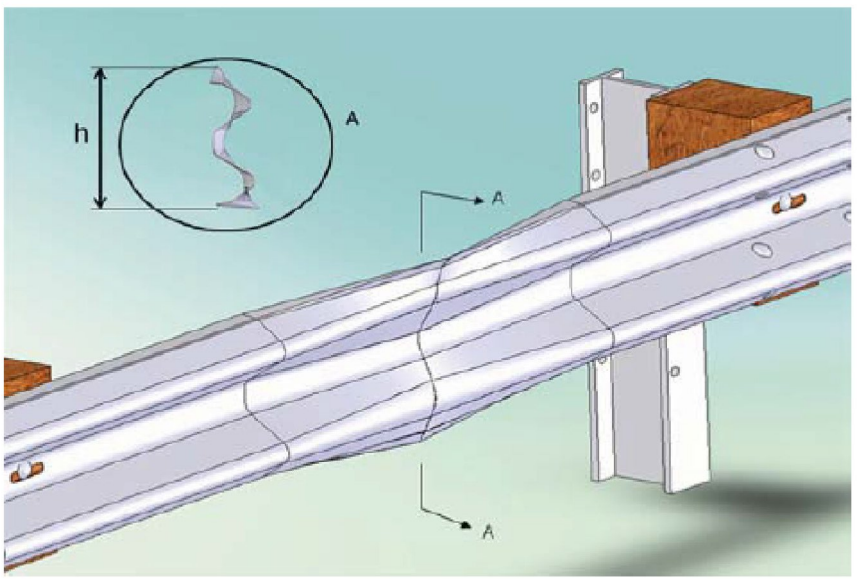
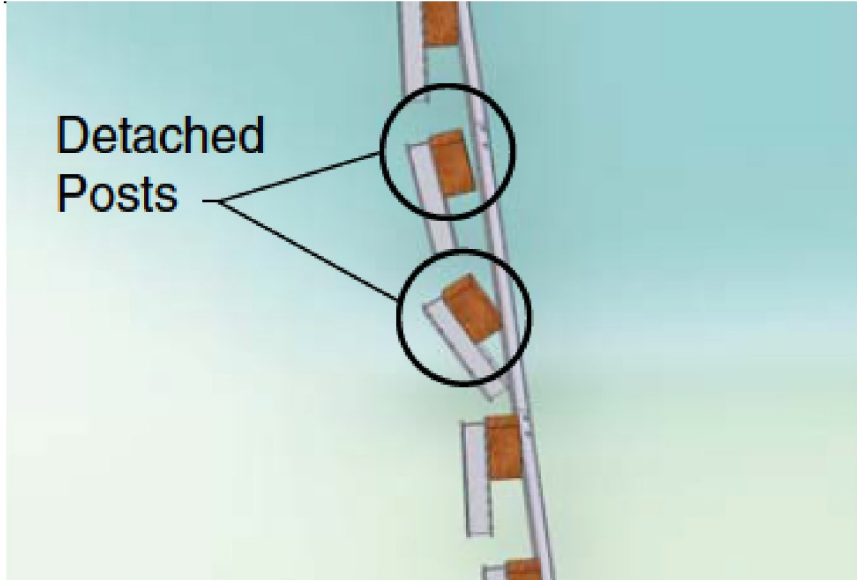


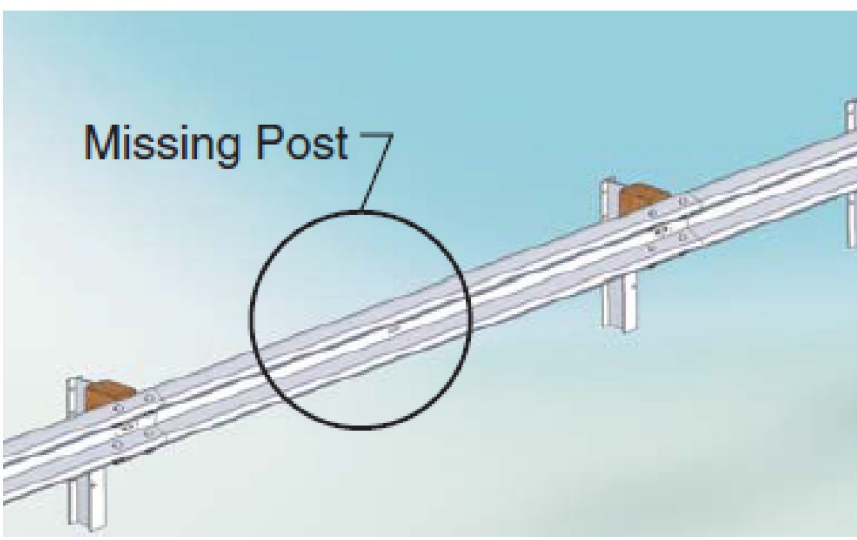
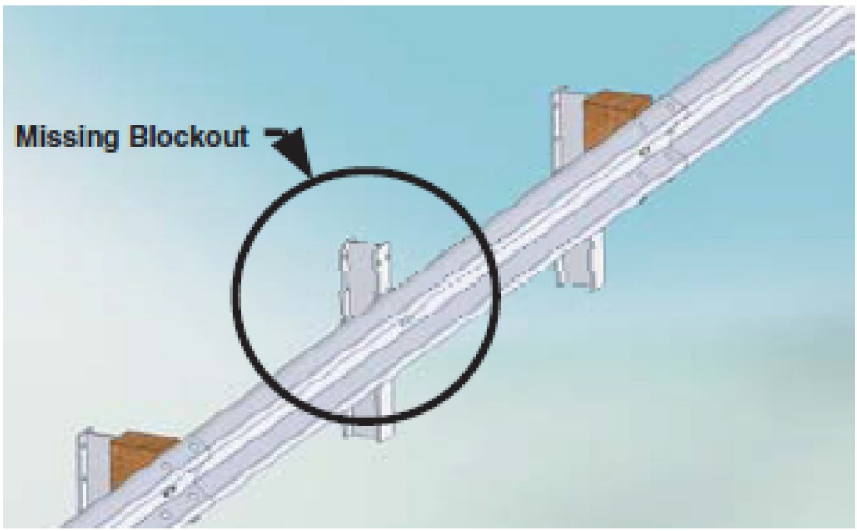
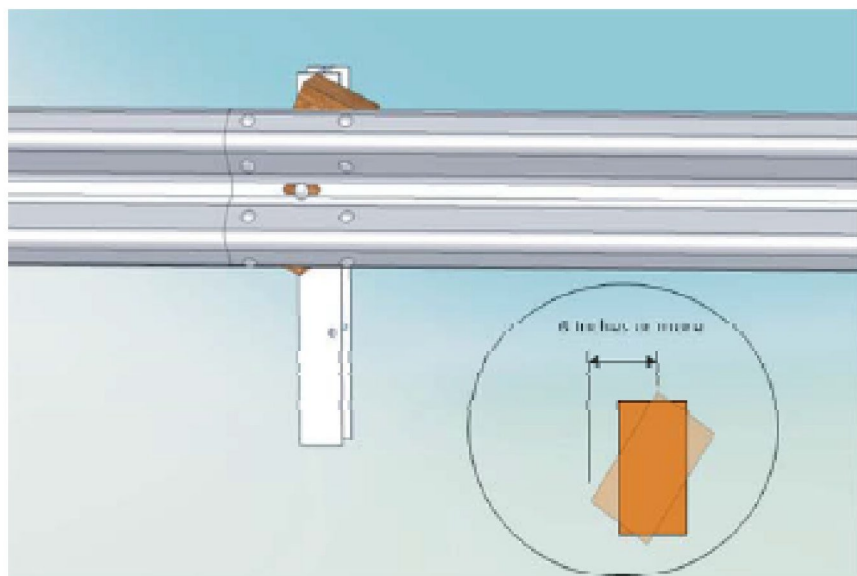
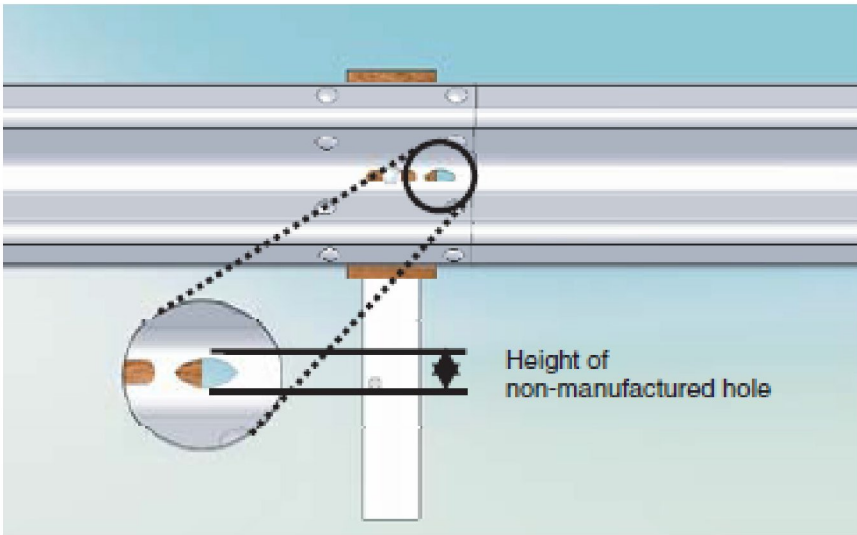
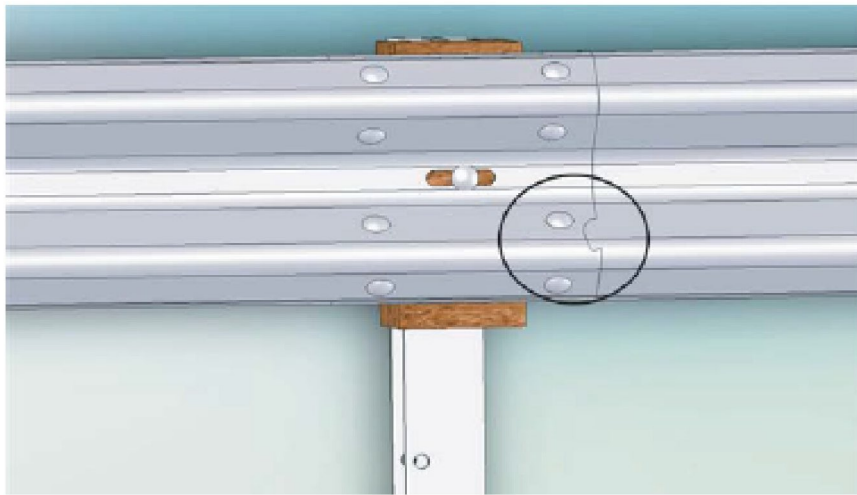






GUARDRAIL REPLACEMENT GUIDELINES

DAMAGE TYPE	REPAIR THRESHOLD	RELATIVE PRIORITY	MEASURMENT
POST AND RAIL DEFLECTION	ONE OR MORE OF THE FOLLOWING THRESHOLDS:    - MORE THAN 9 IN. LATERAL DEFLECTION ANYWHERE OVER A 25 FT LENGTH OF RAILTOP OF RAIL   - HEIGHT 2 OR MORE INCHES LOWER THAN ORIGINAL TOP OF RAIL HEIGHT	HIGH	
	6-9 IN. LATERAL DEFLECTION ANYWHERE OVER A 25-FT LENGTH OF RAIL	MEDIUM	
	LESS THAN 6 IN. OF LATERAL DEFLECTION OVER A 25-FT LENGTH OF RAIL	LOW	
RAIL DEFLECTION ONLY	6-9 IN. OF LATERAL DEFLECTION BETWEEN ANY TWO ADJACENT POSTS.  NOTE: FOR DEFLECTION OVER 9 IN., USE POST/RAIL DEFLECTION GUIDELINES	MEDIUM	
	LESS THAN 6 IN. OF LATERAL DEFLECTION BETWEEN ANY TWO ADJACENT POSTS	LOW	
RAIL FLATTENING	ONE OR MORE OF THE FOLLOWING THRESHOLDS:    - RAIL CROSS SECTION HEIGHT MORE THAN 17 IN. (SUCH AS MAY OCCUR IF RAIL IS FLATTENED)   - RAIL CROSS SECTION HEIGHT LESS THAN 9 IN. (SUCH AS A DENT TO TOP EDGE)	MEDIUM	
	RAIL CROSS SECTION HEIGHT BETWEEN 9 AND 17 IN.	LOW	
POSTS SEPARATED FROM RAIL	2 OR MORE POSTS WITH BLOCKOUT ATTACHED WITH POST/RAIL SEPARATION LESS THAN 3 IN.    1 OR MORE POSTS WITH POST/RAIL SEPARATION WICH EXCEEDS 3 IN.	MEDIUM	
	1 POST, WITH BLOCKOUT ATTACHED, WIT POST/RAIL SEPARATION LESS THAN 3 IN.	LOW	
			NOTE: 1. IF THE BLOCKOUT IS NOT FIRMLY ATTACHED TO THE POST. USE THE MISSING BLOCKOUT GUIDELINES. 2. DAMAGE SHOULD ALSO BE EVALUATED AGAINST POST/RAIL DEFLECTION GUIDELINES.

DAMAGE TYPE	REPAIR THRESHOLD	RELATIVE PRIORITY	MEASURMENT
POST AND RAIL DEFLECTION	ONE OR MORE POSTS    - MISSING   - CRACKED ACROSS THE GRAIN   - BROKEN   - ROTTED   - WITH METAL TEARS	HIGH	
MISSING BLOCKOUT	ANY BLOCKOUTS    - MISSING   - CRACKED ACROSS THE GRAIN   - CRACKED FROM TOP OR BOTTOM OF BLOCK OUT   - ROTTED	MEDIUM	
TWISTED BLOCKOUTS	ANY MISALIGNED BLOCKOUTS, TOP EDGE OF BLOCK 6 IN. OR MORE FROM BOTTOM EDGE  NOTE: REPAIRS OF TWISTED BLOCKOUT ARE RELATIVELY QUICK AND INEXPENSIVE	LOW	
DAMAGE AT A RAIL SPLICE	MORE THAN 1 SPLICE BOLT:    - MISSING   - DAMAGED   - VISIBLY MISSING ANY UNDERLYING RAIL   - TORN THROUGH RAIL	HIGH	
	1 SPLICE BOLT:    - MISSING   - DAMAGED   - VISIBLY MISSING ANY UNDERLYING RAIL   - TORN THROUGH RAIL	MEDIUM	
	- MORE THAN 2 HOLES LESS THAN 1 IN. HEIGHT IN A 12.5-FT LENGTH OF RAIL   - ANY HOLES GREATER THAN 1 IN. IN HEIGHT   - ANY HOLE WHICH INTERSECTS EITHER THE TOP OR BOTTOM EDGE OF THE RAIL.	HIGH	
	1-2 HOLES LESS TH AN 1 IN. IN HEIGHT IN A 12.5-FT LENGTH OF RAIL	MEDIUM	

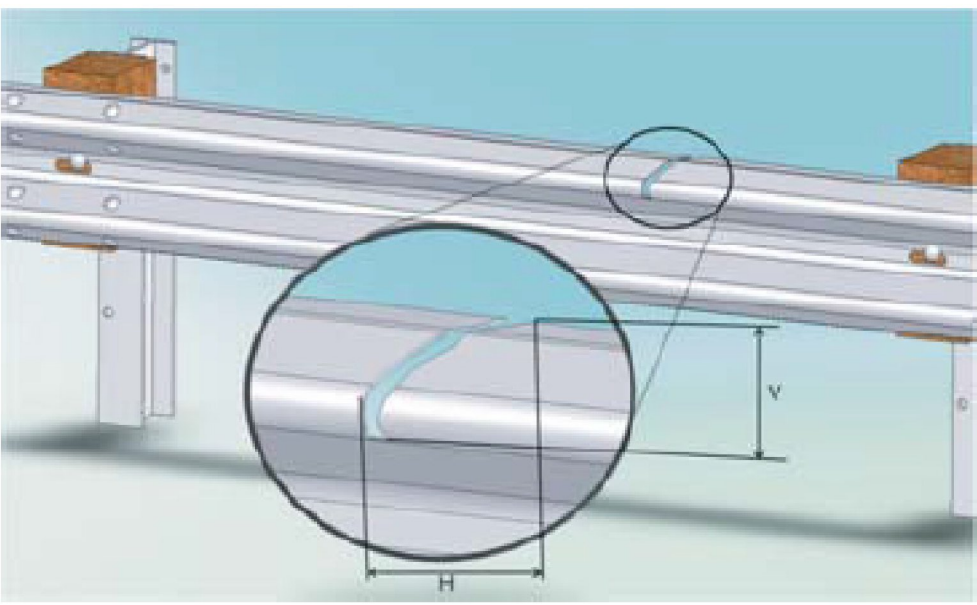
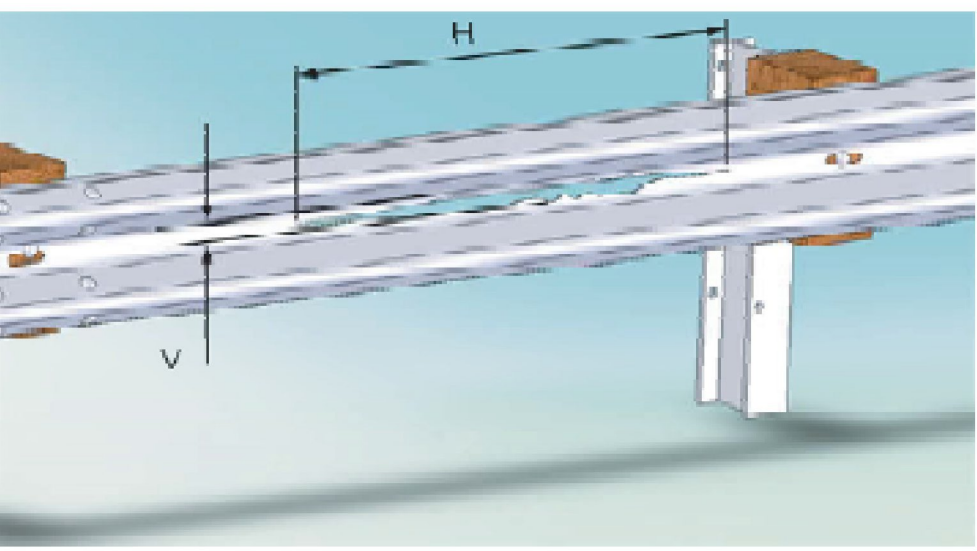
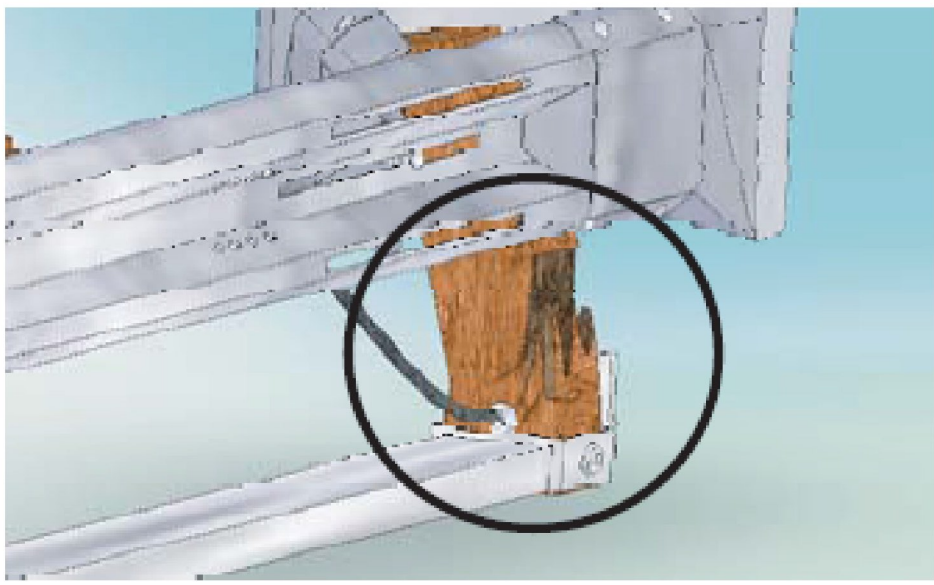
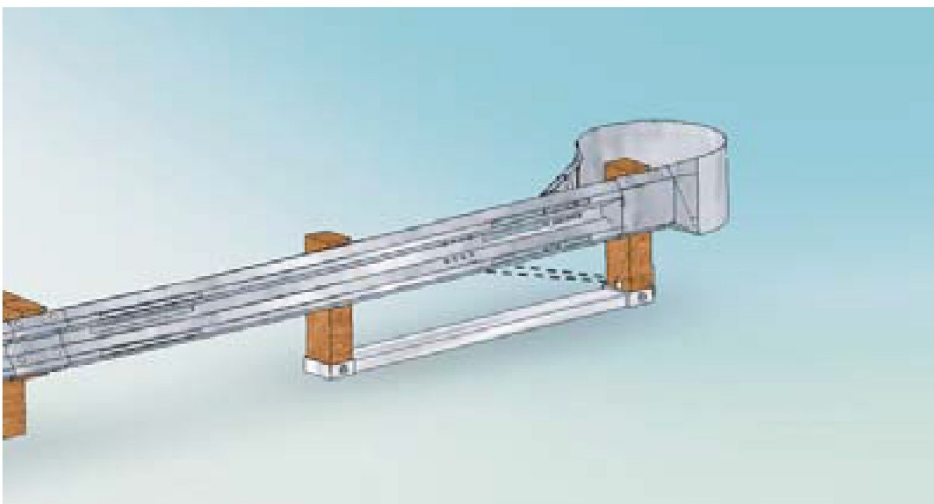
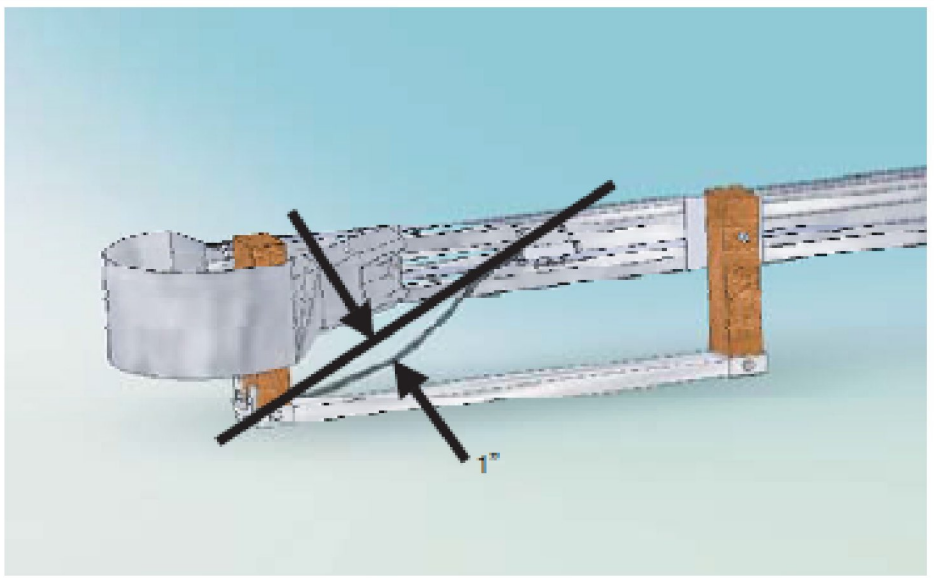
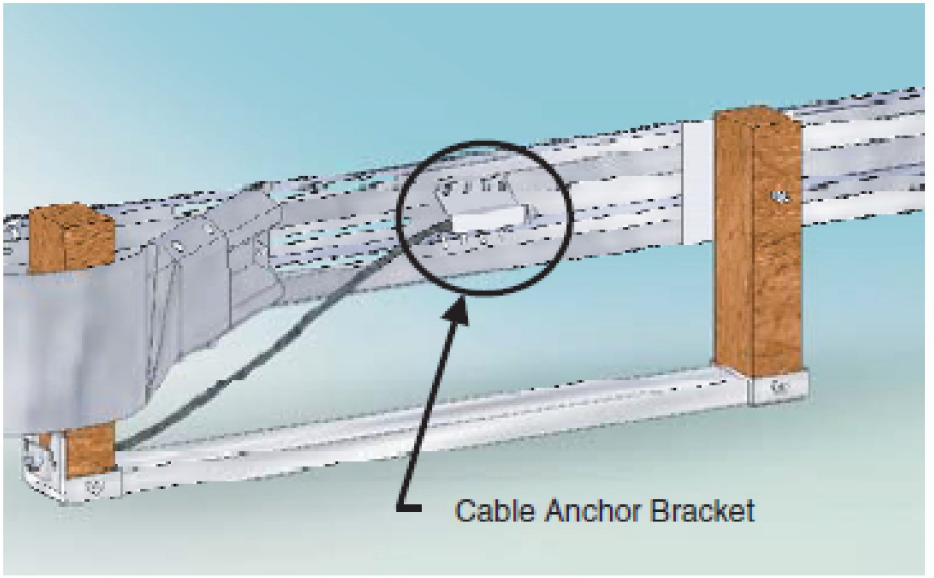
NOTES:

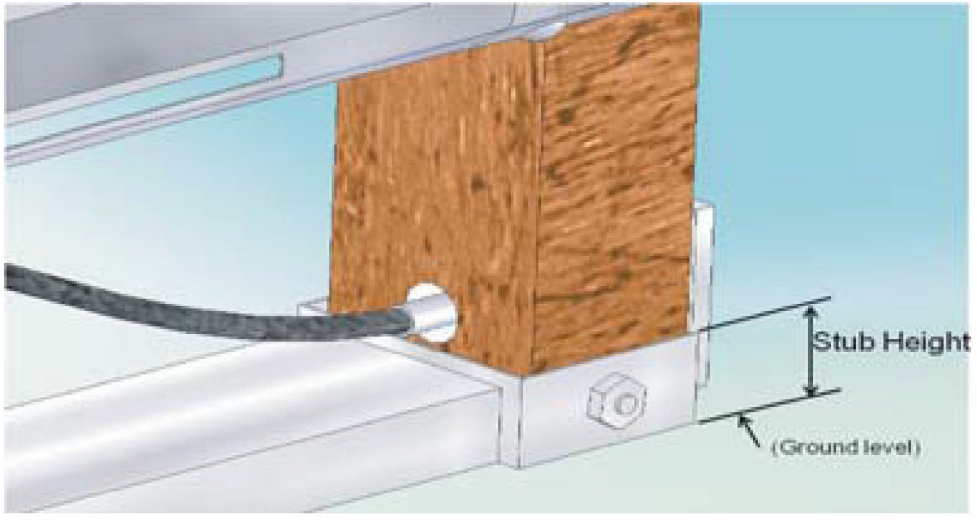
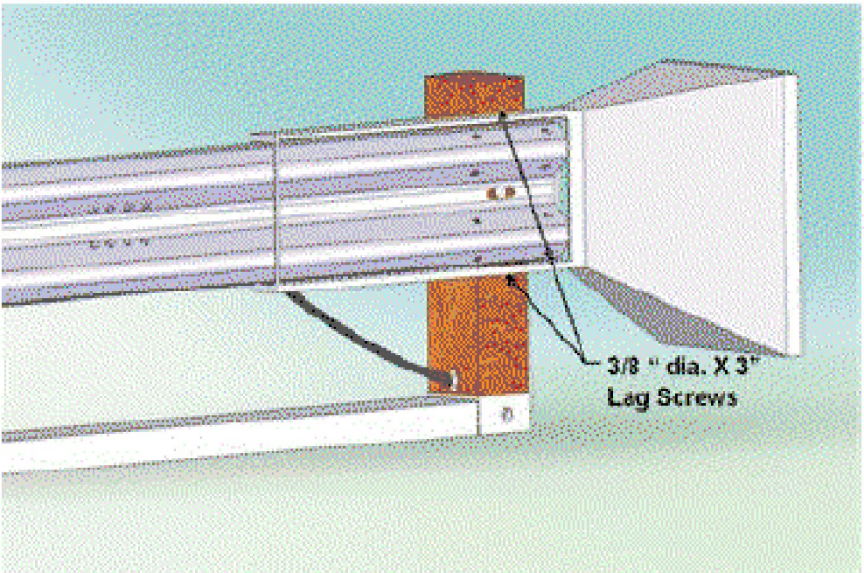
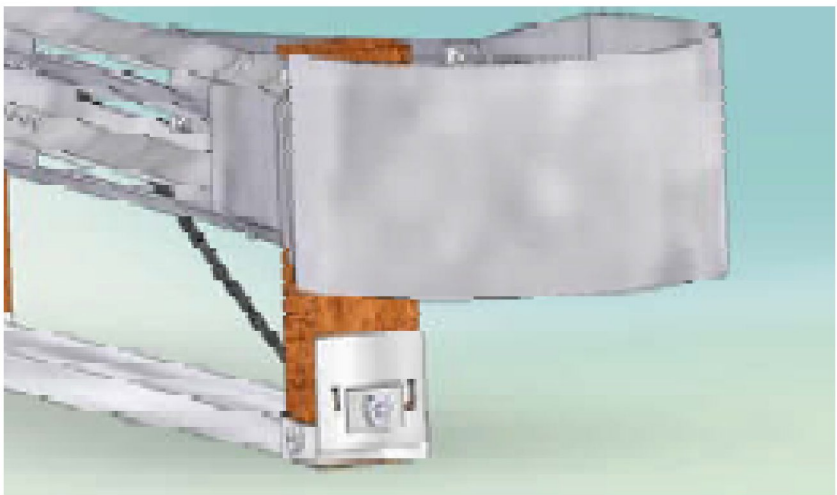
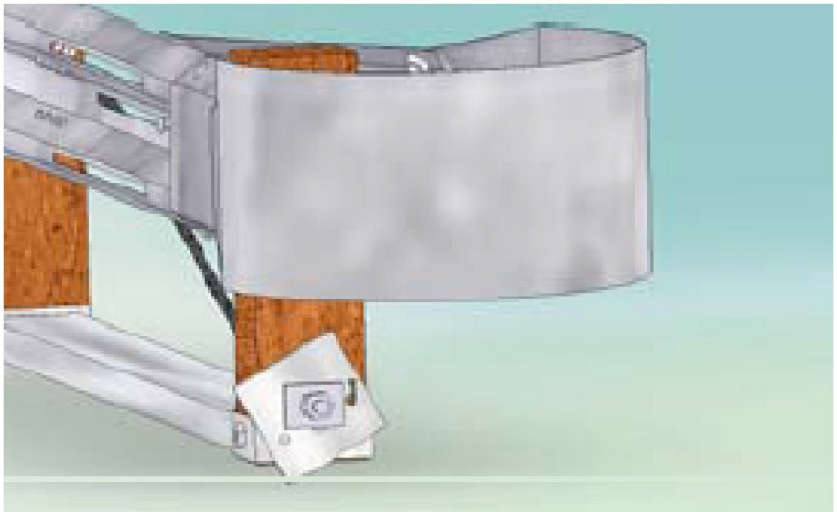
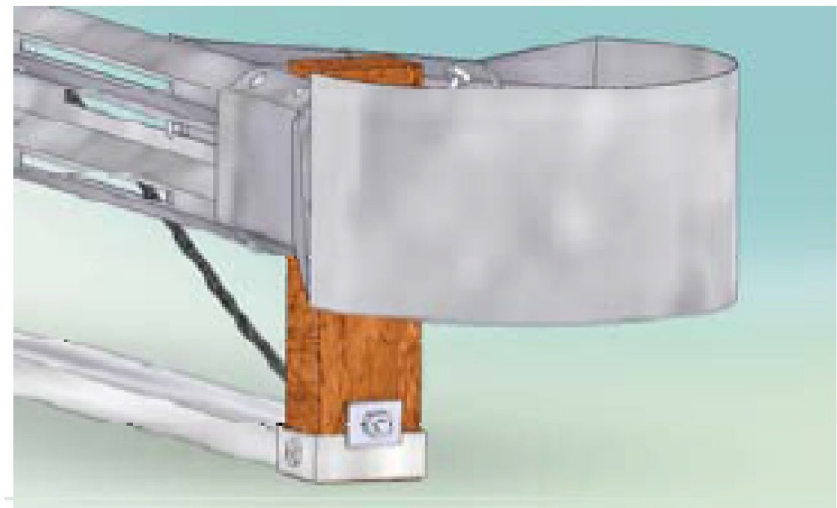
- THESE ARE GUIDELINES FOR THE EVALUATION OF EXISTING GUARDRAIL. THESE ARE GUIDELINES ONLY AND THE CONTRACTOR SHALL REPLACE GUARDRAIL AS DIRECTED BY THE ENGINEER.
- GUIDELINES ARE FROM THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 656, "CRITERIA FOR RESTORATION OF LONGITUDINAL BARRIERS", COPYRIGHT 2010.

PROJECT NAME:	MONTPELIER-WATERBURY
PROJECT NUMBER:	IM SURF(59)
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK
GUARDRAIL REPLACEMENT DETAIL I	SHEET 13 OF 34



GUARDRAIL REPLACEMENT GUIDELINES

DAMAGE TYPE	REPAIR THRESHOLD	RELATIVE PRIORITY	MEASURMENT
VERTICAL TEAR	ANY LENGTH VERTICAL (TRANSVERSE) TEAR	HIGH	
HORIZONTAL TEAR	HORIZONTAL (LONGITUDINAL) GREATER THAN 12 IN. LONG AND GREATER THAN 0.5 IN. WIDE  NOTE: FOR HORIZONTAL TEARS LESS THAN 12 IN. IN LENGTH OR LESS THAN 0.5 IN. IN HEIGHT, USE THE NON-MANUFACTURED HOLES GUIDELINES	MEDIUM	
DAMAGE TYPE	REPAIR THRESHOLD	RELATIVE PRIORITY	MEASURMENT
DAMAGED END POST	NOT FUNCTIONAL (SHEARED, ROTTED CRACKED ACROSS THE GRAIN)	HIGH	
ANCHOR CABLE	MISSING	HIGH	
ANCHOR CABLE	LOOSE - MORE THAN 1 IN. OF MOVEMENT WHEN PUSHED DOWN BY HAND	MEDIUM	
CABLE ANCHOR BRACKET	LOOSE OR NOT FIRMLY SEATED IN RAIL	MEDIUM	

DAMAGE TYPE	REPAIR THRESHOLD	RELATIVE PRIORITY	MEASURMENT
STUB HEIGHT	HEIGHT WHICH EXCEEDS 4 IN.	MEDIUM	
LAG SCREWS (ENERGY ABSORBING TERMINALS ONLY)	HEIGHT WHICH EXCEEDS 4 IN.	MEDIUM	
BEARING PLATE	LOOSE OR MISALIGNED	MEDIUM	 (CORRECT BEARING PLATE)  (MISALIGNED BEARING PLATE)
	MISSING BEARING PLATE	HIGH	 (MISSING BEARING PLATE)

NOTES:

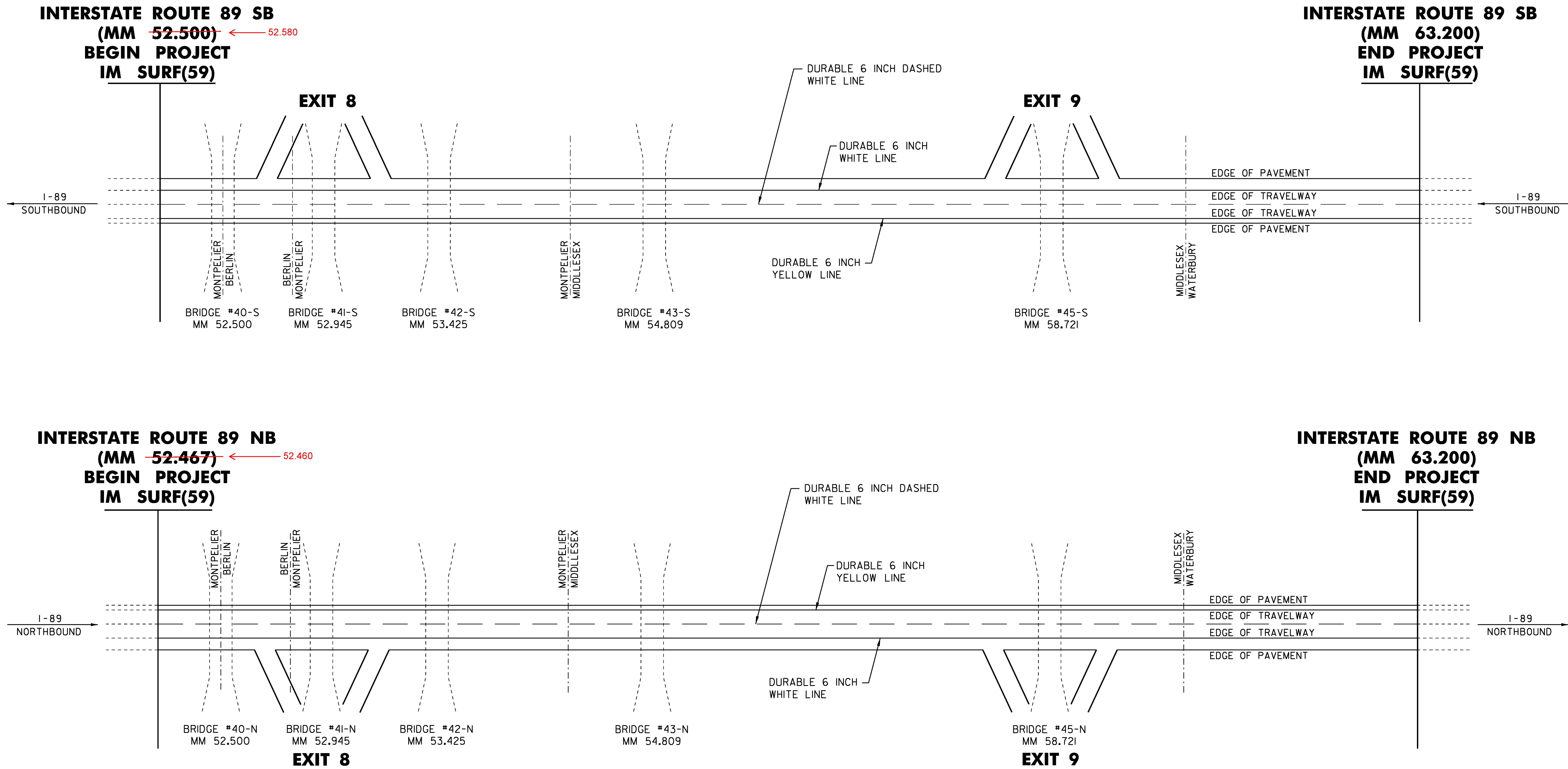
- THESE ARE GUIDELINES FOR THE EVALUATION OF EXISTING GUARDRAIL. THESE ARE GUIDELINES ONLY AND THE CONTRACTOR SHALL REPLACE GUARDRAIL AS DIRECTED BY THE ENGINEER.
- GUIDELINES ARE FROM THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 656, "CRITERIA FOR RESTORATION OF LONGITUDINAL BARRIERS", COPYRIGHT 2010.

PROJECT NAME:	MONTPELIER-WATERBURY
PROJECT NUMBER:	IM SURF(59)
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK
GUARDRAIL REPLACEMENT DETAIL 2	SHEET 14 OF 34



TEMPORARY 6" WHITE LINE &  
DURABLE 6 INCH WHITE LINE, (SEE OPTION ITEM)  
NB MM 52.467 - MM 63.200 (SOLID RT)  
NB MM 52.467 - MM 63.200 (DASHED)  
SB MM 52.500 - MM 63.200 (SOLID LT)  
SB MM 52.500 - MM 63.200 (DASHED)

TEMPORARY 6" YELLOW LINE &  
DURABLE 6 INCH YELLOW LINE, (SEE OPTION ITEM)  
NB MM 52.467 - MM 63.200 (SOLID LT)  
SB MM 52.500 - MM 63.200 (SOLID RT)



NOT TO SCALE

PROJECT NAME:	MONTPELIER-WATERBURY
PROJECT NUMBER:	IM SURF(59)
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK
PAVEMENT MARKING DETAIL SHEET 1	SHEET 15 OF 34

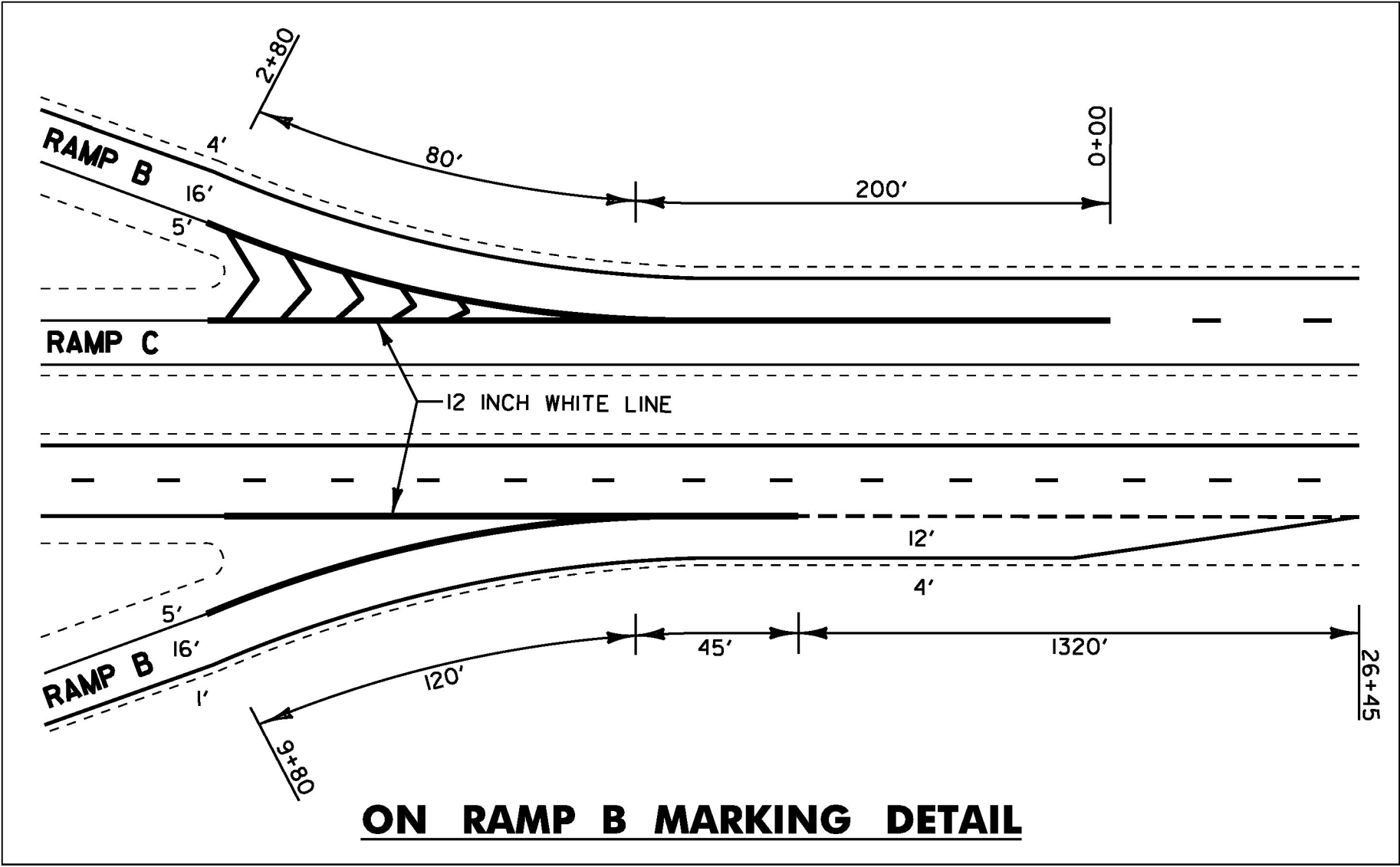
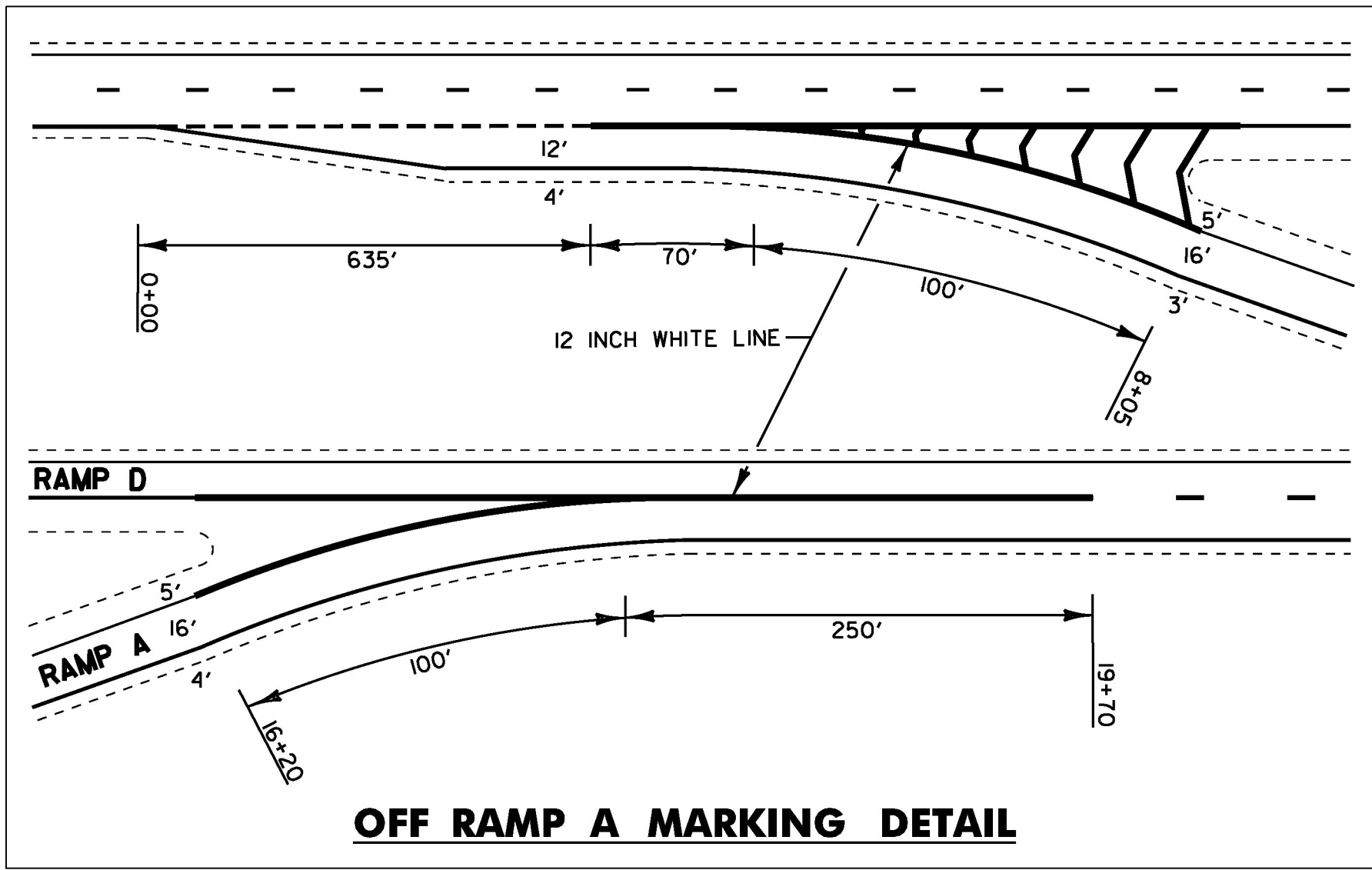
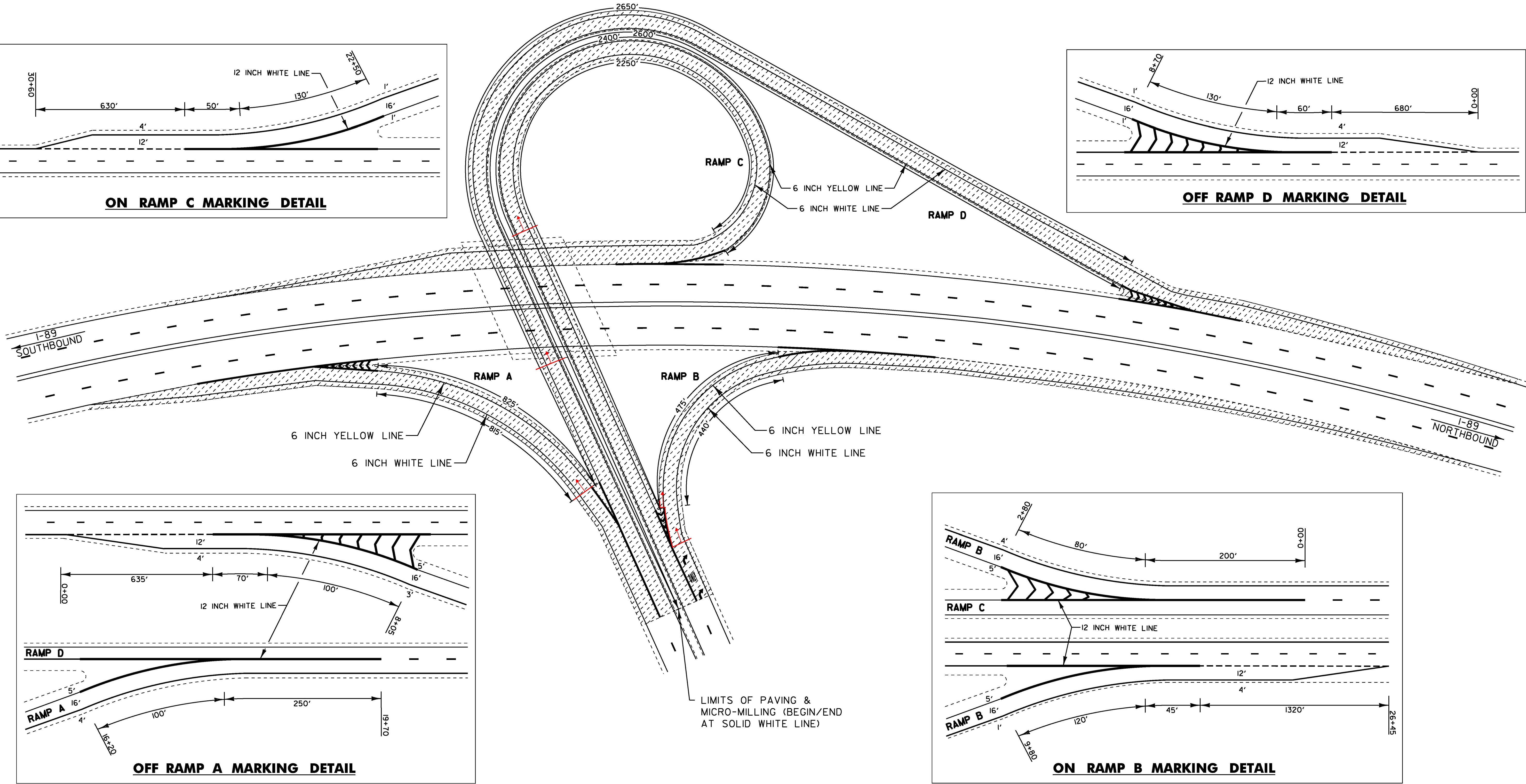
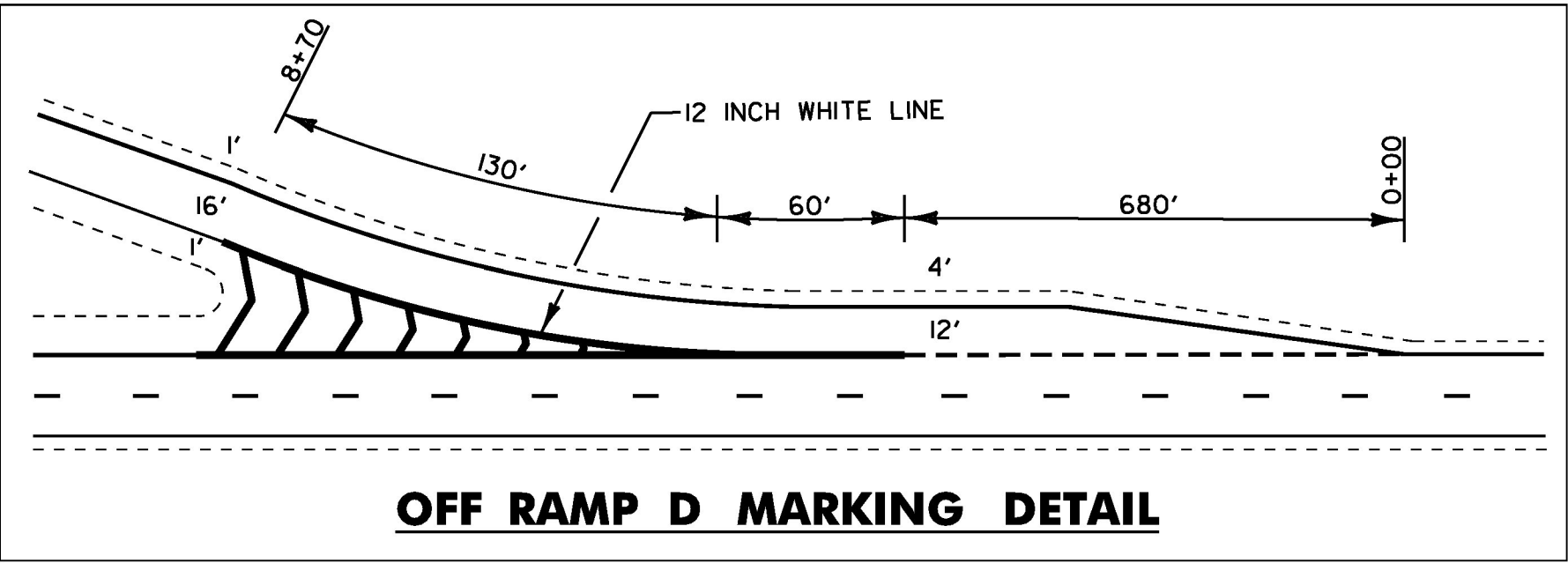
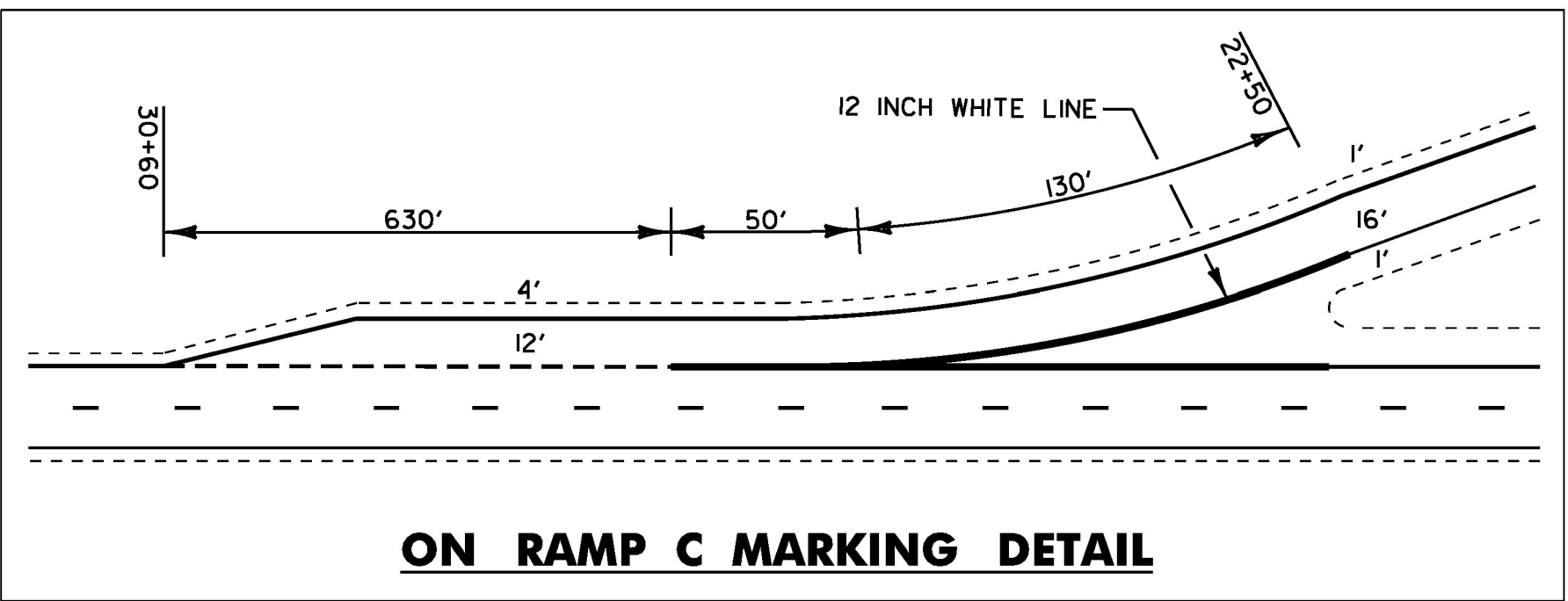


TEMPORARY 6 INCH WHITE LINE &  
DURABLE 6 INCH WHITE LINE, (SEE OPTION ITEM)  
RAMP A - SOLID RT (1165')  
RAMP A - DOTTED (635')  
RAMP B - SOLID RT (720')  
RAMP B - DOTTED (1320')  
RAMP C - SOLID RT (2250')  
RAMP D - SOLID RT (2650')  
RAMP D - DOTTED (630')

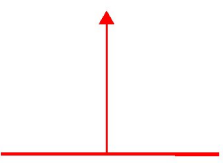
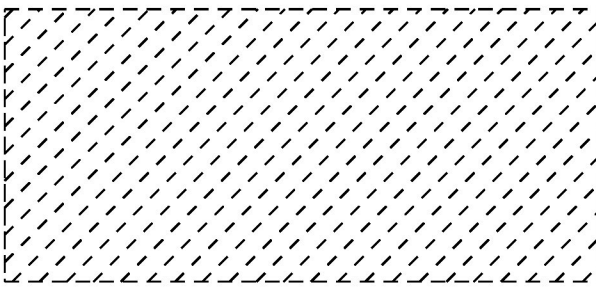
TEMPORARY 6 INCH YELLOW LINE &  
DURABLE 6 INCH YELLOW LINE, (SEE OPTION ITEM)  
RAMP A - SOLID LT (825')  
RAMP B - SOLID LT (475')  
RAMP C - SOLID LT (2600')  
RAMP D - SOLID LT (2400')

TEMPORARY 12 INCH WHITE LINE &  
DURABLE 12 INCH WHITE LINE, (SEE OPTION ITEM)  
RAMP A - GORE AREA ~~(800')~~ 348'  
RAMP B - GORE AREA ~~(700')~~ 329'  
RAMP C - GORE AREA ~~(260')~~ 301'  
RAMP D - GORE AREA ~~(450')~~ 416'

TEMPORARY LETTER OR SYMBOL, PAINT &  
DURABLE LETTER OR SYMBOL (OPTION BID ITEM)  
RAMP B - "R" (1 EACH)  
RAMP B - "ONLY" (4 EACH)  
RAMP B - "R" (1 EACH)



LEGEND: MICRO-MILLING AREA FOR RAMPS



= LIMITS OF  
MICRO-MILLING  
AND PPST

**EXIT 8 RAMP DETAILS**

NOTE: SEE PAVEMENT MARKING DETAIL SHEET 4 FOR ADDITIONAL MARKING DETAILS

**NOT TO SCALE**

PROJECT NAME: MONTPELIER-WATERBURY  
PROJECT NUMBER: IM SURF(59)

FILE NAME: pl6v098 Montpelier-Water.dgn PLOT DATE: 20-MAR-2018  
PROJECT LEADER: M. BOGACZYK DRAWN BY: N. PAPPAS  
DESIGNED BY: N. PAPPAS CHECKED BY: M. BOGACZYK  
PAVEMENT MARKING DETAIL SHEET 2 SHEET 16 OF 34



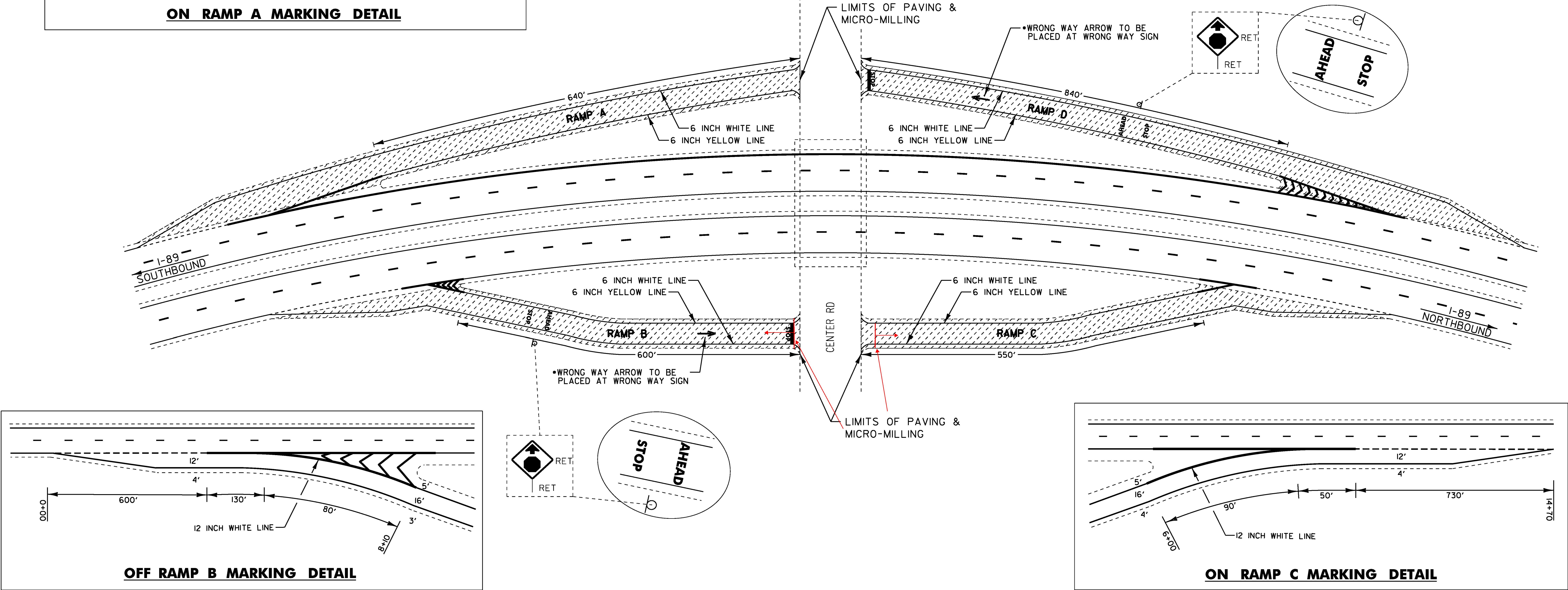
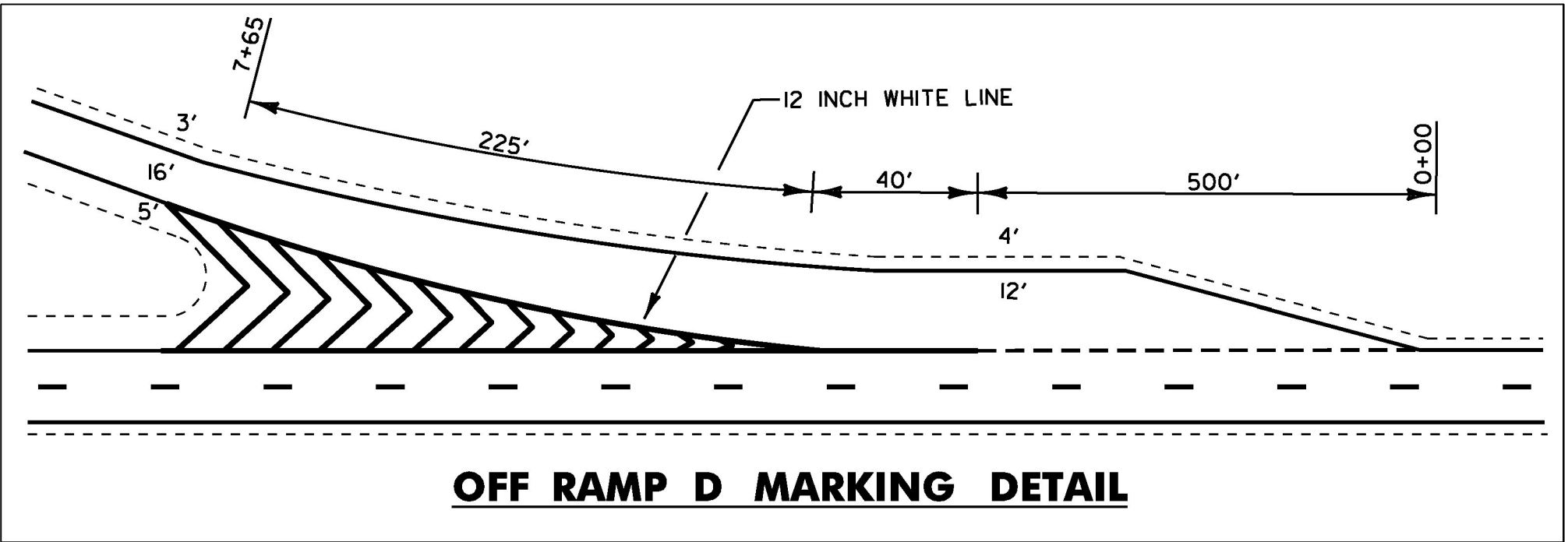
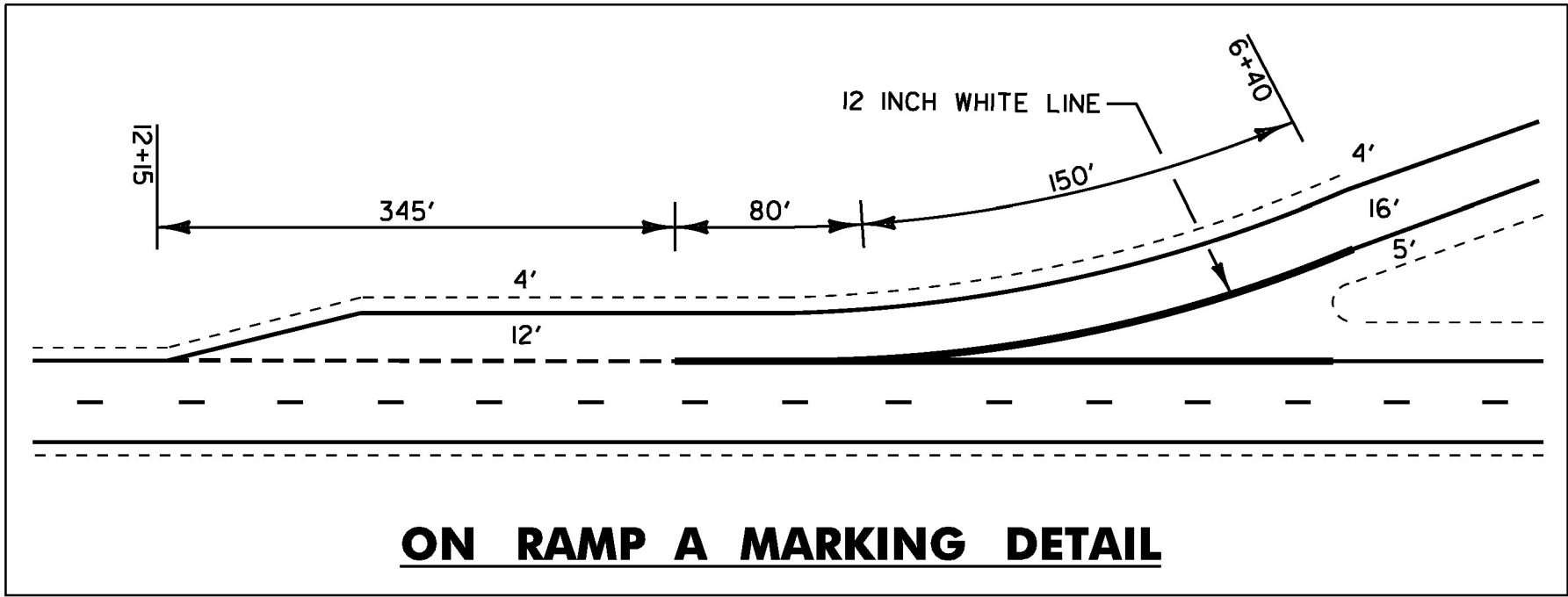
TEMPORARY 6" WHITE LINE &  
DURABLE 6 INCH WHITE LINE, (SEE OPTION ITEM)  
RAMP A - SOLID RT (640')  
RAMP A - DOTTED (345')  
RAMP B - SOLID RT (600')  
RAMP B - DOTTED (600')  
RAMP C - SOLID RT (550')  
RAMP C - DOTTED (730')  
RAMP D - SOLID RT (840')  
RAMP D - DOTTED (500')

TEMPORARY 6 INCH YELLOW LINE &  
DURABLE 6 INCH YELLOW LINE, (SEE OPTION ITEM)  
RAMP A - SOLID LT (640')  
RAMP B - SOLID LT (600')  
RAMP C - SOLID LT (550')  
RAMP D - SOLID LT (840')

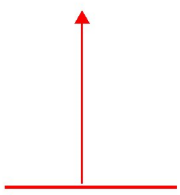
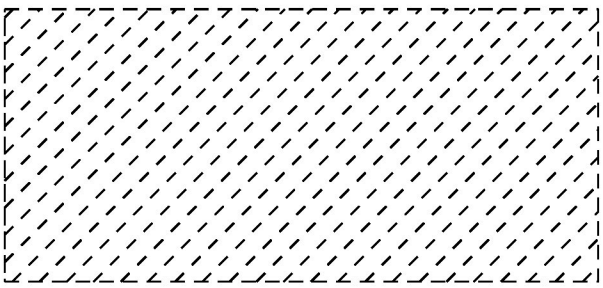
TEMPORARY 12 INCH WHITE LINE &  
DURABLE 12 INCH WHITE LINE, (SEE OPTION ITEM)  
RAMP A - GORE AREA ~~(380')~~ 463'  
RAMP B - GORE AREA ~~(355')~~ 364'  
RAMP C - GORE AREA ~~(230')~~ 234'  
RAMP D - GORE AREA ~~(720')~~ 681'

TEMPORARY 24 INCH STOP BAR &  
DURABLE 24 INCH STOP BAR (SEE OPTION ITEM)  
RAMP B - ~~(35')~~ 37'  
RAMP D - ~~(35')~~ 37'

TEMPORARY LETTER OR SYMBOL &  
DURABLE LETTER OR SYMBOL (SEE OPTION ITEM)  
RAMP B - "STOP AHEAD" (9 EACH)  
RAMP B - "→" (1 EACH)  
RAMP B - "STOP" (4 EACH)  
RAMP D - "STOP AHEAD" (9 EACH)  
RAMP D - "←" (1 EACH)  
RAMP D - "STOP" (4 EACH)



LEGEND: MICRO-MILLING AREA FOR RAMPS



= LIMITS OF  
MICRO-MILLING  
AND PPST

EXIT 9 RAMP DETAILS

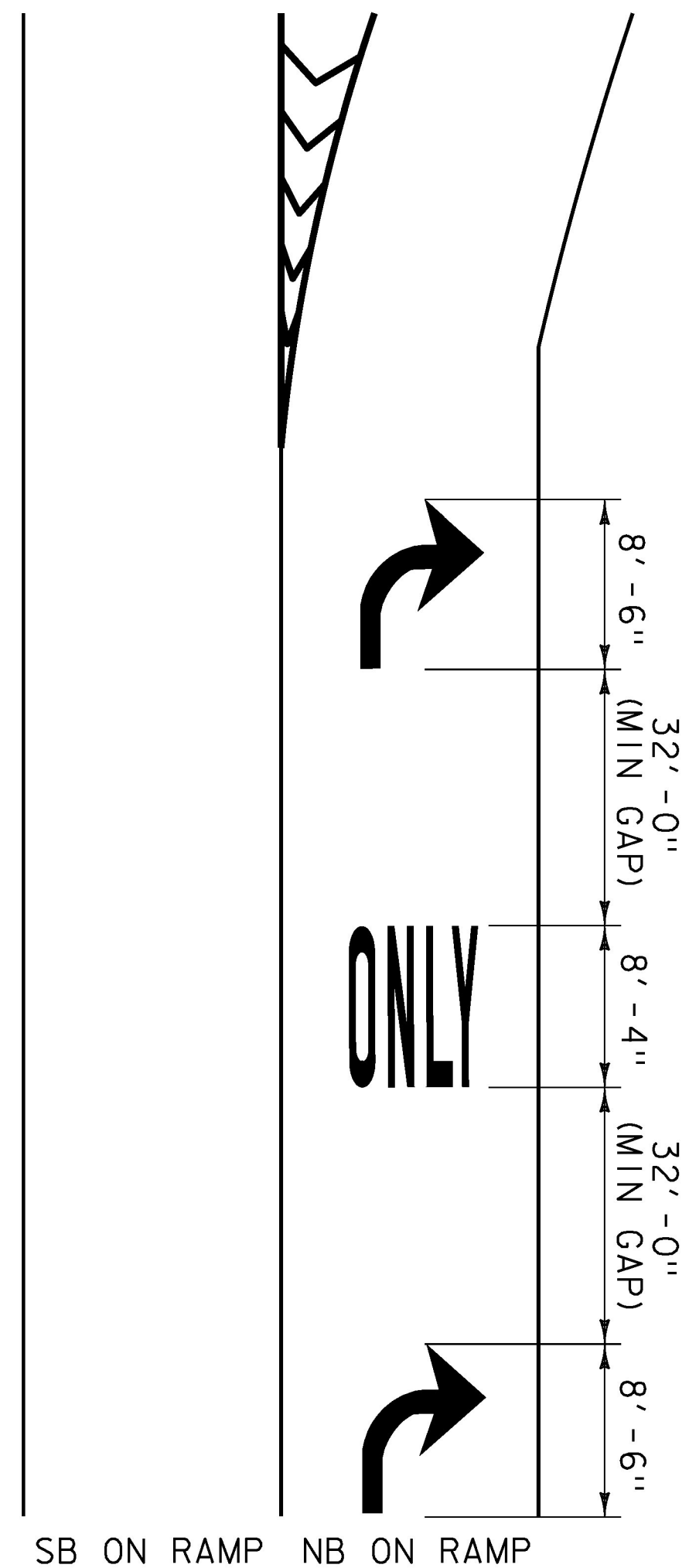
NOTE: SEE PAVEMENT MARKING DETAIL SHEET 4 FOR ADDITIONAL MARKING DETAILS

NOT TO SCALE

PROJECT NAME: MONTPELIER-WATERBURY  
PROJECT NUMBER: IM SURF(59)

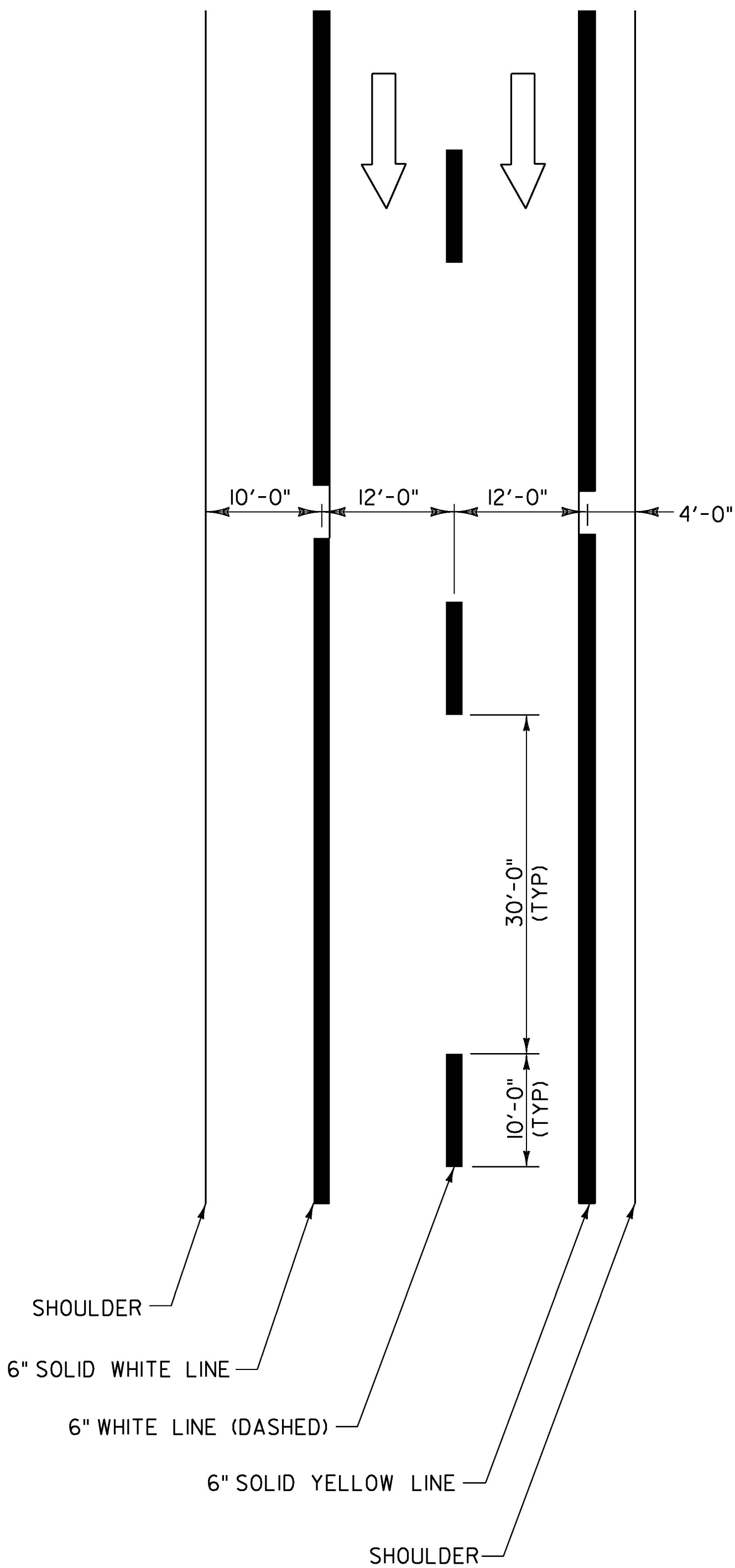
FILE NAME: pl6v098 Montpelier-Water.dgn PLOT DATE: 20-MAR-2018  
PROJECT LEADER: M. BOGACZYK DRAWN BY: N. PAPPAS  
DESIGNED BY: N. PAPPAS CHECKED BY: M. BOGACZYK  
PAVEMENT MARKING DETAIL SHEET 3 SHEET 17 OF 34





**TYPICAL MARKINGS FOR TURN LANE  
EXIT 8 NORTHBOUND ON RAMP**

- NOTES:
1. MARKINGS START AT THE BEGINNING OF SOLID LANE LINE.
  2. THE "ONLY" WORD MARKINGS SHALL BE USED TO SUPPLEMENT LANE-USE ARROW MARKINGS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
  3. IF LANE LENGTH IS LESS THAN 50 FEET, ONLY ONE TURN ARROW PLACED AT THE BEGINNING OF THE SOLID LANE LINE IS REQUIRED.
  4. THE LONGITUDINAL SPACE BETWEEN WORD OR SYMBOL MESSAGE MARKINGS SHOULD BE AT LEAST FOUR TIMES THE HEIGHT OF THE CHARACTERS USED FOR LOW SPEED ROADS, BUT NOT MORE THAN TEN TIMES THE HEIGHT OF THE CHARACTERS UNDER ANY CONDITIONS.
  5. A SECOND "ONLY" IS OPTIONAL WHEN SPACE PERMITS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

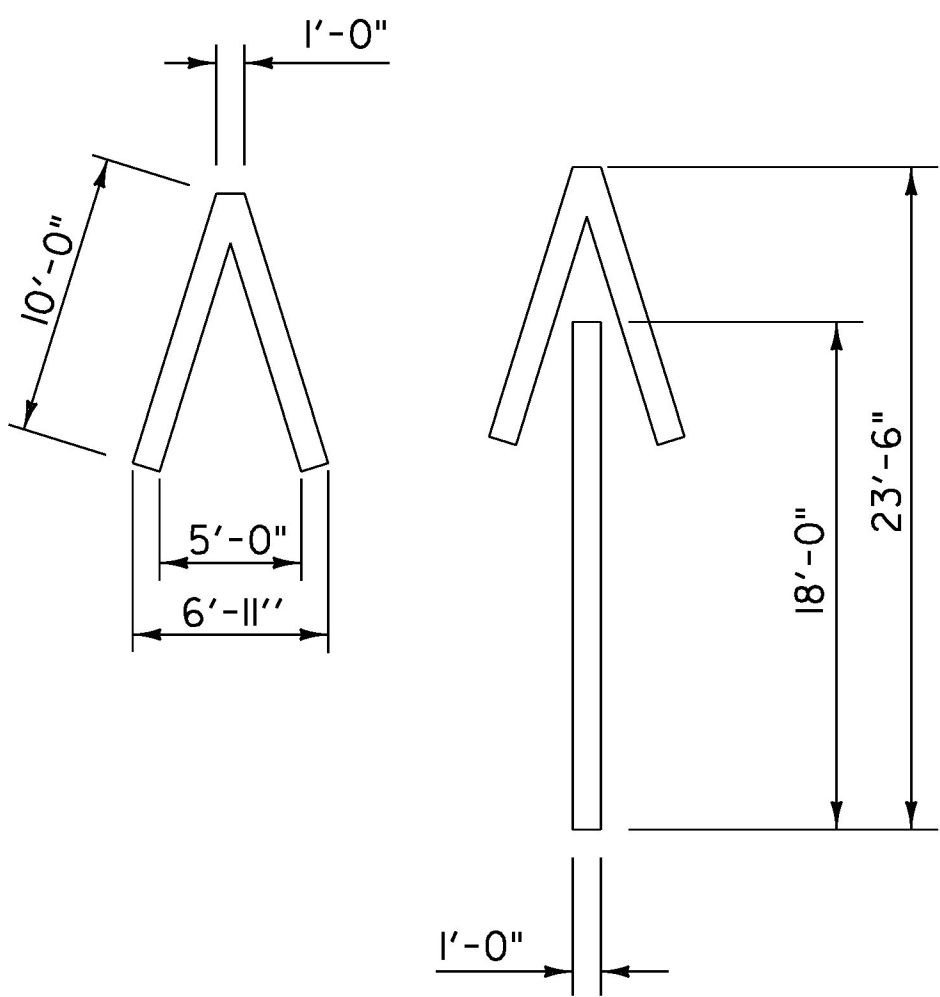


**TYPICAL MAINLINE MARKING PLAN**  
NOT TO SCALE

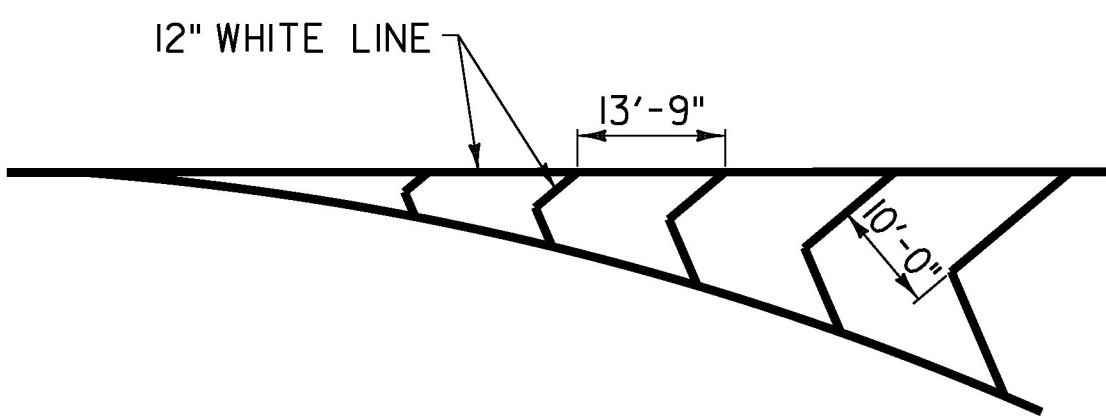
LEGEND

← DIRECTION OF TRAFFIC FLOW

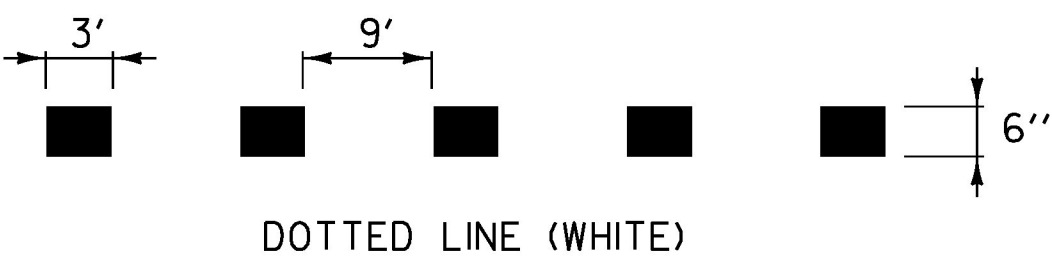
NOT TO SCALE



**WRONG WAY ARROW**  
MARKINGS TO BE PLACED AT EXISTING WRONG WAY SIGN



**GORE MARKING DETAIL**



DOTTED LINE (WHITE)

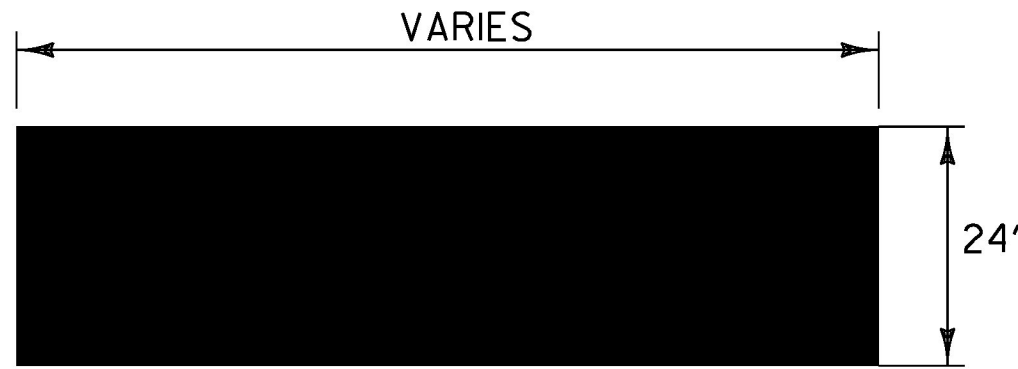


SOLID LINE (WHITE OR YELLOW)



CHANNELIZING LINE (WHITE)

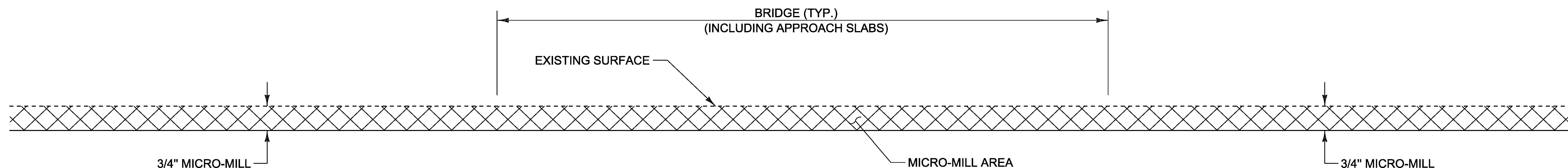
**PAVEMENT MARKING LINE DETAILS**



**STOP BAR DETAIL**

PROJECT NAME:	MONTPELIER-WATERBURY
PROJECT NUMBER:	IM SURF(59)
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK
PAVEMENT MARKING DETAIL SHEET 4	SHEET 18 OF 34

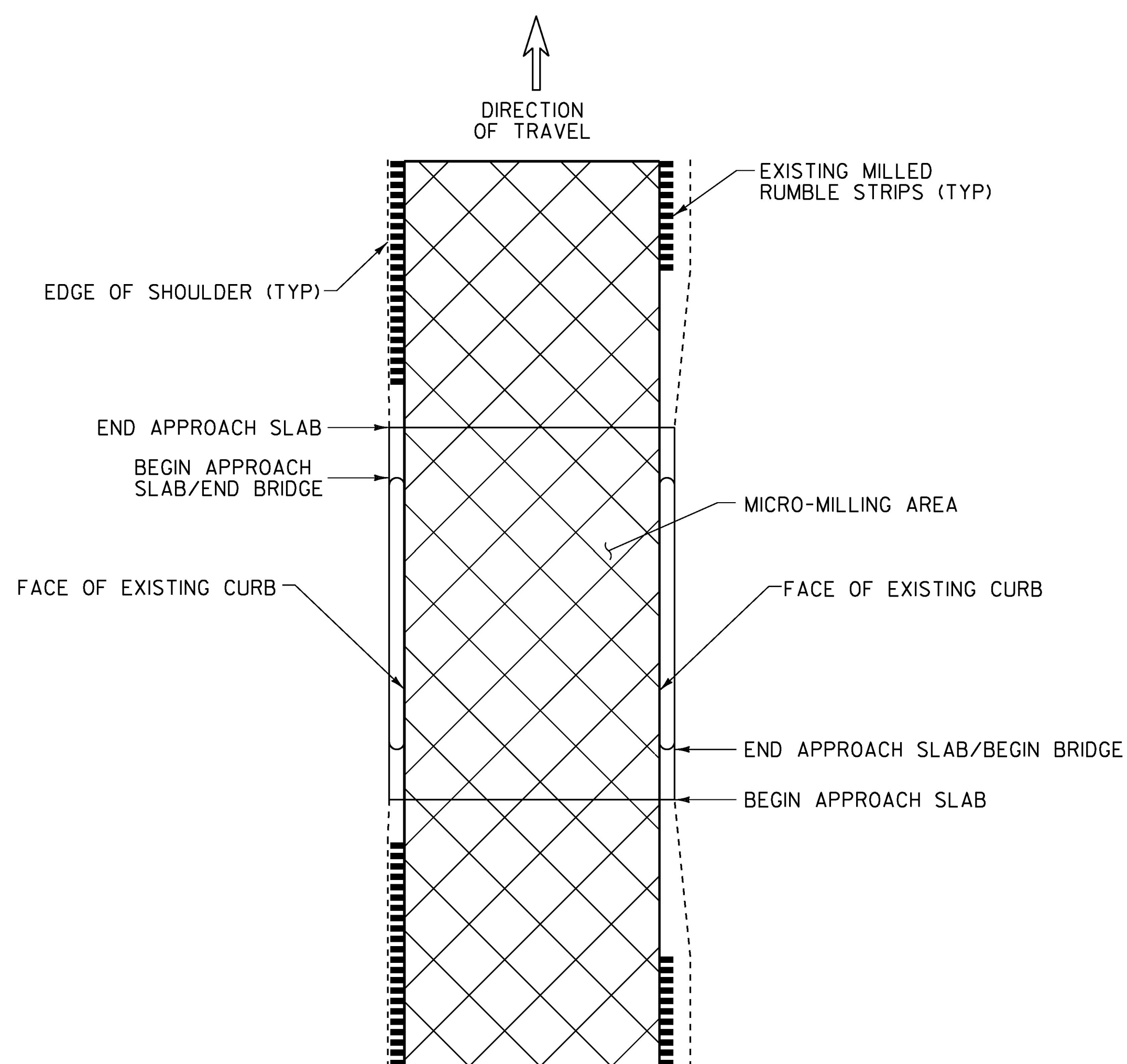




### **BRIDGE MICRO-MILL DETAIL**

#### **NOTES:**

1. REFER TO ASPHALTIC PLUG JOINT DETAIL SHEET SD-516.10 AND BRIDGE DETAIL SHEETS. ALL NEW JOINTS TO BE PAID FOR UNDER ITEM 516.10 BRIDGE EXPANSION JOINT, ASPHALTIC PLUG AND ITEM 900.670 SPECIAL PROVISION (ASPHALTIC APPROACH MATERIAL).
2. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID DAMAGING DRAINAGE STRUCTURES AND EXPANSION JOINTS. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE STATE.
3. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID THE ACCUMULATION OF DEBRIS IN THE DRAINAGE STRUCTURES LOCATED AT CURB LINE AND IN THE EXPANSION JOINTS. THE CONTRACTOR SHALL EXAMINE THESE BRIDGE FEATURES ON A DAILY BASIS TO ENSURE THAT DEBRIS HAS NOT ACCUMULATED. ANY DEBRIS WHICH IS PRESENT SHALL BE REMOVED BY THE CONTRACTOR AT NO COST TO THE STATE.
4. THE CONTRACTOR SHALL USE CAUTION WHEN MICRO-MILLING AND PAVING OPERATIONS OCCUR ON BRIDGE DECKS. SHOULD ANY DAMAGE OCCUR TO THE DECK OR MEMBRANE AS A RESULT OF THESE OPERATIONS THE ENGINEER SHALL CONTACT THE VTRANS CONSTRUCTION STRUCTURES ENGINEER TO PROVIDE AN ASSESSMENT OF THE DAMAGE AND RECOMMEND ANY NECESSARY REPAIRS. THE CONSTRUCTION STRUCTURES ENGINEER WILL ALSO DETERMINE IF THE DAMAGE WAS AVOIDABLE. IF THE CONTRACTOR IS DETERMINED BY THE ENGINEER TO BE AT FAULT FOR THE DAMAGE, THE RECOMMENDED REPAIRS SHALL BE COMPLETED BY THE CONTRACTOR AT NO COST TO THE STATE.

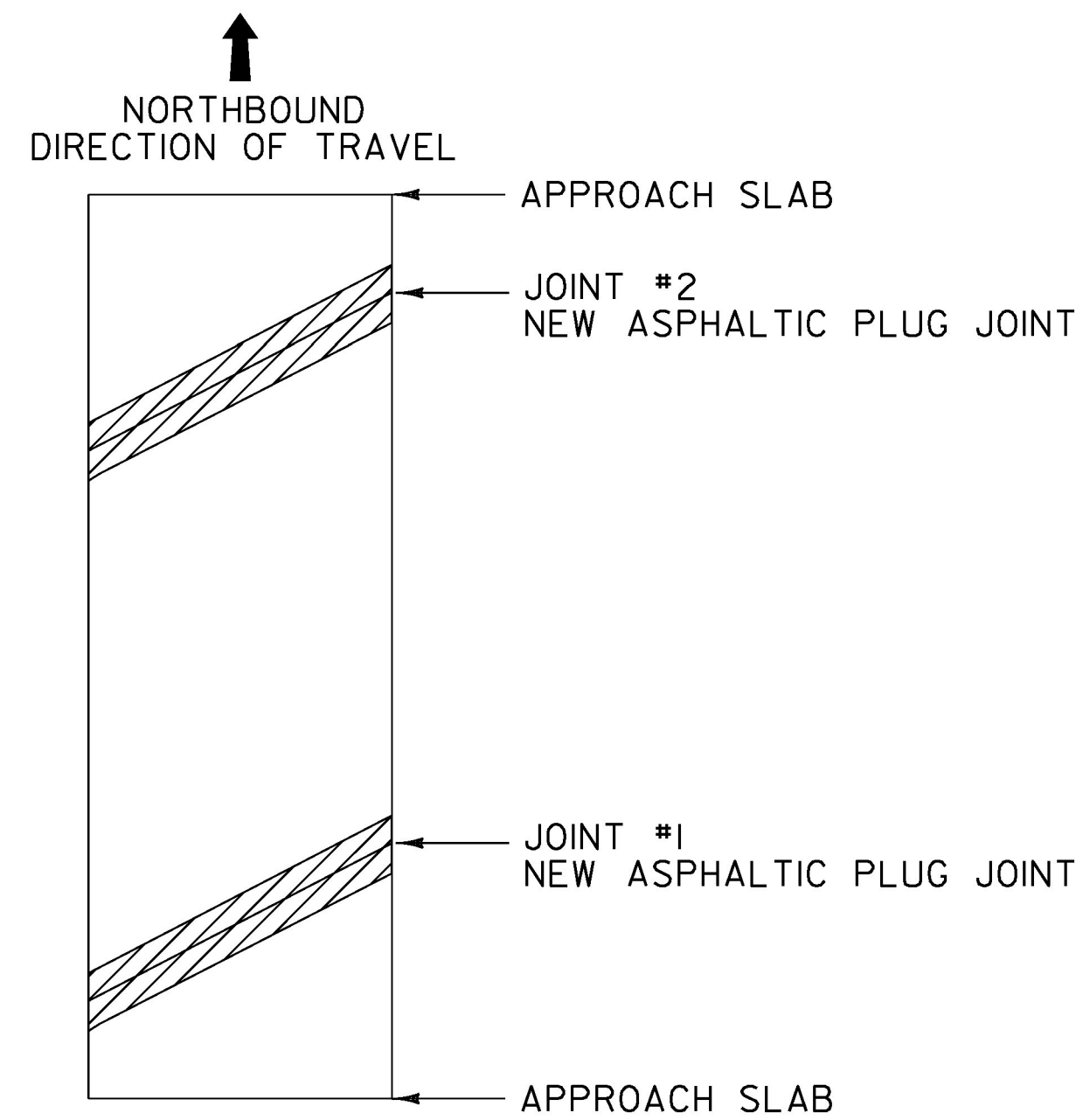


### **BRIDGE MICRO-MILL TYPICAL**

**NOT TO SCALE**

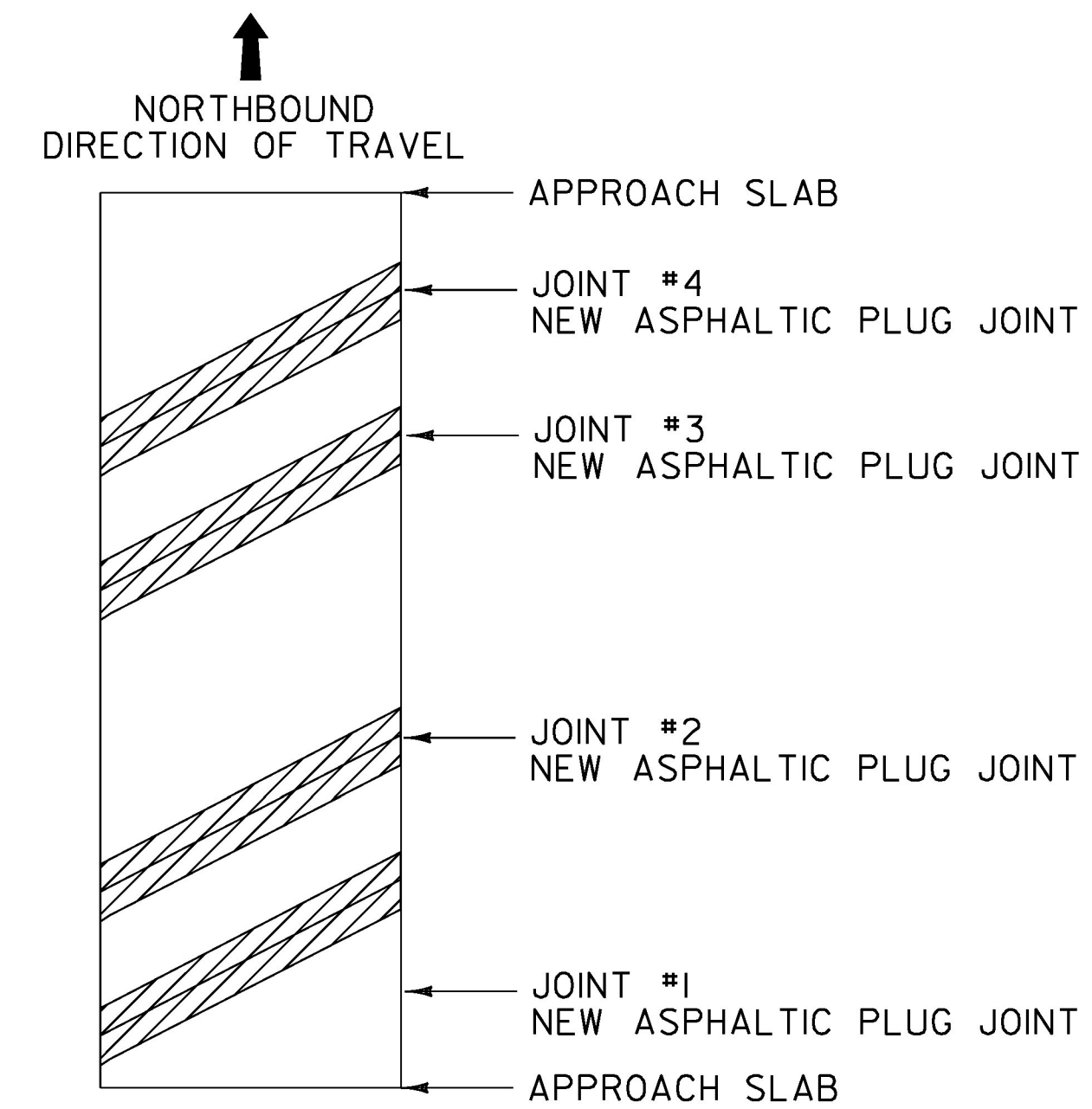
PROJECT NAME:	MONTPELIER-WATERBURY		
PROJECT NUMBER:	IM SURF(59)		
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE:	20-MAR-2018	
PROJECT LEADER: M. BOGACZYK	DRAWN BY:	N. PAPPAS	
DESIGNED BY: N. PAPPAS	CHECKED BY:	M. BOGACZYK	
BRIDGE DETAIL SHEET 1	SHEET	19	OF 34





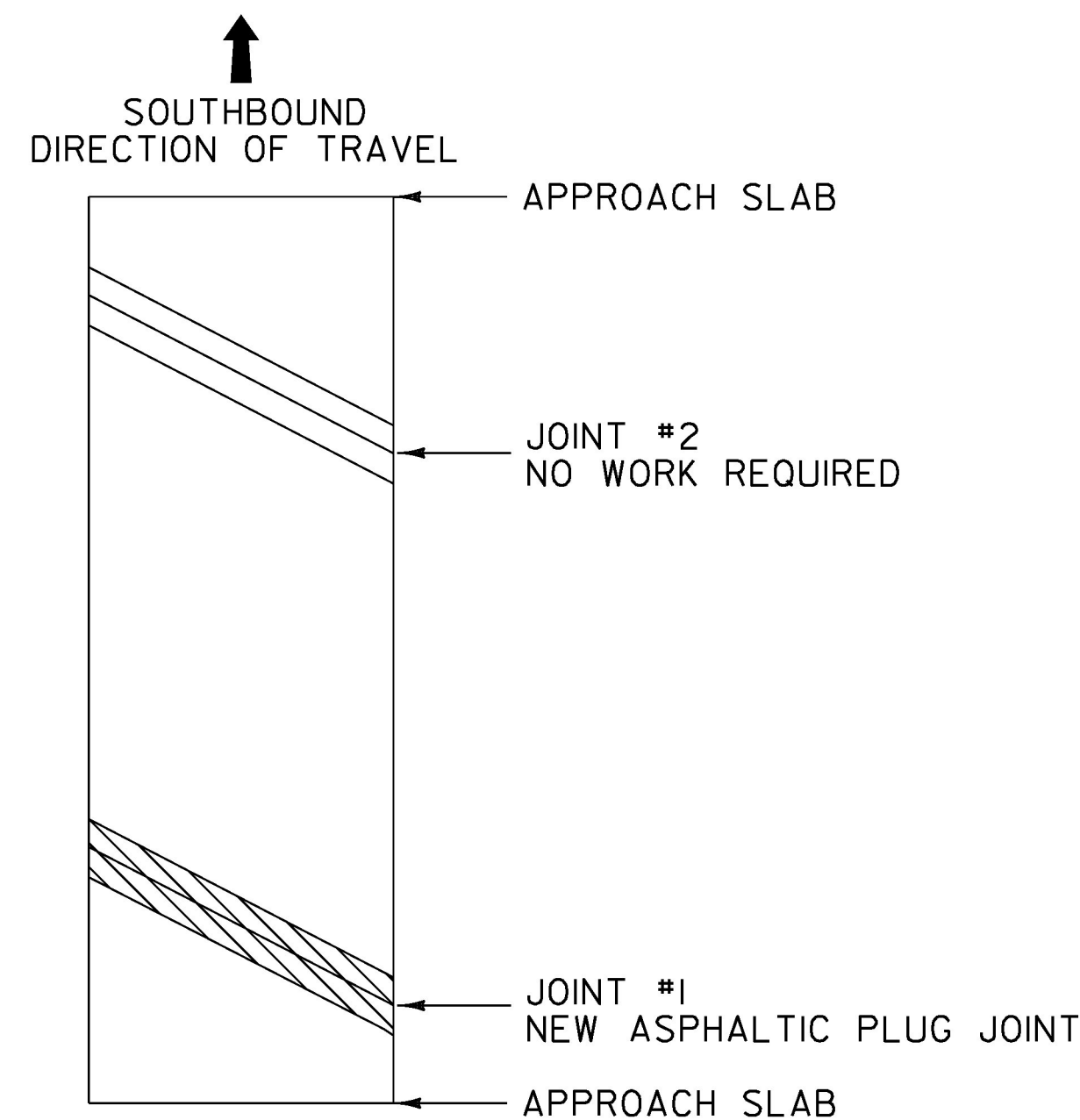
**BRIDGE 40N**  
MM 52.550

LENGTH OF ASPHALTIC PLUG JOINTS:  
JOINT #1 - ~~42'~~ 48.17'  
JOINT #2 - ~~42'~~ 62.00'  
TOTAL = ~~84'~~ 110.17'



**BRIDGE 41N**  
MM 52.945

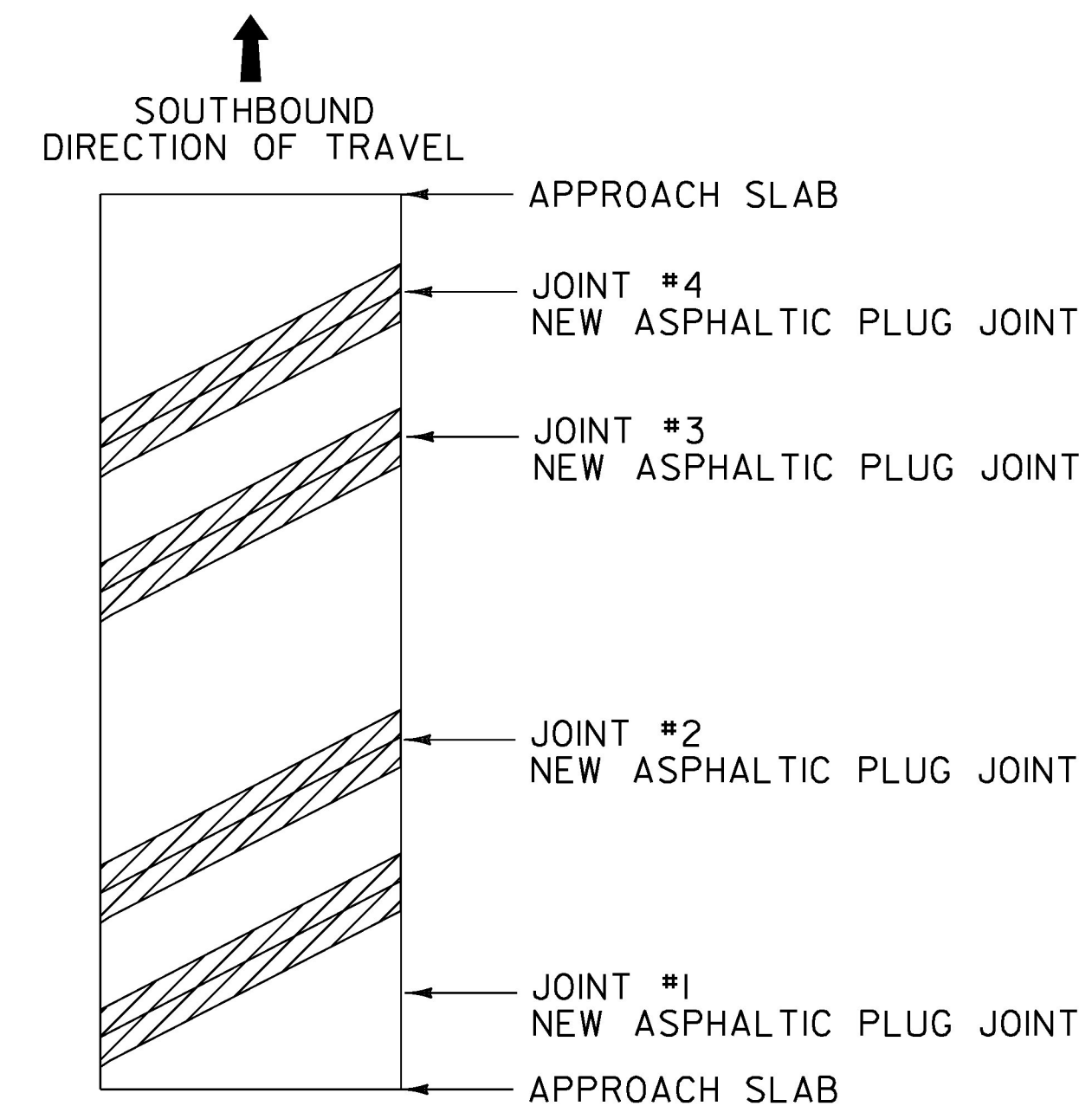
LENGTH OF ASPHALTIC PLUG JOINTS:  
JOINT #1 - ~~32'~~ 34.08'  
JOINT #2 - ~~32'~~ 34.50'  
JOINT #3 - ~~32'~~ 35.00'  
JOINT #4 - ~~32'~~ 35.10'  
TOTAL = ~~128'~~ 138.68'



**BRIDGE 40S**  
MM 52.550

LENGTH OF ASPHALTIC PLUG JOINTS:  
JOINT #1 - ~~42'~~  
TOTAL = ~~42'~~

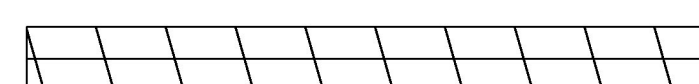
Actual Joint Length Approx. 70 FT  
(Joint on Skew). 35 LF Replaced in  
RT Lane and 8 LF Replaced in LT  
Lane. TOTAL: 43 LF



**BRIDGE 41S**  
MM 52.945

LENGTH OF ASPHALTIC PLUG JOINTS:  
JOINT #1 - ~~32'~~ 50.00'  
JOINT #2 - ~~32'~~ 50.00'  
JOINT #3 - ~~32'~~ 37.00' Only Portion of Joint Replaced  
JOINT #4 - ~~32'~~ 47.00'  
TOTAL = ~~128'~~ 184.00'

## LEGEND

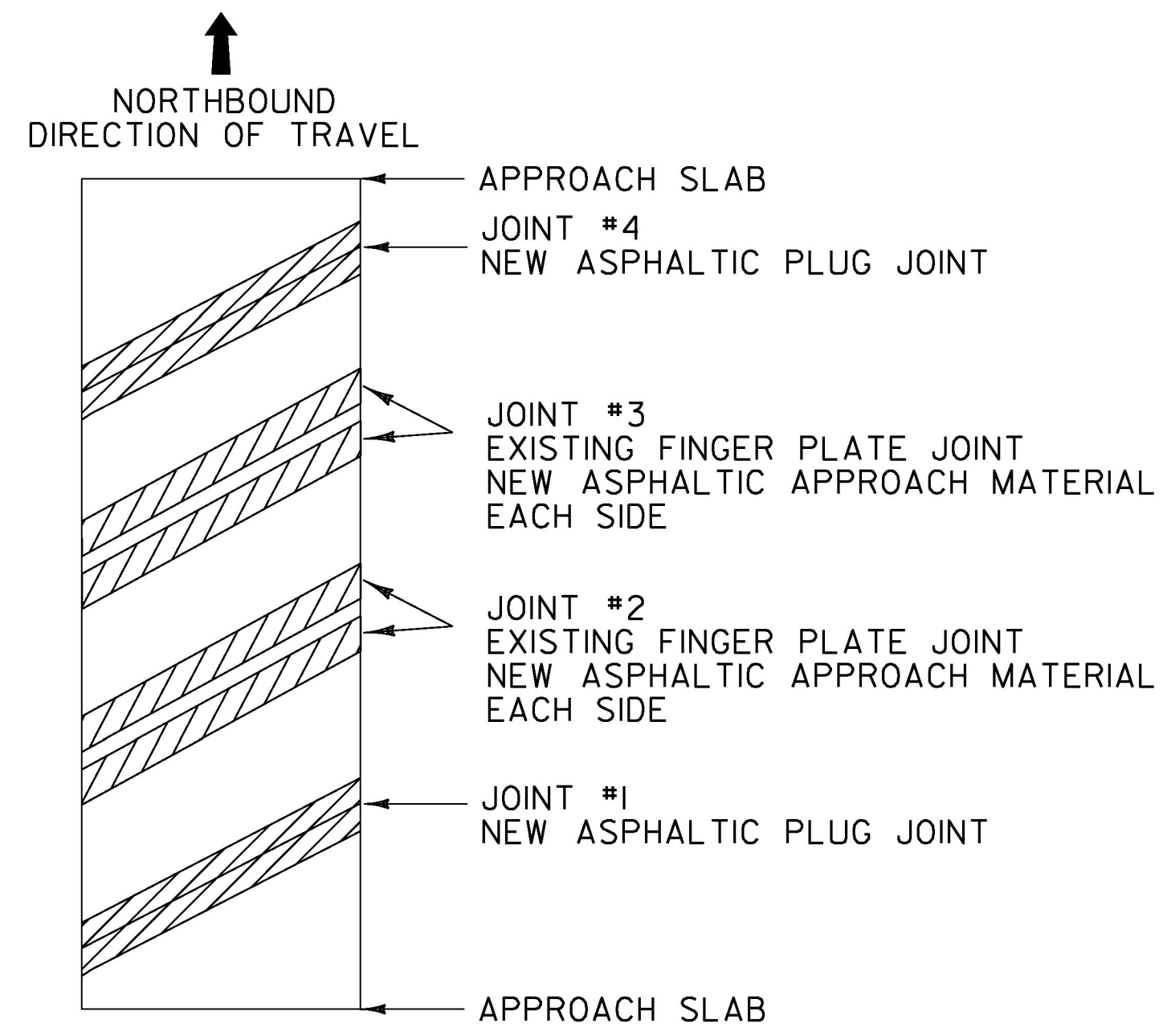


EXISTING BRIDGE JOINTS TO BE REPAIRED  
WITH ASPHALTIC PLUG JOINT.

**NOT TO SCALE**

PROJECT NAME:	MONTPELIER-WATERBURY		
PROJECT NUMBER:	IM SURF(59)		
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE:	20-MAR-2018	
PROJECT LEADER: M. BOGACZYK	DRAWN BY:	N. PAPPAS	
DESIGNED BY: N. PAPPAS	CHECKED BY:	M. BOGACZYK	
BRIDGE DETAIL SHEET 2	SHEET	20	OF 34



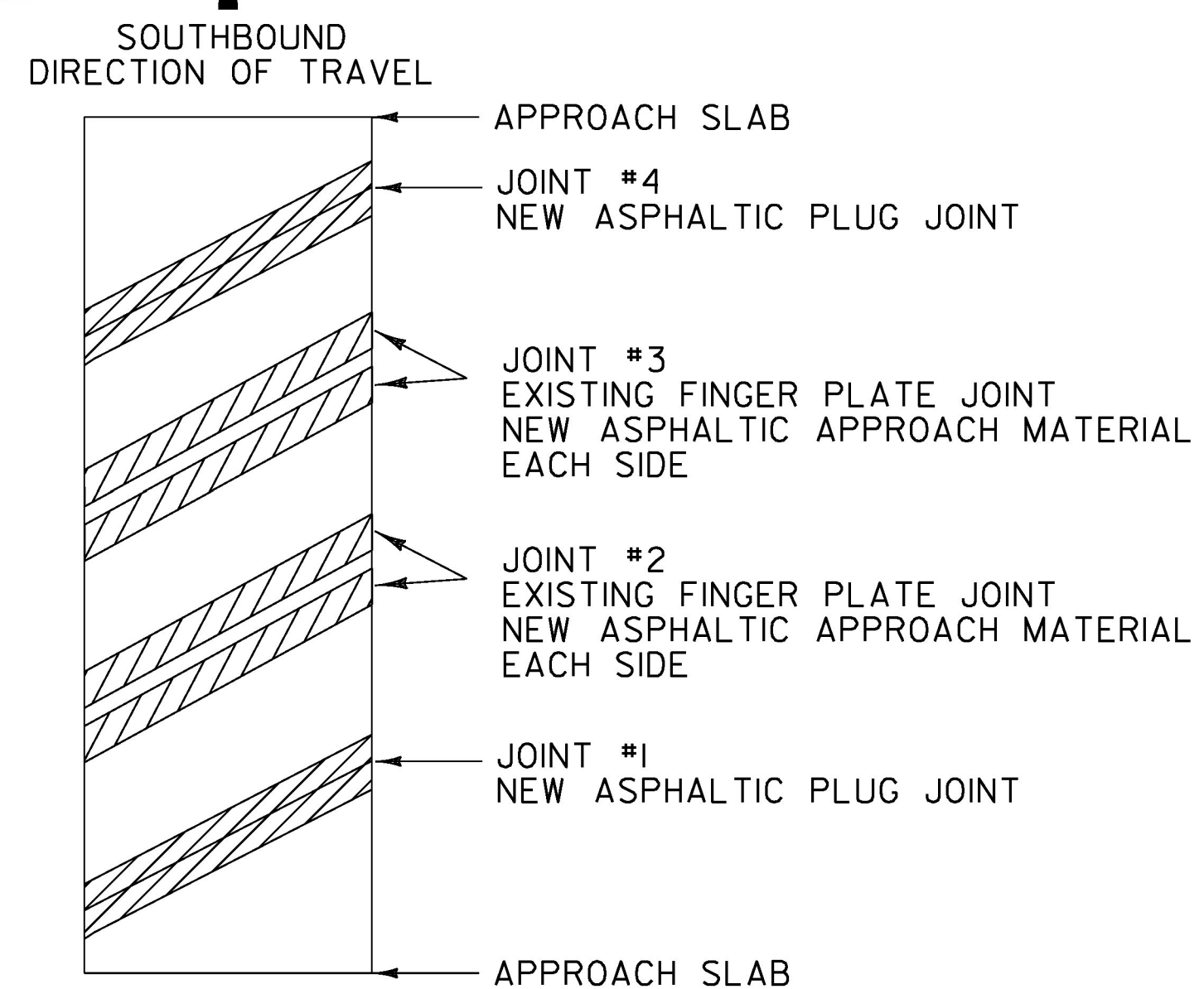


**BRIDGE 42N**  
MM 53.425

LENGTH OF ASPHALTIC PLUG JOINTS:  
JOINT #1 - ~~28'~~ 36.60'  
JOINT #4 - ~~28'~~ 51.80'  
TOTAL - ~~56'~~ 88.40'

ASPHALTIC APPROACH MATERIAL:  
JOINT #2 - ~~28'~~ X 2' X 2 = ~~112~~ SF 143.62 SF  
JOINT #3 - ~~28'~~ X 2' X 2 = ~~112~~ SF 200.60 SF  
35.90' TOTAL - ~~224~~ SF 344.22 SF

50.15'



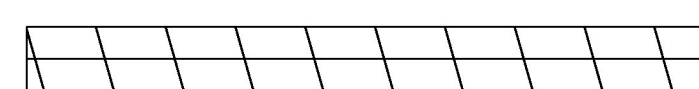
**BRIDGE 42S**  
MM 53.425

LENGTH OF ASPHALTIC PLUG JOINTS:  
JOINT #1 - ~~28'~~ 47.00'  
JOINT #4 - ~~28'~~ 37.33'  
TOTAL - ~~56'~~ 84.33'

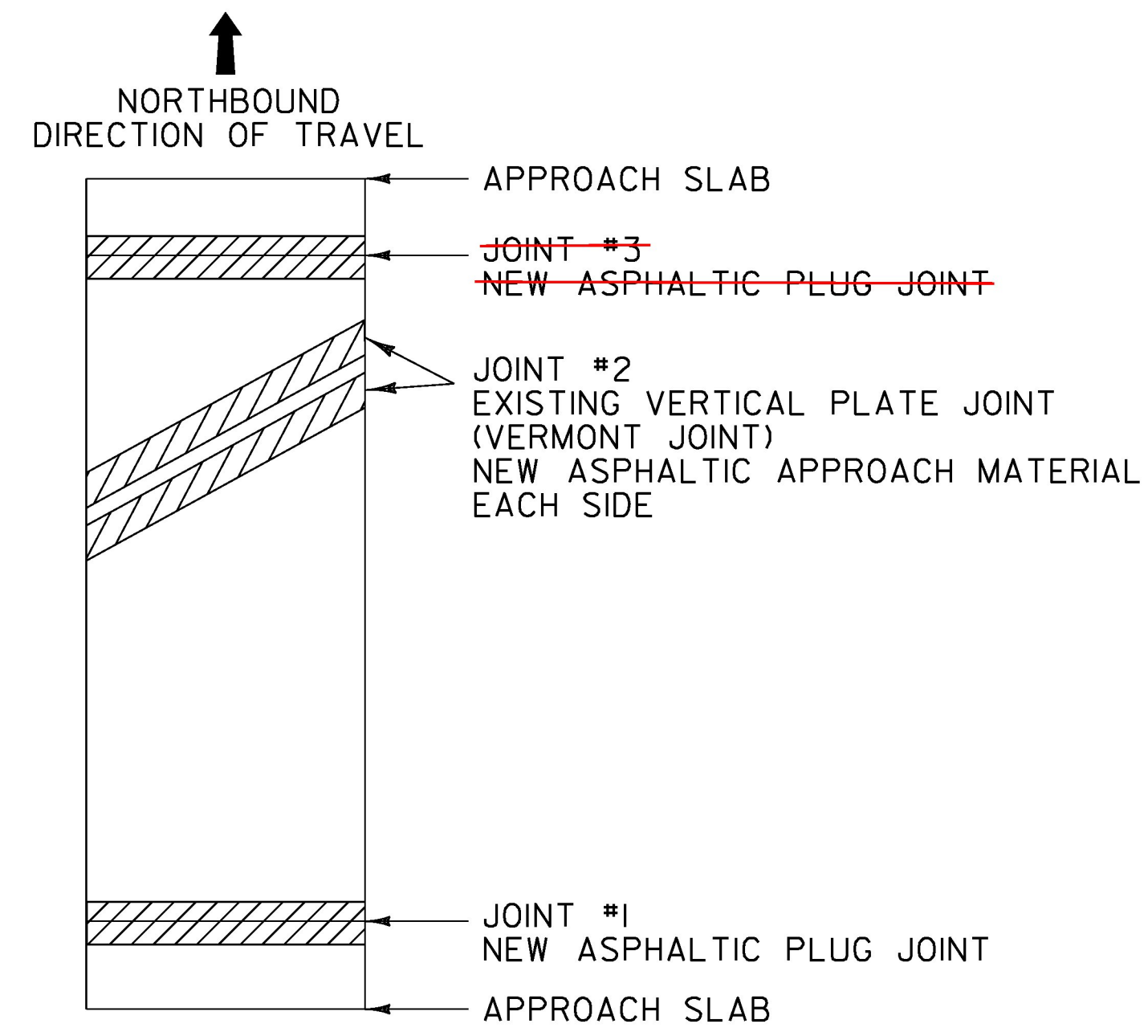
50.50'

ASPHALTIC APPROACH MATERIAL:  
JOINT #2 - ~~28'~~ X 2' X 2 = ~~112~~ SF 202.00 SF  
JOINT #3 - ~~28'~~ X 2' X 2 = ~~112~~ SF 144.00 SF  
36.00' TOTAL - ~~224~~ SF 346.00 SF

## LEGEND



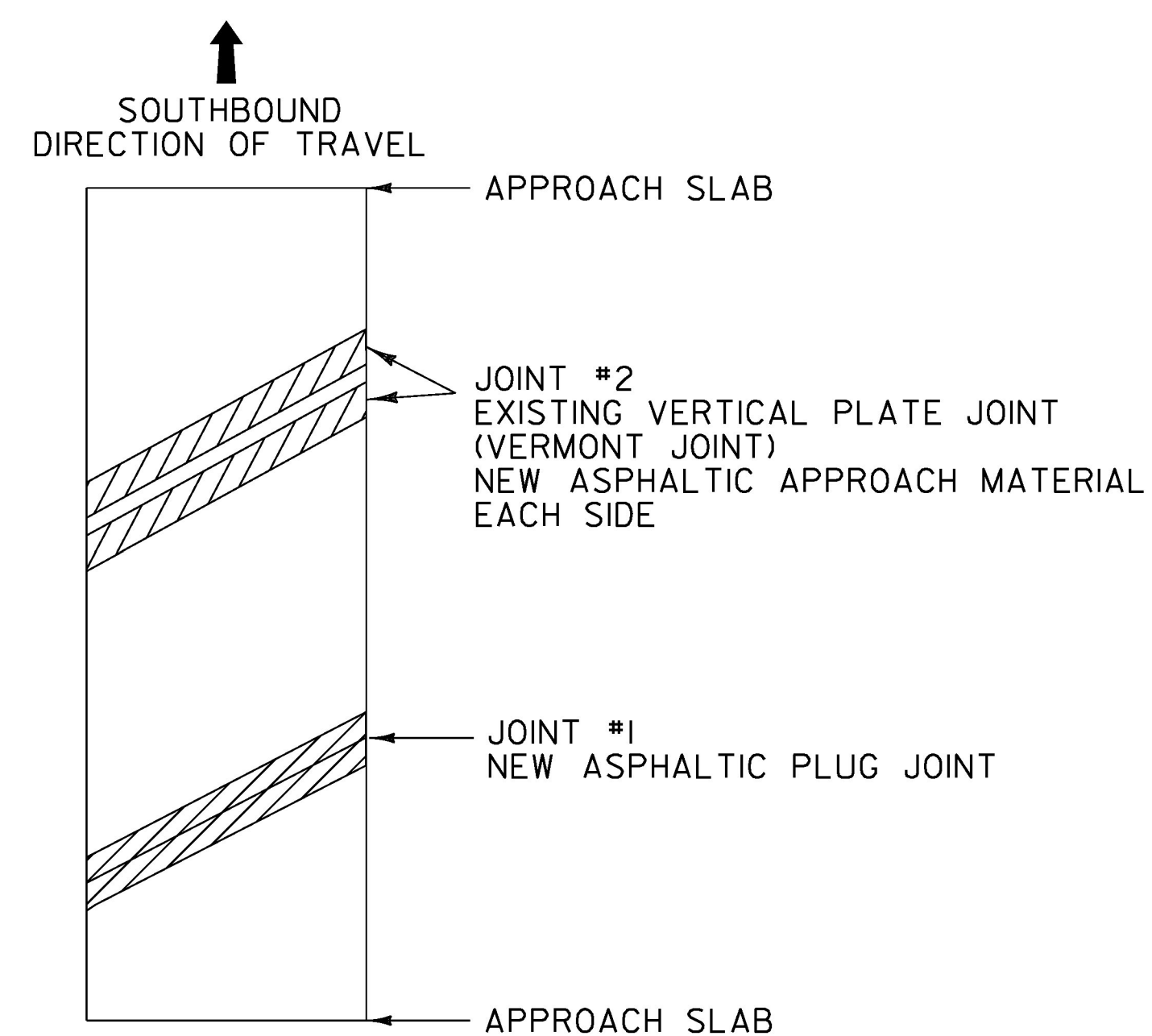
EXISTING BRIDGE JOINTS TO BE REPAIRED  
WITH ASPHALTIC PLUG JOINT.



**BRIDGE 43N**  
MM 54.809

LENGTH OF ASPHALTIC PLUG JOINTS:  
JOINT #1 - ~~30'~~ 45.67'  
~~JOINT #3~~ - ~~30'~~ JOINT NOT INSTALLED  
TOTAL - ~~60'~~ 45.67'

ASPHALTIC APPROACH MATERIAL:  
JOINT #2 - ~~30'~~ X 2' X 2 = ~~120~~ SF 181.50 SF  
45.37' TOTAL - ~~120~~ SF 181.50 SF

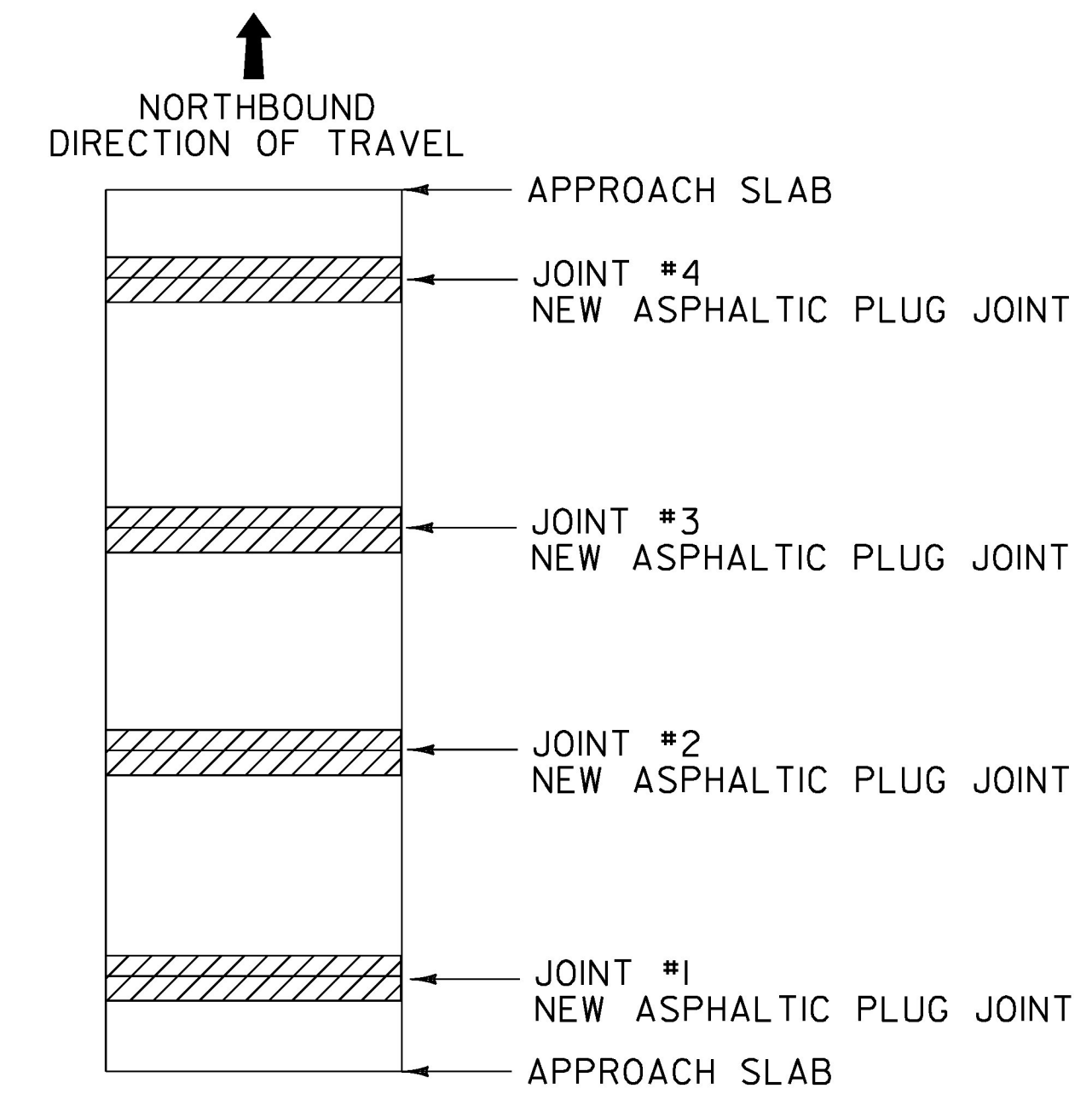


**BRIDGE 43S**  
MM 54.809

LENGTH OF ASPHALTIC PLUG JOINTS:  
JOINT #1 - ~~30'~~ 43.17'  
~~JOINT #3~~ - ~~30'~~  
TOTAL - ~~60'~~ 43.17'

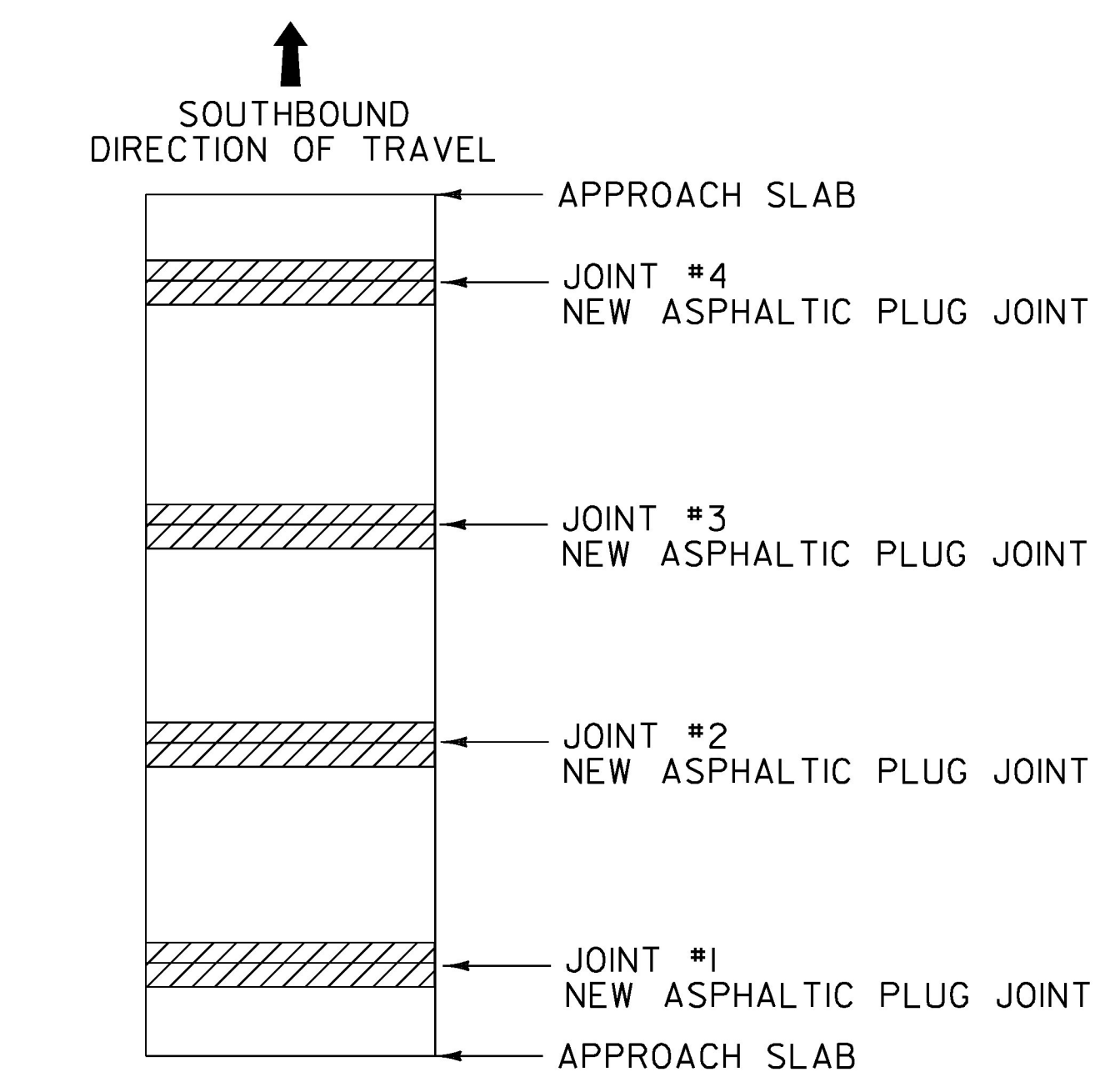
ASPHALTIC APPROACH MATERIAL:  
JOINT #2 - ~~30'~~ X 2' X 2 = ~~120~~ SF 173.00 SF  
43.25' TOTAL - ~~120~~ SF 173.00 SF

NOT TO SCALE



**BRIDGE 45N**  
MM 58.721

LENGTH OF ASPHALTIC PLUG JOINTS:  
JOINT #1 - 42'  
JOINT #2 - 42'  
JOINT #3 - 42'  
JOINT #4 - ~~42'~~ 41.83'  
TOTAL = ~~168'~~ 167.83'

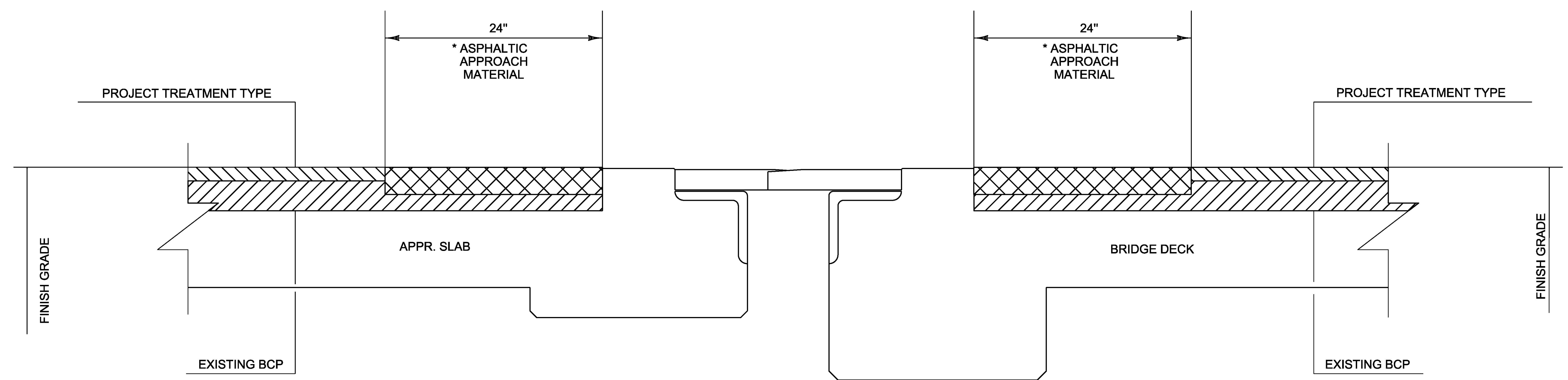
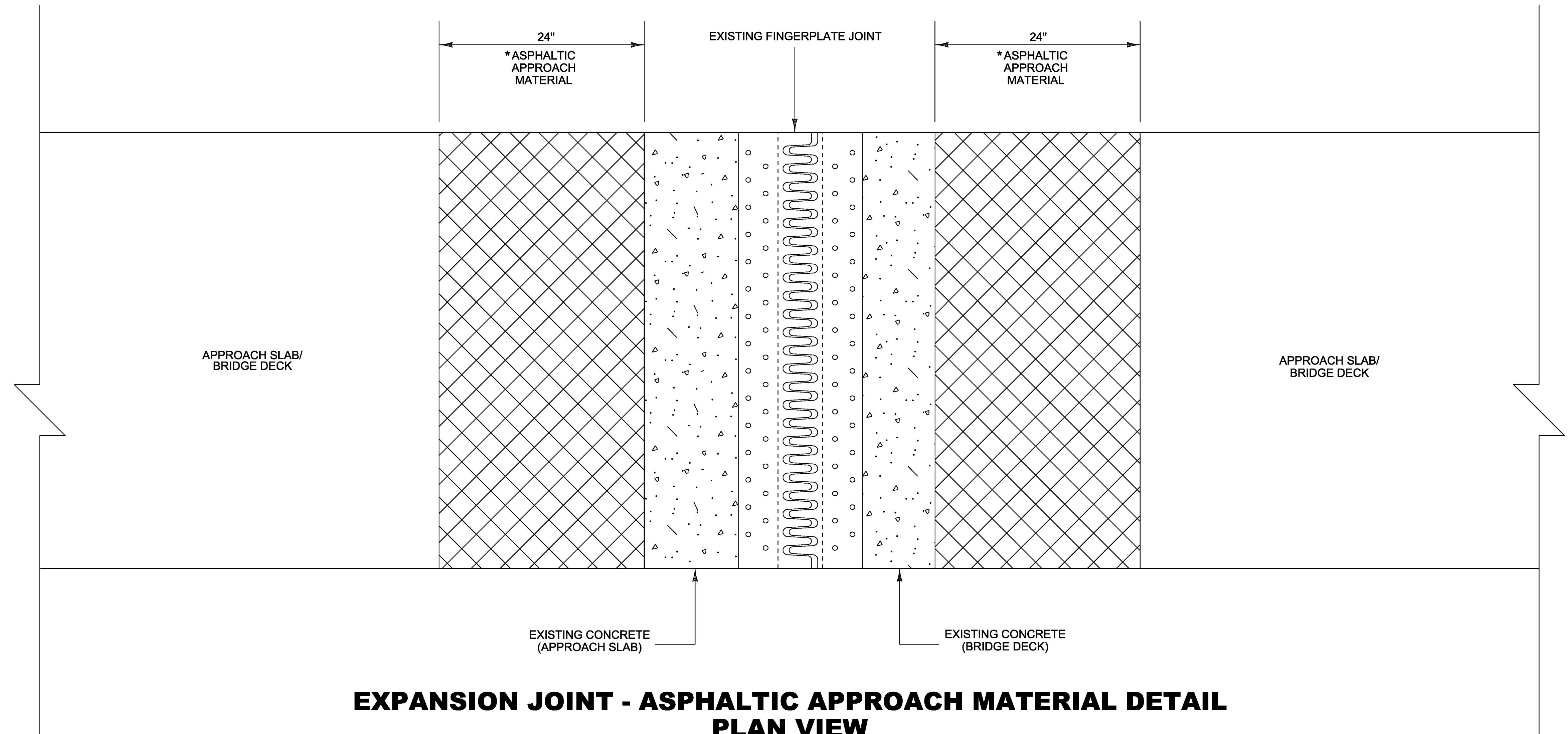


**BRIDGE 45S**  
MM 58.721

LENGTH OF ASPHALTIC PLUG JOINTS:  
JOINT #1 - 42'  
JOINT #2 - 42'  
JOINT #3 - 42'  
JOINT #4 - 42'  
TOTAL = 168'

PROJECT NAME:	MONTPELIER-WATERBURY		
PROJECT NUMBER:	IM SURF(59)		
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018		
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS		
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK		
BRIDGE DETAIL SHEET 3	SHEET 21 OF 34		





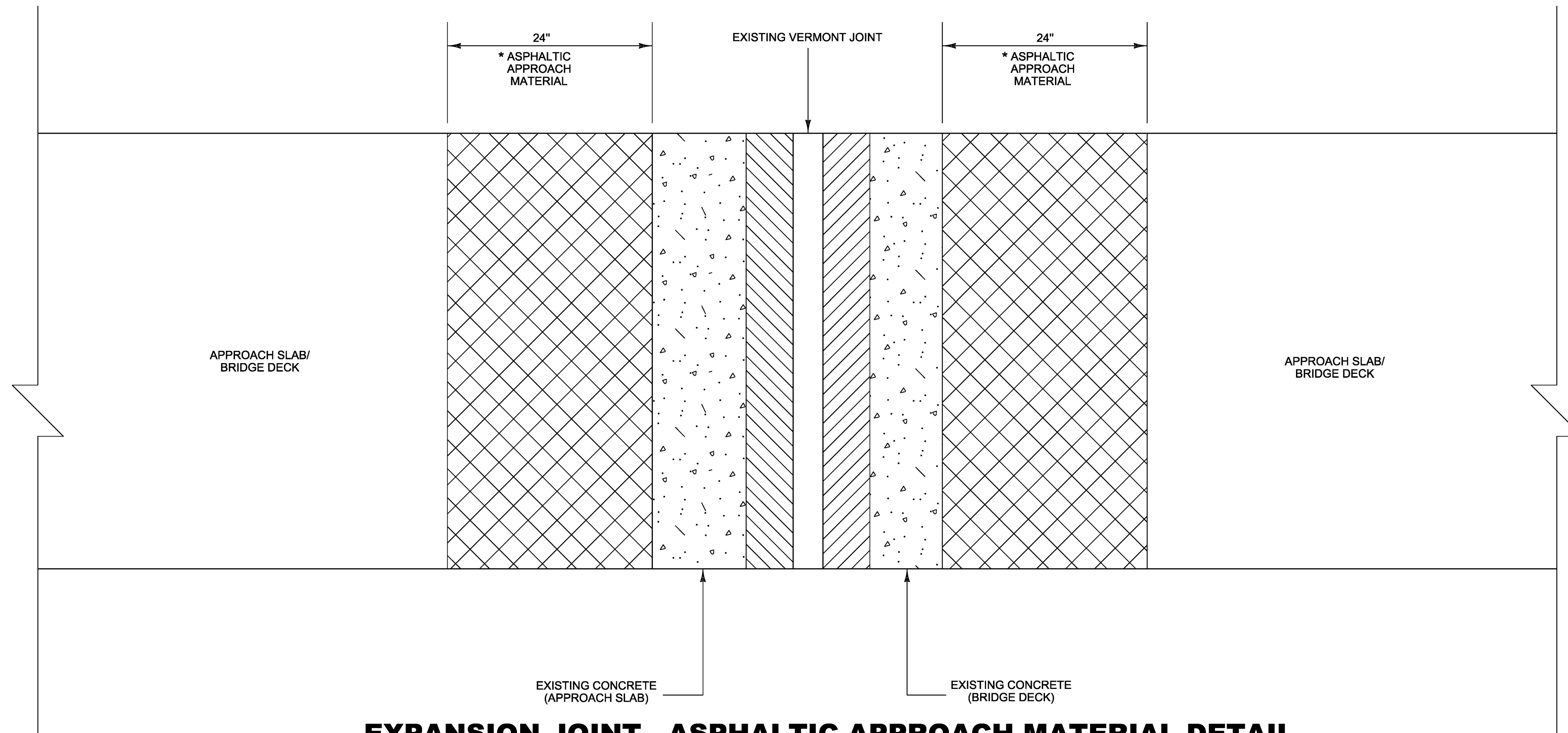
* 2" MINIMUM THICKNESS UNLESS OTHERWISE  
DIRECTED BY THE ENGINEER

PROJECT NAME: MONTPELIER-WATERBURY

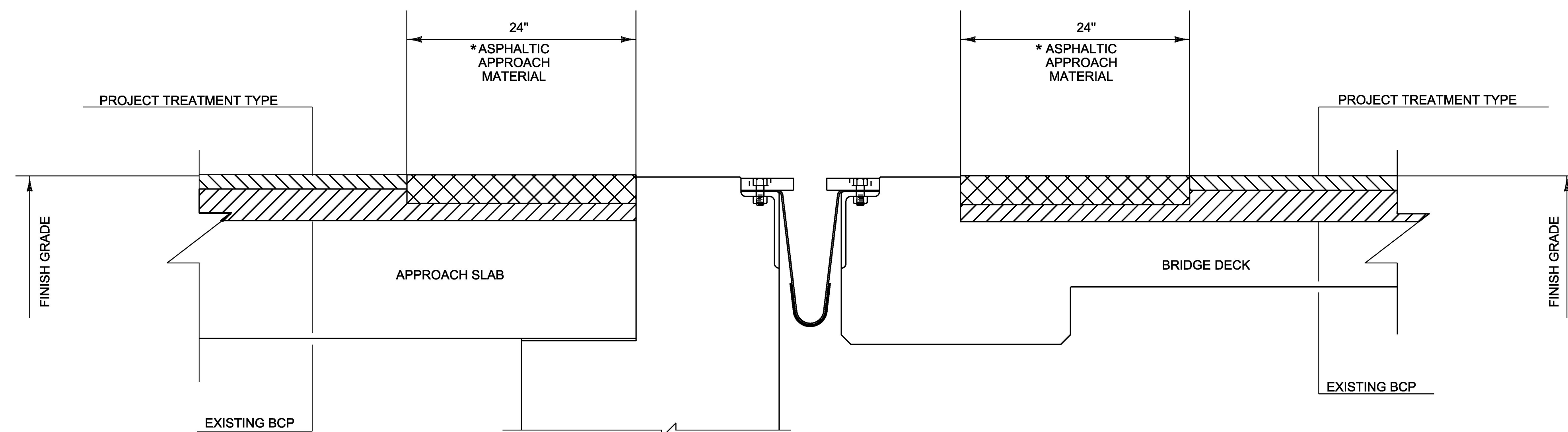
PROJECT NUMBER: IM SURF(59)

FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK
BRIDGE DETAIL SHEET 4	SHEET 22 OF 34





**EXPANSION JOINT - ASPHALTIC APPROACH MATERIAL DETAIL  
PLAN VIEW  
(VERMONT JOINT)**

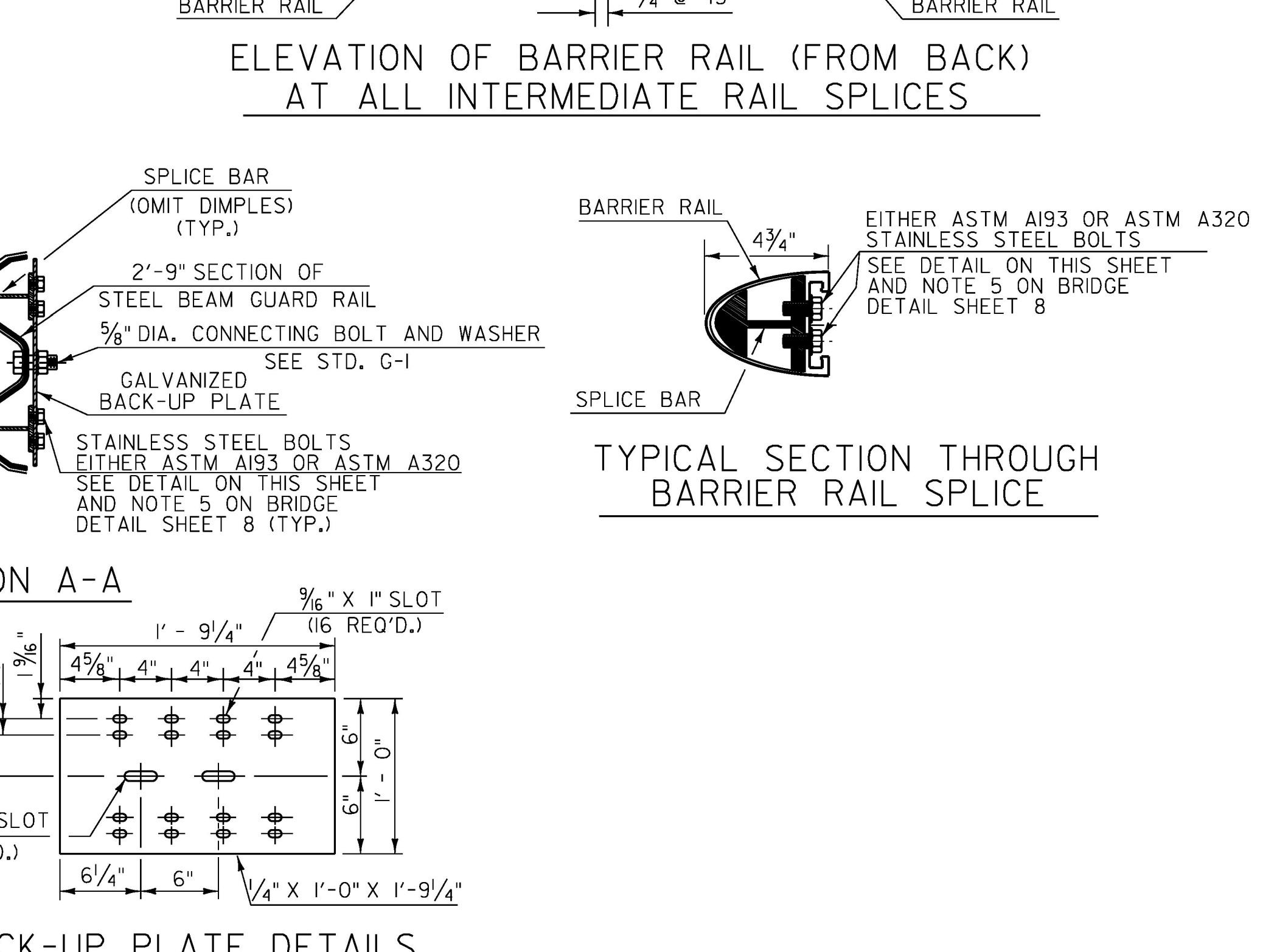
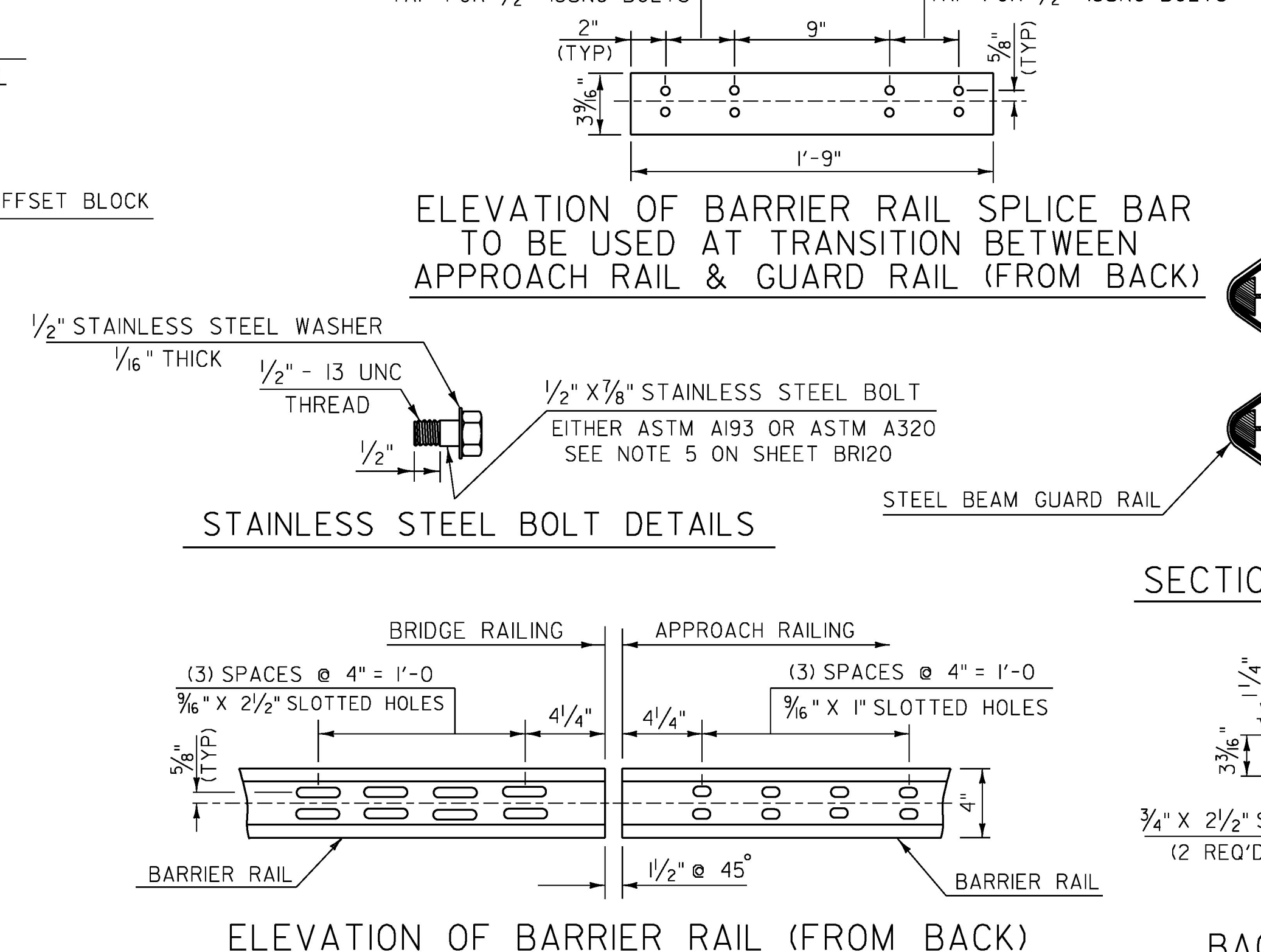
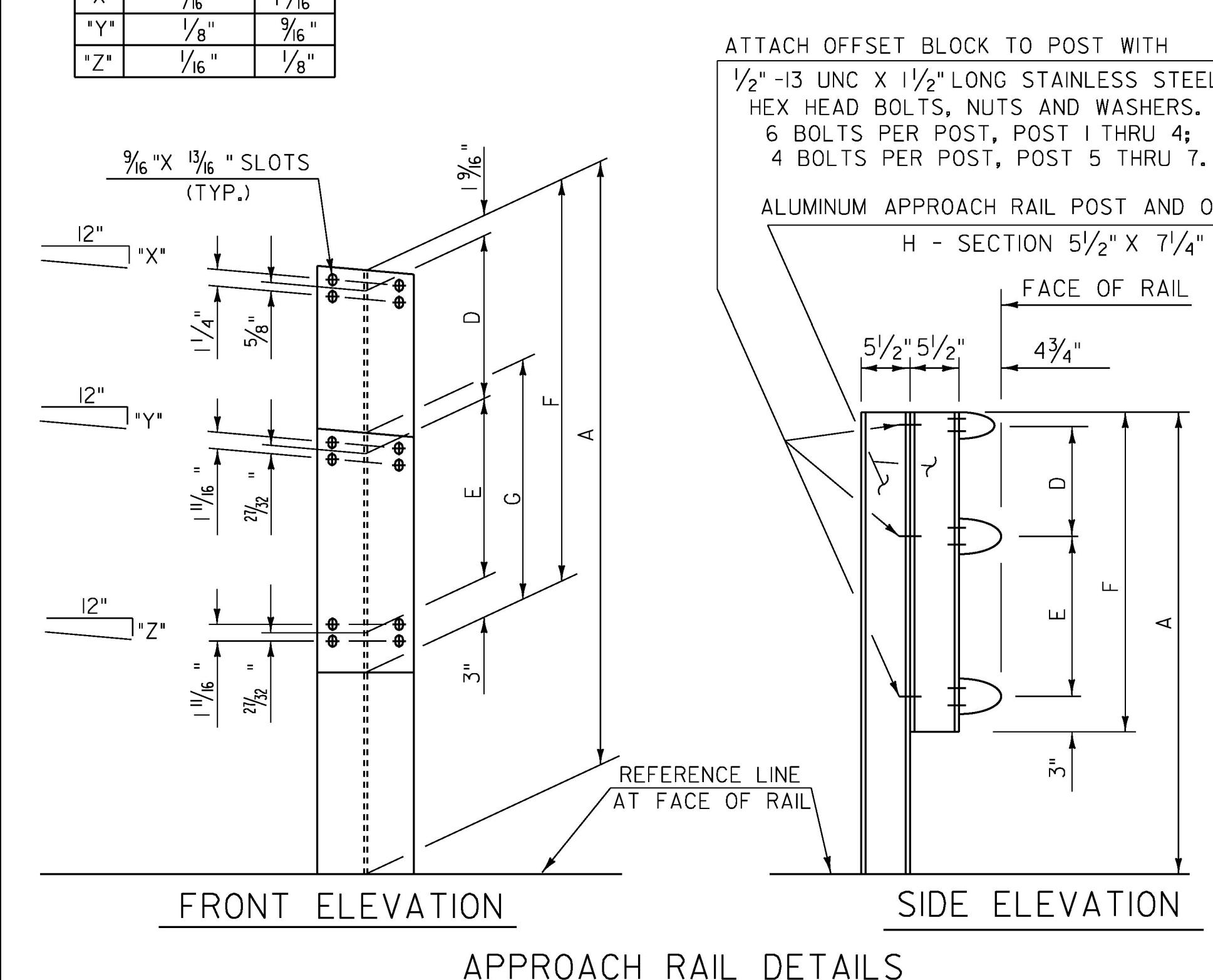
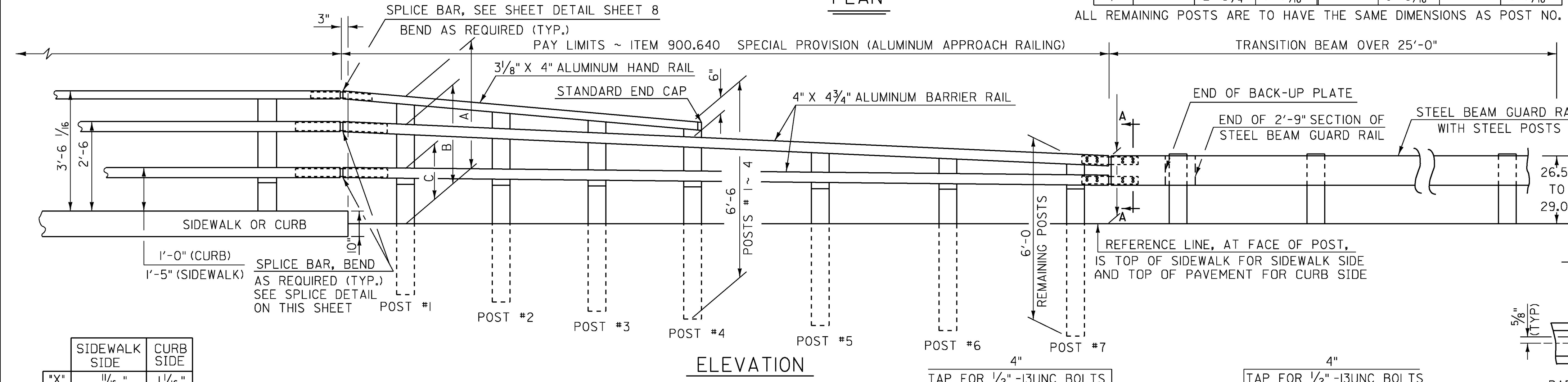
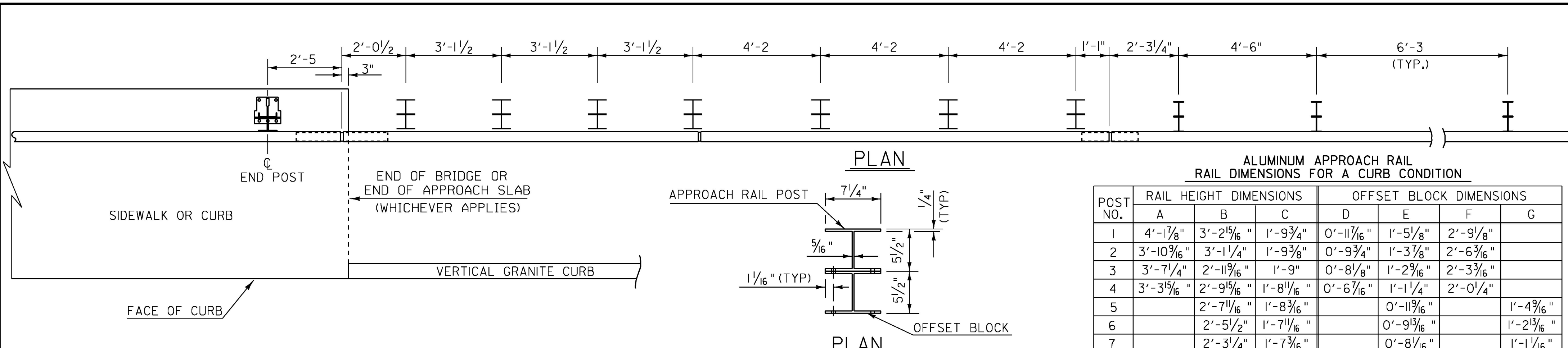


* 2" MINIMUM THICKNESS UNLESS OTHERWISE  
DIRECTED BY THE ENGINEER

**ASPHALTIC APPROACH MATERIAL  
TYPICAL CROSS SECTION  
(VERMONT JOINT)  
NOT TO SCALE**

PROJECT NAME: MONTPELIER-WATERBURY	
PROJECT NUMBER: IM SURF(59)	
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK
BRIDGE DETAIL SHEET 5	SHEET 23 OF 34





**NOTES**

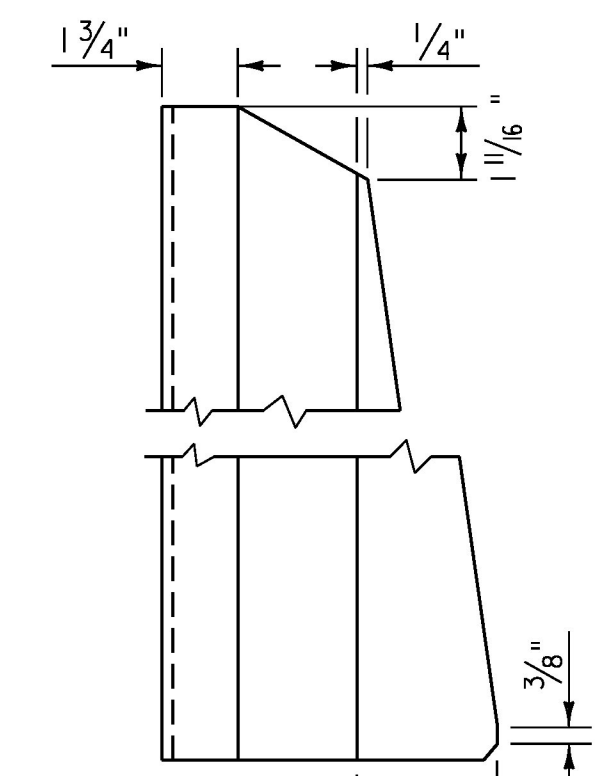
- POST 1 THROUGH 7 SHALL BE EXTRUDED ALUMINUM.
- ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 36 GALVANIZED AFTER FABRICATION.
- ALL ITEMS NOT OTHERWISE INDICATED SHALL MEET THE SPECIFICATION REQUIREMENTS OF THE STANDARD SHEETS ON WHICH THEY ARE DETAILED.
- SEE STANDARD G-1 FOR STEEL BEAM GUARDRAIL DETAILS. SEE BRIDGE DETAIL SHEET 7 AND 8.
- THE COST OF ALL MATERIALS AND LABOR FOR THE SPLICE BETWEEN THE ALUMINUM APPROACH RAILING AND THE STEEL BEAM GUARDRAIL SHALL BE INCIDENTAL TO ITEM 900.640 SPECIAL PROVISION (ALUMINUM APPROACH RAILING).
- DETAILS ARE SHOWN FOR TRANSITION TO A 3 RAIL ALUMINUM BRIDGE RAILING.
- DIMENSIONS SHOWN ARE FROM A REFERENCE LINE AT THE FACE OF POST FOR A NORMAL CROWNED SECTION. APPROPRIATE CORRECTIONS SHALL BE MADE FOR CROSS SLOPES OTHER THAN A NORMAL SECTION.

**ALUMINUM APPROACH RAIL RAIL DIMENSIONS FOR A SIDEWALK CONDITION**

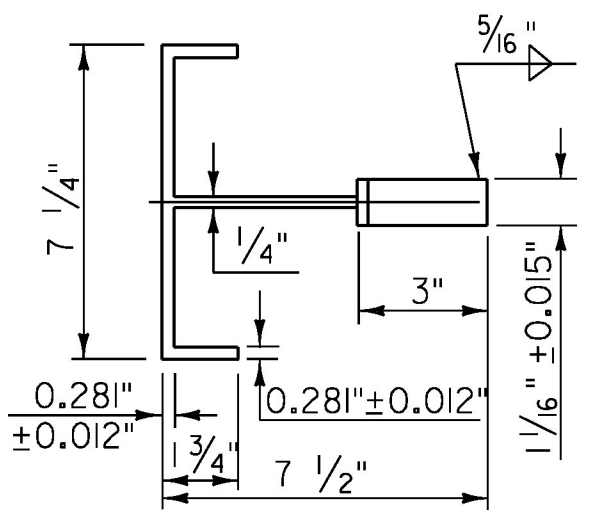
POST NO.	RAIL HEIGHT DIMENSIONS			OFFSET BLOCK DIMENSIONS			
	A	B	C	D	E	F	G
1	3'-4 1/16"	2'-5 3/4"	1'-5 3/16"	0'-11 1/6"	1'-0 9/16"	2'-4 3/16"	
2	3'-2 5/8"	2'-5 5/16"	1'-5 1/16"	0'-9 3/4"	0'-11 7/8"	2'-2 3/16"	
3	3'-0 9/16"	2'-4 1/8"	1'-5 1/16"	0'-8 1/8"	0'-11 3/16"	1'-11 1/16"	
4	2'-10 1/2"	2'-4 1/2"	1'-5 5/16"	0'-6 1/16"	0'-10 9/16"	1'-9 9/16"	
5		2'-3 3/16"	1'-6 3/16"		0'-9 9/16"		1'-2 5/8"
6		2'-3 3/8"	1'-6 5/8"		0'-8 3/4"		1'-1 3/4"
7		2'-2 3/16"	1'-7"		0'-7 7/8"		1'-0 7/8"

ALL REMAINING POSTS TO HAVE THE SAME DIMENSIONS AS POST NO. 7

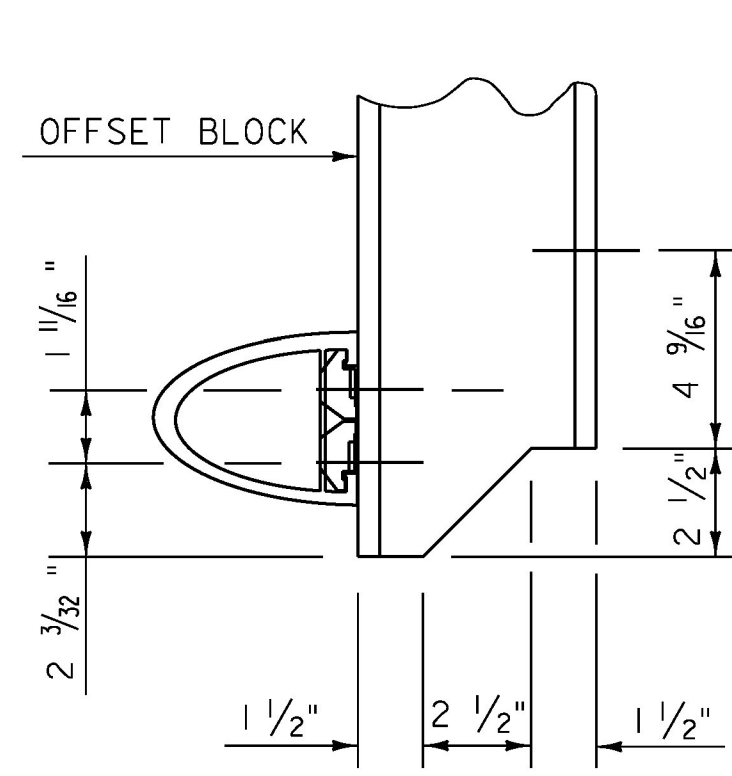




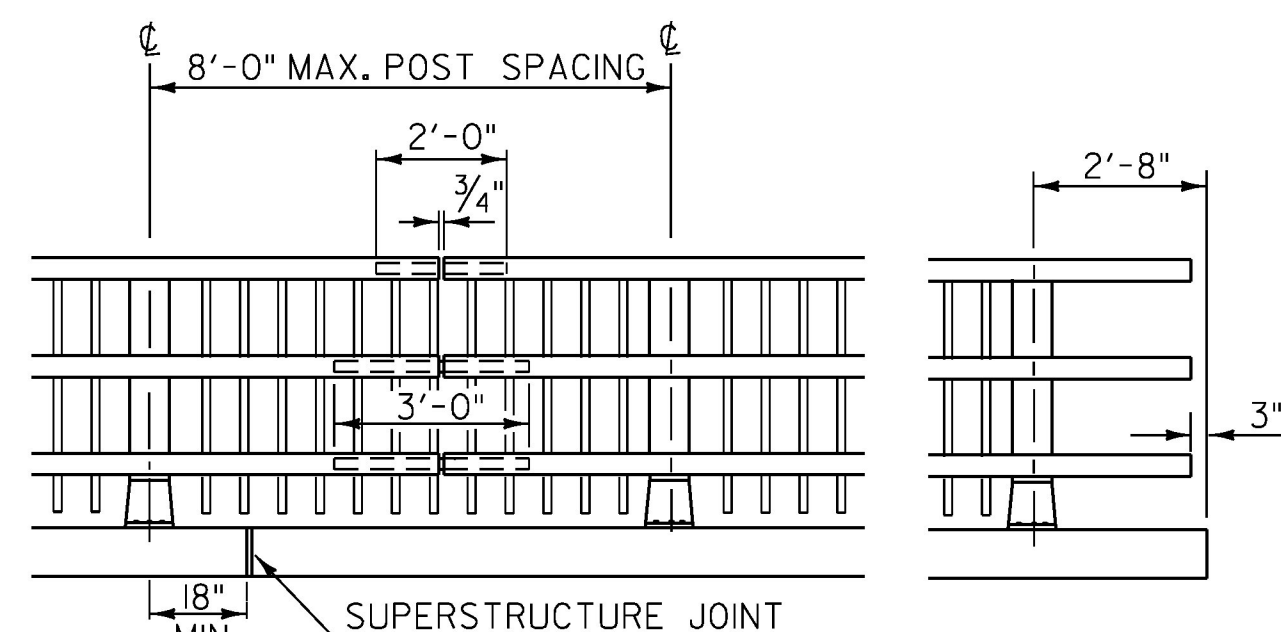
POST SIDE VIEW



POST PLAN VIEW

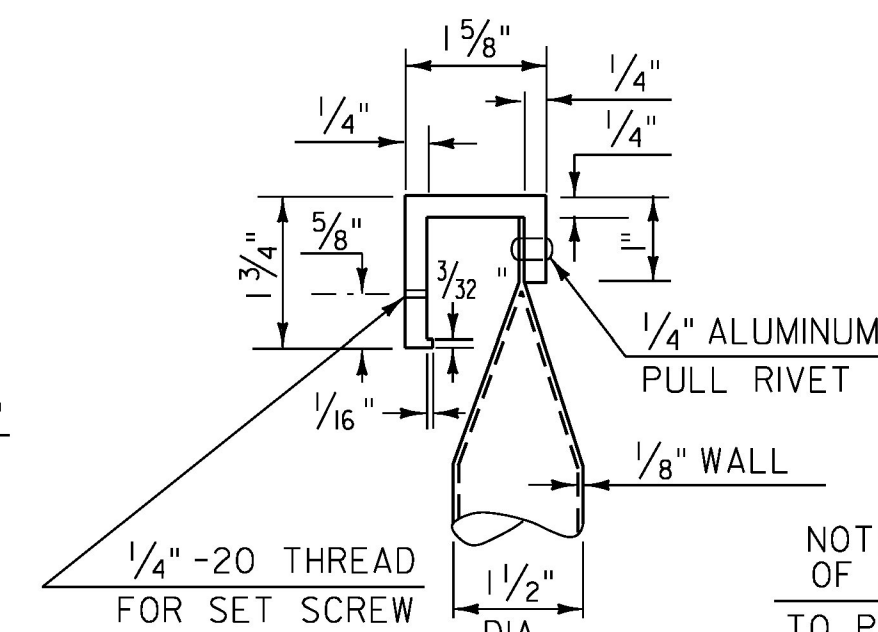


COPING DETAIL

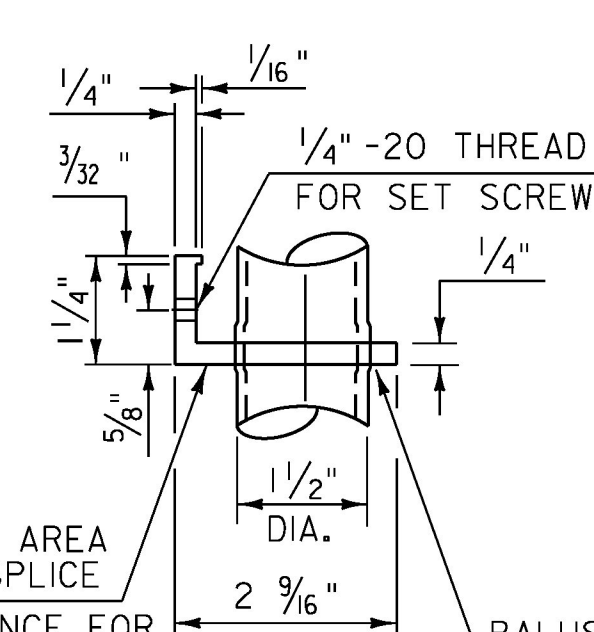


FRONT ELEVATION OF THREE RAIL WITH SPINDLES

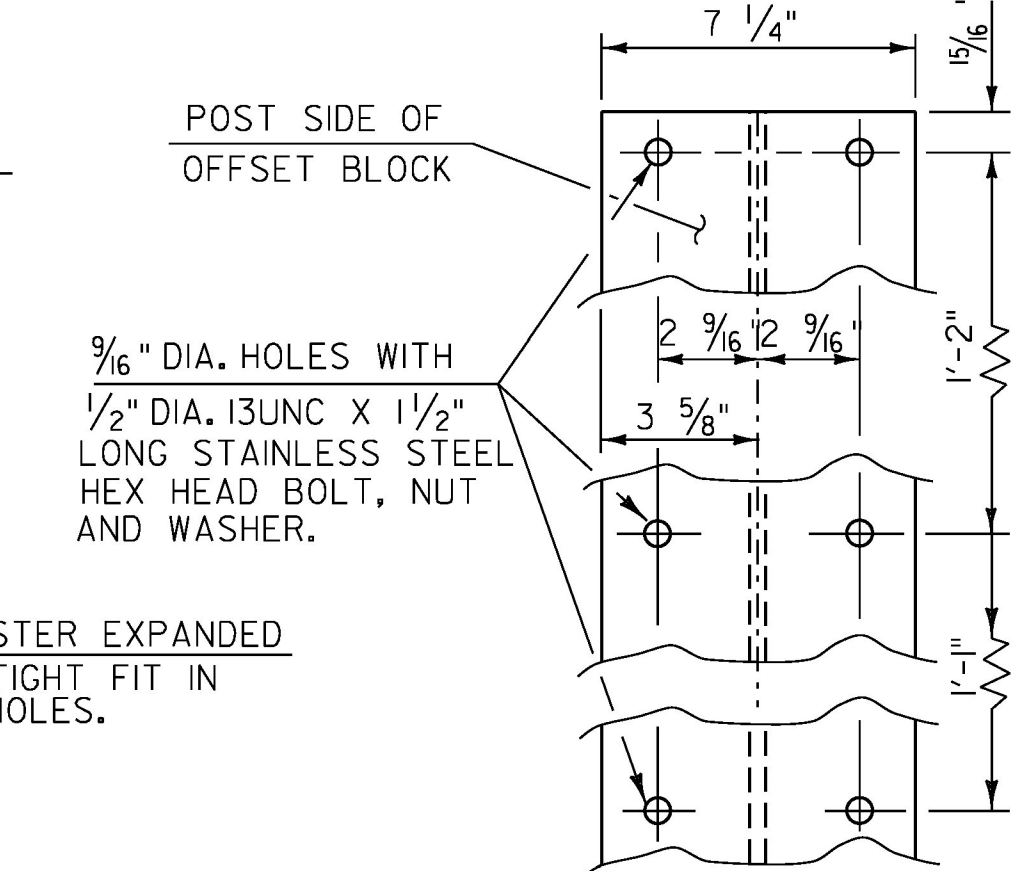
NOTE : RAIL POSTS ARE TO BE SET NORMAL TO GRADE  
ALL DIMENSIONS ARE TYPICAL UNLESS OTHERWISE NOTED.



DETAIL A

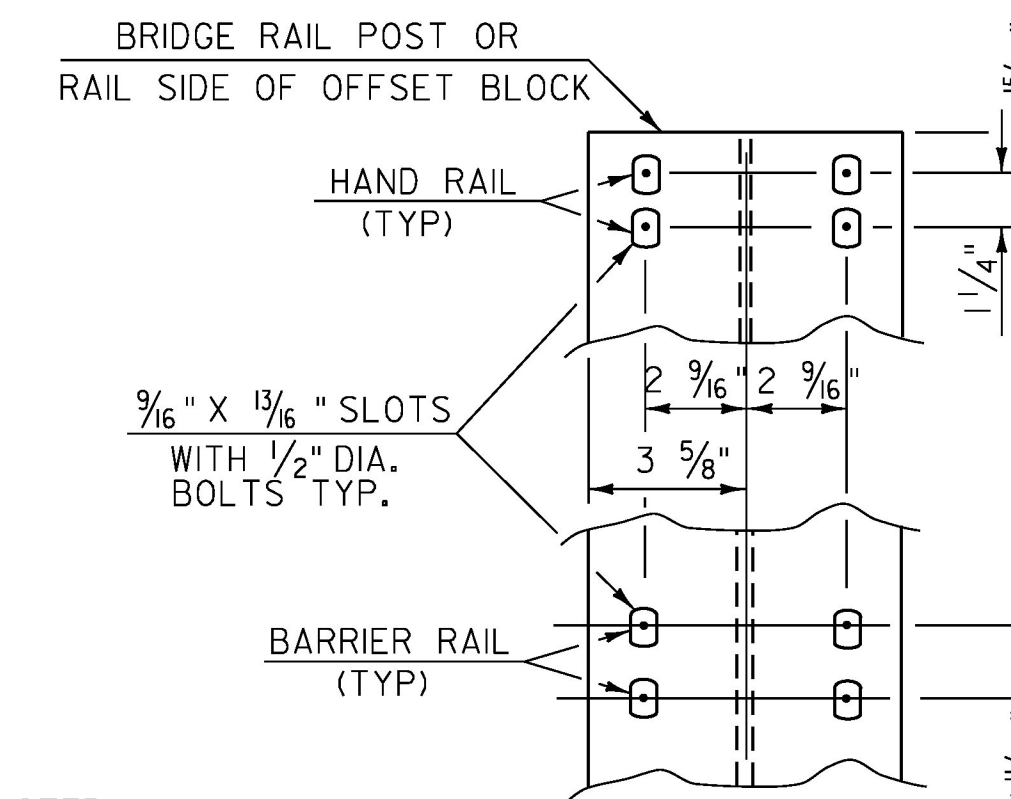


DETAIL B

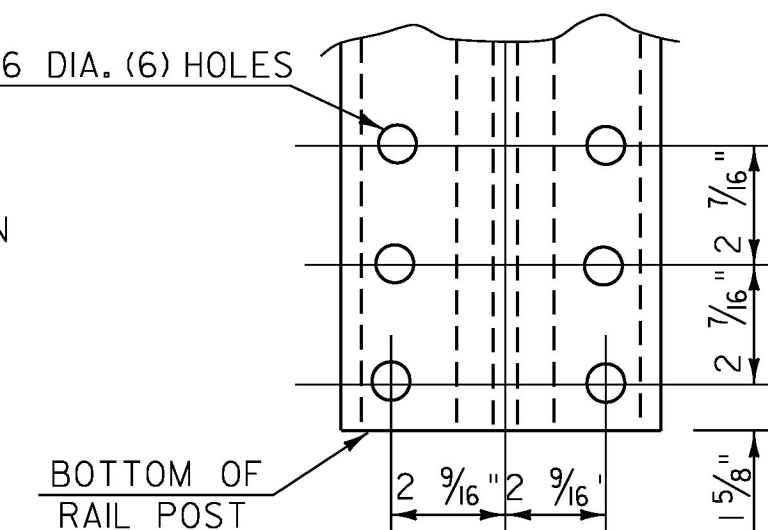


OFFSET BLOCK CONNECTION

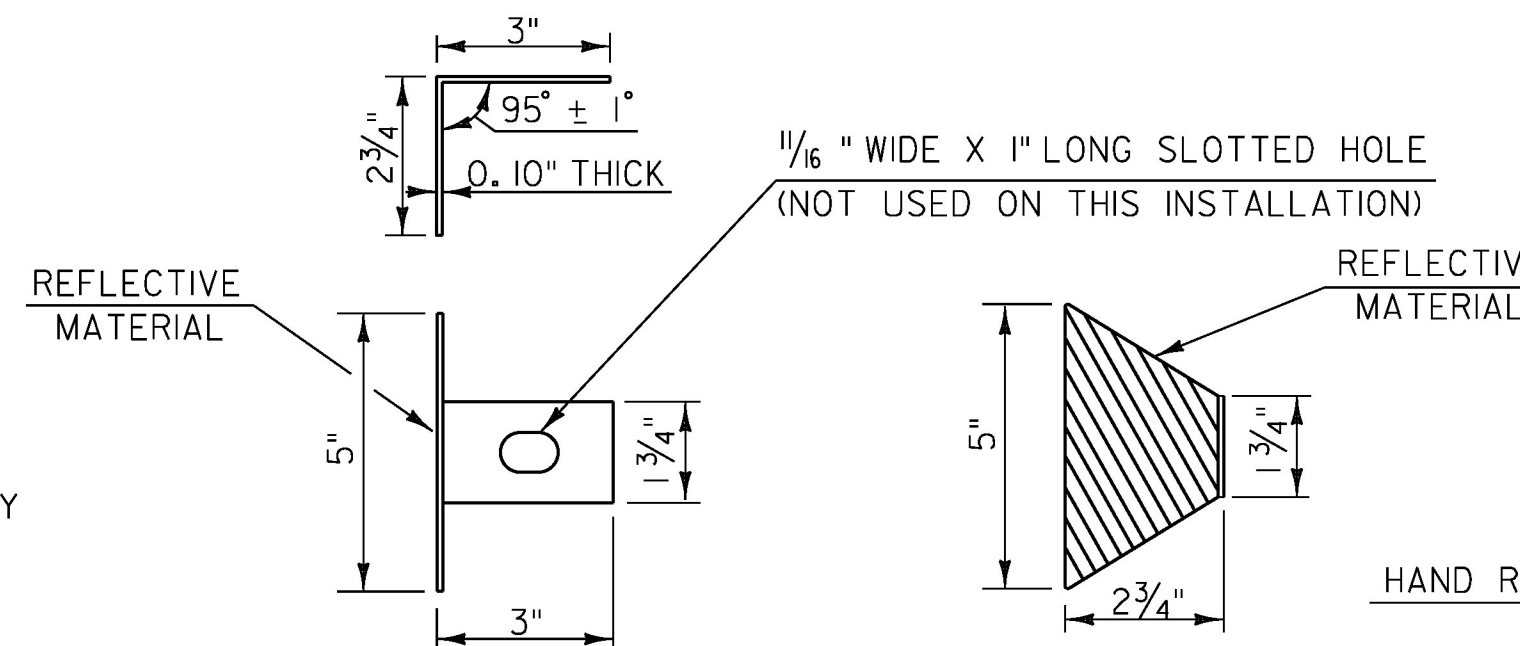
ALLOWABLE STRESSES:  
RAILING : 21,000 PSI TENSION  
22,000 PSI COMPRESSION  
POSTS : 17,000 PSI TENSION  
19,000 PSI COMPRESSION



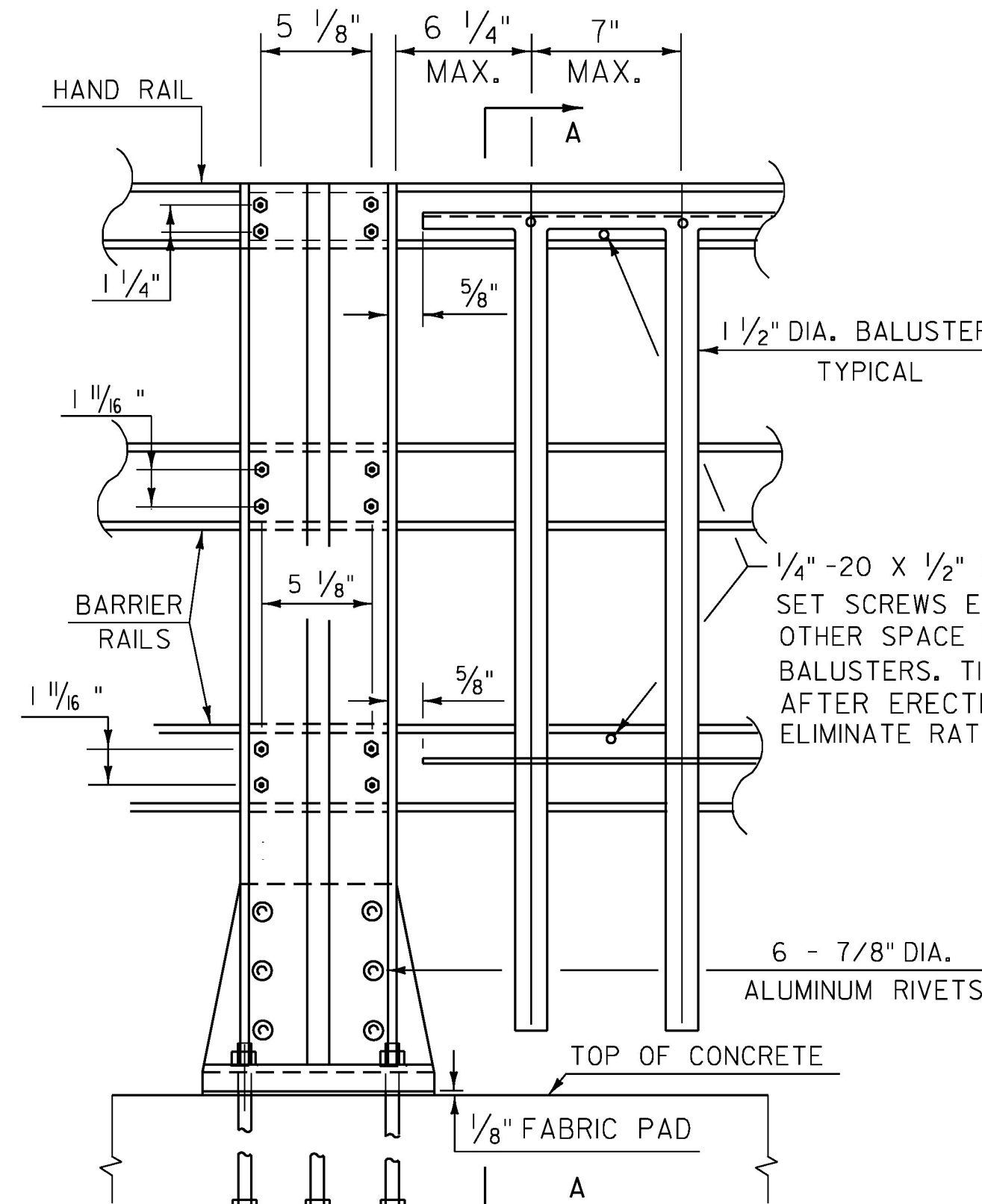
RAIL CONNECTION



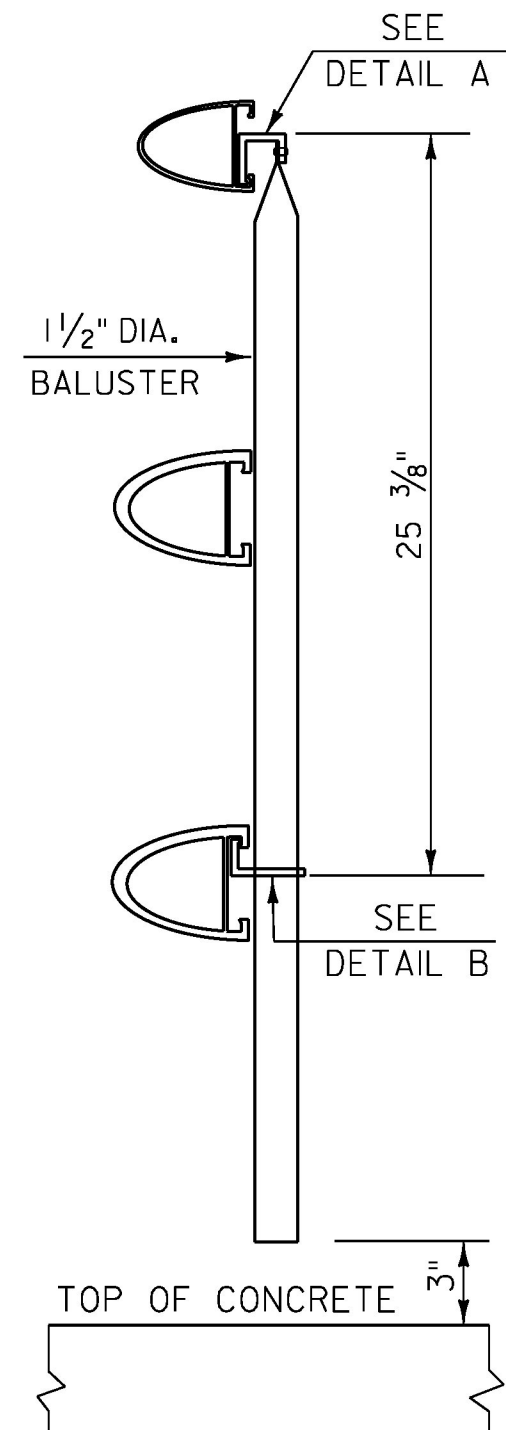
POST BASE BOLT HOLE DETAILS



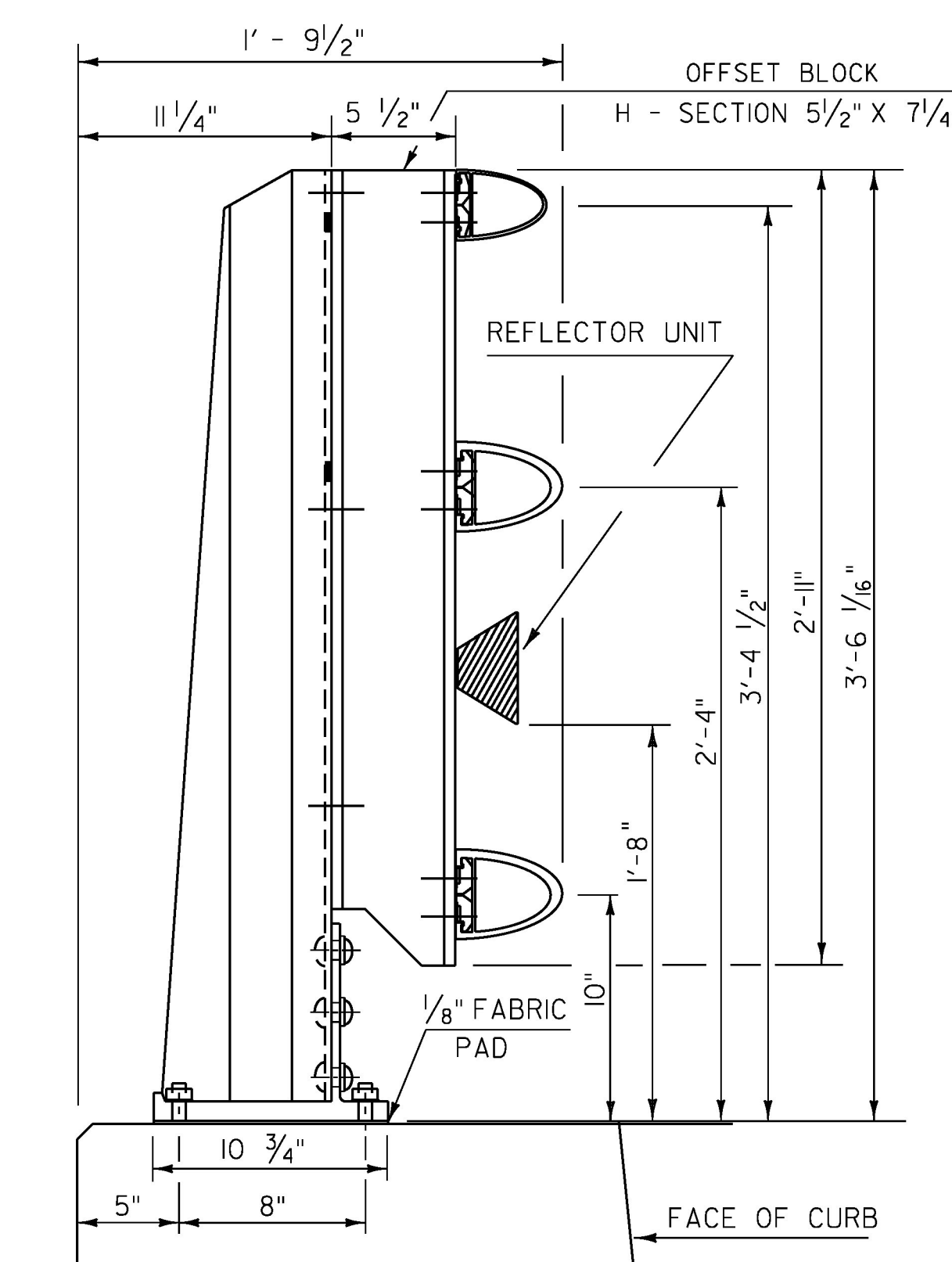
REFLECTOR DETAILS



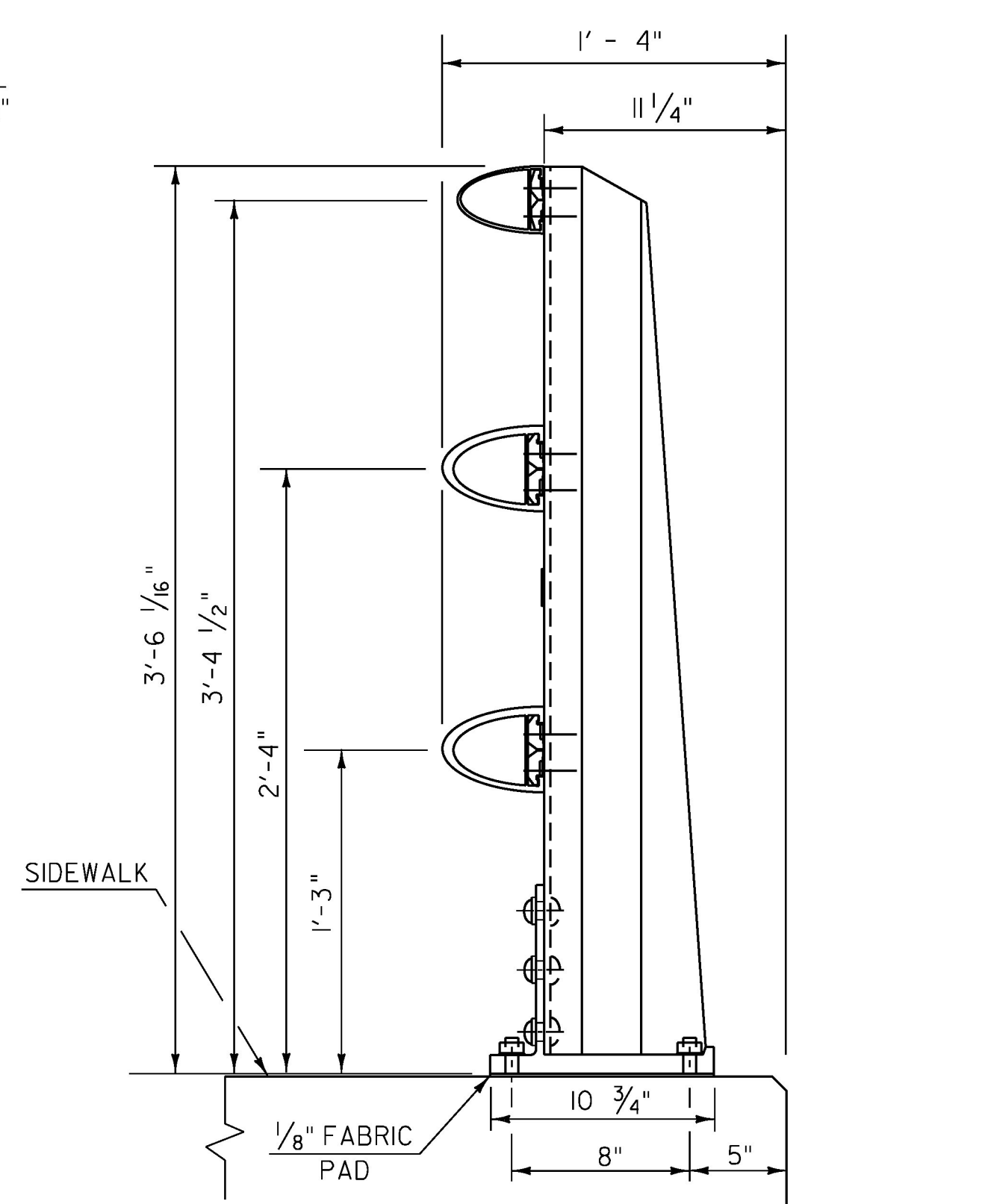
OUTSIDE ELEVATION OF THREE RAIL POST & SPINDLES



SECTION AA



SIDE ELEVATION OF THREE RAIL TO BE USED ON CURB SIDE



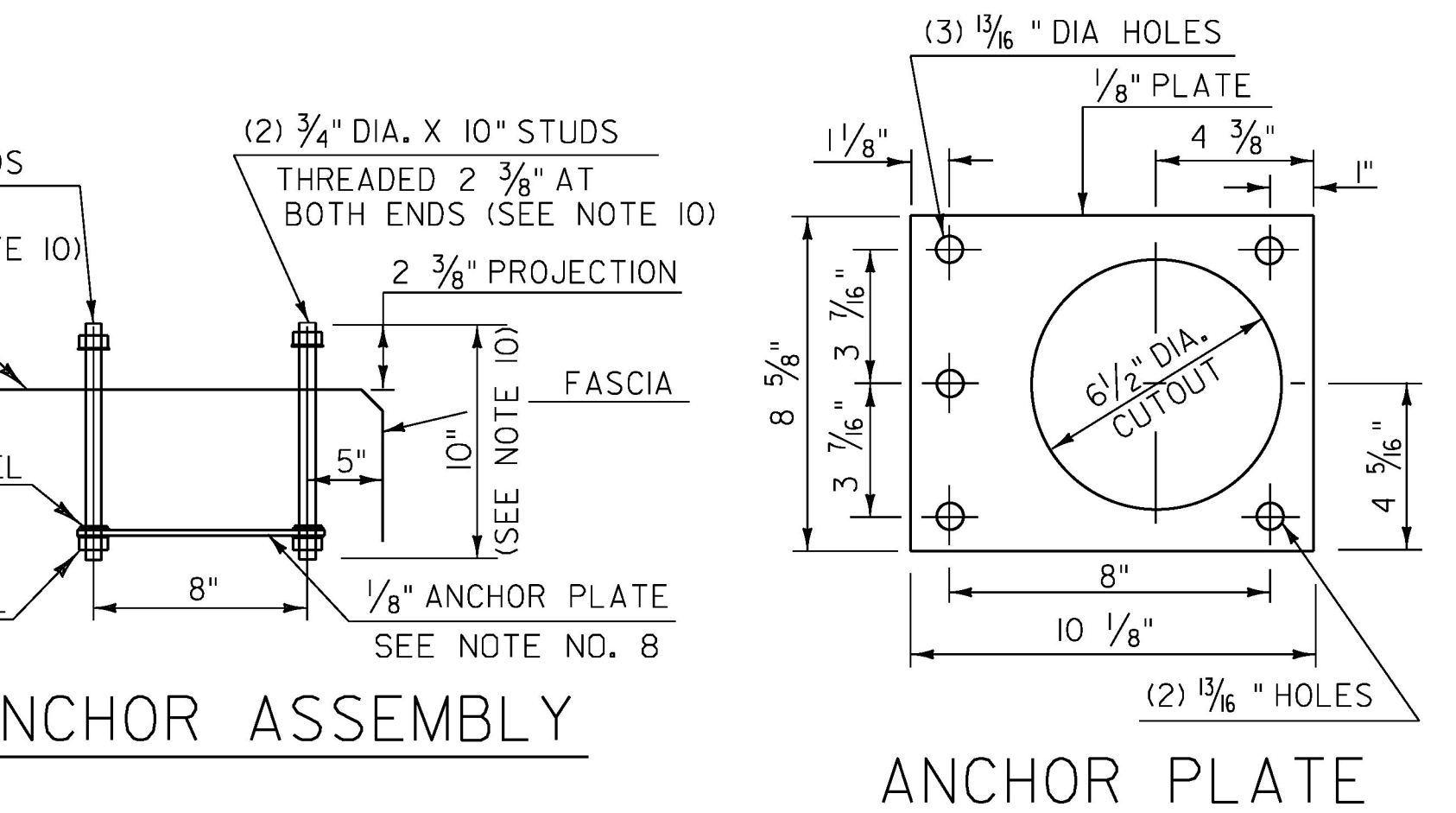
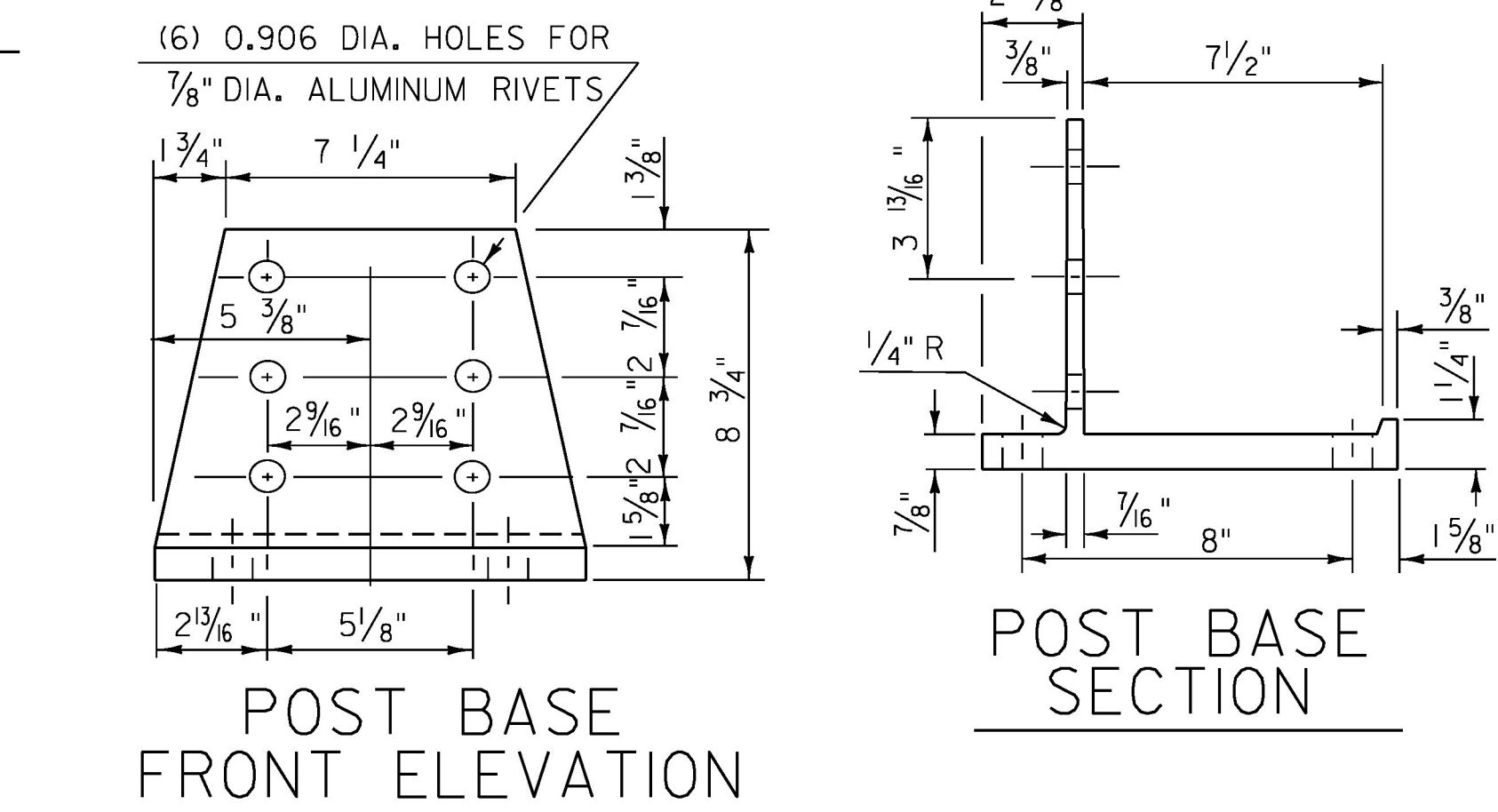
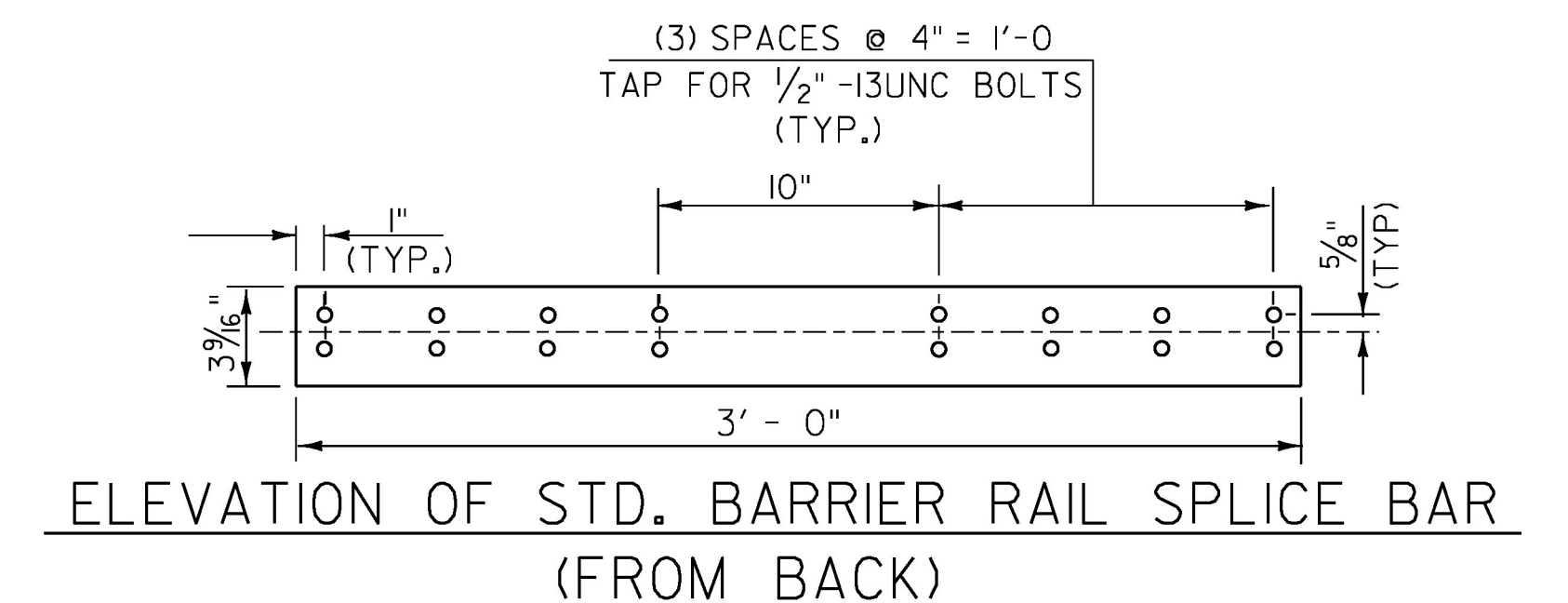
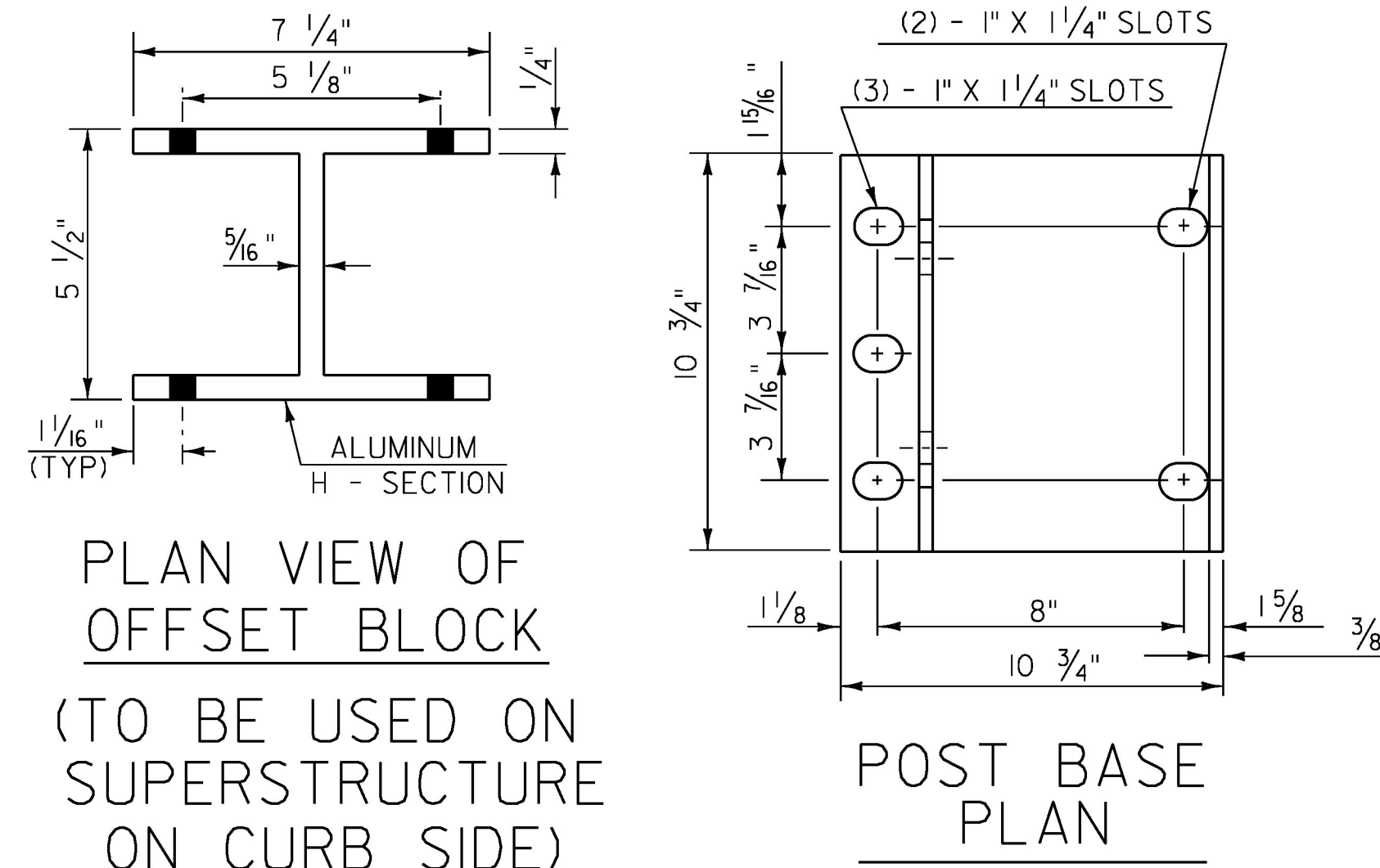
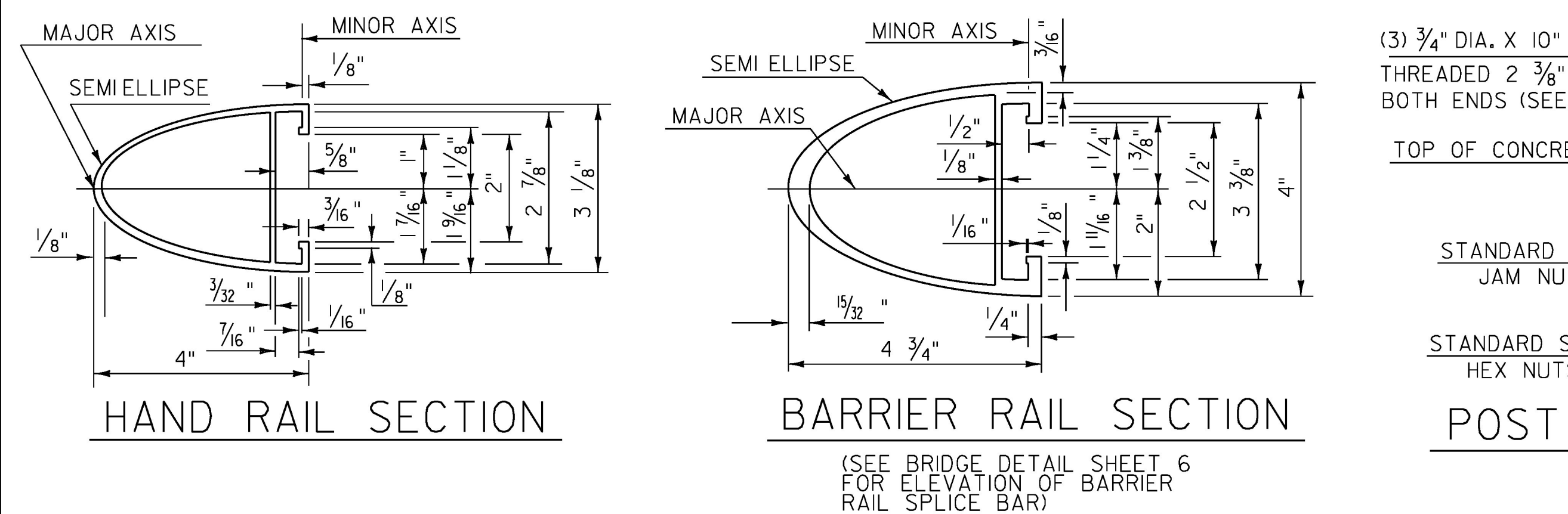
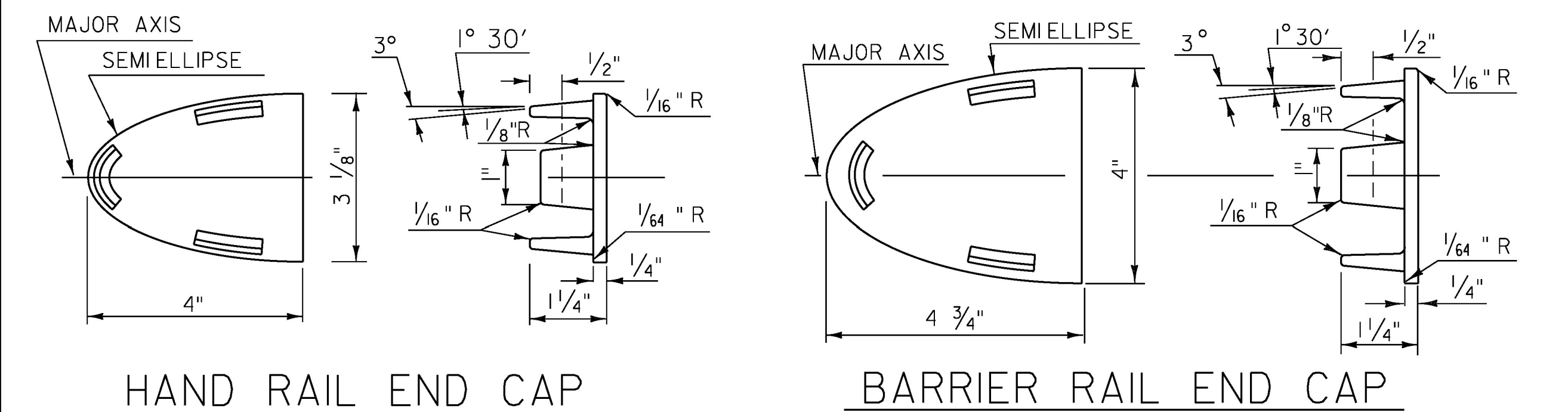
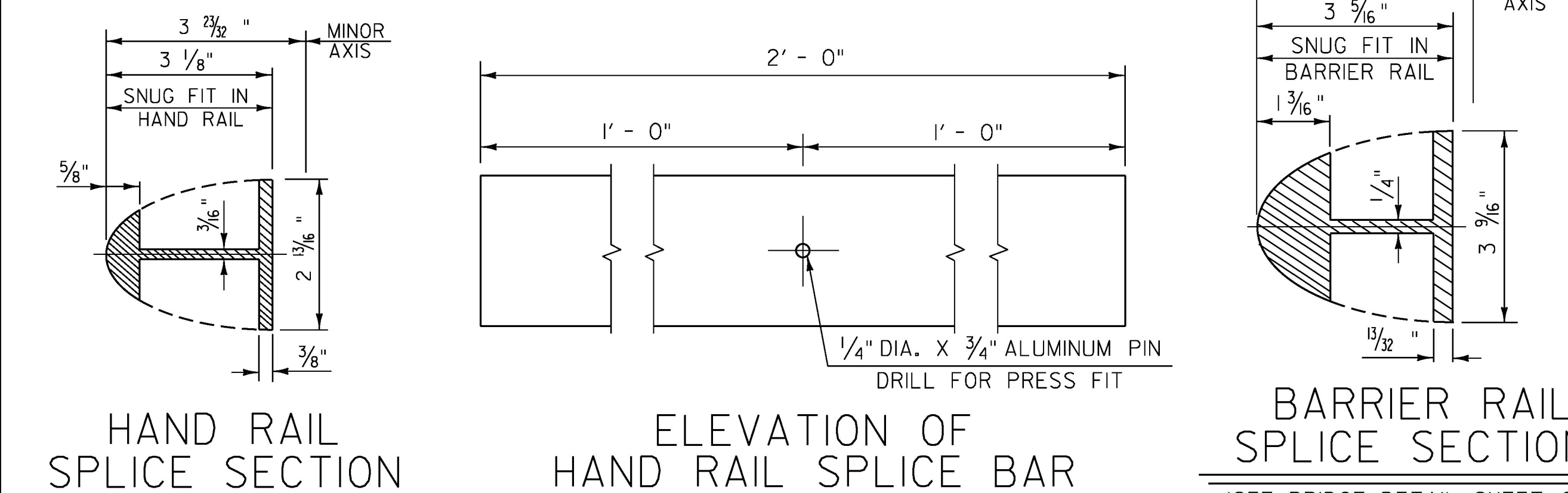
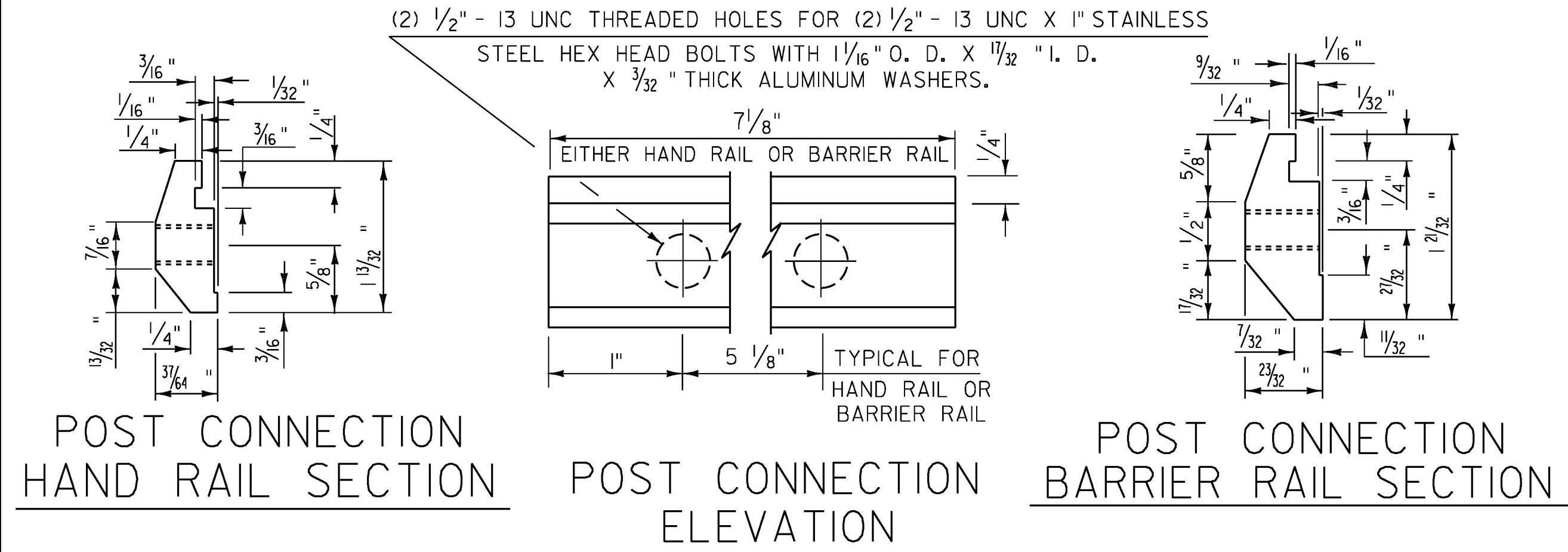
SIDE ELEVATION OF THREE RAIL TO BE USED ON SIDEWALK SIDE

RAIL POST DETAILS ON SUPERSTRUCTURE

DETAILS OF SPINDLES FOR ALUMINUM RAILING

PROJECT NAME: MONTPELIER-WATERBURY	
PROJECT NUMBER: IM SURF(59)	
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK
BRIDGE DETAIL SHEET 7	SHEET 25 OF 34





## NOTES

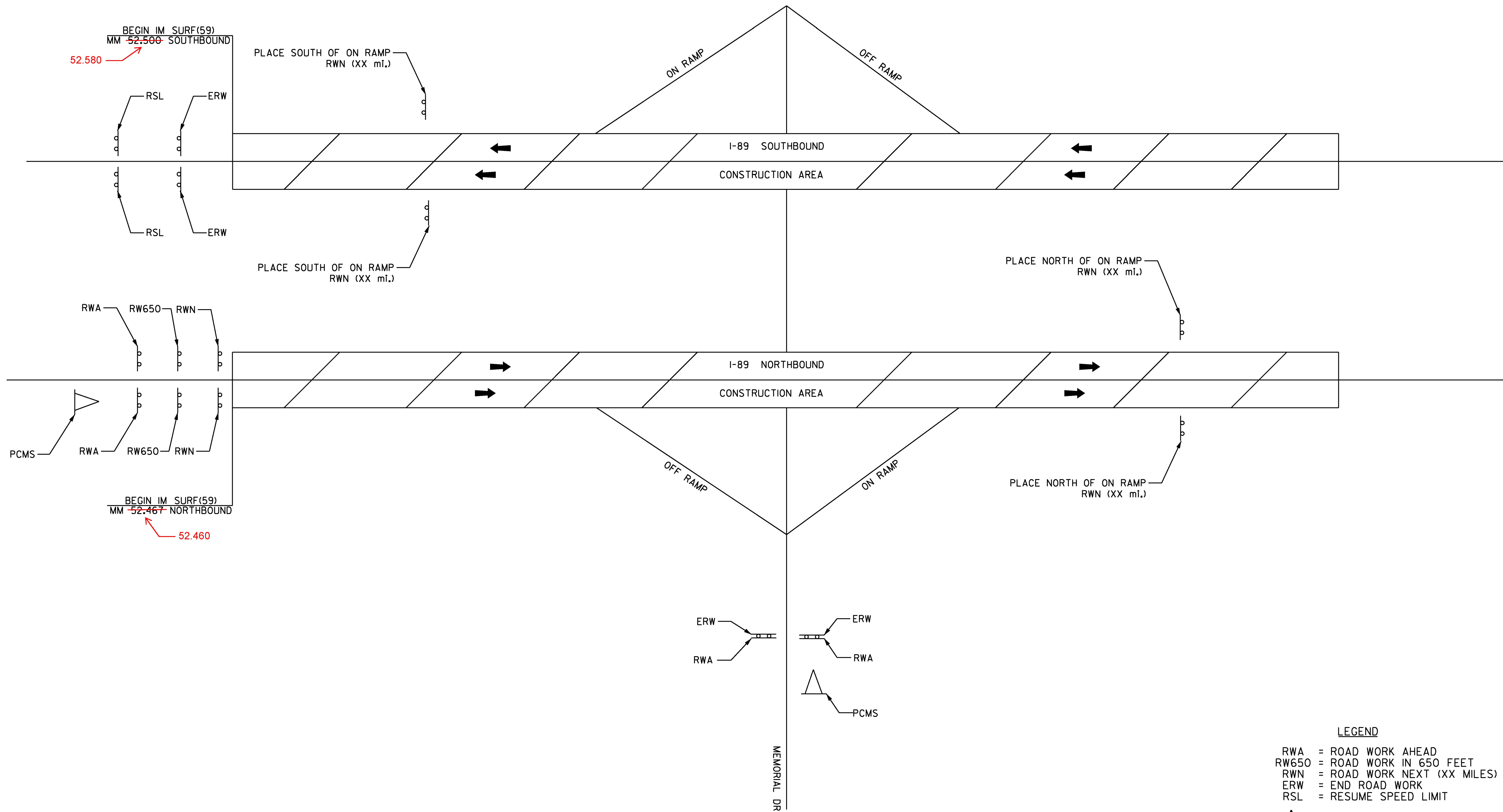
- ANCHOR BOLTS, WASHERS AND HEAVY HEX NUTS MAY BE ANY OF THE FOLLOWING:
  - ASTM A449 GALVANIZED, OR
  - AASHTO M164 (ASTM A325) GALVANIZED
  - BOLTS AND WASHERS OF STAINLESS STEEL ASTM A276, TYPE 304 (MINIMUM ULTIMATE STRENGTH OF 100,000 PSI) WITH STAINLESS STEEL NUTS OF ASTM A194, GRADE 8NA.
- ALUMINUM POSTS, POST BASES, SPLICE BARS, CONNECTION BARS, RAILS AND BALUSTER FRAMES SHALL CONFORM TO ASTM B221 ALLOY 6061-T6 OR ALLOY 6351-T5. MINIMUM ALLOWABLE STRESS  $F_y = 35,000$  PSI.
- ALUMINUM BALUSTER TUBES SHALL CONFORM TO ASTM B210 ALLOY 6061-T5 OR 6063-T5.
- ALUMINUM RAIL END CAPS SHALL CONFORM TO ASTM B26 ALLOY 356-T6.
- THE POST, RAIL, AND OFFSET BLOCK CONNECTION BOLTS SHALL BE EITHER ASTM A193 OR ASTM A320. EITHER ONE SHALL BE CLASS 1, B8 GRADE AISI 304 WITH AN ULTIMATE TENSILE STRENGTH OF 75,000 PSI. NUTS FOR EITHER OF THE ABOVE BOLTS SHALL BE ASTM A194, GRADE 8, STAINLESS STEEL WITH AN ULTIMATE TENSILE STRENGTH OF 75,000 PSI.
- SET SCREWS FOR ATTACHING BALUSTERS TO RAILING SHALL BE ASTM F880, TYPE 303 MATERIAL.
- RIVETS SHALL BE COLD DRIVEN HIGH BUTTON HEAD "CONE POINT", CONFORMING TO ASTM B316 ALLOY 6061-T6.
- THE ANCHOR PLATE FOR THE POST ANCHOR ASSEMBLY SHALL BE ASTM A36 STRUCTURAL STEEL.
- WELDING SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 506.10 USING THE GMAW-INERT GAS PROCESS AND AWS ER 5356 ELECTRODE WIRE.
- UNLESS OTHERWISE SPECIFIED, ANCHOR BOLTS SHALL BE CAST INTO THE CONCRETE AS DETAILED.
- WHENEVER FEASIBLE BARRIER RAIL AND HAND RAIL SECTIONS, SHALL BE FULL LENGTH SECTIONS (40' ±) AND WHEN POSSIBLE SHALL BE ATTACHED TO THREE POSTS. RAILS SHALL BE SPLICED AT EACH DECK JOINT AND INTERMITTENTLY AS REQUIRED. SPLICES SHALL OCCUR WITHIN THE SAME PANEL.
- ENDS OF RAILS SHALL BE CUT SQUARE AND GROUND FREE OF BURRS OR RAGGED EDGES. EXPOSED ENDS SHALL BE CAPPED.
- THE CONCRETE CONTACT SURFACE AT THE POST BASE SHALL BE BUSH HAMMERED AND/OR SHIMMED AS REQUIRED FOR PROPER POST ALIGNMENT. POST HEIGHT ADJUSTMENTS LESS THAN 1/4" SHALL BE WITH 1/16" AND 1/8" SHIMS. CORRECTIONS EXCEEDING 1/4" SHALL BE WITH EPOXY MORTAR CONFORMING WITH SECTION 530. FABRIC BEARING PADS AND ANY REQUIRED SHIMS OR EPOXY MORTAR ARE SUBSIDIARY TO THE UNIT PRICE BID FOR THE RAILING.
- SHIMS AND 1/8" FABRIC BEARING PADS SHALL BE 10 3/4" SQUARE WITH SLOTTED HOLES SIZED AND LOCATED THE SAME AS THE POST BASE DETAIL. FABRIC BEARING PADS SHALL CONFORM TO SUBSECTION 731.01 OR 731.02, SHIM MATERIAL SHALL BE ASTM B 209 ALLOY 100-0.
- EXTRUDED SECTIONS ARE DETAILED TO COMPLY WITH CURRENT AASHTO-AGC-ARTBA STANDARDS. MINOR VARIATIONS OF THE DETAILS SHOWN MAY BE CONSIDERED PROVIDING THEY DO NOT REDUCE THE STRENGTH CAPACITY OF THE RAIL SYSTEM.
- ALUMINUM WASHERS SHALL BE ASTM B209 ALLOY ACLAD 2024-T4.

PROJECT NAME: MONTPELIER-WATERBURY  
PROJECT NUMBER: IM SURF(59)

FILE NAME: pl6v098 Montpelier-Water.dgn  
PROJECT LEADER: M. BOGACZYK  
DESIGNED BY: N. PAPPAS  
BRIDGE DETAIL SHEET 8

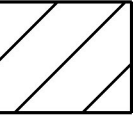
PLOT DATE: 20-MAR-2018  
DRAWN BY: N. PAPPAS  
CHECKED BY: M. BOGACZYK  
SHEET 26 OF 34





I-89 NB & SB	ROAD WORK AHEAD	END ROAD WORK	ROAD WORK 500'	ROAD WORK NEXT XX MILES	PCMS
BEGINNING OF PROJECT	2	2	4	6	1
EXIT 8 INTERCHANGE	2	2			1
TOTAL	4	4	4	6	2

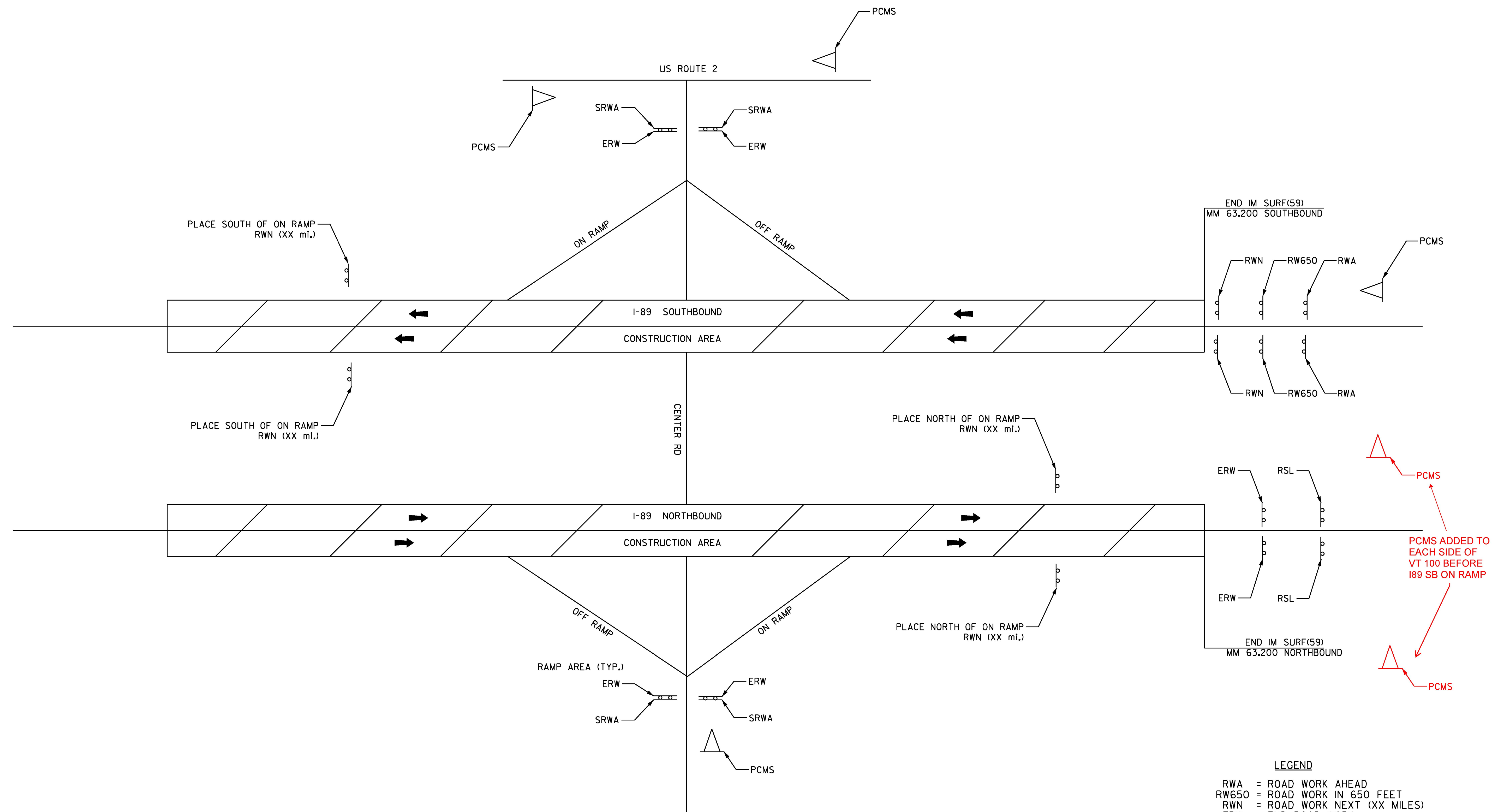
EXIT RAMP 8

- LEGEND
- RWA = ROAD WORK AHEAD
  - RW650 = ROAD WORK IN 650 FEET
  - RWN = ROAD WORK NEXT (XX MILES)
  - ERW = END ROAD WORK
  - RSL = RESUME SPEED LIMIT
  -  = PORTABLE CHANGEABLE MESSAGE SIGN
  -  = WORK AREA
  -  = DIRECTION OF TRAFFIC FLOW

PROJECT NAME:	MONTPELIER-WATERBURY
PROJECT NUMBER:	IM SURF(59)
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK
CONSTRUCTION APPROACH SIGNING SHEET 1 SHEET 27 OF 34	

NOT TO SCALE





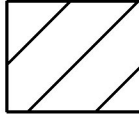
**EXIT RAMP 9**

I-89 NB & SB	ROAD WORK AHEAD	END ROAD WORK	ROAD WORK 500'	ROAD WORK NEXT XX MILES	PCMS
END OF PROJECT	2	2	6	6	1
EXIT 9 INTERCHANGE	4	4			3
TOTAL	6	6	6	6	<del>4</del> 6

VT ROUTE 100

2

NOT TO SCALE

- LEGEND**
- RWA = ROAD WORK AHEAD
  - RW650 = ROAD WORK IN 650 FEET
  - RWN = ROAD WORK NEXT (XX MILES)
  - ERW = END ROAD WORK
  - RSL = RESUME SPEED LIMIT
  -  = PORTABLE CHANGEABLE MESSAGE SIGN
  -  = WORK AREA
  -  = DIRECTION OF TRAFFIC FLOW

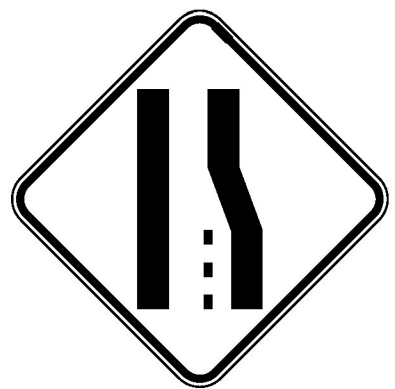
PROJECT NAME:	MONTPELIER-WATERBURY
PROJECT NUMBER:	IM SURF(59)
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK
CONSTRUCTION APPROACH SIGNING SHEET 2 SHEET 28 OF 34	



1. THE CONTRACTOR SHALL SUBMIT A SITE SPECIFIC TRAFFIC CONTROL PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO THE START OF CONSTRUCTION. THE COST OF PREPARING THIS PLAN (AND MAKING CHANGES IF NECESSARY) SHALL NOT BE PAID SEPARATELY BUT WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 64I.10, "TRAFFIC CONTROL".
2. THE 2009 MUTCD, WITH REVISIONS SHALL BE THE STANDARD FOR ALL TRAFFIC CONTROL DEVICES. EXISTING SIGNS, SIGNALS AND MARKINGS SHALL BE VALID UNTIL SUCH TIME AS THEY ARE REPLACED OR RECONSTRUCTED. WHEN NEW TRAFFIC CONTROL DEVICES ARE ERECTED OR PLACED OR EXISTING TRAFFIC CONTROL DEVICES ARE REPLACED OR REPAIRED THE EQUIPMENT, DESIGN, METHOD OF INSTALLATION, PLACEMENT OR REPAIR SHALL CONFORM WITH THE MUTCD.
3. ADDITIONAL RAMP SIGNING MAY BE REQUIRED AS DIRECTED BY THE ENGINEER.
4. THE BID PRICE FOR "TRAFFIC CONTROL", ITEM 64I.10, SHALL INCLUDE ALL APPROACH AND ON-PROJECT CONSTRUCTION SIGNING, PORTABLE ARROW BOARDS, BARRIERS, BARRELS, CONES, BARRICADES, TEMPORARY REGULATORY AND WARNING SIGNS, AND POSTS AS DETAILED IN VAOT STANDARDS. ALL ADJUSTING, RELOCATING, AND REMOVING OF THESE DEVICES AS DIRECTED BY THE ENGINEER SHALL ALSO BE INCLUDED. THE FOLLOWING ITEMS WILL BE PAID FOR SEPARATELY:
- 630.10 AND 630.15 - UNIFORMED TRAFFIC OFFICERS AND FLAGGERS
  - 646.622 TEMPORARY 6 INCH WHITE LINE, PAINT
  - 646.632 TEMPORARY 6 INCH YELLOW LINE, PAINT
  - 646.662 TEMPORARY 12 INCH WHITE LINE, PAINT
  - 646.682 TEMPORARY 24 INCH STOP BAR, PAINT
  - 646.692 TEMPORARY LETTER OR SYMBOL, PAINT
  - 646.76 LINE STRIPING TARGETS
5. PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE PROVIDED FOR USE ALONG THIS PROJECT. THE PLACEMENT OF THESE UNITS AS WELL AS THE MESSAGE WILL BE APPROVED BY THE ENGINEER. THESE SIGNS WILL BE PAID FOR UNDER ITEM 64I.15, "PORTABLE CHANGEABLE MESSAGE SIGN".
- PCMS SHOULD NOT REPLACE ANY OF THE SIGNING DETAILED IN THE MUTCD AND SHOULD NOT BE USED IF STANDARD TRAFFIC CONTROL DEVICES ADEQUATELY PROVIDE THE INFORMATION THE MOTORISTS NEED TO TRAVEL SAFELY.
- THE PCMS SHALL CONSIST OF EITHER ONE OR TWO PHASES. TYPICALLY, A PHASE SHALL CONSIST OF UP TO THREE LINES OF EIGHT CHARACTERS PER LINE. THE PCMS SHOULD BE USED AS A SUPPLEMENT AND NOT AS A SUBSTITUTE FOR CONVENTIONAL SIGNS AND PAVEMENT MARKINGS.
- THE PCMS SHOULD COMMUNICATE WHAT INFORMATION MOTORISTS NEED TO KNOW. UNNECESSARY INFORMATION SHOULD BE AVOIDED. MESSAGES SHOULD BE UPDATED PERIODICALLY TO DESCRIBE THE WORK ACTIVITY OCCURRING SO THAT THE PCMS CONTINUES TO COMMAND THE ATTENTION OF MOTORISTS.
6. THE CONTRACTOR SHALL INCLUDE A CONSTRUCTION SIGN APPROACH PACKAGE FOR EXPECTED LANE CLOSURES AND WORK ZONE SPEED REDUCTIONS IN COMPLIANCE WITH VAOT STANDARDS. PAYMENT FOR PROVIDING THIS PACKAGE SHALL BE INCIDENTAL TO ITEM 64I.10, "TRAFFIC CONTROL". ADD G20-5aP "WORK ZONE" PLAQUE AND R2-6aP "FINES DOUBLED" PLAQUE TO SPEED LIMIT SIGNS (SEE FIG. 6F-3 OF MUTCD). OMIT VR-355 "FINES DOUBLED FOR SPEEDING IN WORK ZONE" SIGN. IF LANE CLOSURES ARE USED THEY SHOULD NOT EXCEED THREE MILES AT ANY GIVEN PERIOD OF TIME. IF LANE CLOSURES REDUCE THE TRAVEL LANE WIDTH TO LESS THAN 12 FEET DMV MUST BE NOTIFIED TO DETOUR WIDE LOAD PERMITTED VEHICLES.
7. NO CONSTRUCTION SIGNS SHALL BE INSTALLED AS TO INTERFERE OR OBSTRUCT THE VIEW OF EXISTING TRAFFIC CONTROL DEVICES, STOPPING SIGHT DISTANCE, AND CORNER SIGHT DISTANCE FROM DRIVES AND INTERSECTING HIGHWAYS.

8. REFER TO VT STATE STANDARDS, THE SPECIAL PROVISIONS, SHSM HANDBOOK AND THE MUTCD FOR TEMPORARY TRAFFIC CONTROL SIGN DIMENSIONS AND COLORS.

9. SIGN W4-2 MAY BE REPLACED WITH W9-2:



W4-2



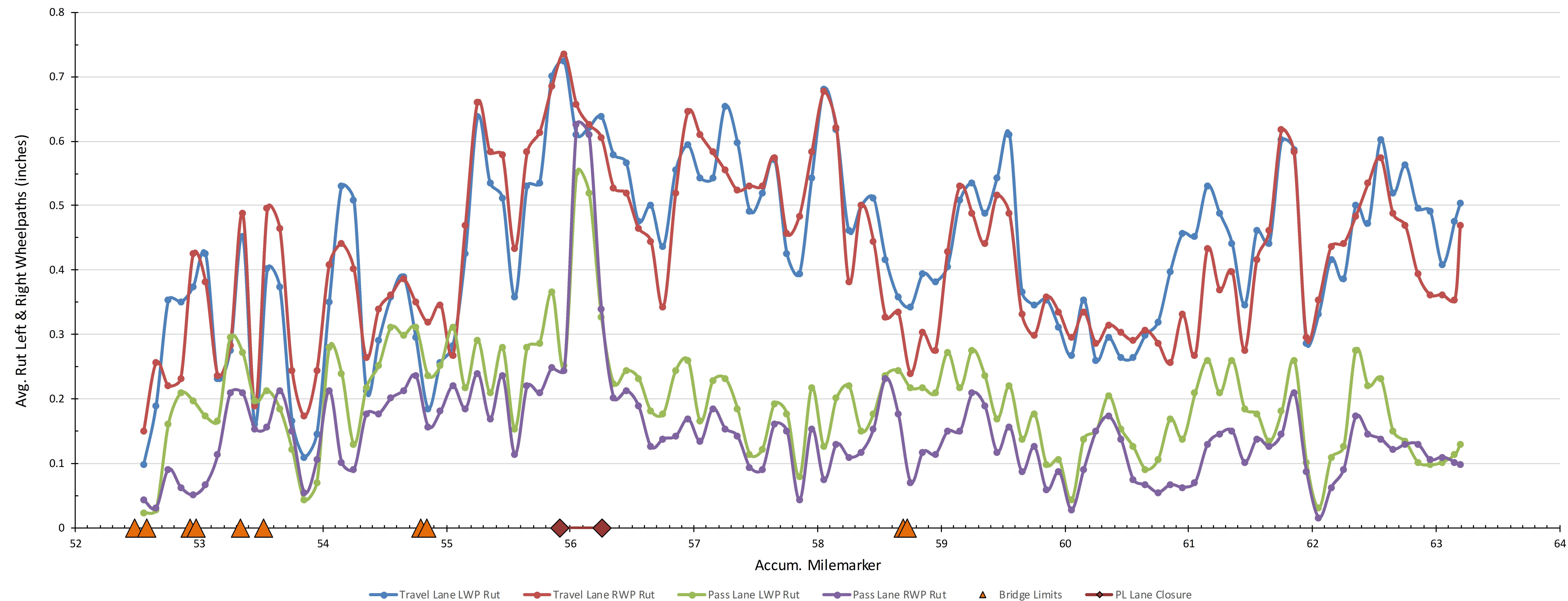
W9-2

10. IN ADVANCE OF ANY PROPOSED INTERCHANGE RAMP CLOSURES THE CONTRACTOR SHALL SUBMIT A PLAN THAT WILL DEPICT HOW ADVANCED WARNING TO THE TRAVELING PUBLIC WILL BE ACCOMMODATED DURING THE CLOSURE. ADVANCED WARNING SHALL BE DEFINED AS PROVIDING ADVANCED WARNING SIGNS, BOTH STATIC AND PCMS, THAT PROVIDE INFORMATION FOR MOTORISTS TO SAFELY UTILIZE THE REGIONALLY ACCEPTABLE OPPORTUNITIES FOR SEEKING AN ALTERNATE ROUTE PRIOR TO APPROACHING THE INTERCHANGE INVOLVING RAMP CLOSURES. THE PLAN WILL NEED TO BE SUBMITTED FOR REVIEW AND COMMENT BY THE PROJECT MANAGER A MINIMUM OF 14 CALENDAR DAYS AHEAD OF ANY PLANNED CLOSURE. APPROVAL OF THE PLAN SHALL BE IN PLACE 72 HOURS BEFORE WORK MAY BEGIN.
- INSTALLATION OF THE PCMS NETWORK SHALL BE DONE TWO WEEKS BEFORE WORK MAY BEGIN. ELEMENTS OF THE PLAN SHALL INCLUDE BUT WILL NOT BE LIMITED TO THE LOCATION OF PCMS AND ASSOCIATED MESSAGES, ANY OTHER NECESSARY SIGNAGE, LOCATIONS FOR DEPLOYMENT OF UNIFORMED TRAFFIC OFFICERS AND FLAGGERS, AND SEQUENCING AND DURATION OF CLOSURE FOR EACH RAMP WITHIN THE RESPECTIVE INTERCHANGE. NO MORE THAN ONE INTERCHANGE PER WORK PERIOD MAY HAVE RAMP CLOSURES. THE COST OF PREPARING THIS PLAN (AND MAKING CHANGES IF NECESSARY) SHALL NOT BE PAID SEPARATELY BUT WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 64I.10, TRAFFIC CONTROL.
11. THE CONTRACTOR SHALL PROVIDE ACCESS THROUGH THE WORK ZONE FOR EMERGENCY VEHICLES OR COORDINATE EMERGENCY ROUTES.

PROJECT NAME:	MONTPELIER-WATERBURY		
PROJECT NUMBER:	IM SURF(59)		
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018		
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS		
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK		
CONSTRUCTION APPROACH SIGNING NOTES	SHEET 29 OF 34		



I-89 NB Montpelier-Waterbury IM SURF(59) Preconstruction Ruts  
Profiled 5/23/2017



FOR INFORMATIONAL PURPOSES ONLY

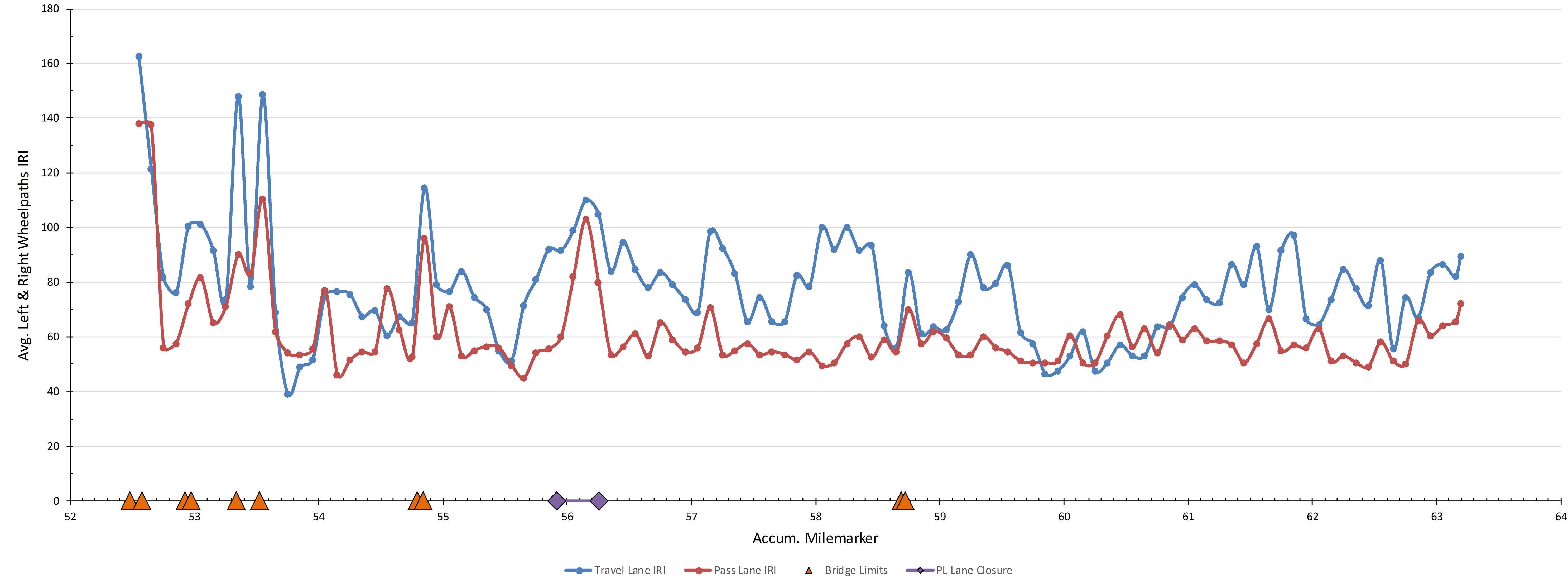
PROJECT NAME:	MONTPELIER-WATERBURY		
PROJECT NUMBER:	IM SURF(59)		
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018		
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS		
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK		
NB ROUGHNESS DATA INFORMATION SHEET	SHEET 30 OF 34		



I-89 NB Montpelier-Waterbury IM SURF(59) Preconstruction IRI

Profiled 5/23/2017

Travel Lane Avg. IRI =78.0 Pass Lane Avg. IRI = 61.4

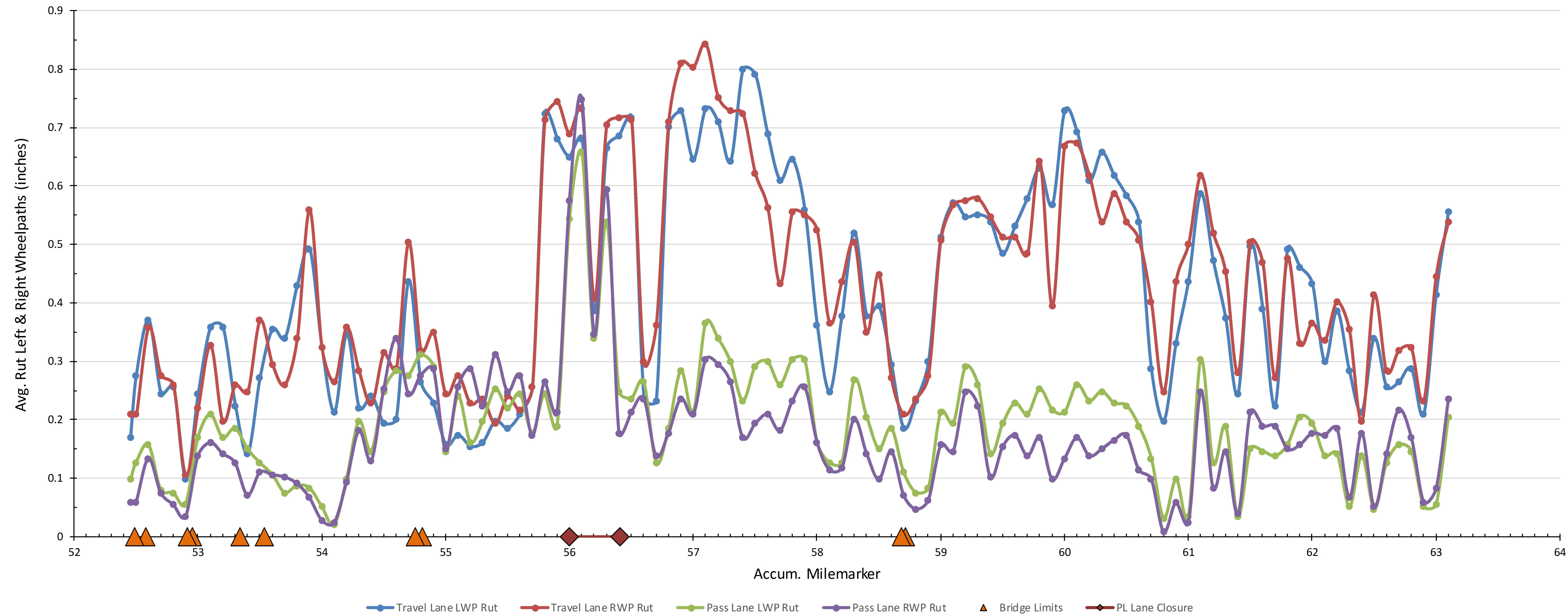


FOR INFORMATIONAL PURPOSES ONLY

PROJECT NAME:	MONTPELIER-WATERBURY		
PROJECT NUMBER:	IM SURF(59)		
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE:	20-MAR-2018	
PROJECT LEADER: M. BOGACZYK	DRAWN BY:	N. PAPPAS	
DESIGNED BY: N. PAPPAS	CHECKED BY:	M. BOGACZYK	
NB RUTTING DATA INFORMATION SHEET	SHEET	31	OF 34



I-89 SB Montpelier-Waterbury IM SURF(59) Preconstruction Ruts  
Profiled 5/23/2017



FOR INFORMATIONAL PURPOSES ONLY

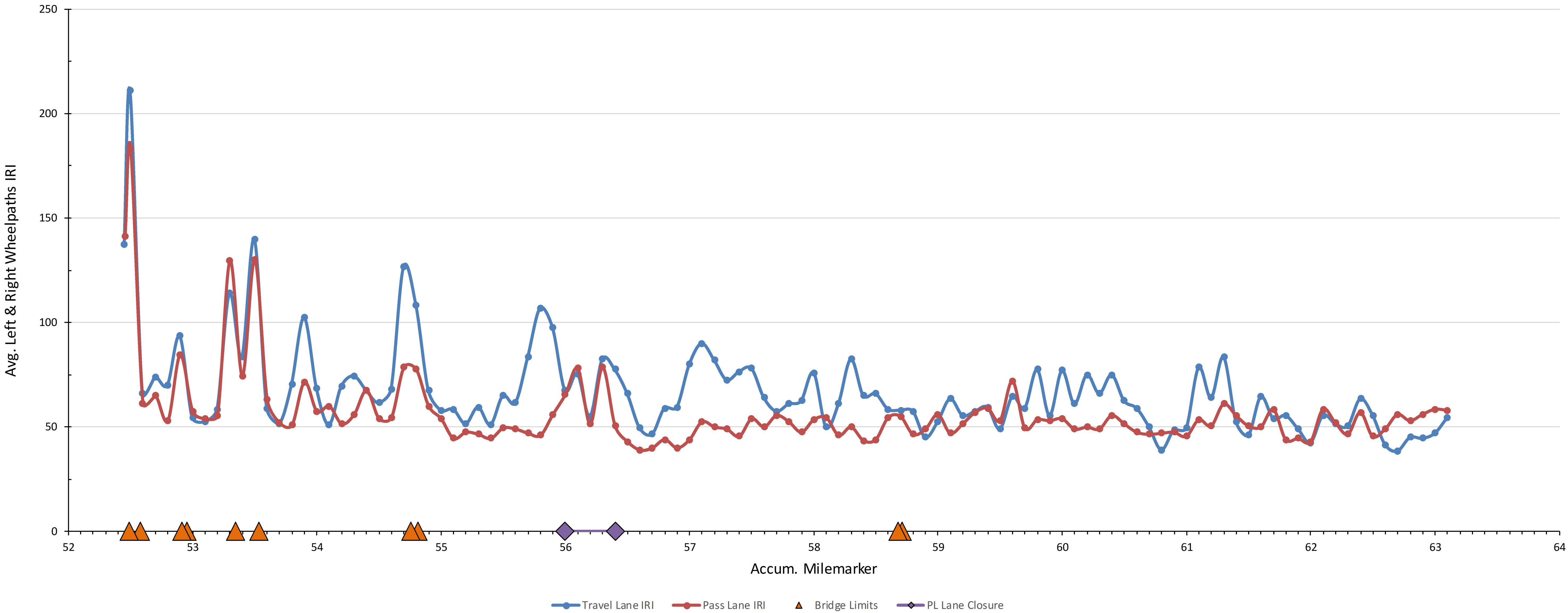
PROJECT NAME:	MONTPELIER-WATERBURY		
PROJECT NUMBER:	IM SURF(59)		
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018		
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS		
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK		
SB ROUGHNESS DATA INFORMATION SHEET	SHEET 32	OF	34



I-89 SB Montpelier-Waterbury IM SURF(59) Preconstruction IRI

Profiled 5/23/2017

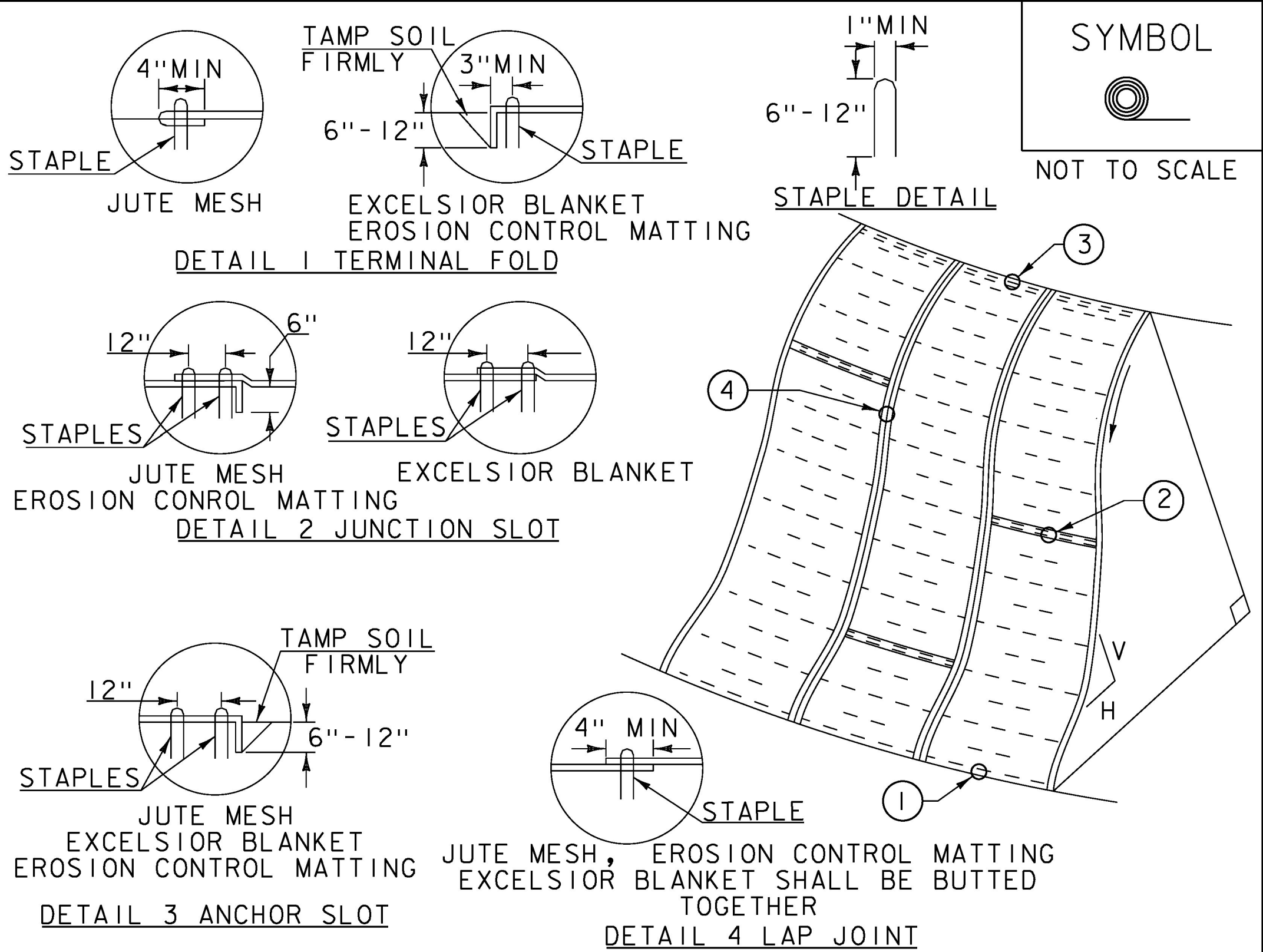
Travel Lane Avg. IRI = 67.3 Pass Lane Avg. IRI = 57.0



FOR INFORMATIONAL PURPOSES ONLY

PROJECT NAME:	MONTPELIER-WATERBURY		
PROJECT NUMBER:	IM SURF(59)		
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018		
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS		
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK		
SB RUTTING DATA INFORMATION SHEET	SHEET 33 OF 34		





CONSTRUCTION SPECIFICATIONS

1. APPLY TO SLOPES GREATER THAN 3H: 1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION	ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE
NOTES: REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE. THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20)	
REVISIONS APRIL 16, 2007 JMF JANUARY 13, 2009 WHF	

VAOT LOW GROW/FINE FESCUE MIX						
	LBS/AC					
WEIGHT	BROADCAST	HYDROSEED	NAME	LATIN NAME	GERM	PURITY
38%	57	95	CREEPING RED FESCUE	FESTUCA RUBRA VAR. RUBRA	90%	98%
29%	43.5	72.5	HARD FESCUE	FESTUCA LONGIFOLIA	85%	95%
15%	22.5	37.5	CHEWINGS FESCUE	FESTUCA RUBRA VAR. COMMUTATA	87%	95%
15%	22.5	37.5	ANNUAL RYEGRASS	LOLIUM MULTIFLORUM	90%	95%
3%	4.5	7.5	INERTS			
100%	150	250				

VAOT RURAL AREA MIX						
	LBS/AC					
WEIGHT	BROADCAST	HYDROSEED	NAME	LATIN NAME	GERM	PURITY
37.5%	22.5	45	CREEPING RED FESCUE	FESTUCA RUBRA VAR. RUBRA	85%	98%
37.5%	22.5	45	TALL FESCUE	FESTUCA ARUNDINACEA	90%	95%
5.0%	3	6	RED TOP	AGROSTIS GIGANTEA	90%	95%
15.0%	9	18	WHITE FIELD CLOVER	TRIFOLIUM REPENS	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	LOLIUM MULTIFLORUM	85%	95%
100%	60	120				

GENERAL AMENDMENT GUIDANCE		
FERTILIZER	LIME	
10/20/10	AG LIME	PELLITIZED
500 LBS/AC	2 TONS/AC	1 TONS/AC

CONSTRUCTION GUIDANCE

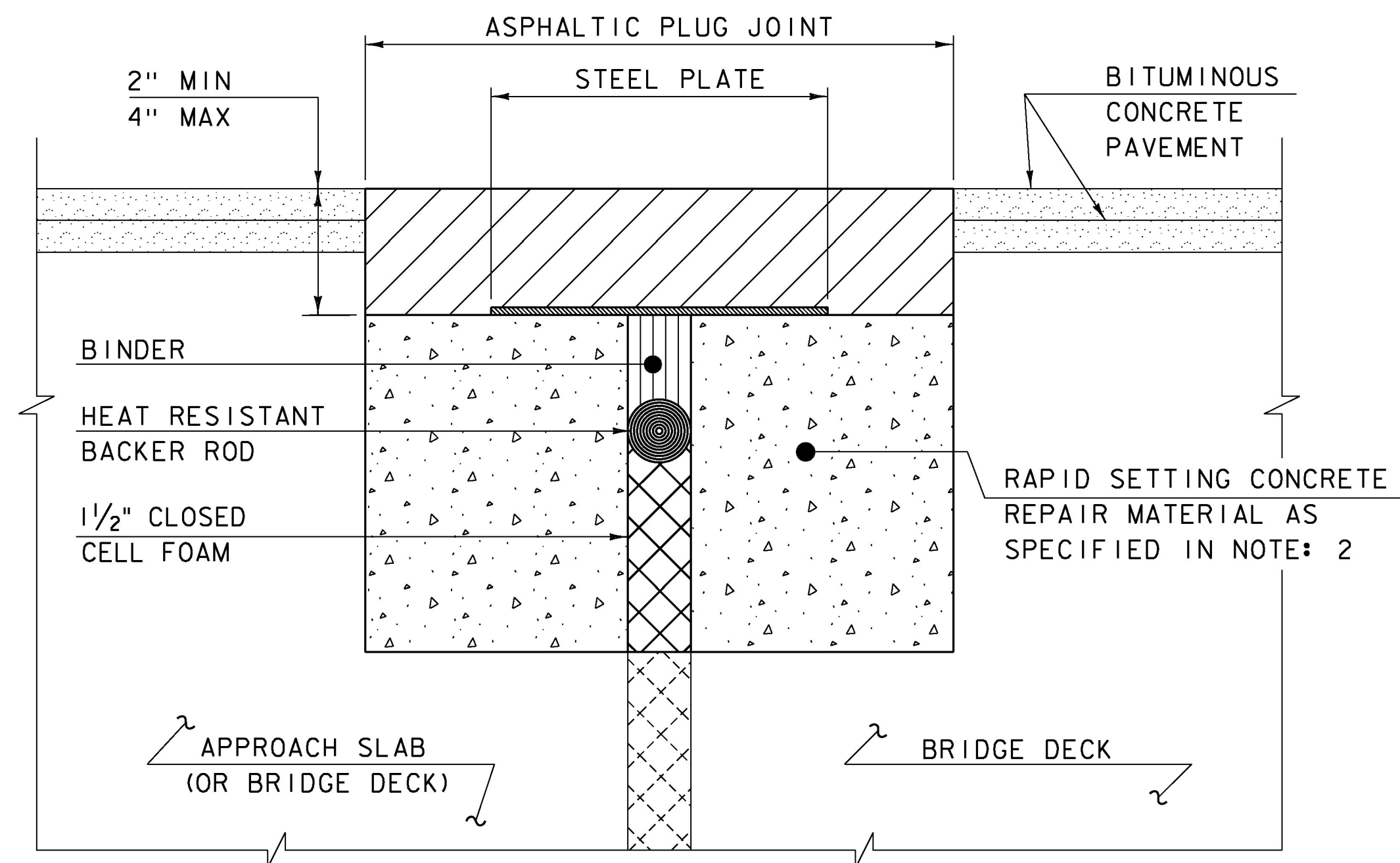
1. SEED MIX: THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER ON WHICH SEED MIX TO USE.
2. SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER.
5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
6. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED PROPOSED FOR USE WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED.
7. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES	TURF ESTABLISHMENT
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651 FOR SEED (PAY ITEM 651.15)	
REVISIONS JANUARY 12, 2015 WHF	

PROJECT NAME:	MONTPELIER-WATERBURY
PROJECT NUMBER:	IM SURF(59)
FILE NAME: pl6v098 Montpelier-Water.dgn	PLOT DATE: 20-MAR-2018
PROJECT LEADER: M. BOGACZYK	DRAWN BY: N. PAPPAS
DESIGNED BY: N. PAPPAS	CHECKED BY: M. BOGACZYK
EROSION CONTROL DETAIL SHEET	SHEET 34 OF 34

NOT TO SCALE

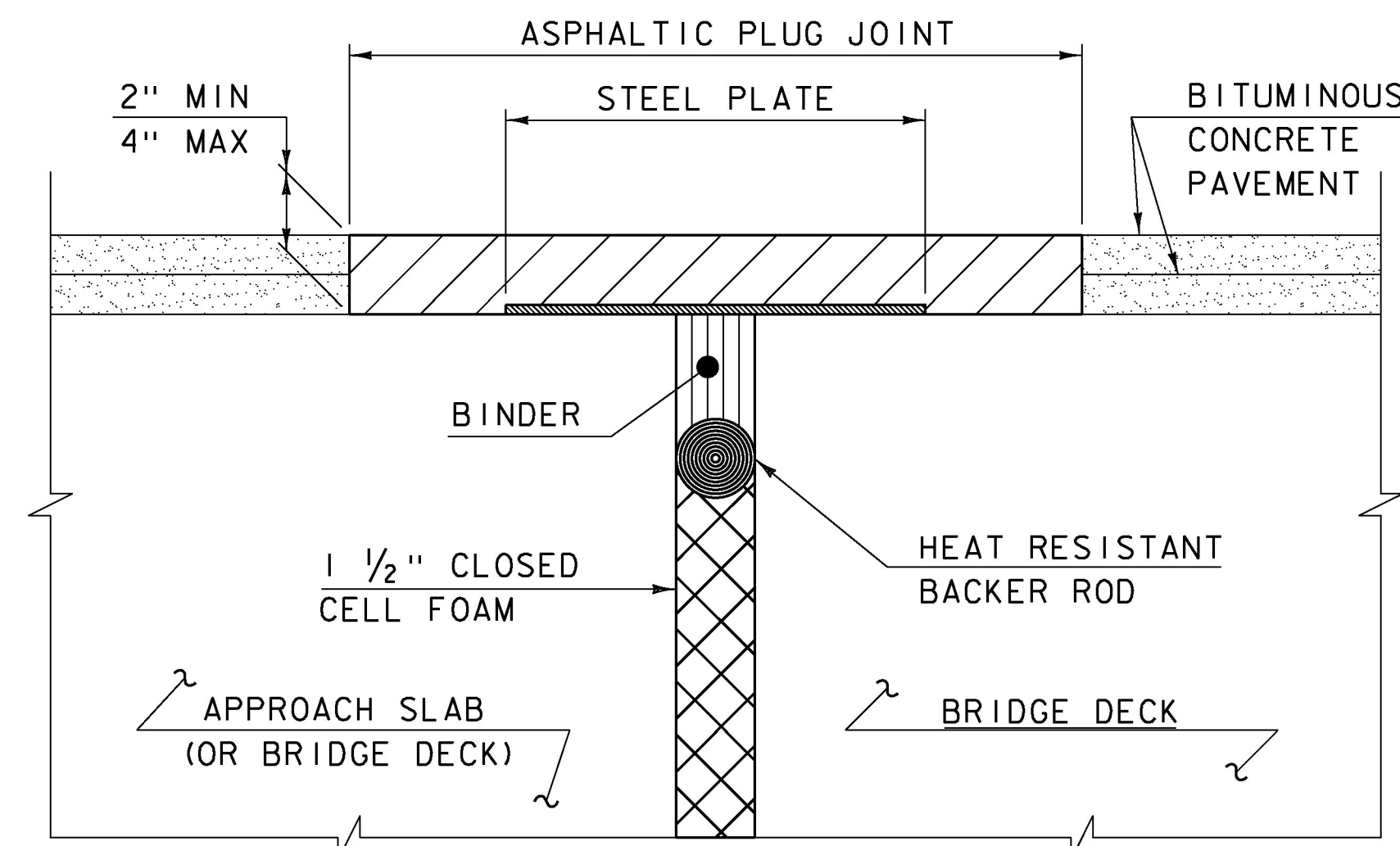




ASPHALTIC PLUG JOINT DETAIL - REHAB

**NOTES:**

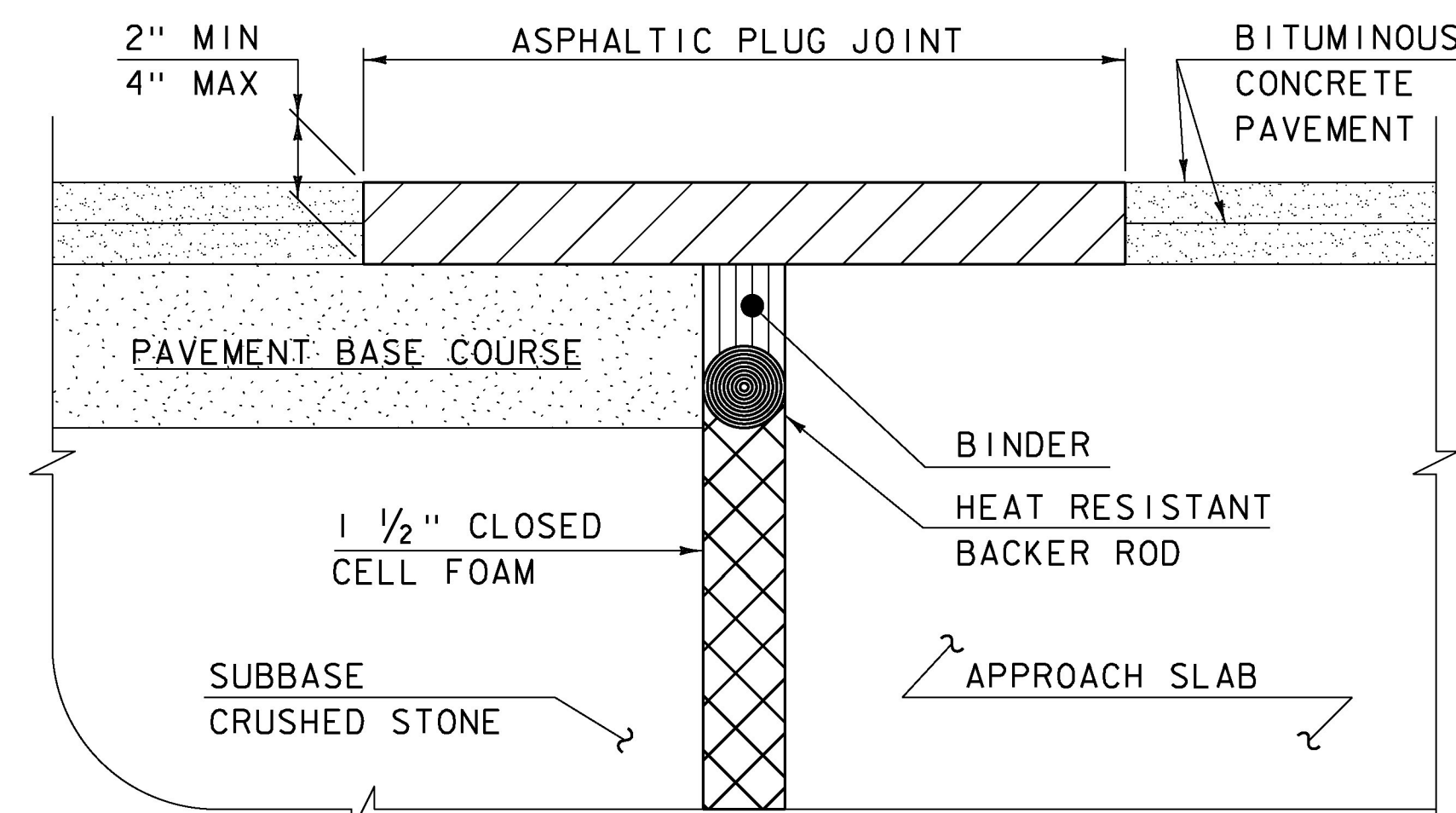
1. THE CONTRACTOR SHALL REMOVE ALL ASPHALTIC PLUG JOINT MATERIAL AND DETERIORATED CONCRETE AS DIRECTED BY THE ENGINEER. REMOVAL OF THE FIRST 4 INCHES OF MATERIAL SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 516.10 BRIDGE EXPANSION JOINT, ASPHALTIC PLUG. ANY REMOVAL OF MATERIAL GREATER THAN 4 INCHES SHALL BE INCLUDED IN THE BID PRICE OF ITEM 580.20 RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE.
2. THE CONTRACTOR SHALL REPLACE REMOVED MATERIAL THAT IS LESS THAN 4" FROM FINISHED GRADE WITH ASPHALTIC PLUG JOINT MATERIAL MEETING THE REQUIREMENTS OF SUBSECTION 707.15. ALL REMOVED MATERIAL THAT IS GREATER THAN 4 INCHES FROM FINISHED GRADE SHALL BE REPLACED WITH RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE MEETING THE REQUIREMENTS OF SUBSECTION 780.04.
3. REINFORCING STEEL NOT SHOWN FOR CLARITY.
4. PLACE 1/4" THICK BY 8" WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE THE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRE-STAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER. THE STEEL PLATES MAY BE OMITTED WHERE THE ENGINEER DETERMINES THAT THE APPROACH SLAB OR BRIDGE DECK WILL PROVIDE INADEQUATE SUPPORT AND WHERE VERTICAL MOVEMENT OF THE PLATES MIGHT OCCUR.



ASPHALTIC PLUG JOINT DETAIL "A" - NEW

**NOTE:**

PLACE 1/4" THICK BY 8" WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE THE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRE-STAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER.



ASPHALTIC PLUG JOINT DETAIL "B" - NEW

**ASPHALTIC PLUG JOINT NOTES**

**INSTALLATION:**

1. LOCATE THE JOINT CENTRALLY OVER THE DECK OVERLAY EXPANSION GAP OR FIXED JOINT, MARKED OUT TO THE MANUFACTURER'S RECOMMENDED WIDTH.
2. REMOVE THE BITUMINOUS CONCRETE PAVEMENT FULL DEPTH AS SHOWN ON THE PLANS. THE PAVEMENT SHALL BE DRY AND SAW CUT TO THE LIMITS REQUIRED TO PLACE THE JOINT. A PNEUMATIC HAMMER AND CHISEL MAY BE USED ADJACENT TO THE CURB ONLY WHEN SAW CUTTING IS NOT POSSIBLE.
3. BLAST CLEAN THE JOINT AREA OF DEBRIS, ASPHALT AND SHEET MEMBRANE. THOROUGHLY DRY THE JOINT AREA WITH COMPRESSED AIR PRIOR TO APPLYING BINDER MATERIAL.
4. PLACE PROPERLY SIZED HEAT RESISTANT BACKER ROD IN THE MOVEMENT GAP ALLOWING FOR 1" +/- OF BINDER ABOVE THE ROD.
5. HEAT AND PLACE THE BINDER MATERIAL AS RECOMMENDED BY THE MANUFACTURER.
6. IMMEDIATELY AFTER TOP COATING, CAST AN ANTI-SKID MATERIAL OVER THE JOINT TO REDUCE THE RISK OF TRACKING.

**WEATHER LIMITATIONS**

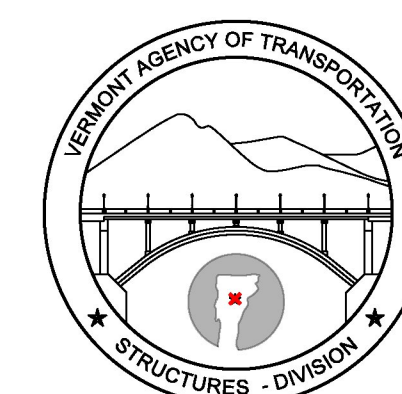
APPLY BINDER MATERIAL ONLY WHEN THE FOLLOWING CONDITIONS PREVAIL OR AS RECOMMENDED BY THE MANUFACTURER:

1. THE AMBIENT AIR TEMPERATURE IS AT LEAST 10 DEG C (50 DEG F) AND RISING.
2. THE ROAD SURFACE IS DRY.
3. WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.

DETAILS ON THIS SHEET ARE NOT TO SCALE.

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
AUGUST 29, 2011	ADD DETAIL "B" AND REV. NOTES

BRIDGE JOINT  
ASPHALTIC PLUG



STRUCTURES  
DETAIL  
SD-516.10