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SD-516.0 BRIDGE JOINT ASPHALTIC PLUG

VAOT STANDARDS

E-191	02/01/99
E-192	10/12/00
E-193	08/18/95
T-1	08/06/12
T-10	08/06/12
T-11	08/06/12
T-12	08/06/12
T-13	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

RECORD PLANS

CONTRACTOR:	GORMAN GROUP, LLC - ALBANY, NY
RESIDENT ENGINEER:	JAY STRONG
CONSTRUCTION BEGAN:	AUGUST 3, 2015
CONSTRUCTION COMPLETE:	OCTOBER 7, 2015
RECORD PLANS BY:	JAY STRONG

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

BY Jay Strong RESIDENT ENGINEER  
DATE 12/2/2016

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.

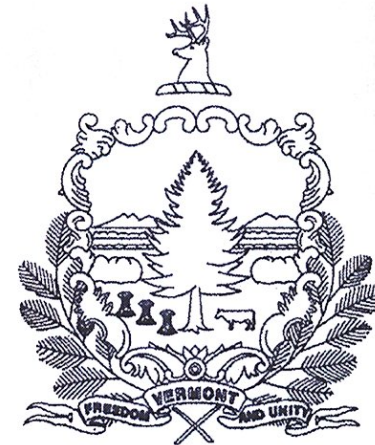
CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS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

# STATE OF VERMONT AGENCY OF TRANSPORTATION



## PROPOSED IMPROVEMENT TOWNS OF WATERFORD & ST. JOHNSBURY COUNTY OF CALEDONIA INTERSTATE ROUTE 93 (PRINCIPAL ARTERIAL - NHS)

IM SURF (47) NORTHBOUND:  
BEGINNING IN THE TOWN OF WATERFORD AT MILE MARKER 0.038 AND EXTENDING NORTHERLY ALONG INTERSTATE ROUTE 93 (NORTHBOUND LANE) FOR A DISTANCE OF 58,555.20 FT (11.090 MILES) TO MILE MARKER 11.128 IN THE TOWN OF WATERFORD.

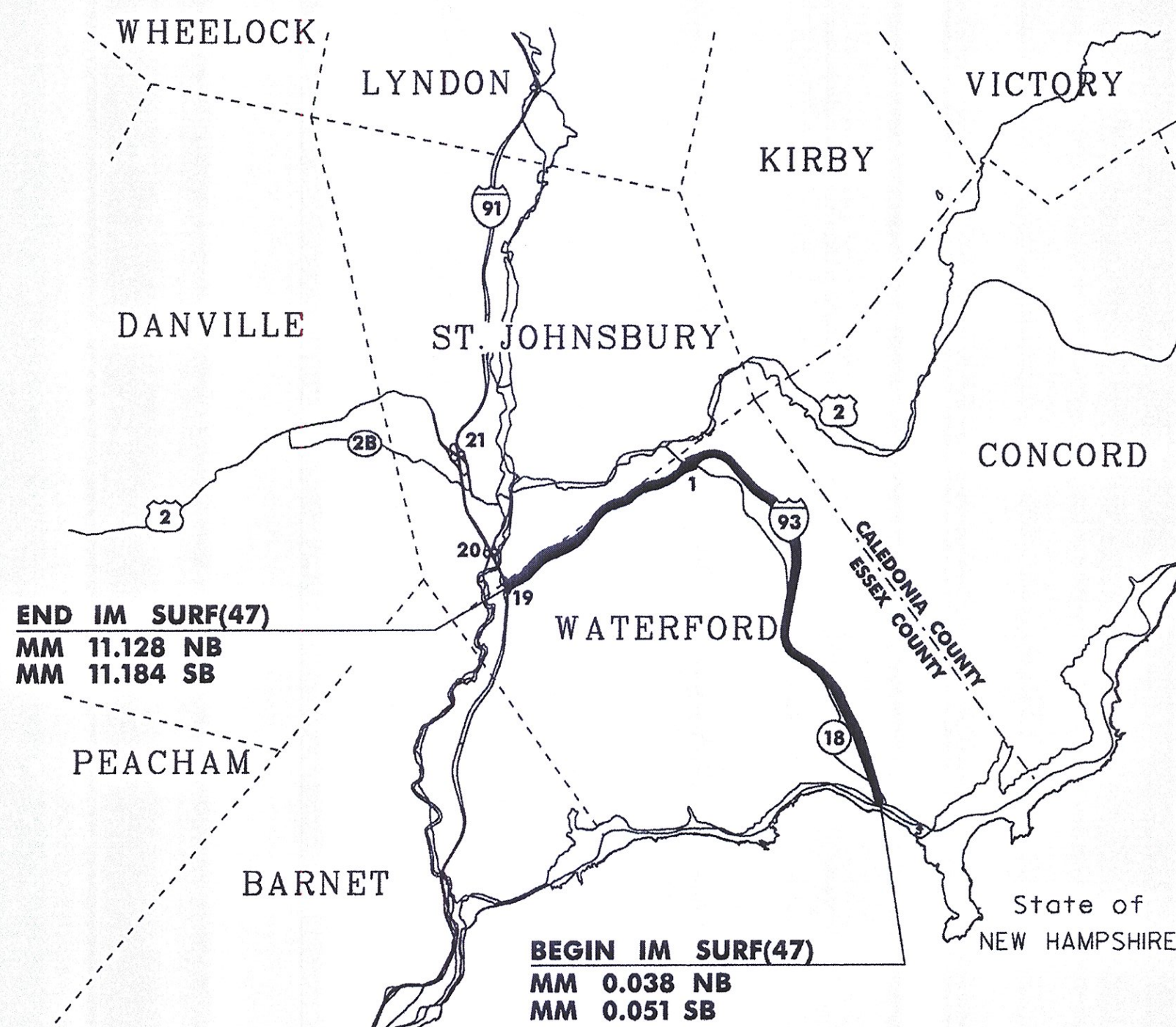
LENGTH OF ROADWAY = 58,555.20 FT = (11.090 MILES)

IM SURF (47) SOUTHBOUND:  
BEGINNING IN THE TOWN OF WATERFORD AT MILE MARKER 0.051 AND EXTENDING NORTHERLY ALONG INTERSTATE ROUTE 93 (SOUTHBOUND LANE) FOR A DISTANCE OF 58,782.24 FT (11.113 MILES) TO MILE MARKER 11.184 IN THE TOWN OF WATERFORD.

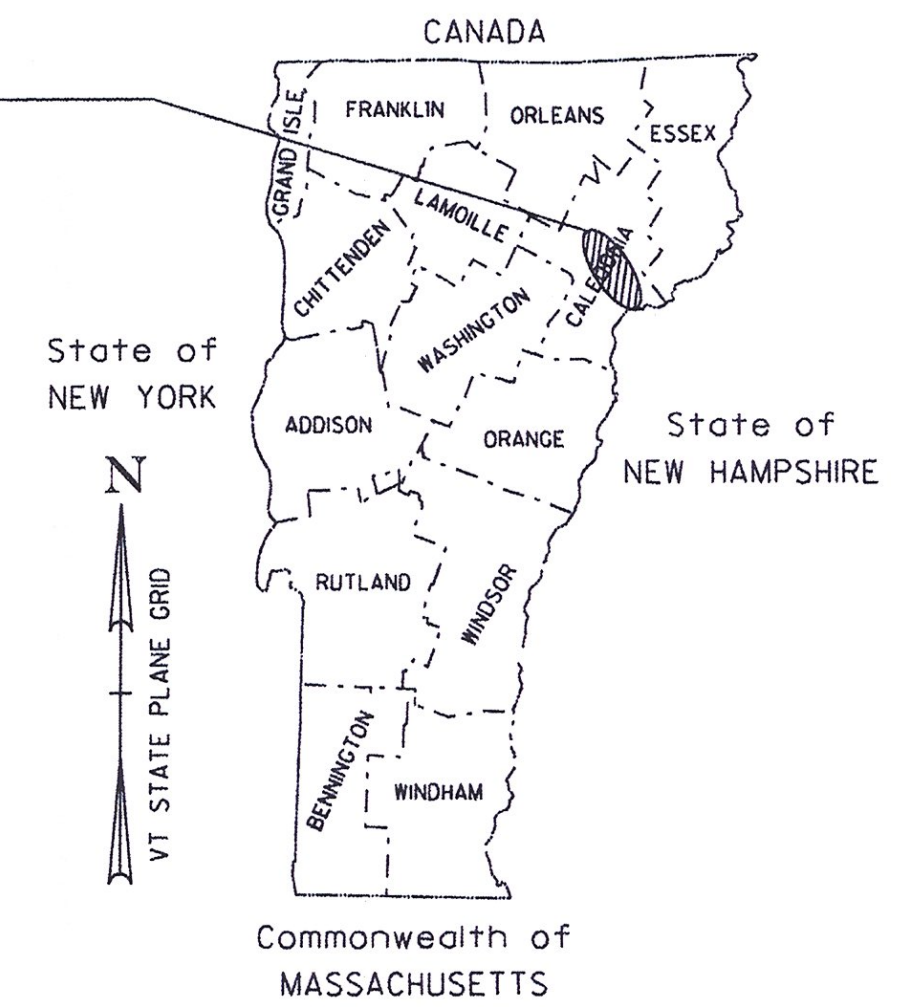
LENGTH OF ROADWAY = 58,782.24 FT = (11.113 MILES)

LENGTH OF PROJECT = 58,782.24 FT = (11.113 MILES)

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



PROJECT LOCATION  
WATERFORD IM SURF(47)



**BUILT AS DESIGNED**

TRAFFIC DATA

1-93 NB	2015 AADT	2025 AADT	2015 DHV	2025 DHV	FLEXIBLE ESALS (2015-2025)	FLEXIBLE ESALS (2015-2035)
BEGIN PROJECT TO EXIT 1	3,000	3,500	490	570	1,650,000	4,046,000
EXIT 1 TO END PROJECT	3,100	3,600	500	580	1,846,000	4,567,000

1-93 SB	2015 AADT	2025 AADT	2015 DHV	2025 DHV	FLEXIBLE ESALS (2015-2025)	FLEXIBLE ESALS (2015-2035)
BEGIN PROJECT TO EXIT 1	3,000	3,500	470	550	1,625,000	3,971,000
EXIT 1 TO END PROJECT	3,100	3,600	480	560	1,691,000	4,173,000

**BUILT AS DESIGNED**

DIRECTOR OF PROJECT DELIVERY
APPROVED <u>[Signature]</u> DATE <u>12/2/2014</u>
PROJECT MANAGER : MICHAEL J. FOWLER, P.E.
PROJECT NAME : WATERFORD
PROJECT NUMBER : IM SURF (47)
SHEET 1 OF 22 SHEETS

NOT TO SCALE

**GENERAL INFORMATION**

**SYMBOLOLOGY LEGEND NOTE**

THE SYMBOLOLOGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLOLOGY. THE SYMBOLOLOGY 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. SYMBOLOLOGY 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 VALVE
⊕	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 SYMBOLOLOGY**

UNDERGROUND UTILITIES	
— UGU —	UTILITY (GENERIC-UNKNOWN)
— 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)	
— AGU —	UTILITY (GENERIC-UNKNOWN)
— 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 SYMBOLOLOGY**

PROJECT DESIGN & LAYOUT SYMBOLOLOGY	
— — — — —	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 — — — — —	PROJECT DEMARCATION FENCE
BF — — — — —	BARRIER FENCE
XXXXXXXXXXXX	TREE PROTECTION ZONE (TPZ)
//////	STRIPING LINE REMOVAL
~~~~~	SHEET PILES

**CONVENTIONAL BOUNDARY SYMBOLOLOGY**

BOUNDARY LINES	
— — — — —	TOWN BOUNDARY LINE
— — — — —	COUNTY BOUNDARY 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)
▲ SR ○ SR ▲ SR	SLOPE RIGHTS
6f — — — — —	6F PROPERTY BOUNDARY
4f — — — — —	4F PROPERTY BOUNDARY
HAZ — — — — —	HAZARDOUS WASTE

**EPSC LAYOUT PLAN SYMBOLOLOGY**

EPSC MEASURES	
○ — — — — —	FILTER CURTAIN
— — — — —	SILT FENCE
— — — — —	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
— — — — —	THREATENED & ENDANGERED SPECIES
HAZ — — — — —	HAZARDOUS WASTE AREA
— — — — —	AGRICULTURAL LAND
— — — — —	FISH & WILDLIFE HABITAT
— — — — —	FLOOD PLAIN
— — — — —	ORDINARY HIGH WATER (OHW)
— — — — —	STORM WATER
— — — — —	USDA FOREST SERVICE LANDS
— — — — —	WILDLIFE HABITAT SUIT/CONN

**ARCHEOLOGICAL & HISTORIC**

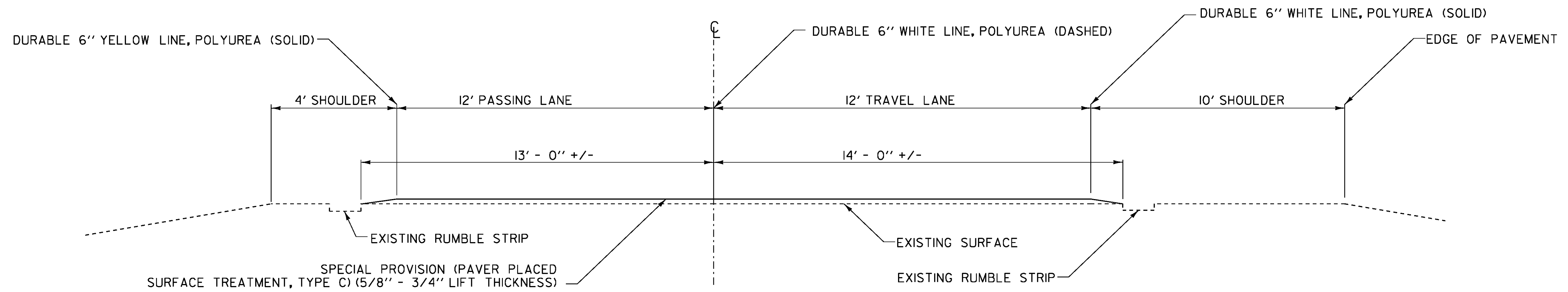
— — — — —	ARCHEOLOGICAL BOUNDARY
— — — — —	HISTORIC DISTRICT BOUNDARY
— — — — —	HISTORIC AREA
Ⓜ	HISTORIC STRUCTURE

**CONVENTIONAL TOPOGRAPHIC SYMBOLOLOGY**

EXISTING FEATURES	
— — — — —	ROAD EDGE PAVEMENT
— — — — —	ROAD EDGE GRAVEL
— — — — —	DRIVEWAY EDGE
— — — — —	DITCH
— — — — —	FOUNDATION
— — — — —	FENCE (EXISTING)
— — — — —	FENCE WOOD POST
— — — — —	FENCE STEEL POST
— — — — —	GARDEN
— — — — —	ROAD GUARDRAIL
— — — — —	RAILROAD TRACKS
— — — — —	CULVERT (EXISTING)
— — — — —	STONE WALL
— — — — —	WALL
— — — — —	WOOD LINE
— — — — —	BRUSH LINE
— — — — —	HEDGE
— — — — —	BODY OF WATER EDGE
— — — — —	LEDGE EXPOSED

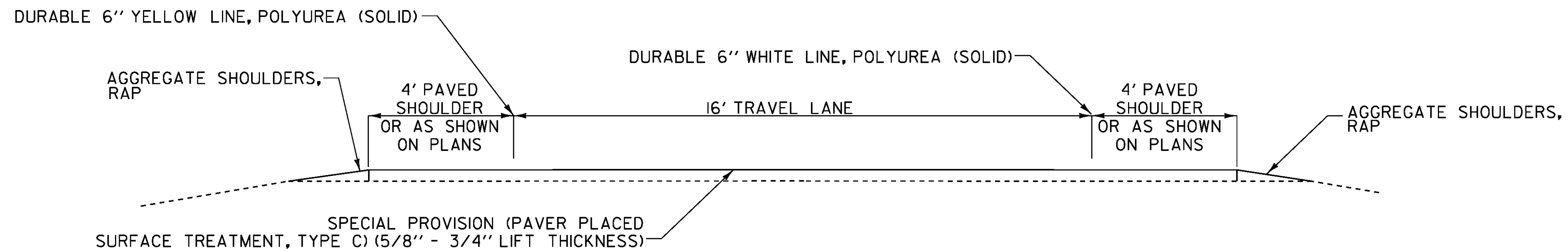
**CONVENTIONAL SYMBOLOLOGY LEGEND SHEET**

PROJECT NAME:	WATERFORD		
PROJECT NUMBER:	IM SURF(47)		
FILE NAME:	I4a122\pl4a122.dgn	PLOT DATE:	10-DEC-2014
PROJECT LEADER:	M. FOWLER	DRAWN BY:	K. LOCKE
DESIGNED BY:	K. LOCKE	CHECKED BY:	M. FOWLER
IPARM FILE NAME:	pl4a122_02.1	SHEET	2 OF 22



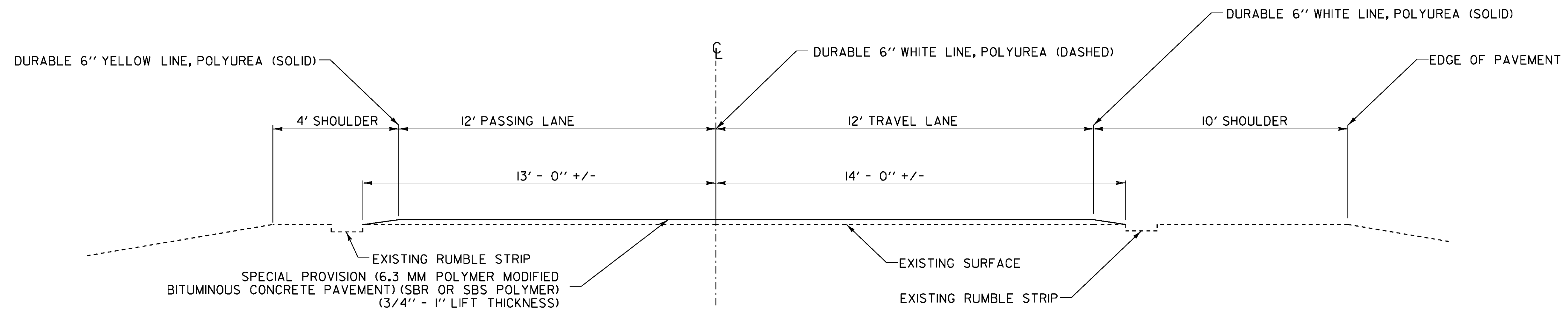
**ROADWAY PROJECT TYPICAL SECTION - ALTERNATE A**  
**I-93 NORTHBOUND WATERFORD M.M. 0.038 - WATERFORD M.M. 11.128**  
**I-93 SOUTHBOUND WATERFORD M.M. 0.051 - WATERFORD M.M. 11.184**

NOT TO SCALE



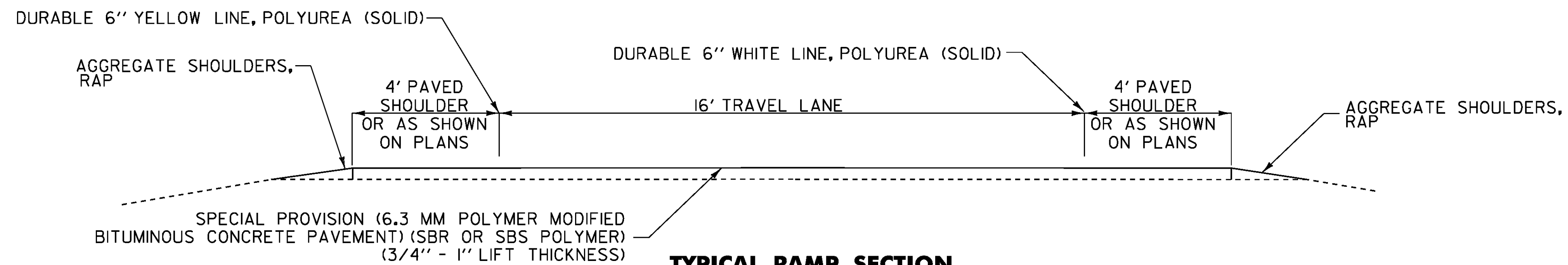
**TYPICAL RAMP SECTION**  
**ALTERNATE A**  
 NOT TO SCALE

<b>TYPICAL SECTION - ALTERNATE A</b>	PROJECT NAME: WATERFORD	
	PROJECT NUMBER: IM SURF(47)	
	FILE NAME: I4aI22\pl4aI22.dgn	PLOT DATE: 10-DEC-2014
	PROJECT LEADER: M. FOWLER	DRAWN BY: K. LOCKE
	DESIGNED BY: K. LOCKE	CHECKED BY: M. FOWLER
	IPARM FILE NAME: pl4aI22_03.1	SHEET 3 OF 22



**ROADWAY PROJECT TYPICAL SECTION - ALTERNATE B**  
**I-93 NORTHBOUND WATERFORD M.M. 0.038 - WATERFORD M.M. 11.128**  
**I-93 SOUTHBOUND WATERFORD M.M. 0.051 - WATERFORD M.M. 11.184**

NOT TO SCALE



**TYPICAL RAMP SECTION**  
**ALTERNATE B**

NOT TO SCALE

**NOTE:**

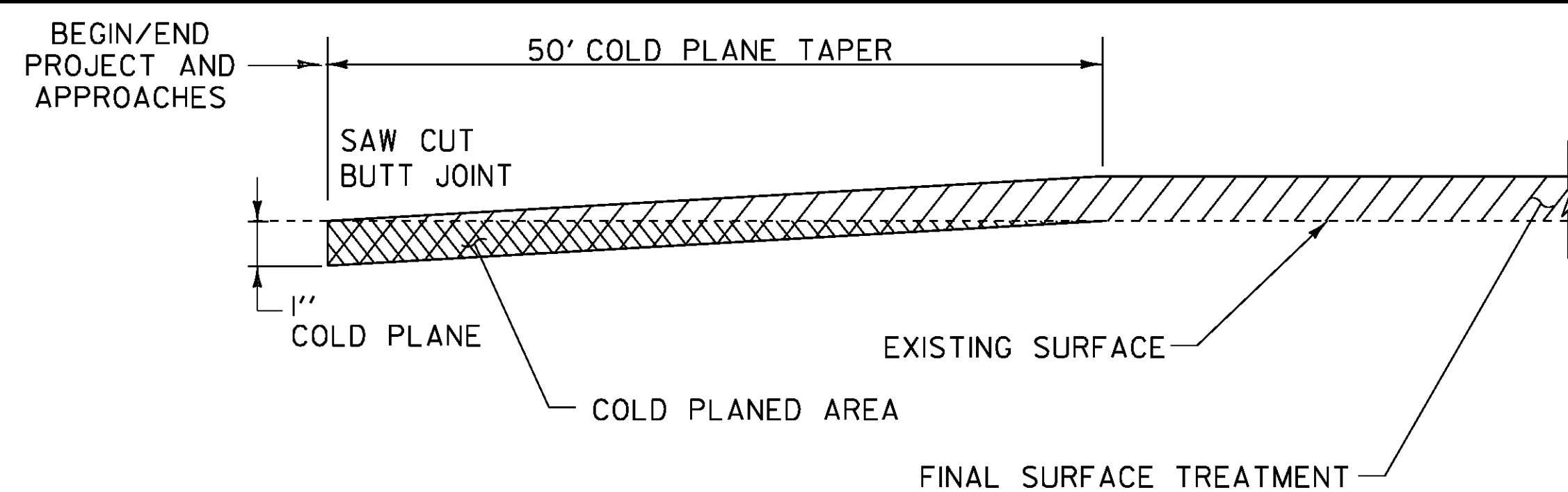
1. PRIOR TO THE PLACEMENT OF THE 6.3 MM POLYMER MODIFIED BITUMINOUS CONCRETE PAVEMENT, EMULSIFIED ASPHALT SHALL BE APPLIED TO ALL EXISTING PAVEMENT SURFACES AND ON ALL COLD PLANED SURFACES AT A RATE OF 0.080 GAL/SY (+/- 0.01 GAL/SY) OR AS DIRECTED BY THE ENGINEER. EMULSIFIED ASPHALT SHALL BE RS-IH OR CRS-IH PER THE MANUFACTURER'S RECOMMENDATION AND PAID UNDER ITEM 900.683 SPECIAL PROVISION (EMULSIFIED ASPHALT) (RS-IH OR CRS-IH).

**TYPICAL SECTION - ALTERNATE B**

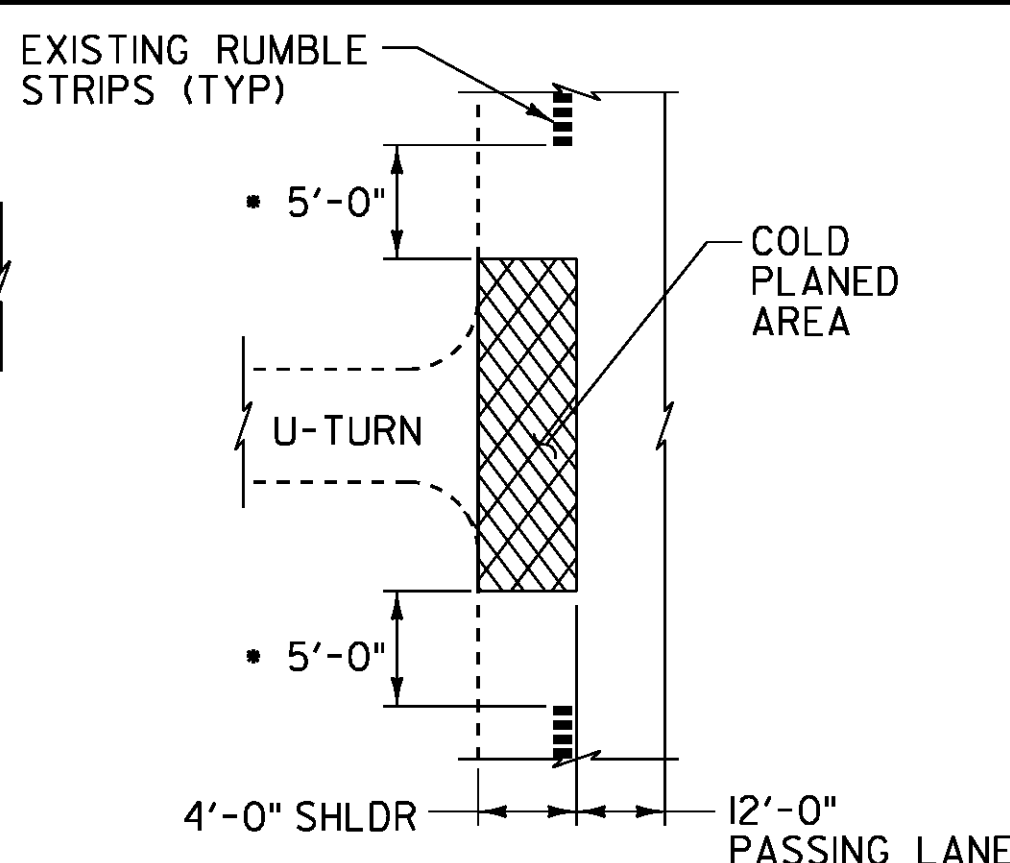
PROJECT NAME: WATERFORD  
 PROJECT NUMBER: IM SURF(47)

FILE NAME: I4a122\pl4a122.dgn  
 PROJECT LEADER: M. FOWLER  
 DESIGNED BY: K. LOCKE  
 IPARM FILE NAME: pl4a122\_04.1

PLOT DATE: 09-JAN-2015  
 DRAWN BY: K. LOCKE  
 CHECKED BY: M. FOWLER  
 SHEET 4 OF 22

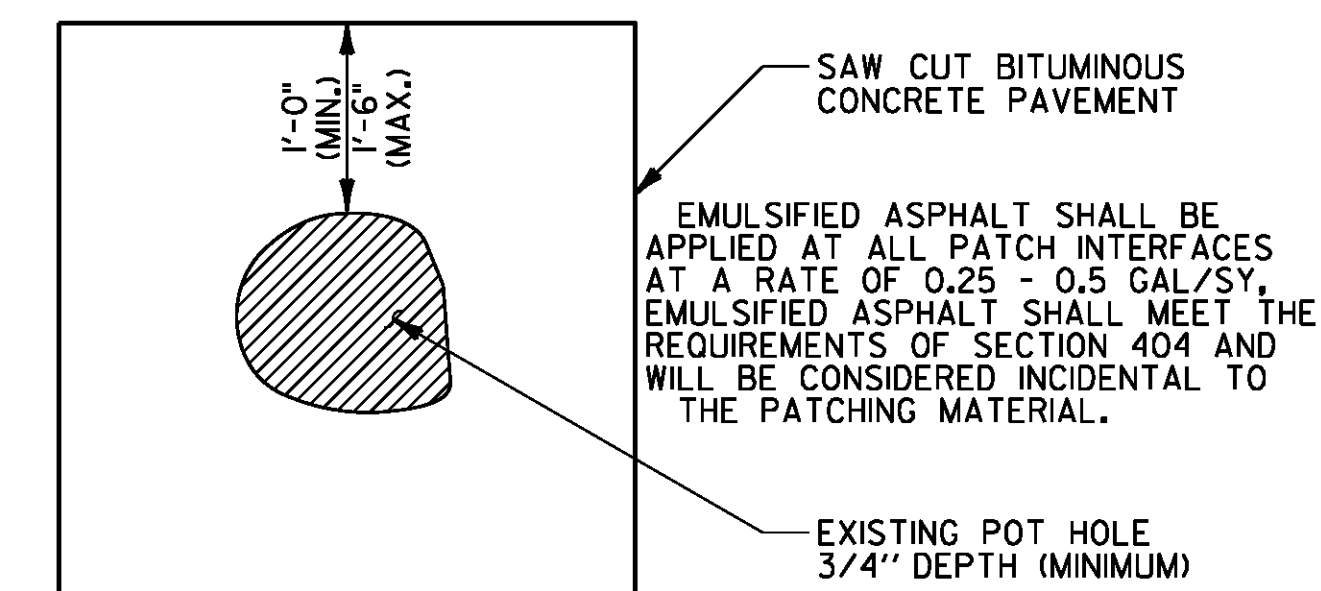
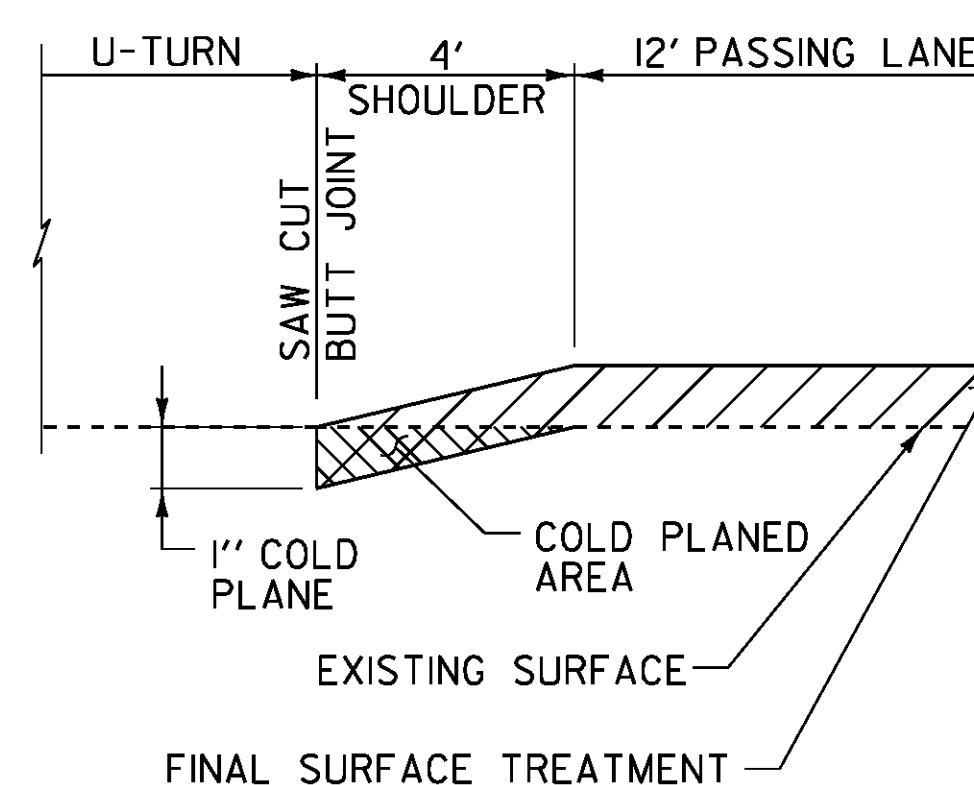


**TYPICAL APPROACH AREA DETAIL MAINLINE & RAMPS**  
NOT TO SCALE

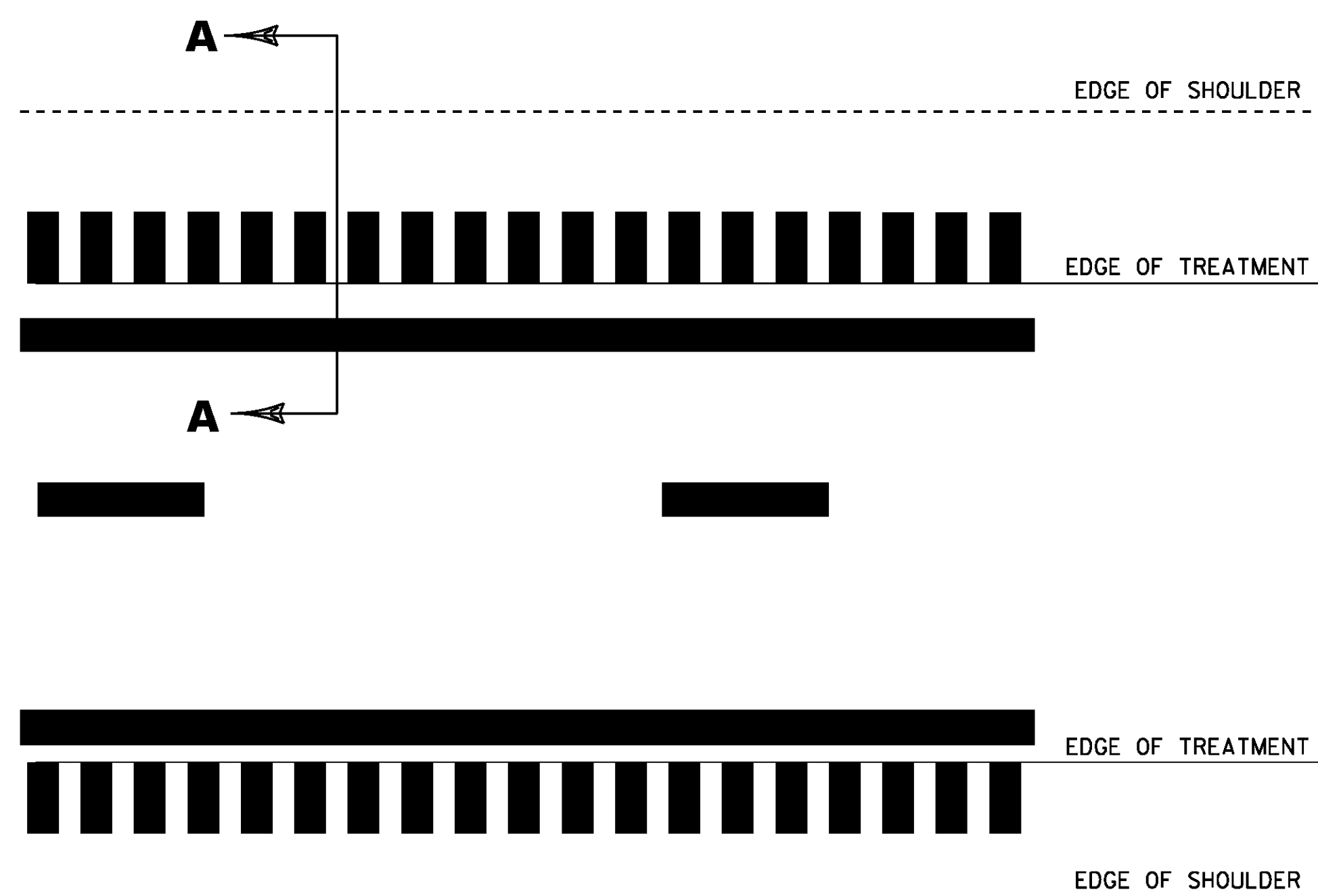


- BEGIN COLD PLANING 5'-0" AFTER RUMBLE STRIPS END, AND END COLD PLANING 5'-0" BEFORE RUMBLE STRIPS BEGIN

**COLD PLANE DETAIL AT U-TURNS**  
NOT TO SCALE

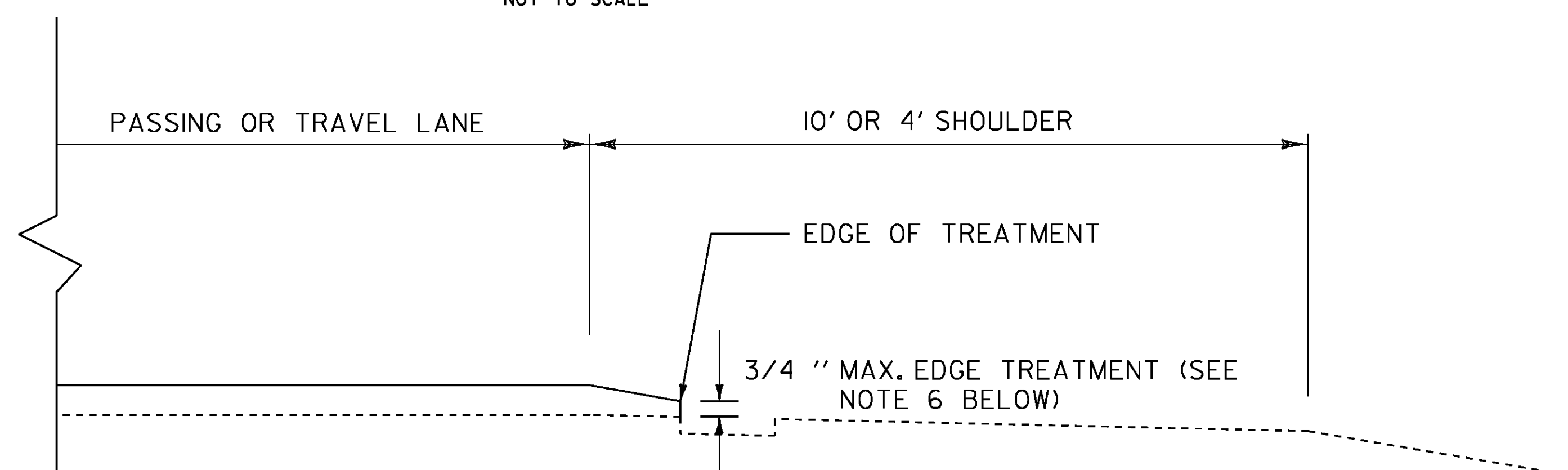


**TYPICAL POT HOLE REPAIR**  
NOT TO SCALE



**EDGE OF TREATMENT TYPICAL PLAN**

NOT TO SCALE



**EDGE OF TREATMENT TYPICAL SECTION A-A**

NOT TO SCALE

**NOTES:**

1. ALL NECESSARY SURFACE PREPARATION INVOLVING PATCHING, POT HOLE 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 ASSOCIATED 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 POT HOLE REPAIR SHALL BE COMPLETED USING BITUMINOUS CONCRETE PAVEMENT IN ACCORDANCE WITH ITEM 900.680 SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT SURFACE PREPARATION, TYPE D). 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 POT HOLE REPAIR TREATMENTS.

3. FOLLOWING COMPLETION OF COLD PLANING, THE MILLED SURFACE FOR ALL BRIDGES SHALL ALSO RECEIVE CRACK-SEALING AND RELATED PATCHING AND POT HOLE 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. A 50' COLD PLANED WEDGE SHALL BE CONSTRUCTED AT THE PROJECT BEGIN, PROJECT END, RAMPS, AND AT ALL BRIDGE APPROACHES OR AS DIRECTED BY THE ENGINEER. THE LONGITUDINAL EDGES OF THE SURFACE TREATMENT SHALL BE FEATHERED AS SHOWN ON THE TYPICAL SECTION, OR AS DIRECTED BY THE ENGINEER. ANY SAWCUTTING AT BUTT JOINTS SHALL BE PAID INCIDENTAL TO ITEM 900.675 SPECIAL PROVISION (MICRO-MILLING BITUMINOUS CONCRETE PAVEMENT). ALL PROJECT COLD PLANING WILL BE PAID AS ITEM 900.675 SPECIAL PROVISION (MICRO-MILLING BITUMINOUS CONCRETE PAVEMENT).

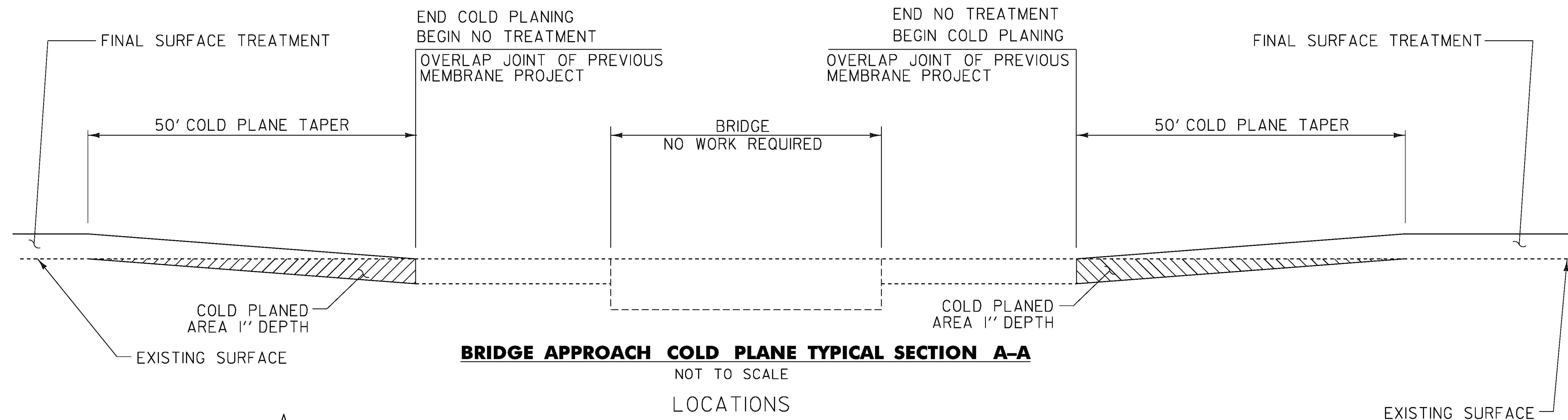
6. THE SCREED OF THE PAVER SHALL BREAK AT THE BREAK POINT OF THE SHOULDER SUCH THAT THE DESIGNED NOMINAL THICKNESS IS CARRIED ONTO THE SHOULDER AND BROKEN OR PINCHED BY ROLLING. EDGE HEIGHT SHALL BE MEASURED AT MINIMUM OF FIVE RANDOMLY SPACED POINTS PER TENTH OF A MILE. IF IT IS FOUND THAT THE AVERAGE EDGE HEIGHT IS GREATER THAN 3/4" OVER THE TENTH OF A MILE, WORK SHALL BE PERFORMED SUCH THAT NO MORE THAN THE 3/4" AVERAGE HEIGHT IS ATTAINED. THIS APPLIES TO BOTH THE 10' AND 4' SHOULDER SIDES OF THE HIGHWAY.

**NOTES & DETAILS  
COMMON TO  
BOTH  
ALTERNATES**

PROJECT NAME: WATERFORD  
PROJECT NUMBER: IM SURF(47)

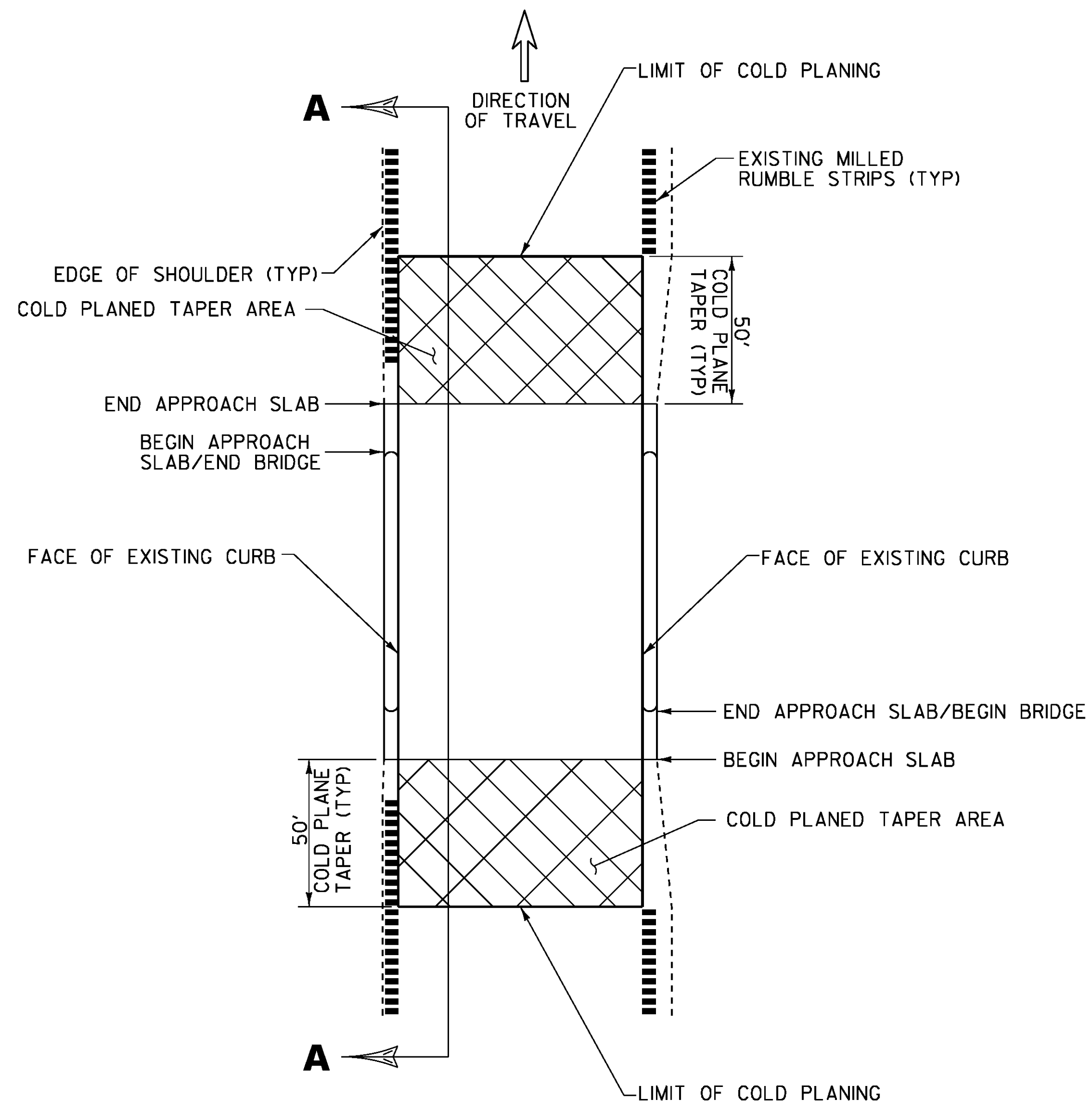
FILE NAME: I4a122\pl4a122.dgn  
PROJECT LEADER: M. FOWLER  
DESIGNED BY: K. LOCKE  
IPARM FILE NAME: pl4a122\_05.1

PLOT DATE: 10-DEC-2014  
DRAWN BY: K. LOCKE  
CHECKED BY: M. FOWLER  
SHEET 5 OF 22



**BRIDGE APPROACH COLD PLANE TYPICAL SECTION A-A**  
NOT TO SCALE

- LOCATIONS
- BRIDGE 1N M.M. 0.367
  - BRIDGE 1S M.M. 0.367
  - BRIDGE 3 N M.M. 4.600
  - BRIDGE 3 S M.M. 4.600
  - BRIDGE 5 N M.M. 6.385
  - BRIDGE 5 S M.M. 6.385



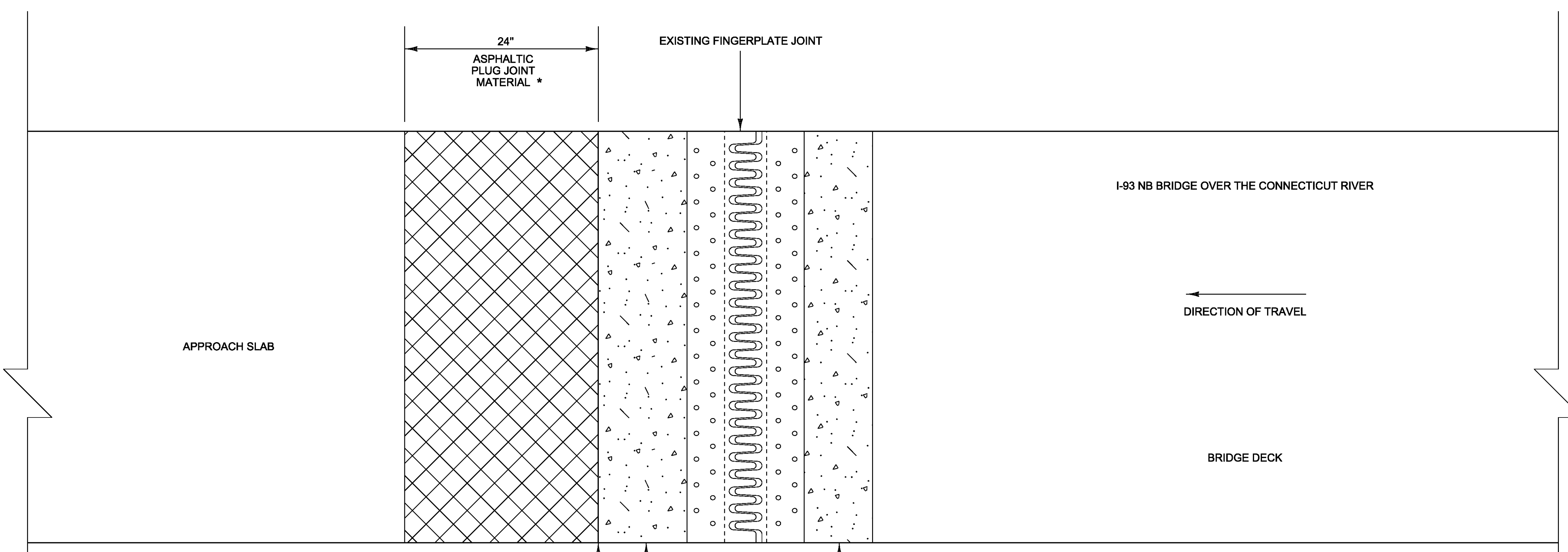
**BRIDGE APPROACH COLD PLANE TYPICAL PLAN**  
NOT TO SCALE

**BRIDGE  
DETAIL SHEET  
# 1**

PROJECT NAME: WATERFORD  
PROJECT NUMBER: IM SURF(47)

FILE NAME: I4a122\pl4a122.dgn  
PROJECT LEADER: M. FOWLER  
DESIGNED BY: K. LOCKE  
IPARM FILE NAME: pl4a122\_06.1

PLOT DATE: 10-DEC-2014  
DRAWN BY: K. LOCKE  
CHECKED BY: M. FOWLER  
SHEET 6 OF 22



BEGIN PROJECT NB  
MM 0.038 NB

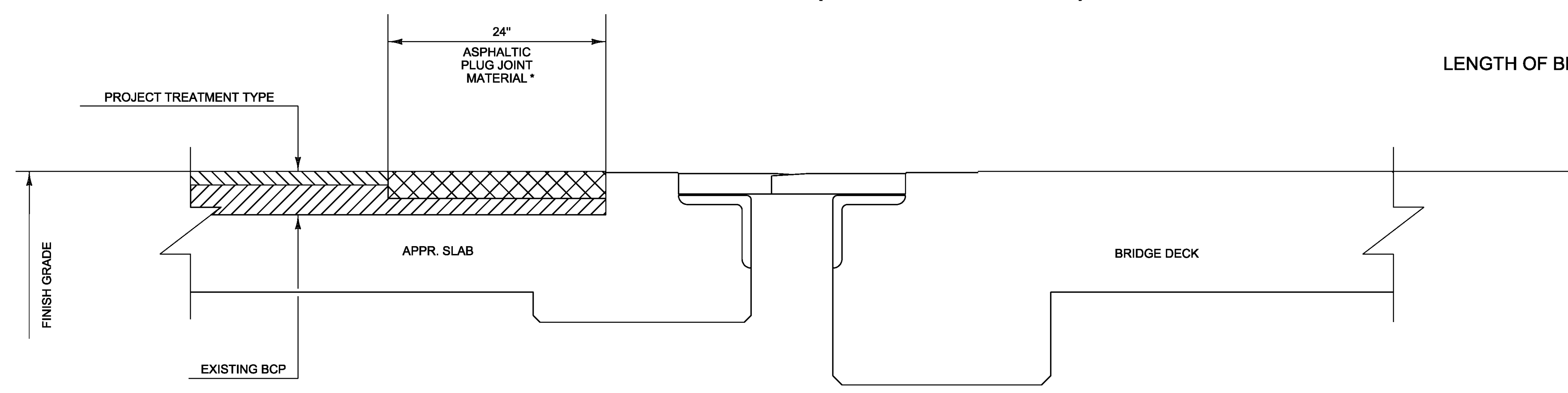
EXISTING CONCRETE  
(APPROACH SLAB)

EXISTING CONCRETE  
(BRIDGE DECK)

**EXPANSION JOINT - ASPHALTIC PLUG DETAIL  
PLAN VIEW  
(FINGER PLATE JOINT)**

\* 2" DEPTH OR AS DIRECTED  
BY THE ENGINEER

LENGTH OF BRIDGE EXPANSION JOINT, ASPHALTIC PLUG NEEDED = 48'

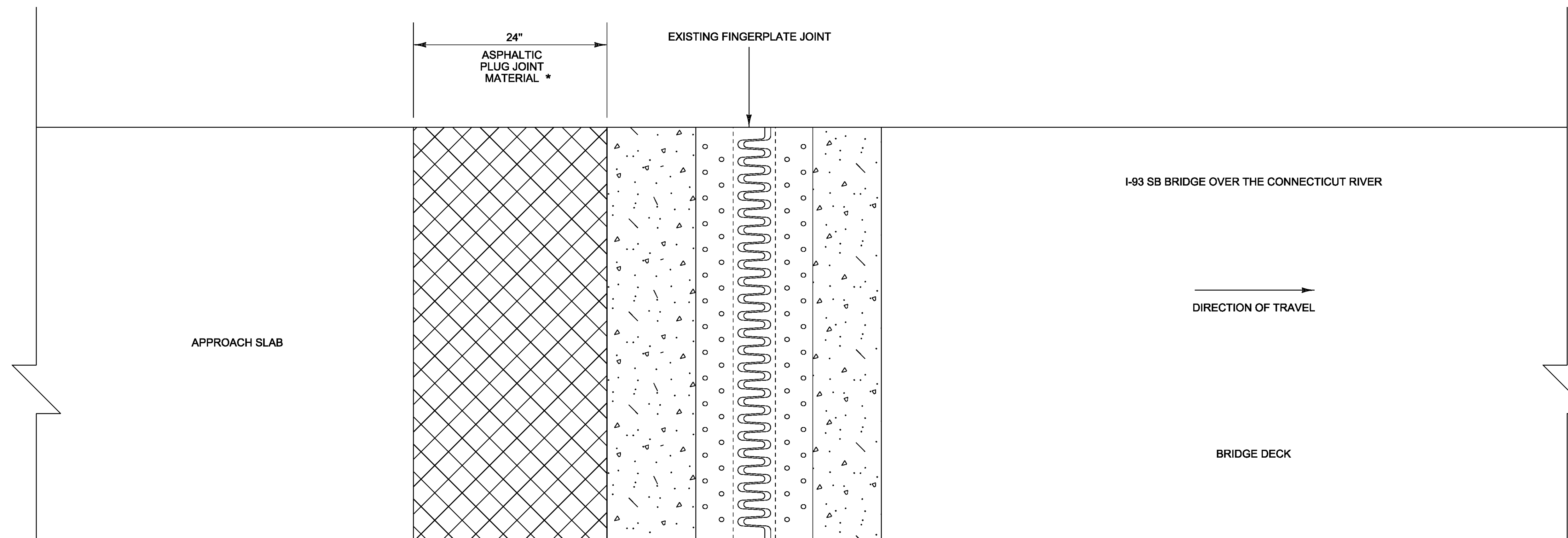


**EXPANSION JOINT - ASPHALTIC PLUG DETAIL  
CROSS SECTION VIEW  
(FINGER PLATE JOINT)**

NOT TO SCALE

**BRIDGE  
DETAIL SHEET  
# 2**

PROJECT NAME:	WATERFORD
PROJECT NUMBER:	IM SURF(47)
FILE NAME:	I4a122\pl4a122.dgn
PROJECT LEADER:	M. FOWLER
DESIGNED BY:	K. LOCKE
IPARM FILE NAME:	pl4a122_07.1
PLOT DATE:	12-JAN-2015
DRAWN BY:	K. LOCKE
CHECKED BY:	M. FOWLER
SHEET	7 OF 22



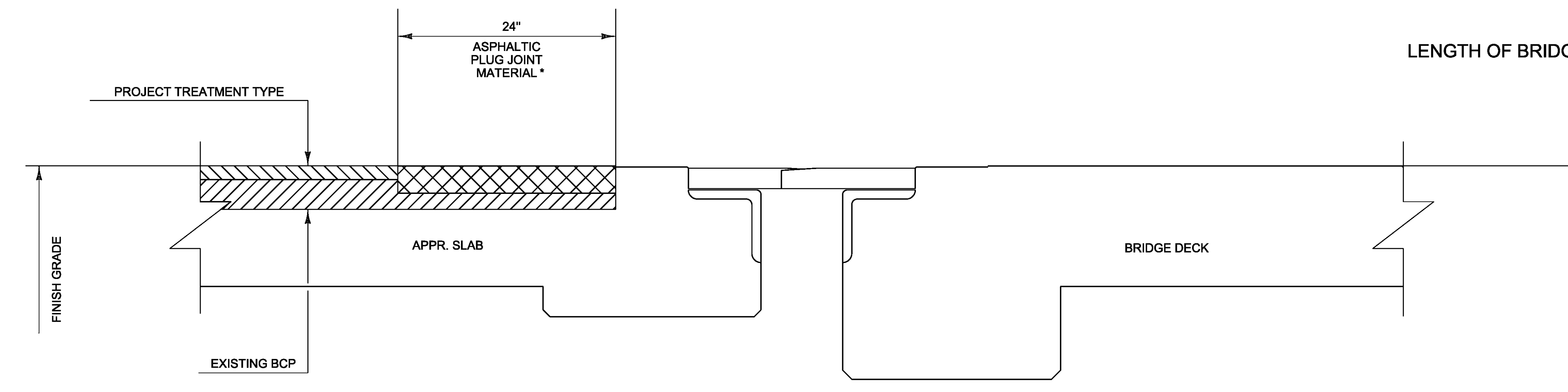
BEGIN PROJECT SB MM 0.051 SB

EXISTING CONCRETE (APPROACH SLAB)

EXISTING CONCRETE (BRIDGE DECK)

\* 2" DEPTH OR AS DIRECTED BY THE ENGINEER

**EXPANSION JOINT - ASPHALTIC PLUG DETAIL  
PLAN VIEW  
(FINGER PLATE JOINT)**



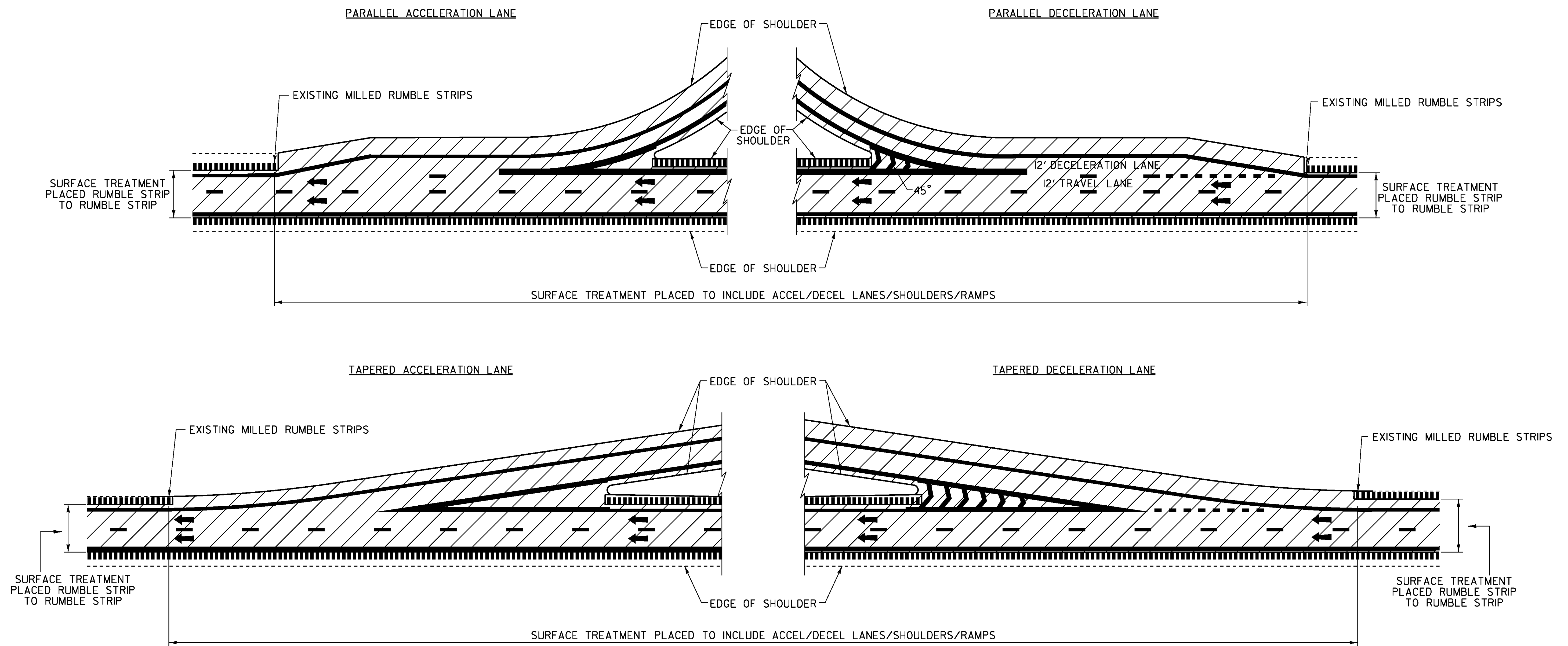
LENGTH OF BRIDGE EXPANSION JOINT, ASPHALTIC PLUG NEEDED = 48'

**EXPANSION JOINT - ASPHALTIC PLUG DETAIL  
CROSS SECTION VIEW  
(FINGER PLATE JOINT)**

NOT TO SCALE

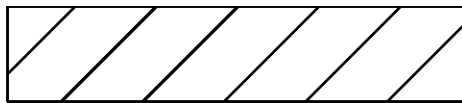


<b>BRIDGE DETAIL SHEET # 3</b>	PROJECT NAME: WATERFORD
	PROJECT NUMBER: IM SURF(47)
	FILE NAME: I4a122\pl4a122.dgn
PROJECT LEADER: M. FOWLER	PLOT DATE: 12-JAN-2015
DESIGNED BY: K. LOCKE	DRAWN BY: K. LOCKE
IPARM FILE NAME: pl4a122_08.1	CHECKED BY: M. FOWLER
	SHEET 8 OF 22

**TYPICAL INTERCHANGE CONSTRUCTION DETAILS # 1**  
NOT TO SCALE



NOTE:  
I. LINE STRIPING SHOWN FOR REFERENCE ONLY.

**LEGEND**

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

**TYPICAL  
INTERCHANGE  
CONSTRUCTION  
DETAILS # 1**

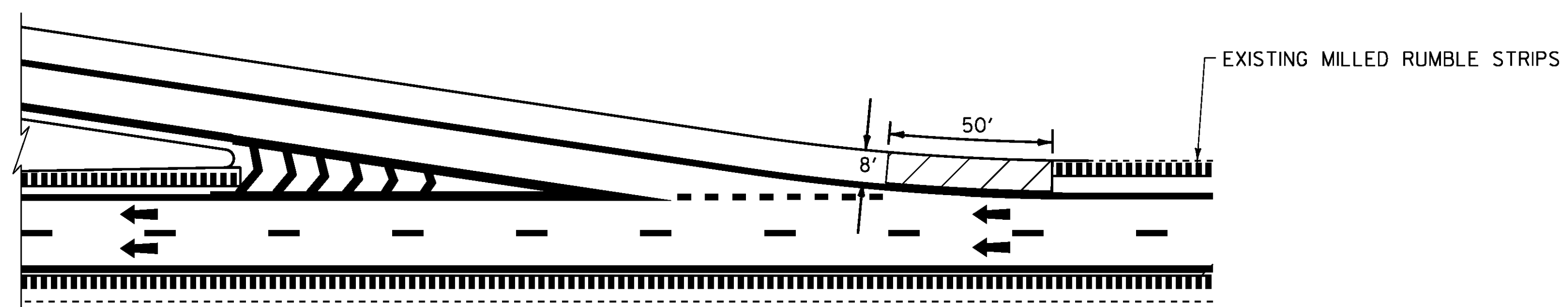
PROJECT NAME: WATERFORD  
PROJECT NUMBER: IM SURF(47)

FILE NAME: I4a122\pl4a122.dgn  
PROJECT LEADER: M. FOWLER  
DESIGNED BY: K. LOCKE  
IPARM FILE NAME: pl4a122\_09.1

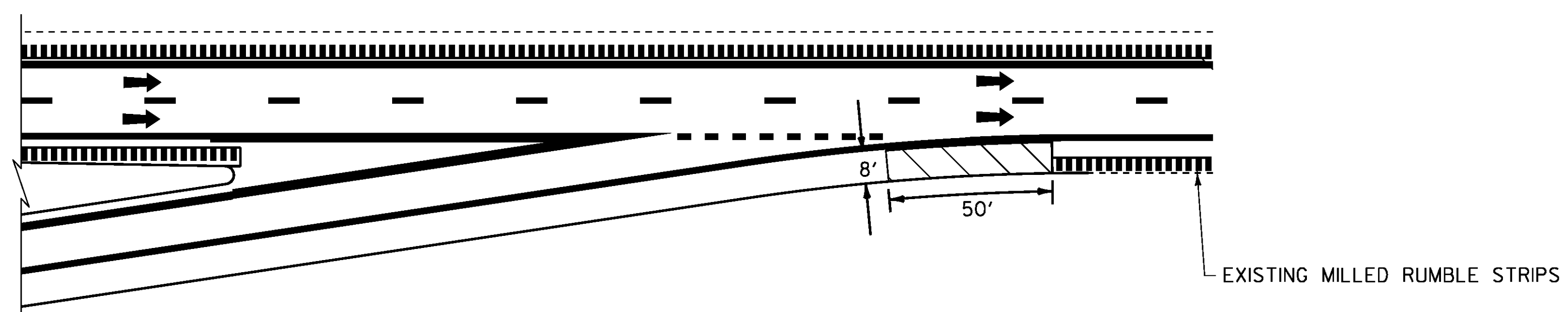
PLOT DATE: 10-DEC-2014  
DRAWN BY: K. LOCKE  
CHECKED BY: M. FOWLER  
SHEET 9 OF 22

## TYPICAL INTERCHANGE CONSTRUCTION DETAILS # 2

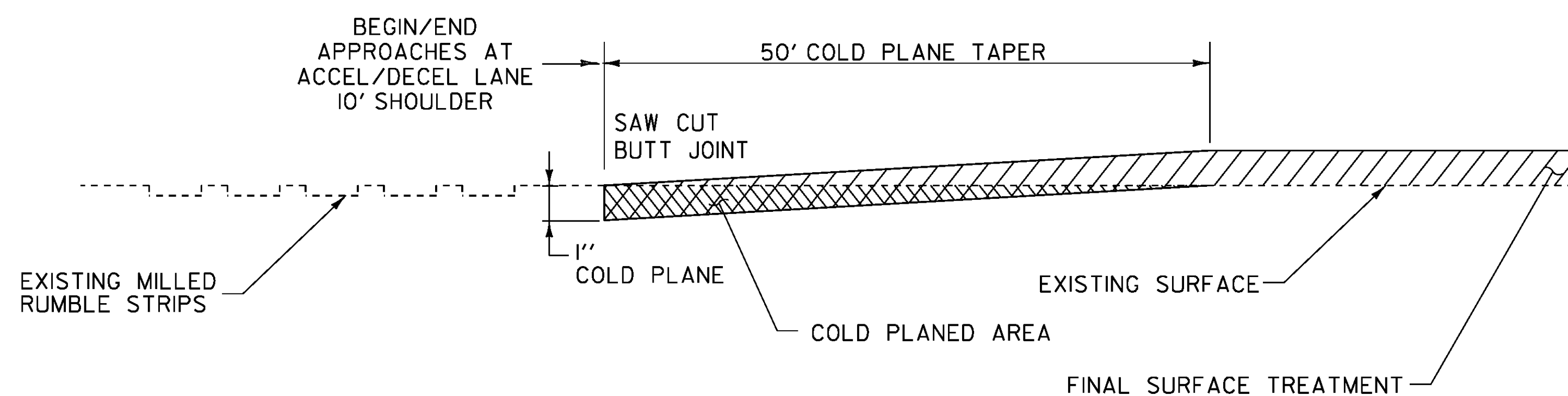
NOT TO SCALE



**DECELERATION LANE**



**ACCELERATION LANE**



**TYPICAL APPROACH AREA DETAIL AT ACCEL/DECEL LANE 10 FT SHOULDER**

**LEGEND**



AREA TO BE COLD PLANED



DIRECTION OF TRAFFIC FLOW



EXISTING MILLED RUMBLE STRIPS

**TYPICAL  
INTERCHANGE  
CONSTRUCTION  
DETAILS # 2**

PROJECT NAME: WATERFORD  
PROJECT NUMBER: IM SURF(47)

FILE NAME: I4a122\pl4a122.dgn  
PROJECT LEADER: M. FOWLER  
DESIGNED BY: K. LOCKE  
IPARM FILE NAME: pl4a122\_10.i

PLOT DATE: 10-DEC-2014  
DRAWN BY: K. LOCKE  
CHECKED BY: M. FOWLER  
SHEET 10 OF 22



# QUANTITY SHEET 2

**STATE OF VERMONT  
AGENCY OF TRANSPORTATION**

SUMMARY OF ESTIMATED QUANTITIES								
ROADWAY ALT. A	ROADWAY ALT. B	BRIDGE	ROADWAY	FULL C.E.	QUANTITIES GRAND TOTAL	UNIT	ITEMS	ITEM NO. ROUNDING
			36		36	EA	TEMPORARY LETTER OR SYMBOL, PAINT	646.692 -
			9,000		9,000	EA	LINE STRIPING TARGETS	646.76 EST
			192,000		192,000	SF	REMOVAL OF EXISTING PAVEMENT MARKINGS	646.85 EST
			1		1	LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50 -
			4,250		4,250	SY	SPECIAL PROVISION (MICRO-MILLING BITUMINOUS CONCRETE PAVEMENT)	900.675 125
			100		100	TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT SURFACE PREPARATION, TYPE I)	900.680 EST
							END ITEMS COMMON TO ALL ALTERNATES	
							BEGIN ALTERNATE A	
			394,000		394,000	SY	SPECIAL PROVISION (PAVER PLACED SURFACE TREATMENT, TYPE C)	900.675 279
							END ALTERNATE A	
							BEGIN ALTERNATE B	
			1		1	LU	AIR VOIDS PAY ADJUSTMENT (N.A.B.I.)	490.31 -
			23,000		23,000	TON	SPECIAL PROVISION (6.3 MM POLYMER MODIFIED BITUMINOUS CONCRETE PAVEMENT)(SBR OR SBS POLYMER)	900.680 34
			2,650		2,650	CWT	SPECIAL PROVISION (EMULSIFIED ASPHALT)(RS-IH OR CRS-IH)	900.683 2.3
							END ALTERNATE B	

DETAILED SUMMARY OF QUANTITIES		
QUANTITIES	UNIT	ITEMS
		SPECIAL PROVISION (MICRO-MILLING BITUMINOUS CONCRETE PAVEMENT)
368	SY	NORTHBOUND MAINLINE BEGIN & END APPROACHES
368	SY	SOUTHBOUND MAINLINE BEGIN & END APPROACHES
67	SY	U TURNS
312	SY	BRIDGE 1N APPROACHES
312	SY	BRIDGE 1S APPROACHES
312	SY	BRIDGE 3 N APPROACHES
312	SY	BRIDGE 3 S APPROACHES
312	SY	BRIDGE 5 N APPROACHES
312	SY	BRIDGE 5 S APPROACHES
1,070	SY	EXIT 1 RAMP & ACCEL/DECEL LANE APPROACHES
380	SY	WELCOME CENTER ACCEL/DECEL LANE APPROACHES
125	SY	ROUNDING
4,250	SY	TOTAL
		ALTERNATE A
		SPECIAL PROVISION (PAVER PLACED SURFACE TREATMENT, TYPE C)
181,378	SY	MAINLINE NORTHBOUND
181,409	SY	MAINLINE SOUTHBOUND
67	SY	U TURNS
21,639	SY	EXIT 1 RAMPS
9,228	SY	NORTHBOUND WELCOME CENTER ACCEL/DECEL LANES
279	SY	ROUNDING
394,000	SY	TOTAL

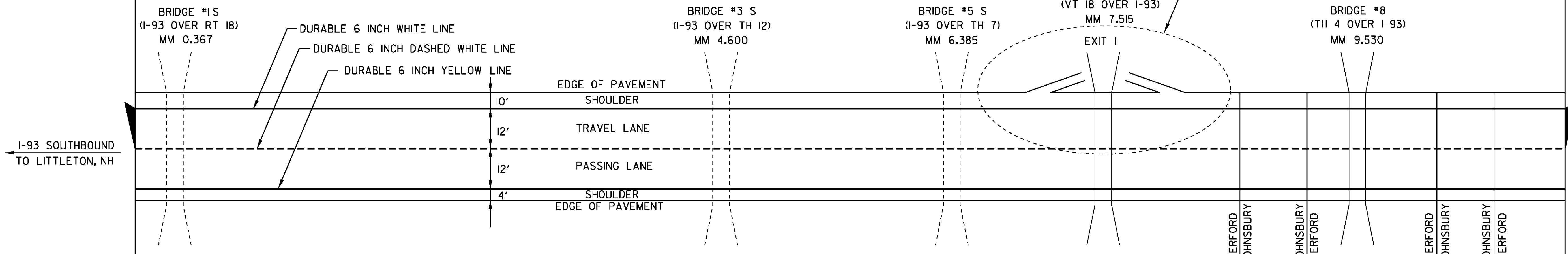
DETAILED SUMMARY OF QUANTITIES		
QUANTITIES	UNIT	ITEMS
		ALTERNATE B
		SPECIAL PROVISION (6.3 MM POLYMER MODIFIED BITUMINOUS CONCRETE PAVEMENT)(SBR OR SBS POLYMER)
10,580	TON	MAINLINE NORTHBOUND
10,582	TON	MAINLINE SOUTHBOUND
4	TON	U TURNS
1,262	TON	EXIT 1 RAMPS
538	TON	NORTHBOUND WELCOME CENTER ACCEL/DECEL LANES
34	TON	ROUNDING
23,000	TON	TOTAL

PROJECT NAME: WATERFORD  
 PROJECT NUMBER: IM SURF(47)  
 FILE NAME: I4a122\p14a122.dgn PLOT DATE: 10-DEC-2014  
 PROJECT LEADER: M. FOWLER DRAWN BY: K. LOCKE  
 DESIGNED BY: K. LOCKE CHECKED BY: M. FOWLER  
 IPARM FILE NAME: p14a122-12.i SHEET 12 OF 22

NOTE: THE BEGIN PROJECT LIMIT IN BOTH THE NORTHBOUND AND SOUTHBOUND BARRELS OF I-93 IS LOCATED AT THE NORTHERN ARMORED JOINT OF BOTH THE NORTHBOUND AND SOUTHBOUND BRIDGES AT THE VT/NH BORDER OVER THE CONNECTICUT RIVER. SEE SHEETS 7 AND 8 FOR DETAILS.

**INTERSTATE ROUTE 93  
SOUTHBOUND  
(MM 0.051)  
BEGIN PROJECT IM SURF(47)**

**INTERSTATE ROUTE 93  
SOUTHBOUND  
(MM 11.184)  
END OF PROJECT IM SURF(47)**

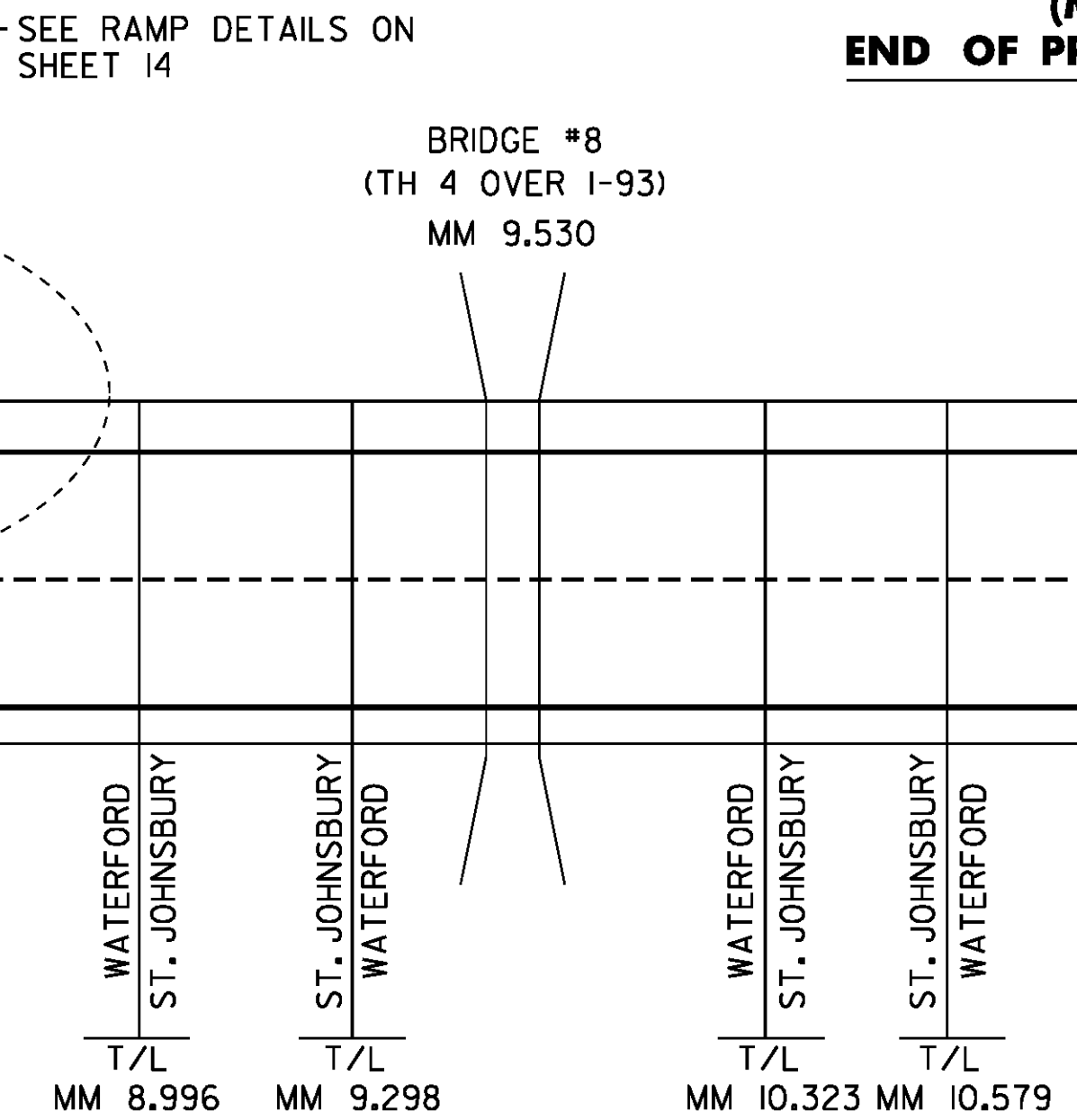


TEMPORARY 6 INCH WHITE LINE, PAINT  
MM 0.051 - MM 11.184 SB (SOLID LT)  
MM 0.051 - MM 11.184 SB (DASHED CL)  
MM 0.038 - MM 11.128 NB (SOLID RT)  
MM 0.038 - MM 11.128 NB (DASHED CL)

DURABLE 6 INCH WHITE LINE, POLYUREA  
MM 0.051 - MM 11.184 SB (SOLID LT)  
MM 0.051 - MM 11.184 SB (DASHED CL)  
MM 0.038 - MM 11.128 NB (SOLID RT)  
MM 0.038 - MM 11.128 NB (DASHED CL)

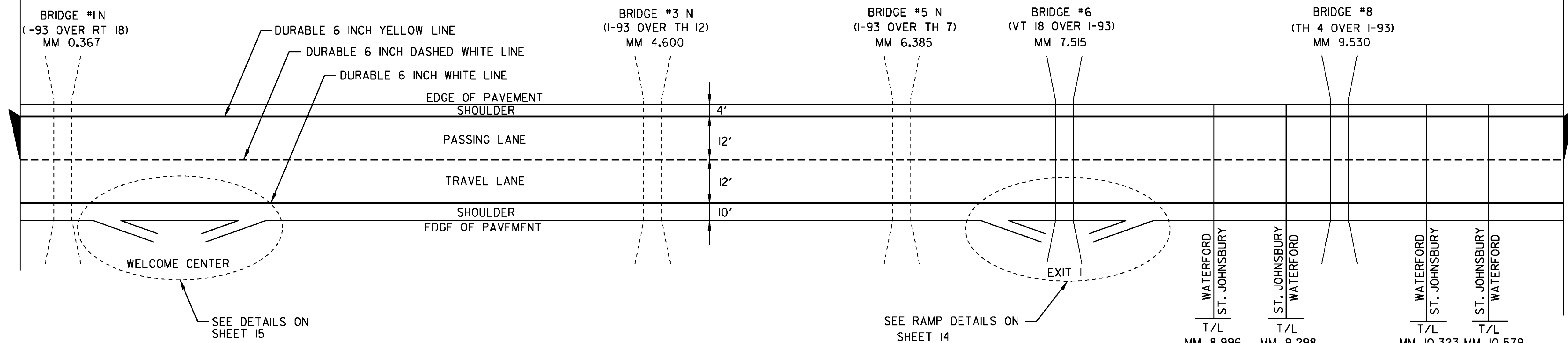
TEMPORARY 6 INCH YELLOW LINE, PAINT  
MM 0.051 - MM 11.184 SB (SOLID RT)  
MM 0.038 - MM 11.128 NB (SOLID LT)

DURABLE 6 INCH YELLOW LINE, POLYUREA  
MM 0.051 - MM 11.184 SB (SOLID RT)  
MM 0.038 - MM 11.128 NB (SOLID LT)



**INTERSTATE ROUTE 93  
NORTHBOUND  
(MM 0.038)  
BEGIN PROJECT IM SURF(47)**

**INTERSTATE ROUTE 93  
NORTHBOUND  
(MM 11.128)  
END OF PROJECT IM SURF(47)**



NOTE: THERE ARE WEIGH IN MOTION SENSORS IN THE PAVEMENT AT MM 7.910 NORTHBOUND AND MM 7.910 SOUTHBOUND THAT MAY BE IMPACTED BY CONSTRUCTION ACTIVITIES. INSTALLATION OF NEW SENSORS WILL BE PERFORMED BY OTHERS FOLLOWING COMPLETION OF THE PROJECT.

SEE RAMP DETAILS ON SHEET 14

**PAVEMENT  
MARKING  
DETAIL SHEET 1  
MAINLINE**

PROJECT NAME: WATERFORD  
PROJECT NUMBER: IM SURF(47)

FILE NAME: i4ai22\p14ai22.dgn  
PROJECT LEADER: M. FOWLER  
DESIGNED BY: K. LOCKE  
IPARM FILE NAME: p14ai22\_13.1

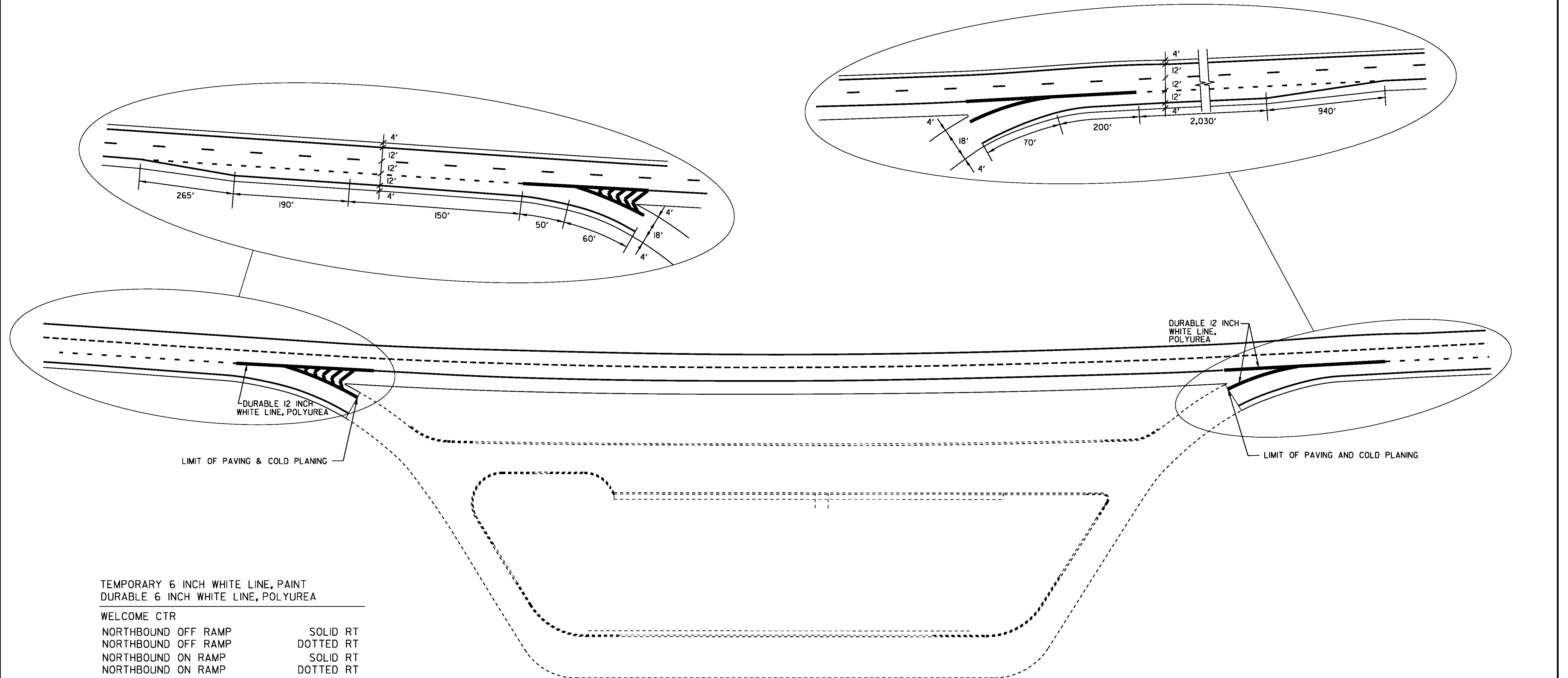
PLOT DATE: 10-DEC-2014  
DRAWN BY: K. LOCKE  
CHECKED BY: M. FOWLER  
SHEET 13 OF 22

NOT TO SCALE



**WELCOME CENTER  
NORTHBOUND**

MM 1.275



TEMPORARY 6 INCH WHITE LINE, PAINT  
DURABLE 6 INCH WHITE LINE, POLYUREA

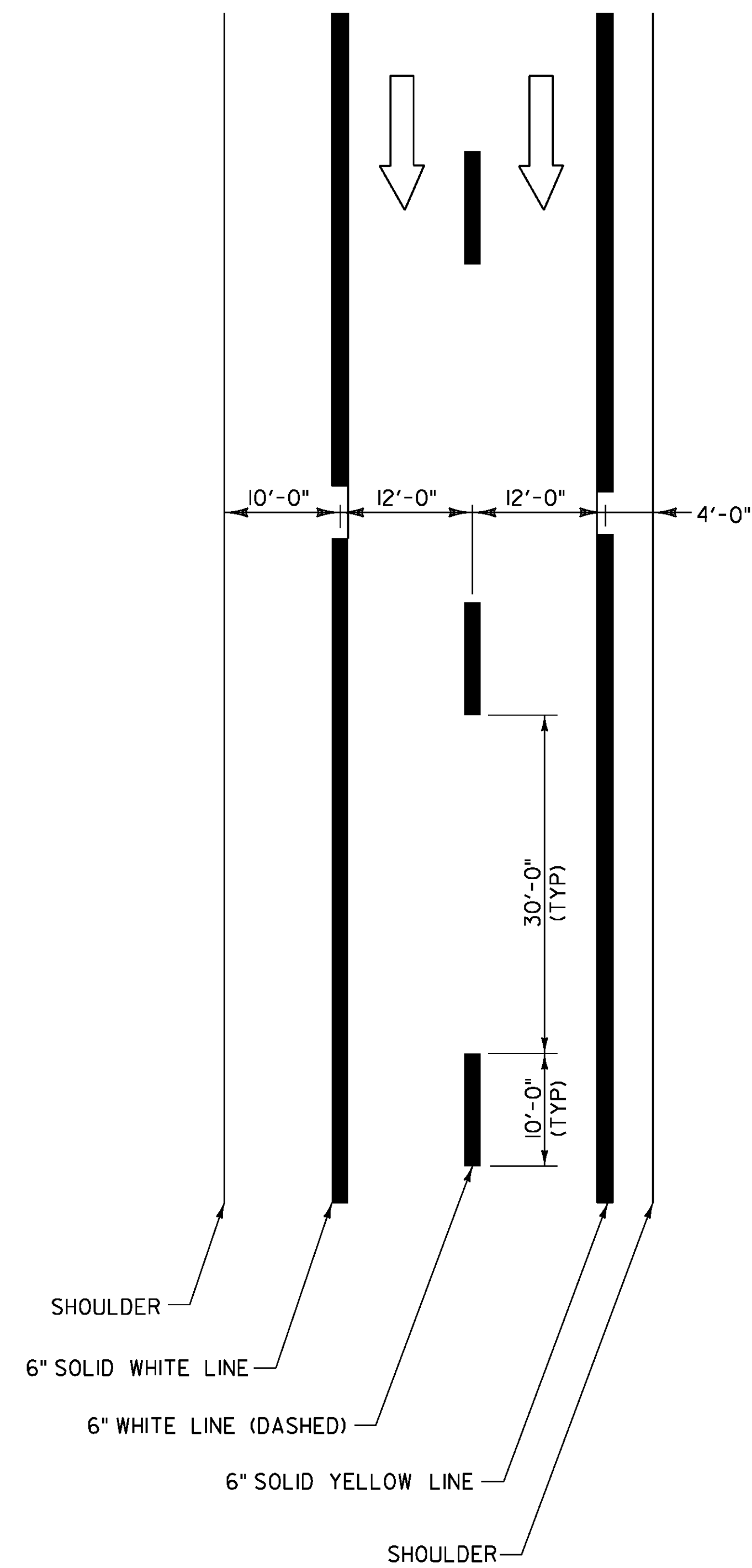
WELCOME CTR	
NORTHBOUND OFF RAMP	SOLID RT
NORTHBOUND OFF RAMP	DOTTED RT
NORTHBOUND ON RAMP	SOLID RT
NORTHBOUND ON RAMP	DOTTED RT

TEMPORARY 12 INCH WHITE LINE, PAINT  
DURABLE 12 INCH WHITE LINE, POLYUREA

WELCOME CTR	
NORTHBOUND OFF RAMP	SOLID RT (GORE AREA)
NORTHBOUND ON RAMP	SOLID RT (GORE AREA)

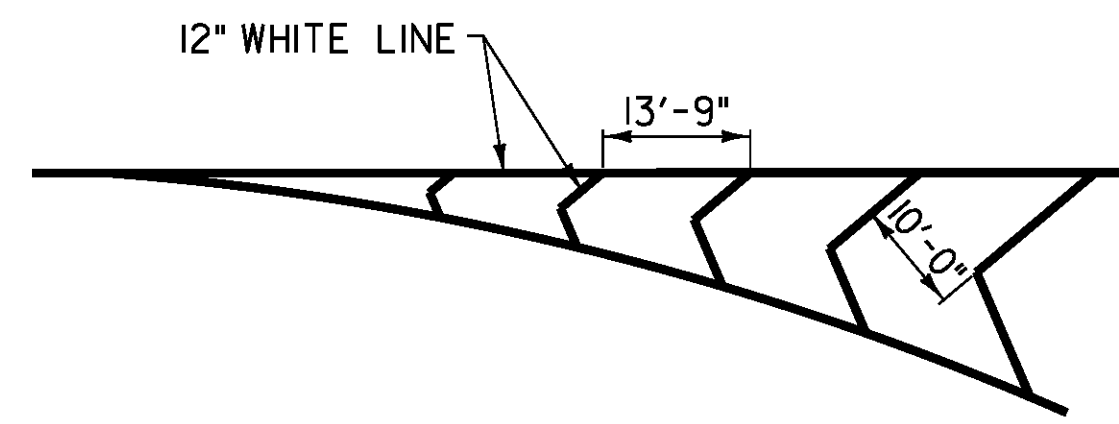
NOT TO SCALE

<b>PAVEMENT MARKING DETAIL SHEET 3 WELCOME CTR</b>	PROJECT NAME: WATERFORD	PLOT DATE: 10-DEC-2014
	PROJECT NUMBER: IM SURF(47)	DRAWN BY: K. LOCKE
	FILE NAME: i4a122\p14a122.dgn	CHECKED BY: M. FOWLER
	PROJECT LEADER: M. FOWLER	SHEET 15 OF 22
	DESIGNED BY: K. LOCKE	
	IPARM FILE NAME: p14a122_15.1	



**TYPICAL MAINLINE MARKING PLAN**  
NOT TO SCALE

**LEGEND**  
← DIRECTION OF TRAFFIC FLOW



**GORE MARKING DETAIL**  
NOT TO SCALE



DOTTED LINE (WHITE)



SOLID LINE (WHITE OR YELLOW)

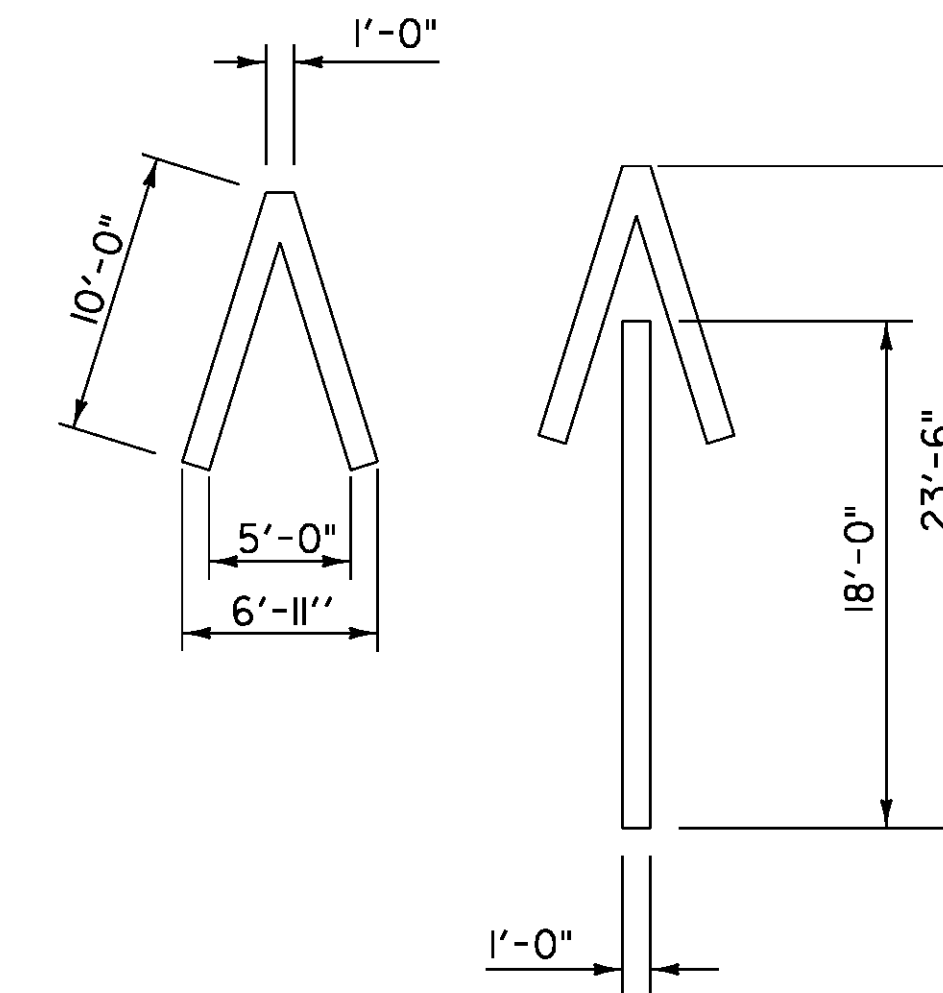


CHANNELIZING LINE (WHITE)

**PAVEMENT MARKING LINE DETAILS**  
NOT TO SCALE



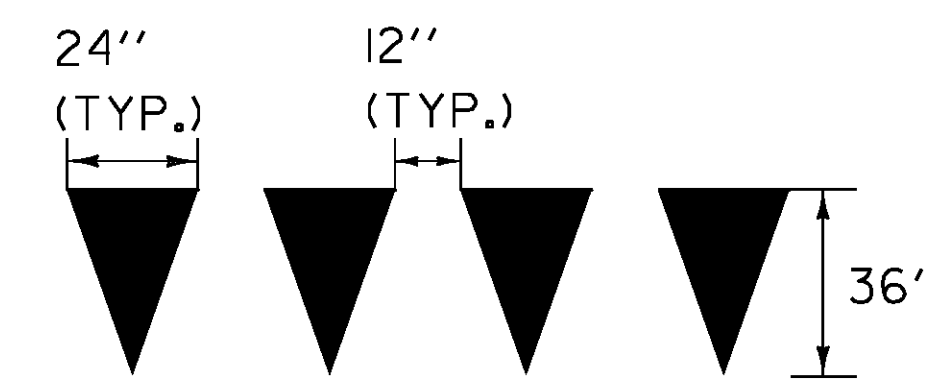
**STOP BAR DETAIL**  
NOT TO SCALE



**WRONG WAY ARROW**

NOT TO SCALE

MARKINGS TO BE PLACED AT EXISTING WRONG WAY SIGN



**YIELD LINE DETAILS**

NOT TO SCALE

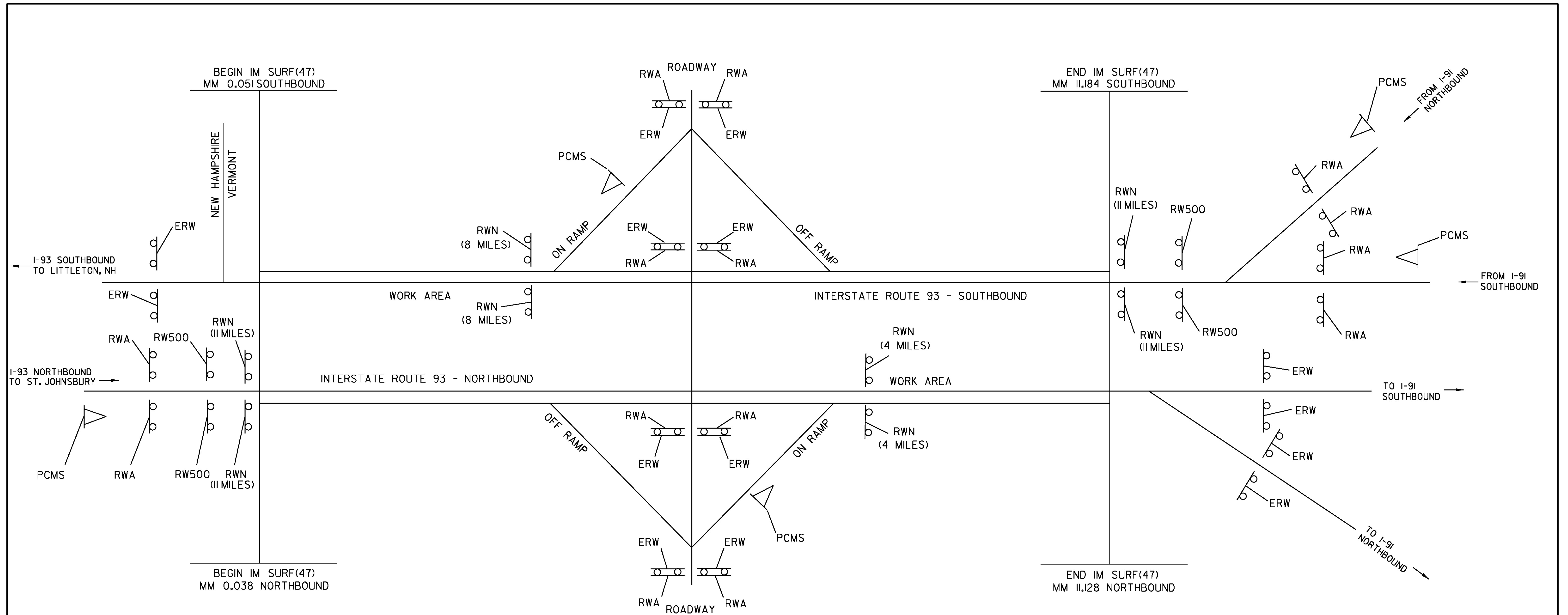
TO BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.  
TO BE PAID AS ONE LETTER OR SYMBOL PER TRIANGLE.

**PAVEMENT  
MARKING  
DETAIL  
SHEET 4**

PROJECT NAME: WATERFORD  
PROJECT NUMBER: IM SURF(47)

FILE NAME: i4a122\p14a122.dgn  
PROJECT LEADER: M. FOWLER  
DESIGNED BY: K. LOCKE  
IPARM FILE NAME: p14a122\_16.1

PLOT DATE: 10-DEC-2014  
DRAWN BY: K. LOCKE  
CHECKED BY: M. FOWLER  
SHEET 16 OF 22



TOWN/STATE HIGHWAY NAME	ROAD WORK AHEAD	END ROAD WORK	ROAD WORK 500'	ROAD WORK NEXT 12 MILES	ROAD WORK NEXT 4 MILES	PCMS
I-93 NORTHBOUND						
BEGINNING OF PROJECT			2	2		1
EXIT INTERCHANGE	4	4				1
MM 7.950					2	
END OF PROJECT		4				
<b>TOTAL</b>	<b>6</b>	<b>8</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>

TOWN/STATE HIGHWAY NAME	ROAD WORK AHEAD	END ROAD WORK	ROAD WORK 500'	ROAD WORK NEXT 12 MILES	ROAD WORK NEXT 8 MILES	PCMS
I-93 SOUTHBOUND						
BEGINNING OF PROJECT		2			2	
EXIT INTERCHANGE	4	4				1
MM 6.740					2	
END OF PROJECT	4		2	2		2
<b>TOTAL</b>	<b>8</b>	<b>6</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>3</b>

**LEGEND**

- RWA = ROAD WORK AHEAD
- RW500 = ROAD WORK 500 FEET
- RWN = ROAD WORK NEXT XX MILES
- ERW = END ROAD WORK
- PCMS = PORTABLE CHANGEABLE MESSAGE SIGN

**NOTE:**

THE CONTRACTOR SHALL CONTACT THE NHDOT BEFORE INSTALLATION OF CONSTRUCTION SIGNS IN NEW HAMPSHIRE

CONTACT: BRIAN SCHUTT  
DISTRICT ENGINEER  
DISTRICT 1

PHONE: 603-788-4641

ADDRESS: 641 MAIN STREET  
LANCASTER, NH 03584

**CONSTRUCTION  
APPROACH  
SIGNING  
SHEET**

PROJECT NAME: WATERFORD  
PROJECT NUMBER: IM SURF(47)

FILE NAME: i4a122\p14a122.dgn  
PROJECT LEADER: M. FOWLER  
DESIGNED BY: K. LOCKE  
IPARM FILE NAME: p14a122\_17.1

PLOT DATE: 10-DEC-2014  
DRAWN BY: K. LOCKE  
CHECKED BY: M. FOWLER  
SHEET 17 OF 22

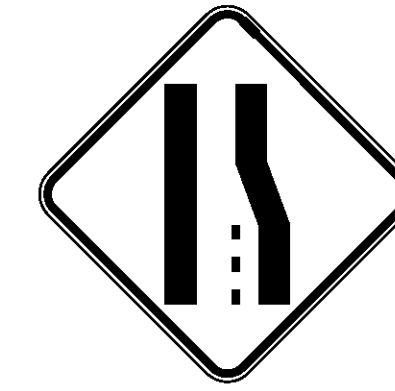
1. THE CONTRACTOR SHALL SUBMIT A SITE SPECIFIC TRAFFIC CONTROL PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO THE START OF CONSTRUCTION. THE COST OF PREPARING THIS PLAN (AND MAKING CHANGES IF NECESSARY) SHALL NOT BE PAID SEPARATELY BUT WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 641.10, "TRAFFIC CONTROL".
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 641.10, 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 641.15, "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 641.10, "TRAFFIC CONTROL". ADD G20-50P "WORK ZONE" PLAQUE AND R2-60P "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 3 MILES AT ANY GIVEN PERIOD OF TIME. IF LANE CLOSURES REDUCE THE TRAVEL LANE BELOW 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, 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 7 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 48 HOURS BEFORE WORK MAY BEGIN. ELEMENTS OF THE PLAN SHALL INCLUDE BUT WILL NOT BE LIMITED TO THE LOCATION OF THE 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 641.10, TRAFFIC CONTROL.

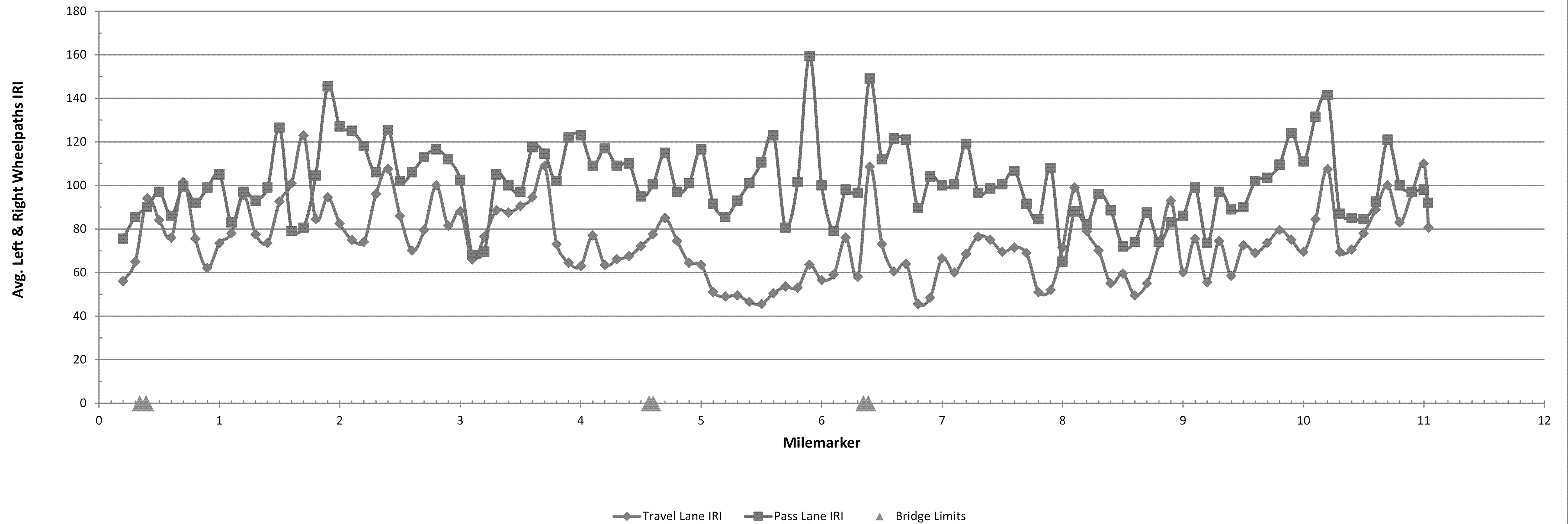
**CONSTRUCTION  
APPROACH  
SIGNING  
SHEET NOTES**

PROJECT NAME:	WATERFORD	
PROJECT NUMBER:	IM SURF(47)	
FILE NAME:	i4a122\p14a122.dgn	PLOT DATE:
PROJECT LEADER:	M. FOWLER	DRAWN BY:
DESIGNED BY:	K. LOCKE	CHECKED BY:
IPARM FILE NAME:	p14a122_18.1	SHEET
		18 OF 22

### I-93 NB Waterford-St.Johnsbury-Waterford IM SURF(47) PreCon IRI

Profiled 7/8/2014

Travel Lane Avg. IRI = 74.4 Pass Lane Avg. IRI = 101.1

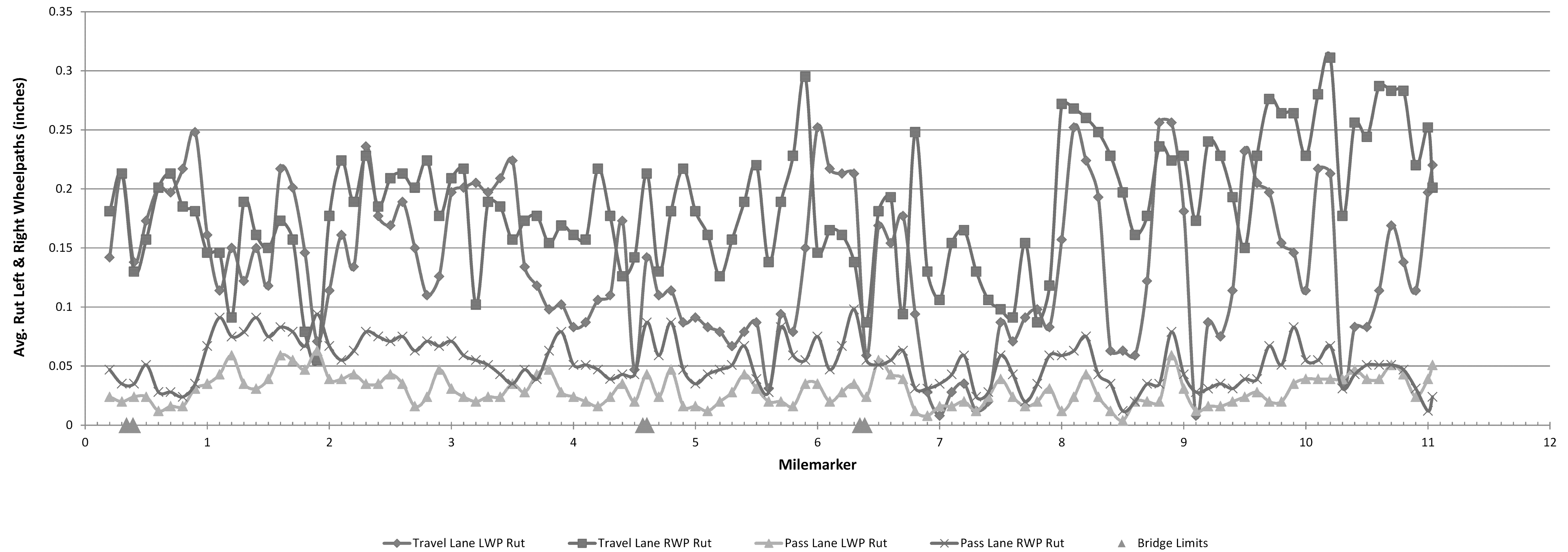


**FOR INFORMATIONAL PURPOSES ONLY**

<b>ROUGHNESS DATA INFORMATION SHEET NB</b>	PROJECT NAME:	WATERFORD		
	PROJECT NUMBER:	IM SURF(47)		
	FILE NAME:	i4a122\p14a122.dgn	PLOT DATE:	10-DEC-2014
	PROJECT LEADER:	M. FOWLER	DRAWN BY:	K. LOCKE
DESIGNED BY:	K. LOCKE	CHECKED BY:	M. FOWLER	
IPARM FILE NAME:	p14a122_19.1	SHEET	19 OF 22	

### I-93 NB Waterford-St.Johnsbury-Waterford IM SURF(47) PreCon Ruts

Profiled 7/8/2014



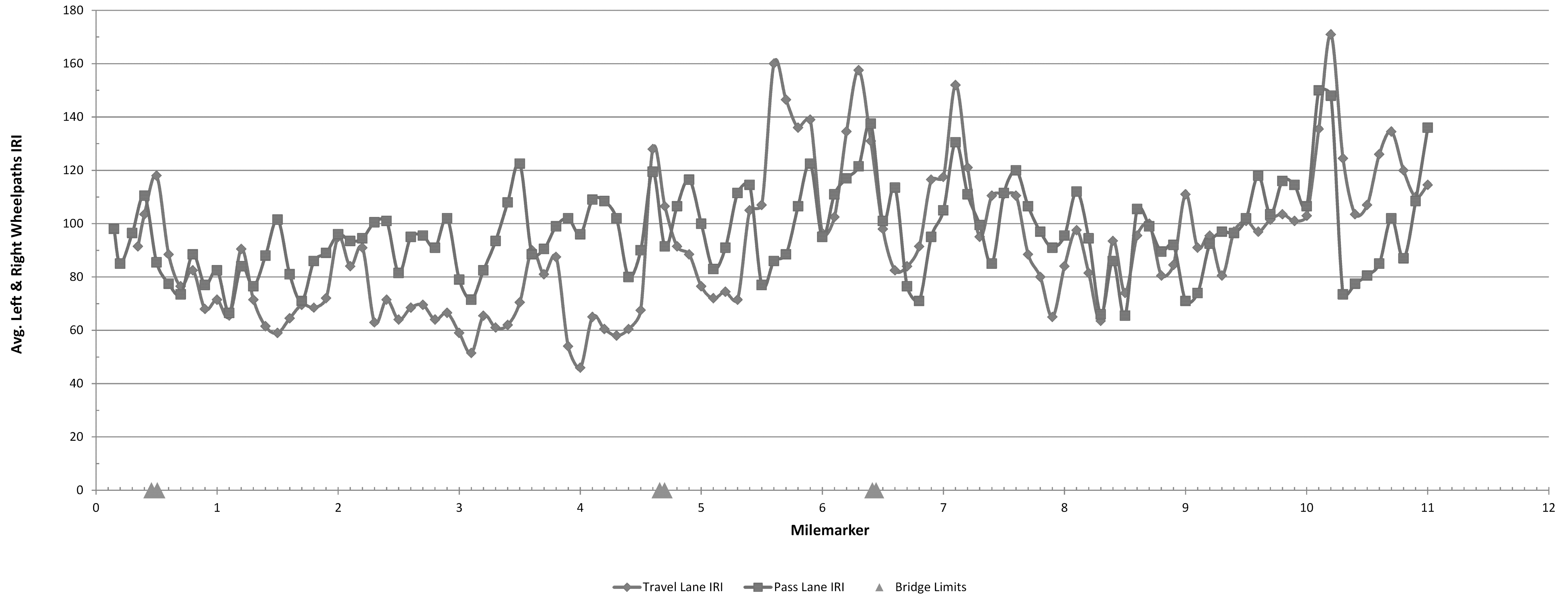
**FOR INFORMATIONAL PURPOSES ONLY**

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	PROJECT NUMBER:	IM SURF(47)
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	PROJECT LEADER:	M. FOWLER
	DESIGNED BY:	K. LOCKE
	IPARM FILE NAME:	p14a122_20.1
	PLOT DATE:	10-DEC-2014
	DRAWN BY:	K. LOCKE
	CHECKED BY:	M. FOWLER
	SHEET	20 OF 22

### I-93 SB Waterford-St.Johnsbury-Waterford IM SURF(47) PreCon IRI

Profiled 7/8/2014

Travel Lane Avg. IRI = 91.9 Pass Lane Avg. IRI = 96.8

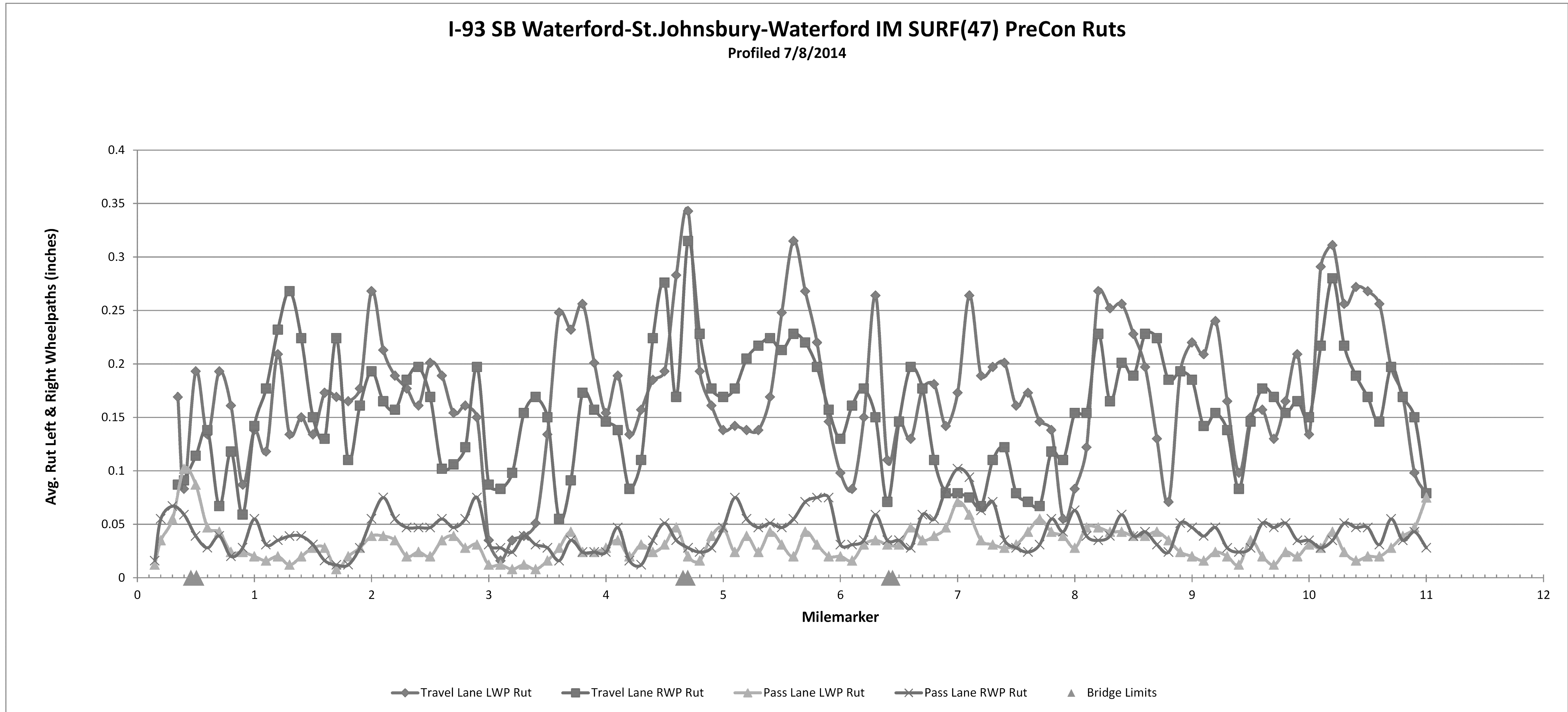


**FOR INFORMATIONAL PURPOSES ONLY**

<b>ROUGHNESS DATA INFORMATION SHEET SB</b>	PROJECT NAME:	WATERFORD	
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PROJECT LEADER:	M. FOWLER	PLOT DATE:	10-DEC-2014
DESIGNED BY:	K. LOCKE	DRAWN BY:	K. LOCKE
		CHECKED BY:	M. FOWLER
		SHEET	21 OF 22

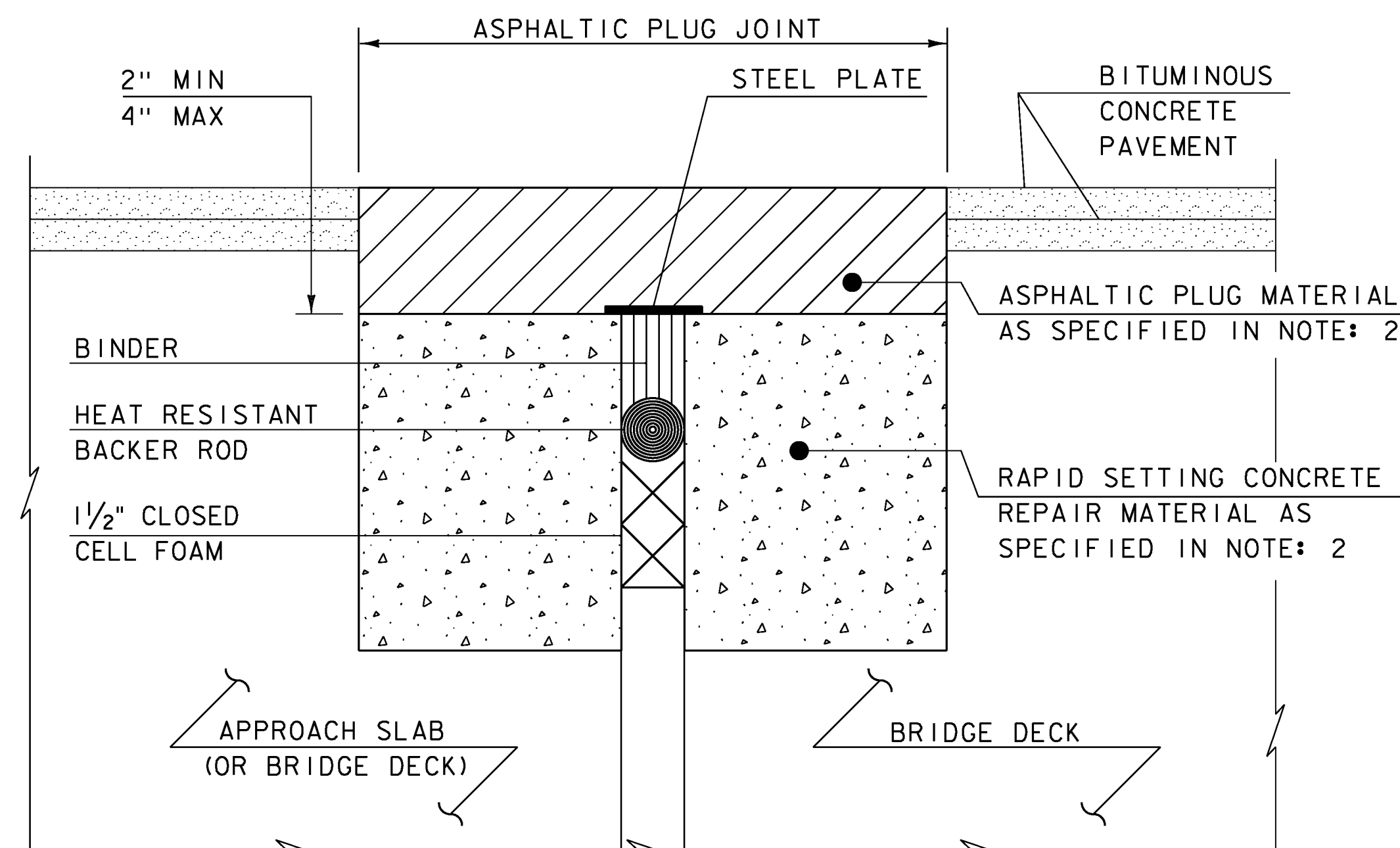
### I-93 SB Waterford-St.Johnsbury-Waterford IM SURF(47) PreCon Ruts

Profiled 7/8/2014



**FOR INFORMATIONAL PURPOSES ONLY**

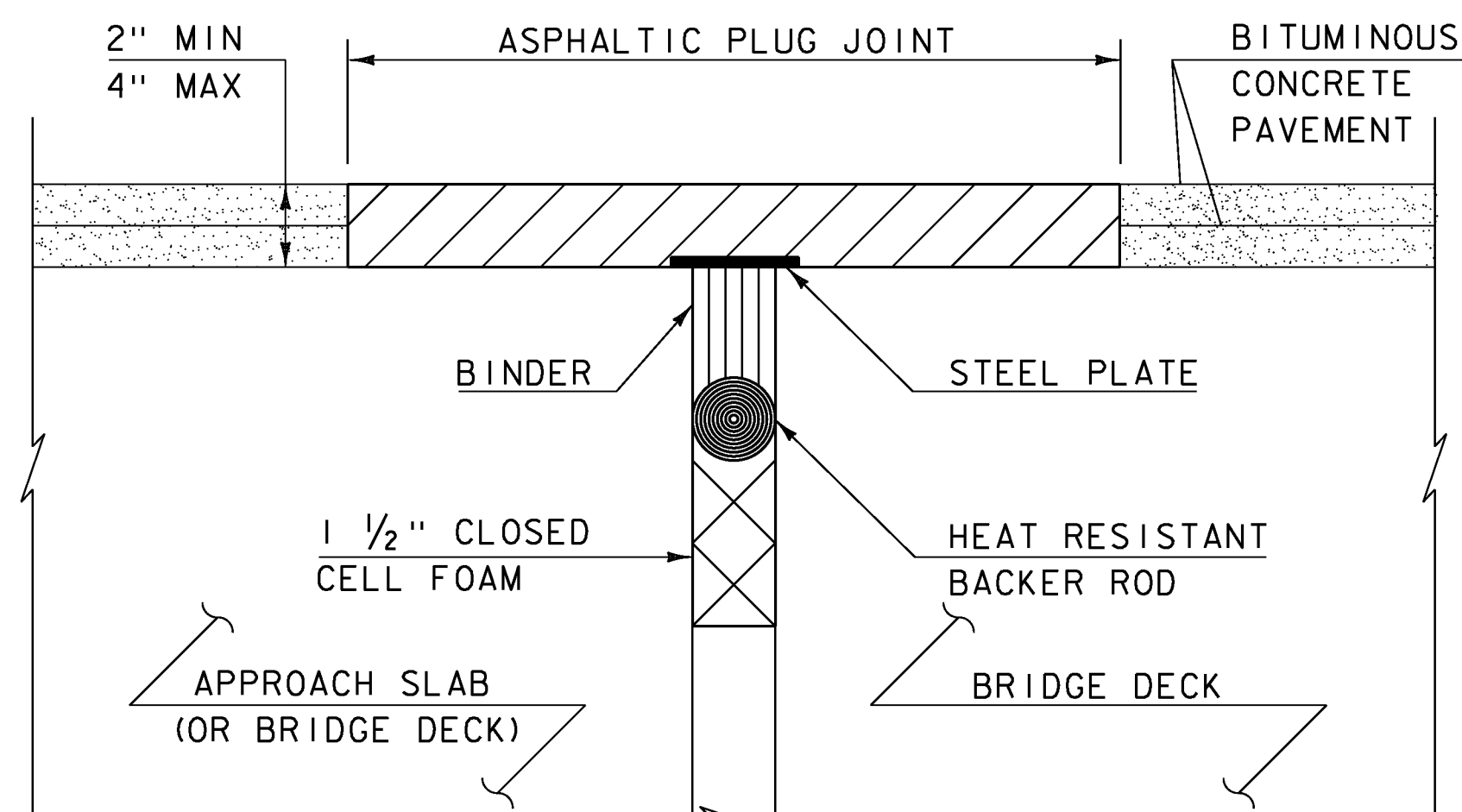
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	FILE NAME:	I4aI22\pI4aI22.dgn	
	PROJECT LEADER:	M. FOWLER	
DESIGNED BY:	K. LOCKE	PLOT DATE:	10-DEC-2014
IPARM FILE NAME:	pI4aI22_22.1	DRAWN BY:	K. LOCKE
		CHECKED BY:	M. FOWLER
		SHEET	22 OF 22



**ASPHALTIC PLUG-TYPE JOINT DETAIL - REHAB**

NOTES: (NOT TO SCALE)

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 COURSE 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 COURSE AGGREGATE MEETING THE REQUIREMENTS OF SUBSECTION 780.04.
3. REINFORCING STEEL NOT SHOWN FOR CLARITY.



**ASPHALTIC PLUG-TYPE JOINT DETAIL - NEW**

(NOT TO SCALE)

**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. REPAIR MATERIAL GREATER THAN 4 INCHES FROM FINISHED GRADE WITH RAPID SETTING CONCRETE REPAIR MATERIAL WITH COURSE AGGREGATE MEETING THE REQUIREMENTS OF SUBSECTION 780.04.
5. PLACE PROPERLY SIZED HEAT RESISTANT BACKER ROD IN THE MOVEMENT GAP ALLOWING FOR 1" +/- OF BINDER ABOVE THE ROD.
6. HEAT AND PLACE THE BINDER MATERIAL AS RECOMMENDED BY THE MANUFACTURER.
7. 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.
8. HEAT AND MIX THE BINDER MATERIAL AND AGGREGATE AS RECOMMENDED BY THE MANUFACTURER.
9. INSTALLATION OF MATERIAL, COMPACTION, AND TOP COATING SHALL BE AS RECOMMENDED BY THE MANUFACTURER.
10. IMMEDIATELY AFTER TOP COATING, CAST AN ANTI-SKID MATERIAL OVER THE JOINT TO REDUCE THE RISK OF TRACKING.
11. ONCE THE JOINT REACHES 82 DEG C (180 DEG F) +/-, WATER MAY BE USED TO EXPEDITE THE COOLING PROCESS.
12. PROTECT JOINT FROM TRAFFIC UNTIL THE MATERIAL HAS COOLED TO 51 DEG C (125 DEG F) +/-.

**WEATHER LIMITATIONS**

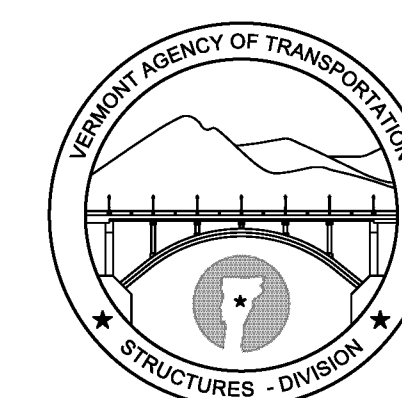
APPLY BINDER MATERIAL ONLY WHEN THE FOLLOWING CONDITIONS PREVAIL OR AS RECOMMENDED BY THE MANUFACTURER:

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.

**REVISIONS**

MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION

**BRIDGE JOINT  
ASPHALTIC PLUG**



**STRUCTURES  
DETAIL  
SD-516.10**